UNIVERSITY OF Southampton

FACULTY OF LAW, ARTS & SOCIAL SCIENCES

School of Social Sciences

British South Asian women in English Universities: a study of 1st year and choice at university

by

Priya Khambhaita

Thesis for the degree of Doctor of Philosophy

October 2011

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

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This thesis is made up of three papers and aims to explore the higher education routes taken by British Asian women covering analyses of degree subject and institution choices. The first paper explores the subject choices of UK home applicants to undergraduate degree courses with the use of multinomial logistic regression and Universities and Colleges Admissions Services applicant data. The study finds that there are clear differences both across and within ethnic groups in terms of preferred subject choice. Overall, ethnic minority groups other than the Black Caribbean group are more likely to apply to study subjects leading to careers in the professions when compared to the White ethnic group. Differences were found within ethnic groups and these were related to socio-economic background.

The second paper uses binary logistic regression analysis and HESA enrolment data for academic years 1998 and 2005 to explore (i) the decision to move out of the parental/guardian home whilst attending university and (ii) the decision to move out of one's home region conditional on the fact a student is not living in the parental home. Findings suggest that Indian, Pakistani and Bangladeshi female students are all more likely to live in the parental/guardian home than White students. Students from all three Asian groups that do move out are less likely to attend a university outside their home region. These patterns are persistent in both 1998 and 2005.

The third paper examines with the use of qualitative semi-structured interviews Indian mothers' perceptions of their roles in their daughters'

university subject choices. The sample included nine women from varying educational backgrounds with different migration stories. It was important to all the interviewees that their daughters attend university, and this was something they had always envisaged. This aspiration was prevalent across the sample. The women rarely offered specific subjects and careers that they preferred for their daughters. Instead they had an inclination for a wide number of careers that shared specific favourable features such as high pay rewards.

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DECLARATION OF AUTHORSHIP

I, Priya Khambhaita, declare that the thesis entitled **British South Asian women in English Universities: a study of 1st year and choice at university** and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission.

Signed: .....
Date: .....

ACKNOWLEDGEMENTS

First and foremost, I wish to express sincere appreciation to Professors John Micklewright and Sue Heath and also to Dr. Ann Berrington for their assistance in the preparation of this manuscript. Thanks also to Dr Savan Chhaniyara, Dr. Kalwant Bhopal, Dr. Clare Woodford, Tom King, Lorraine Pearson and Katie Bruce for their valuable input. My family have been very supportive and I must give special mention to (late) Mr & Mrs. T. H. Raja, Virendra, Dhanila and Darshana Khambhaita, Benita and Pritesh Meswania and Vaishalli Patel. Many colleagues at the Institute for Employment Studies (IES) have helped to guide my research through their helpful comments including Emma Pollard, Gemma Robertson-Smith and Rose Martin. I am also grateful to the Economic and Social Research Council for funding this research. Many thanks to the Higher Education Statistics Agency for providing access to the micro-data sets used for analysis in this thesis. Finally, a special mention of thanks goes to the schools, teachers, students and interviewees for volunteering their time to help facilitate and participate in the qualitative research presented in this thesis.

1. Introduction

1.1 Background

> "Anyone can cook *Aloo Gobi* but who can bend a ball like Beckham?"
>
> Chadha (2002)

This famous line from Gurinder Chadha's 2002 film *Bend It Like Beckham* represents the essence of this thesis. Subject and career choices, parental and family concerns as well and aspirations about moving abroad to study were all difficult for the main protagonist Jessminder Bhamra to negotiate to herself and those around her. Her journey was that of a constant battle to figure out what was right for her and her working-class Hounslow family. In the end she had the courage of conviction to follow her dream to become a professional footballer and study in America, a dream that was eventually understood by her parents after great debate, thought and consideration.

How much does Jessminder's predicament resonate with other young Asian women? Knowing what subjects were popular across an entire cohort of students in the first place was an important start in answering this question. The research presented here is the first of its kind in that it is an investigation of a number of different factors associated with university and by extension career choice across an entire cohort of university applicants. How these factors might be associated with each other is also investigated. Furthermore, the factors associated with the choices that Asian female students make about where to study their courses in relation to their parental homes, and how this might have changed over time is also studied.
In order to understand what the bigger picture might be concerning this research area, it is data sets of entire cohorts of enrolled undergraduate students that are interrogated. Finally, many of the concerns Jessminder's parents might have had around a number of HE-related decisions their daughter was making, particularly subject choice, are explored amongst a sample of Indian mothers to address the gap in the literature on Asian maternal influence.

This thesis is made up of a total of five chapters. The purpose of this chapter is to set a context for the three research papers that follow this introduction and make up the main content of this thesis. The first two of these research papers (Chapters 2 and 3) are quantitative studies and the final substantive paper (Chapter 4) is a qualitative research study. Each of the substantive chapters can be treated as stand-alone research papers. Therefore, they each include a separate discussion of relevant research questions, existing literature, advantages and limitations of data used, research methods and results. They each also have their own discussion and conclusion sections.

The three substantive chapters are all separate research papers but are all related to the wider topic of the routes that ethnic minorities follow into and through Higher Education (HE). Chapter 2 is an analysis of university subject choice carried out with the use of UCAS applicant data. This analysis includes the major ethnic minority groups (Black Caribbean, Black African, Chinese, Indian, Pakistani and Bangladeshi) as well as the White group. Chapter 3 is an investigation of student term-time accommodation with the use of HESA enrolment data. This study is focused only on the Indian, Pakistani and Bangladeshi groups along with the White group for comparison. These three Asian groups are of main interest in this thesis. The analysis presented in Chapter 4 is a study of the roles that Indian mothers play in their daughters' degree subject choices. The fifth and final chapter provides an overall summary and conclusion to the thesis as well as a discussion of recommendations for further related research.

The next section of this introductory chapter includes a brief outline of the current UK HE climate and the government agenda with regards to widening participation. This is followed by a succinct overview of some of the key findings from theorists and researchers investigating choice in HE. These themes are further elaborated on in the relevant chapters. A description of the three research papers that make up the substantive element of this thesis is then given with an outline of the ways in which a contribution has been made to the relevant research areas. This is followed by a section where the links between the three research chapters are highlighted and it is possible to

see how the qualitative research in Chapter 4 builds on the quantitative research in Chapters 2 and 3. The quantitative data sources that were considered for Chapters 2 and 3 are then discussed. There were a number of factors that had to be considered in evaluating which data sets would be suitable in terms of addressing the research questions in each of these chapters. This is then followed by a discussion of qualitative data sources. The final section concludes the introduction.

1.2 UK Higher Education

1.2.1 History of HE and the expansionist agenda

There have been a number of changes to the structure and governance of UK higher education over the last fifty years. Elitist concepts of access and participation have been examined and re-examined alongside the manipulation of funding mechanisms. This has allowed for greater state intervention, the result of which is a substantial transformation in the relationship between the academy and the government.

The Robbins report prepared by the Committee on Higher Education in 1963 was important for placing emphasis on the expansionist agenda. The numbers of young people at universities in absolute terms had steadily increased since 1920. However, the proportion from each class group remained the same. In spite of some cynical commentators, the expansionist agenda emphasised by Robbins continued to gain momentum throughout the 1970s and 80s. It eventually culminated into the 1992 Further and Higher education Act. This Act created the framework necessary for a system of mass HE and marked a huge philosophical shift in the political perception of HE in the UK. Up until the late 1990s, British politicians had only discussed the notion of mass higher education with elements of embarrassment or distaste. However, the situation had changed by mid-1991. The term “mass higher education” had assimilated into cross-party political vocabulary and become more readily accepted (Pugsley 2004).

There are many types of universities, each different in their history, mission, size and subject mix. Unlike today where new institutions are granted university status by the Privy Council, older universities in England were established by Royal Charter, Statute or by an Act of Parliament. These “older” universities vary greatly by age. Some were founded in the 1950s and 1960s. Others such as the ‘civic’ universities were founded in major cities in the 19th and early 20th centuries.

The Further and Higher Education Act of 1992 was important as it granted university status to higher education institutions that were previously known as ‘polytechnics’. Some of these institutions that are often referred to as “new” universities have their origins in vocational colleges. The previous government supported the development of new universities in areas of the UK where it was not possible to access higher education locally (HEFCE 2009).

Alongside the expansionist agenda and the introduction of new universities, there have been changes in funding arrangements. There have been moves from block grants to per capita funding. These have resulted in a loss of institutional autonomy and more HEIs increasingly operating in a competitive framework. The consequence of this is that the past few decades have seen initiatives directed at the marketisation of higher education (Pugsley 1998). Some policy makers and politicians have argued that this marketisation is an important mechanism for ensuring that research and teaching standards are consistently high.

In addition to changes in the structure and governance of UK higher education and the relationship between the state and the academy, the emphasis on the role of HE and its purpose has also changed. The Robbins committee of 1963 identified several objectives for HE. These were specifically in relation to advancing and developing learning. The committee also stressed the need for universities to play an integral role in training students to develop the skills necessary for the labour market. In order to meet this aim, massive expansion of the sector was ordered. The cross-party political consensus was then that universities should be open to all with the necessary entry qualifications (Pugsley 2004).

The growing economic importance of higher education has been recognised and its contribution to national and regional economic development has been attracting the attention of policymakers. In the UK, higher education is regarded as being of key importance in the creation and transfer of knowledge to the economy not only through its teaching but through its research and other activities (Universities UK 2009).

In 1980 the Education For Capability manifesto was published through the Royal Society of Arts (RSA) in London. The manifesto placed emphasis on the limited value of education when it is regarded only as the pursuit of intellectual skills and knowledge for their own sake. Arguments were put forward that higher education should be judged on a wider set of criteria. These should include the extent to which higher education gives students the confidence and ability to take responsibility for their own continuing personal and professional development and prepares students to be personally effective within the circumstances of their lives and work (Stephenson and Yorke 1998).

1.2.2 An increased emphasis on Widening Participation

The last UK government was especially concerned with widening participation in HE and set itself an aim for "helping more people from under-represented groups, particularly low socio-economic groups, to participate successfully in HE" (DFES 2006,5). Great emphasis was placed on fair access in terms of "increasing opportunities for people from under-represented groups to attend HE institutions and courses which offer the highest financial returns" (DFES 2006,5). It is too soon to comment on the current coalition, however they also promise a commitment to equality in education at all levels.

There are many reasons why there has been such great emphasis on expanding the HE sector. It plays a central role in equipping the labour force with appropriate and relevant skills, and supporting productivity in an increasingly competitive world. Not only can the HE sector help meet

objectives around skills and the knowledge economy, it can also play an important role in facilitating social mobility.

A nationwide target was set for 50% of all 18 to 30 year olds in England to be participating in HE by 2010 (Wilson, Homenidou and Dickerson 2006). Meeting this target is more realistic if HE is made accessible to non-traditional students previously under-represented in the student body. Ethnic and socio-economic backgrounds are both potential areas of disadvantage in the uptake and experience of education at all levels. Inclusion and equality of access for young people from diverse backgrounds is an important aim for education policy makers. A concern for students from vulnerable groups became even greater with the recent overhaul of student funding.

1.2.3 Changes in Funding

Student finance reforms were introduced in England in 2006 in accordance with new regulations and the 2004 Higher Education Act. As a result variable tuition fees were introduced for full-time undergraduates and maintenance grants were re-introduced for students from low income backgrounds. The 2004 Act allowed English HEIs to charge fees up to the limit of £3000 a year for full-time undergraduate courses (Callender 2009). There were year-on-year increases to this amount due to inflation. The maximum fee that could be charged in academic year 2009/10 was £3225 (Directgov 2010). All full-time undergraduate students now pay tuition fees regardless of their family's income. In order to cover the cost of their fees, students have the option of taking out a government-funded student loan which they repay once they have graduated and are earning above a certain income level (Callender 2009).

It was important to ensure that the introduction of higher tuition fees did not have an adverse effect on the widening participation agenda. The Office for Fair Access (OFFA) was therefore set up as an independent, non-departmental public body to ensure that this was not the case and under-represented student groups were not discouraged from participation. All HEIs

wishing to charge higher tuition fees are required to submit an 'access agreement' to OFFA where they set out their tuition fee limit and what they have in place in terms of bursaries and other financial support. The government anticipated that OFFA should have high expectations in terms of what outreach and financial support universities were willing to offer, especially those that had much progress to make in having a diverse student body (Callender 2009).

Universities give bursaries and scholarships as extra sources of financial assistance. They are paid in addition to student loans and grants, but do not require repayment from students. They are usually in the form of cash but can be given in other forms like a discount on accommodation, for example. Scholarships are distinguishable from bursaries as students are eligible according to particular characteristics such as A-level grades or subjects studied. Bursaries on the other hand are generally awarded to students on account of their financial circumstances.

A study of bursaries and scholarships was carried out by Callender (2009). It involved examining the awareness, take-up and impact of bursaries and scholarships in England from the perspective of higher education institutions (HEI), full-time undergraduate students and their parents, and higher education (HE) advisors in colleges and schools. Interviews were carried out with key stakeholder organisations. In addition, telephone surveys were conducted with 74 HEIs, 114 parents and 150 HE advisors in schools and colleges. An online survey of a nationally representative sample of just under 5,000 full-time undergraduate students was also carried out.

The results indicated that bursaries and scholarships assisted students to overcome the perceived financial barriers to HE participation. They were particularly valued by students whose HE choices were constrained by their financial circumstances, who were anxious about the costs of going to university and who were concerned about accruing debt during their time at university. Bursaries and scholarships encouraged these students to feel that university was more affordable to them by helping them to off-set some of these expenses. They enabled wider participation and successfully broke

down barriers between high achieving lower income students and higher status, Russell Group HEIs.

Callender's (2009) study highlighted inequalities that had arisen from the new funding arrangements generally and bursaries more specifically. The impact of both bursaries and scholarships was limited by a number of factors. These included a lack of awareness, knowledge and understanding of bursaries by students and parents. Some schemes were found to potentially perpetuate existing inequalities both within and across the HE sector. For example, in 2008-9 38% of HEIs had non-need based scholarships that were worth more than the average means-tested bursaries aimed at low-income students in addition to their main means-tested schemes.

Non-means-tested schemes and packages were found to be diverting resources away from bursaries for low income students especially in a tight fiscal environment. This was diluting the HE opportunities of these low-income students. In some cases, some bursaries and scholarships were being used more to the advantage of HEIs as a competitive tool in admissions rather than helping those in most financial need. Callender's (2009) study demonstrates that there are certain groups of students that are more vulnerable to disadvantage in HE. Lack of funding and financial support can be key barriers to HE for certain students and limiting potential for disadvantage continues to be an important goal for policy makers.

1.2.4 Changes in Participation

There has been some success in increasing participation amongst students from ethnic minority and lower socio-economic groups. The increase in ethnic minority applicants accepted on to first degree courses as a percentage of all acceptances can be seen in Figure 1.1. The similar increase in students from lower socio-economic groups is evident in Figure 1.2. Both of these figures are based on tables computed on the UCAS website[1]. Socio-economic information was only available for academic year 2002 entry

[1] Data are available at: http://www.ucas.ac.uk/about_us/stat_services/stats_online

onwards. For purposes of comparability and consistency, figures for ethnic minority groups are also given for the same six-year period.

Figure 1.1: Ethnic minority acceptances as a % of all degree acceptances, UCAS, UK, 2002/03-2008/09

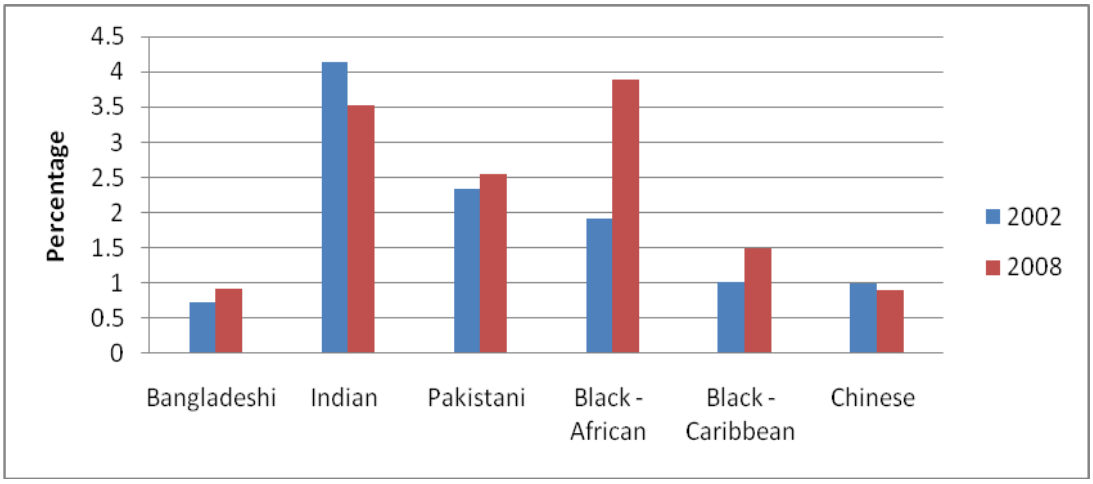
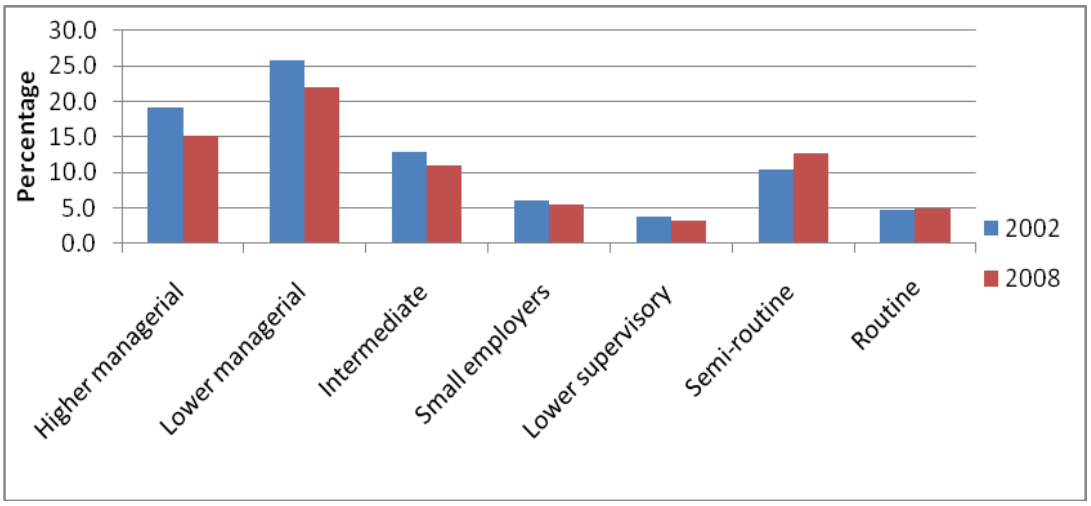


Figure 1.2: HE students by socio-economic group as a % of all degree acceptances, UCAS, UK, 2002/03- 2008/09



The results in Figure 1.1 illustrate that students from the Black Caribbean, Black African, Pakistani and Bangladeshi groups all make up a greater share of the student population in 2008 than in 2002. Students from the Indian and Chinese groups have traditionally had higher rates of participation than the other minority groups, and so they have seen a slight decrease in their percentage share of accepted degree applicants. Researchers such as Torgerson et al (2008) have explained the high rates of participation amongst particular ethnic groups by highlighting differences in cultural attitudes towards education, specifically higher education. There is high cultural

awareness of the value of extending young people's education amongst the ethnic groups with the highest rates of participation. In addition to an increase in the ethnic minority share of the student population, students from lower socio-economic groups have also seen an increase in accepted applicants. The percentage is higher for the lower groups in 2008 than in 2002 as seen in Figure 1.2. The routine group has a small increase whereas the semi-routine group has an even greater increase.

1.3 Choice in Higher Education

Students coming from different ethnic, cultural and socio-economic settings have diverse attitudes towards education. This leads to differences between students in the way they participate in HE. There are considerable variations in what participation in HE means to students of different backgrounds. The initial choice to go to university and how it varies across ethnic group is one that has received much attention from researchers. For example, authors such as Shiner and Modood (1994) and Bailey (2002) have explored the factors that may affect participation, and how entry rates have changed over time. Chowdry et al. (2008) have used linked administrative data from the Higher Education statistics agency (HESA) to investigate how individual secondary school attainment affects participation. Hence, it is not an aspect of HE that has any key focus in the research analyses presented here. It is the choices that ethnic minorities, in particular South Asian women, make before they enter HE (degree subject) and the routes they follow upon enrolment (term-time accommodation) that are addressed in this thesis. Therefore it is choices that are made conditional on the decision to participate in HE, or apply to enter HE, that are studied.

Choice in Higher Education (HE) is a growing area of research. Students are faced with a number of decisions about whether to enrol in HE, which course to enrol in and which institution to attend. Decision-making is complex and there are multiple factors, stages and influences that impinge on the choice process (Paton 2008). It is not realistic to regard students as homogeneous in the routes that they follow through their educational careers (Bailey 2002).

Choice is socially embedded and constrained by socio-economic, family and ethnic cultures (Paton 2008). Young people raised in diverse settings are subject to having different attitudes towards education and the benefits it has to offer (Bailey 2002).

Many recent studies that have involved the investigation of young people's higher education (HE) choices have focused on familial influences (Brooks 2003b). Families can be highly influential in the way young people conceptualise the HE sector (Brooks 2003a). Indeed, Roberts and Allen (1997) found in their large-scale quantitative study that there were some common sources of influence in students' decisions about HE courses and institutions. The family was the main source of influence and this was closely followed by friendship groups (cited in Brooks 2003b).

The path that students follow through HE is not solely dependent on the choices that they make. Universities also have to make decisions about accepting students on the basis of their choices. Institutions make these choices on the basis of number of student characteristics, A-level attainment being one of them. The ways in which students participate in HE is therefore an outcome of the decisions that are made by both providers and consumers of HE. It is clear then that choice in HE is multi-faceted and complex.

Once ethnic minority students are in HE, they do not experience the same success as White students. Ethnic minority students fare worse in terms of their degree attainment. After controlling for type of prior institution attended, term-time employment, parental income and English as an additional language, being from an ethnic minority group (with the exception of "Other Black", "Mixed" and "Other" groups) is still statistically significant in explaining their final attainment (Broecke and Nicholls 2007).

1.4 Research Chapters

1.4.1 Chapter 2

In Chapter 2, the aim was to explore the preferred subject choices that ethnic minority groups apply to study at university relative to Whites with the use of

UCAS applicant data for academic year 2006 entry. Investigating degree subject choice is important for a number of reasons. If there are clear differences across ethnic groups in terms of students that select subjects more likely to lead to well-paid professional occupations and students that are drawn to other subjects, then there are important implications for policy on inequality that must be considered. If an uneven distribution of subject choice and ethnic group is also correlated to socio-economic group, then the implications are even more pressing.

Ball, Reay and David (2002) argue that differences evident amongst ethnic minority students cannot be fully understood without reference to social class. It has been my aim throughout the research presented here not to ignore the overlap between these two variables. Few authors have incorporated socio-economic background into the understanding of variation in education routes across ethnic groups. Similarly, others such as Bratti (2006) have only focused on the association between degree subject choice and social class. Emphasis was placed on how the results for ethnicity would change after controlling for socio-economic background as well as exploring how the effect of the latter variable varied across ethnic groups. One of the methods used in this research was a segregation index. It is a method commonly used to measure segregation in schools and the labour market. However, based on the research reviewed in this thesis, it has never been used to study university subject choice. Cross-tabulations and multinomial regression were the additional two methods used in the Chapter 2 analysis.

1.4.2 Chapter 3

Having studied all the major ethnic minority groups (including Black Caribbean, Black African and Chinese), the third Chapter involved focusing only on the Indian, Bangladeshi and Pakistani ethnic minority groups. The Asian communities place great importance on the family as an institution (Ballard 1994). There is little existing research on the educational experiences of these groups, in particular of Asian women. Where research does exist, it involves predominantly qualitative work that places emphasis on Bangladeshi

and Pakistani students. Indian students have often been excluded mainly because the issue of particularly low attainment is not as pronounced with this Asian group. Furthermore, Bangladeshi and Pakistani students are predominantly Muslim, and research on followers of this faith is high profile and deemed more relevant to modern issues of integration, tolerance and fundamentalism.

In Chapter 3, the key aim was to explore the term-time accommodation patterns of Indian, Pakistani, Bangladeshi and White female students. HESA micro-level data on individual enrolments were available for 1998 and 2005 entry. The intention was to explore how changes during this period, such as an increase in participation rates, might have altered the routes that Asian women follow in HE. Binary logistic regression models were used to investigate (i) term-time accommodation status (whether or not a student lives in the parental home while at university) and (ii) whether or not a student stays in their home region having made the initial decision to leave the parental home.

Bagguley and Hussain (2007) found that the decision to stay at home or move away was an especially important one for Asian female students. It was found to be very much a collective family decision. Bagguley and Hussain's (2007) results indicated that there was a very clear distinction between Indian women and students from the other Asian groups in this respect. The option of moving away was much more realistic for Indian girls. The first stage of the analysis involved exploring with the use of large-scale quantitative data to what extent these trends applied to an entire cohort of enrolled students, how Asian students compare relative to Whites, if these patterns remain once the effect of other variables (e.g. A-level attainment) are controlled for, and how patterns have changed over time.

What other authors such as Bagguley and Hussain (2007) have not done is to explore the decisions that come after the initial choice is made to leave the parental home. The second stage of the analysis involved addressing the following research questions: Do Asian female students that move out behave in the same way as White students? Do they choose to move out but still stay

close enough to allow frequent visits or do they relocate further afield? These are important questions as students that move further away from home may benefit more from a wider choice of institution and course. This in turn can impact upon labour market outcomes once these students graduate. It is important to understand then which students are not only more likely to move away from home, but also which students move further away from home.

1.4.3 Chapter 4

Chapters 2 and 3 of this thesis involve the use of large-scale quantitative data analysis to explore HE outcomes that other authors have demonstrated the family play an important role in at the decision stages. Qualitative literature has been used in these chapters to inform the broad patterns that have emerged in the research. There is little existing work conducted where parents' own narrative accounts have been recorded in order that they discuss their views about their children's education in their own words. Some authors such as Chevalier (2001) and David et al. (2003) have highlighted the importance of the family's role in terms of the educational choices young people make. Authors such as Siann et al. (1990) have interviewed students to gauge parental attitudes as opposed to interact with parents directly. Indeed, research conducted for the purposes of understanding parents' views of their children's subject and career choices is significantly lacking.
This lack of research involving parents themselves as participants is an important deficit addressed in Chapter 4 of this thesis. Again, the focus is on Asian women and Indian female students in particular. As highlighted earlier, Indian students are often excluded from the debate on Asians in education. Interviews were conducted with Indian mothers of daughters that were in the process of applying to study HE courses, or had made their applications recently.

Existing research on Indian or even Asian mothers more generally in terms of the roles they play in their children's educational choices is limited. It is not possible to paint as comprehensive a picture of the role of Asian, or

specifically Indian, mothers as it is with the role of mothers more generally. The specific type of involvement that mothers have in decision making compared to the individual students is not clear. It is this gap in knowledge that is addressed in this study with particular focus being on subject and career choice. The aim was to learn if the mothers believed that they played a role in their daughters' decision making, what they believed this role to be, and what advice they gave if any.

In particular, it was the attitudes that mothers had regarding degree subjects and careers for their daughters that was of most interest. Did these mothers feel that they played a central role in their daughters' decision making processes when it came to choosing degree subject/s and potential career/s? Did they have particular opinions regarding suitable career choices? These were research questions that were central to the analysis presented in Chapter 4.

1.4.4 Intersections between the research chapters

In-depth discussions with Indian mothers (Chapter 4) would help explain in a small way the wider trends in university subject choice seen in the results of the Chapter 2 data analysis. For example, the UCAS results might show that female students from the Indian group are more likely to apply to study certain types of subjects. It is possible that the mothers interviewed have daughters that are planning to study these same subjects. If this is the case, then researching these mothers will illuminate some of the attitudes, thoughts and experiences these preferences were based on.

Furthermore, these discussions with mothers will also help shed some light on concerns about university location (Chapter 3 results) and how these might be bound up in subject choice decisions. For example, a student may wish to study a distinct subject but might be limiting their institution choices to local universities and have to adapt their subject preferences accordingly. The qualitative data analysis in Chapter 4 indeed illuminates in a modest way the intricacies of these tensions between university and subject choice.

This use of multiple data collection methods to address the same set of research questions is understood to be triangulation. Triangular techniques involve studying human behaviour from more than one stand point and so can map out more fully the richness and complexity of human behaviour. As highlighted by Campbell and Fiske (1959), triangulation can be a powerful way of demonstrating concurrent validity, particularly when using qualitative research methods. In this thesis, triangulation involves the use of a segregation index and logistic regression in chapters two and three respectively, and qualitative semi-structured interviews in chapter four.

There are a number of different approaches to mixed methods research. One established approach, and this is the one that is used here in this thesis, is to use quantitative research methods first and qualitative data collection second. Qualitative methods are useful for exploring the outcomes detected in large scale quantitative results and analysis. Quantitative research does not allow for the understanding of attitudes, aspirations and values in the way qualitative research does (Brannen 2005). For example, the UCAS data analysis can show us what the most popular subjects are for students in different ethnic groups in one cohort of applicants. Similarly, the HESA analysis can help us to ascertain which students in their cohorts spend their first year of university living at home. However, it is only when the mothers of students are given a voice in Chapter four is it evident *why* these subjects may be popular and *how* locality issues might relate to subject and university choice. The quantitative analysis provided an important framework for the qualitative analysis. For example, it was advantageous to have a comprehensive knowledge of the widespread patterns as presented in Chapters two and three when designing the qualitative interview schedule.

The research chapters are presented in the sequence that they are for two main reasons. First of all, the sequence reflects the fact that the quantitative research was conducted first and used to inform the qualitative research design and analysis. Secondly, the sequence of chapters reflects that a student's intensions to participate in HE exist before they make a decision and enrol at university to participate in HE in a certain way. It seemed logical to present results and analysis on what students intended to do (UCAS

applications data in Chapter 2) before presenting the HESA data results (enrolment data in Chapter 3) which reflected actual first year undergraduate living arrangements. In terms of Chapter 4, it was intended that the participating mothers had daughters that were in the process of applying to university. However, due to sampling problems (discussed in detail in Chapter 4), mothers with daughters that were already at university were also included. This mixed sample meant that the data included was not only about what students were hoping to study but also what they were already in the process of studying. Therefore, it seemed logical to bring any discussion of both intentions and actualities together at the end of the thesis once they had already both been discussed separately in Chapters 2 and 3.

1.5 Quantitative Data Sources

1.5.1 Background

The UK is particularly rich in terms of the availability of micro-level data. There are a number of data sources with information on ethnic background that are available for secondary analysis. Major government sources include the Sample of Anonymised Records (SAR) from the Census, General Household Survey (GHS) and the Fourth National Survey of Ethnic Minorities. Despite the fact that these surveys included information on ethnicity, the education topics within them were not as detailed as would be desired. Therefore, four other data sources that are large-scale and widely used by researchers studying ethnic minority groups were chosen and evaluated in accordance with a number of criteria. These included sample size and variables available for analysis. The four data sources were: the Office for National Statistics (ONS) Longitudinal Study, Labour Force Survey (LFS), Universities and Colleges Admissions Service (UCAS) records and Higher Education Statistics Agency (HESA) records.

Section 1.5.2. includes an overview of the four data sources and a table summarising the key features of the four data sets discussed. This is followed by a discussion of each criterion that was assessed in order to make

a final decision on what data sources would be used. These include sample size because having a large data set is important for making reliable and confident statistical inferences especially when conducting research on groups with small numbers like some ethnic minorities. Availability and quality of variables is also important. It was important that certain variables be included in each data set. In Chapter 2 the aim was to explore variation in university subject choice by ethnicity. Information on subjects chosen was central to addressing this research question. The objective of Chapter 3 was to put together a picture of British Asian women in terms of their term-time accommodation status and their locality in terms of region and how this may have changed over time. In this case it was important to have a number of variables such as term-time residence and institutional and domicile region. Therefore, variables and other important aspects of the data sets are discussed at length in Section 1.5.3 onwards.

1.5.2 Sources of Data

1.5.2.1 Office for National Statistics (ONS) Longitudinal Study (LS)

The ONS LS is a linkage study of 1% of the population of England and Wales. It was set up in 1974 in response to the concern about the adequacy of mortality data collected from death registrations and insufficient data on fertility patterns. Data are extracted from both censuses and other vital registration systems. The initial study sample was taken from the 1971 census. The method of sampling was to take persons of all ages that had either one of 4 birthdays, the knowledge of which is not made public. No records are deleted as exits from the study are recorded as events (Celsius 2007). Data can be used to analyse household and family circumstances and changes in circumstances between censuses. Research areas studied with linked census data include inter-generational class mobility and migration patterns. Researchers have used the information to examine changes to household arrangements that come with an increase in age (ONS 2008b).

Table 1.1: Summary of potential sources of data

Data	*Key features*
ONS LS	○ Linkage study of 1% of population of England and Wales ○ Approximately 500,000 cases/census ○ Ethnicity data available for 1991 and 2001 ○ Information on a number of socio-economic variables ○ 1971 & 2001 Censuses include information on whether respondent has A-level qualifications ○ No A-level score/attainment variable ○ Information on subject of degree held available for 1971, 1991
LFS	○ Various ethnicity variables available e.g. country of birth ○ Ethnicity classifications consistent with census definitions ○ Smaller sample than the ONS longitudinal survey ○ 60,000 private households included/quarter, each made up of 5 waves that include approx. 12,000 households ○ Quarterly data sets can be merged to create larger samples ○ Includes occupation-based National Statistics Socio-economic classification developed from Goldthorpe's classification ○ Asks whether respondents hold A-level qualifications and how many of these qualifications are held ○ Information on subject of degree held available
UCAS	○ Administrative data ○ Applicants give ethnicity and socio-economic information on voluntary basis ○ Potentially higher rates of missing socio-economic information for ethnic minorities ○ Population data on all HE applications and acceptances to publicly funded HEIs ○ Includes information on A-level score ○ Extensive information on sub-/degree subjects applied to
HESA	○ Similar to UCAS - an administrative data set ○ Population data on all HE enrolments to publicly funded HEIs ○ Includes ethnicity information ○ UCAS pass socio-economic information on to HESA once applicant becomes enrolled student ○ Data collected on A-level score ○ Degree subjects of courses individuals are studying

1.5.2.2 Labour Force Survey (LFS)

The LFS is also conducted by the ONS. It is a sample survey of households living at private addresses and is carried out on a quarterly basis. The purpose of this survey is to provide information on the labour market in the UK that can then be used to develop, evaluate and report on labour market policies (ESDS 2006). In addition to including a number of work related variables, it also includes a number of education and qualification variables. The LFS is conducted under a European Union Directive. It adopts internationally agreed definitions and concepts (ONS 2007).

The sample includes persons aged sixteen and over that are resident in Great Britain (GB). Particularly sparsely populated parts of Scotland are not covered in the survey. Each household in the sample is retained for five consecutive quarters, and a fifth of the sample are replaced each quarter. The fieldwork is carried out separately. In GB it is carried out by ONS, and in Northern Ireland it is carried out by the Central Survey Unit of the Department of Finance and Personnel (ONS 2007).

1.5.2.3 Universities and Colleges Admissions Service (UCAS)

UCAS hold data on HE undergraduates for both applications and acceptances in the UK. Over 500,000 people wanting to study at a university or college use UCAS services every year. UCAS is the central organisation that is responsible for handling applications to HE sub-degree and degree courses across a range of subject areas and study modes (UCAS 2010a). Sub-degree courses include Higher National Certificates (HNC), Higher National Diplomas (HND) and Foundation Degree courses. UCAS also offer specialist services such as the Graduate Teacher Training Registry (GTTR) and the Conservatoires UK Admissions Service (CUKAS). These services are used by over 50,000 people every year (UCAS 2010a). UCAS data are collected from application forms that are completed by each applicant (UCAS 2010b). From 2000 onwards, data are available for the whole of the UK or separately for England, Wales, Scotland and Northern Ireland.

1.5.2.4 Higher Education Statistics Agency (HESA)

HESA was created in response to a Government White Paper released in 1993 that called for more coherence in HE statistics, and it holds data on students enrolled. HESA aims to ensure that stakeholders have access to the information that they require about the characteristics of not only HE students and leavers but also staff and institutions. It is the central source for the collection and dissemination of information on publicly funded HE in the UK. The five main areas that HESA hold data for include enrolments of students, destinations of leavers, staff, finance and records for non-credit bearing courses. Close liaison is kept with HE institutions from which data are collected to ensure quality assurance (HESA 2010a). The important feature that distinguishes UCAS and HESA data from that collected by the other two sources, is that they are essentially administrative databases. They are available in the form of applicant and student records. Therefore, these data are not collected via surveys where specific purposes for the data will have been defined and built in to the survey design at the outset.

1.5.3 Ethnicity

All four data sets include information on ethnicity and there are a number of ways that ethnicity can be measured including nationality, skin colour, identity, country of birth and racial group (Rafferty 2006). The 1971 census and 1981 census did not include a direct question on ethnic origin. They did, however, include country of birth questions. This variable could be used as a proxy for ethnicity. Where a study member is resident in their parent's home, parent's country of birth is also available. 1991 was the first point at which the ethnic group of study members was available in the ONS longitudinal study as this was the first time there was an ethnicity question in the UK Census. This question was amended for the 2001 census and included a more detailed breakdown of ethnic group as well as a new mixed-ethnicity category. A new question on religion was included for the first time in the 2001 census (Celsius 2010a). The LFS also includes ethnicity information where classifications are in line with census definitions. The post 2001 categories are the same as those used in the LFS from the same period. There

are a number of other variables that are related to ethnicity in the LFS including country of birth (ONS 2009b).

Any student that applies through UCAS is asked to record their ethnicity on their application forms. However, this information is voluntary and is not passed on to HE institutions. Data are available on ethnic origin as well as ethnic group where the former is more detailed. The Ethnic origin classifications changed between 2001 and 2005 entry. These changes included the White category being divided up into separate British/Irish/Scottish/Other categories. New ethnic categories were also introduced such as Chinese and Mixed categories (UCAS 2010c).

Ethnicity data held by HESA is also limited as there is only one ethnicity variable. National classifications for this variable are adopted where they exist and where they are appropriate. There is, however, no coding structure for ethnicity that is applicable throughout the UK, as variations to the ethnicity coding for the 2001 Census were adopted in both Scotland and Northern Ireland. The coding frame was revised for these regions (HESA 2010b).

1.5.4 Sample size

Sample size is an important issue to consider when evaluating data sets, and this is particularly true when researching ethnic minority groups. In order for it to be representative of these groups, a sample must be larger to ensure that is representative. The ONS longitudinal study is made up of approximately 1% of the population of England and Wales and includes around 500,000 cases per census. The study represents a continuous sample as new members can enter the study through birth and immigration and existing members can leave through death and emigration. It is possible to look at one minority group to gain an idea of the size of the sample. For example, in the 2001 Census LS sample there were 12,487 Indians, 8,350 Pakistanis and 3,277 Bangladeshis (Buxton and Akinwale 2006, 4). At first glance these numbers suggest that sample size is not an issue. However, these figures include individuals of all ages and not a cohort of young Asians

(between the ages of 18 and 21) entering HE at the same time which is the group of people that is of main interest here.

The LFS sample is smaller than that of the ONS longitudinal survey. The sampling frame for 99% of the sample is the Postcode Address File (PAF). The target population also includes persons living in NHS accommodation and the NHS supply the sampling frame for this. In any one quarter around 60,000 private households are included, each made up of five 'waves'. A wave is made up of approximately 12,000 households. Each wave is interviewed in 5 consecutive quarters. In any one quarter one wave will be receiving their first interview, another will be receiving their second, and so on. One wave also receives their fifth interview. The samples for successive quarters have an 80% overlap of household addresses (ONS 2007). Quarters and waves can be collapsed in order to increase sample size (Rafferty 2006). However, other authors have found problems with LFS samples when studying ethnic minority groups. Bhopal (1998) for example, points out that estimates relating to ethnic origin/country of origin and nationality are subject to high sampling errors. This is due to the fact that these populations are relatively small in number and tend to be highly clustered within households as well as geographical areas.

A key difference between the UCAS and HESA data and the other data sets is that there are no samples. UCAS hold data on approximately all HE applications and acceptances for England, Wales, Scotland and Northern Ireland. Data are held on the entire cohort for any year. To give a guideline on the size of the data set, the 2008/9 UCAS cohort of all UK applicants with known ethnicity included 477,678 applicants (UCAS 2010d). Similarly to UCAS, HESA can provide data on an entire cohort from academic year 1994/5 onwards. Information is available on all student enrolments from each publicly funded HE provider across the UK. Student enrolment data is available for both undergraduate and postgraduate student populations. To give an indication of the size of the data set, the number of first degree enrolments for academic year 2008/9 with known ethnicity was 416,589 (HESA 2010c). The overall size of these data sets would be smaller than the sample available from the ONS longitudinal survey. However, in terms of

having access to datasets that include young people that are prospective or existing students, UCAS and HESA datasets have the advantage of size.

1.5.5 Socio-economic Indicators

Some of the key explanatory variables that are explored in this thesis are social class or SEG. Various studies have explored the different impact that parental social class can have on educational attainment and routes into HE (see Bratti 2006). It has been shown to affect decision making with regards to participation, choice of HE Institution (HEI), the level of qualification that is being studied towards and non-completion of study. An important element of the research presented here is that it lays focus on the way ethnicity and SEG work together in having an impact on the educational choices of ethnic minority groups. As with ethnicity, SEG can be measured in a number of ways.

All four of these data sets include at least one socio-economic indicator. The ONS Longitudinal study includes a number of variables. Information is available on occupation and employment status. Social classifications are based on occupation and up until 2001 the Social Class based on Occupation (SC) was the standard classification of social class. This was then superseded after 2001 by the National Statistics Socio-economic classification (NS-Sec). Social-class can only be derived for that part of the population that are in paid employment and not for those that are unemployed, long-term sick, retired, etc.

It would be possible to combine this social class measure based on occupation and use with the other measures recorded in the data to put together a rounded picture of socio-economic status. Of the other indicators that are available in the ONS LS data, some are based on household resources such as housing tenure, car access and household amenities. Others are based on geographical area where the aggregate circumstances of individuals/households are used to measure the relative deprivation of areas. A key issue with using longitudinal data is that variable definitions are subject to change over time. Census occupation questions have changed over

time and more information is available in some years than in others. This is a feature that makes analysis of the data potentially very complex (Celsius 2010b). One variable that is related to occupation is income. It is often used as a socio-economic indicator but no income information is available in LS data.

The National Statistics Socio-economic classification is adopted for the LFS. It is developed from Goldthorpe's classification, an essentially sociological classification that is widely used and internationally accepted. The occupation question is one that applies to all adults in the sample, and it has a total of eight categories. There is also an additional non-classifiable code that applies to students, occupations that are not stated or that are described inadequately and other responses that are not classifiable for any other reason. The key point to keep in mind with this data set is that parental SEG can only be observed if a student is still living in the same household and not living away from home. The implication of this is information on SEG is only present for a very limited proportion of all students. This would give a researcher less confidence in generalising these results to the wider population. Definitions for SEG have also changed over time with LFS data (ONS 2009b). This would be an issue with data management, as several quarters would have to be collapsed in order to create a sample of sufficient size.

UCAS hold information on parental occupation for applicants from the year 2002 onwards, and this information is passed on to HESA. The Standard Occupational Classification 2000 is used and is based on parental occupation. It is a simplified version of that which is used for the LFS. If an applicant is 21 years of age or over, the occupation of the person contributing the highest income in the parental/guardian household is recorded. Where applicants are living on their own, they state their own occupation. The exact title of occupation is sought on the application form and then later recorded into categories. The provision of this information is voluntary and is not passed on to universities. A key issue to acknowledge here is that the UCAS data sets could be more prone to missing data than

other sources of data (UCAS 2010e). For academic year 2008 entry, 132,592 applicants were in the unknown category making up 26.4% of all applicants (UCAS 2010d).

This is an issue other researchers have had when using this data. Leslie, Abbott and Blackaby (2002) combined all the cohorts from 1996-2000 in order to investigate in detail how university acceptance rates varied by ethnic group. Results showed that certain ethnic groups had lower acceptance rates than Whites (Black African) and others had higher rates (Chinese). This was explained by factors such as differences in qualifications upon entry amongst certain ethnic minority groups. In conducting this particular analysis, these authors found large numbers of ethnic minorities had missing SEG data. The authors argued that one reason for this might be higher unemployment amongst ethnic minorities. In addition, the high incidence of one-parent families amongst Afro-Caribbeans could be another explanation for why occupation was unrecorded.

UCAS also hold data on another socio-economic variable. Information on students' educational background is collected by way of previous school or college type. School or college type is derived from the National Schools Register. Educational background can be presented by either detailed type (Educational Establishment) or grouped type (Educational sector). This information could be used as a proxy to socio-economic group on the assumption, for example, that students from independent schools are predominantly from more affluent backgrounds than those from the state sector (UCAS 2010f).

1.5.6 A-Level attainment

Information available on A-level score differs across the data sources. The 1971 and 2001 Censuses included information on whether or not a respondent held any qualifications at this level. No information is asked about what grades were attained. As mentioned earlier, it would be 1991 results that are used. However, the 1981 and 1991 Censuses included no

questions on A-levels (Celsius 2010c). The LFS contains information on whether or not respondents hold these qualifications. Information is also asked on how many they hold. No data are available on which subjects are held (ONS 2009b).

UCAS and HESA both have a tariff point score for each person with a relevant-level qualification. The grades that are attained are converted to a number of points. A higher grade is equivalent to a higher number of points. The number of points for each grade is summed up to give an overall point score for each person (UCAS 2010g, HESA 2010d). It is usual practice for universities to give guidelines on the least number of points they expect a student to have for admission on a particular course. If students are offered a place, they are given specific conditions they have to meet on the basis of their grades (UCAS 2010h).

1.5.7 Subject of Study

Subject of study is recorded in great detail in each of the four data sets. The ONS longitudinal study includes information on this for the years 1971 and 1991 only. The LFS also includes a subject variable. For both of these data sets, subject information is only asked of those respondents that already hold a degree level qualification and not of those currently studying towards or applying to study towards a degree level qualification (Celsius 2010c).

HESA and UCAS worked together to develop the Joint Academic Coding System (JACS) system which was introduced in 2002 in order to have a common scheme that both could use for categorising subjects (UCAS 2010i). UCAS adopted the JACS system for two main reasons. Firstly, so that a UCAS course within a particular institution could be provided a unique key. Secondly, to convey information to (i) universities and colleges and (ii) HESA about the subject matter of all courses. Data are available for broad subject area (i.e. subject group) or detailed subject of study. As each applicant is permitted to make more than one application, the subject that is listed most

frequently on the form is the one that is recorded as their subject choice (UCAS 2010j).

1.5.8 Term-time accommodation

The student accommodation status information recorded in ONS LS data varies according to the year that a census was conducted. It has become more important with each census to consider students in the decision on when to hold a census because they make up the largest group of people who are away from home for a substantial part of the year. In 1971 and 1991 the Census fell in some student holidays. In 1981 and 2001 however it coincided largely with term-time. In 1971, 1981 and 1991, the home address was taken as the usual address for students away from home during term-time. In 1981, form-fillers did not have to give information on the term-time address of students that were either on holiday or at home during the Census. In 1991 however they were required to indicate whether a student's enumeration address was the term-time address. If it was not then form-fillers were asked to indicate what the term-time address was. Again in the 2001 census, students were again counted at their term-time address and where students were studying away from the family home they were fully enumerated at their term time address and not to their home address. Only basic demographic information was collected at their home address. Any information on families, household size and composition for their home address does not include them. The 'all person' count for their home address is also not inclusive of these students (Celsius 2003).

The standard ONS Social and Vital Statistics division definition of a household states that children over the age of 16 that live away from home should not be included at their parental address. However, for LFS purposes only, this standard definition is changed so that students living in halls of residence have been included at the parental address. Therefore the LFS sampling frame includes students living in halls of residence. As a result of this, LFS households are slightly larger than those in other surveys such as the General Household Survey (GHS) (ONS 2009a). Respondents are asked by interviewers

whether or not there are any household members currently living in a hall of residence and therefore eligible to be interviewed as part of this household. They are asked this by way of system variables that are included in the questionnaire. These questions serve the purpose of aiding the flow of the interview and provide additional information which is necessary for the procedure of the survey at subsequent waves. However, responses to these questions are not collected for data purposes and so the information on student accommodation status available in the LFS is not as detailed as it could be (ONS 2009b).

In terms of HESA data, it is compulsory for full-time and sandwich students to give their term-time accommodation status (where the student is residing during the current academic year). This accommodation information is gathered annually. Where a student has permanent accommodation agreed but is in temporary accommodation at the time of data collection, they are asked to give information on the planned accommodation (HESA 2010e). In contrast to HESA, UCAS do not hold data on term-time accommodation status for applicants or acceptances.

1.6 Final quantitative data sources

The four data sets have been described and their suitability has been discussed. For the analysis presented in Chapter 2 it was UCAS data that were used, as this data set seemed the most appropriate for a number of reasons. Students are least constrained in their subject choice at the point of application. Existing students' subject of study may not reflect what their true aspirations were as they may well have not achieved the grades required, they may have had to find a course that was not their first choice, or it is possible that their course may have been cancelled before commencement. With regards to the other data sets, ONS and LFS data only included subject information on graduates and HESA hold data on existing and not prospective students. It is only UCAS that hold the applicant data required. These data sets are sufficiently large as they include entire cohorts of applicants. The key

explanatory variables of ethnicity, SEG and subject were also available for analysis. It is for these reasons that UCAS data were chosen for the Chapter 2 analysis.

For the research and analysis in Chapter 3, HESA data were used as it was important to gain access to a number of geographical variables such as Domicile Region and Institution Region. HESA also hold information on a number of other student characteristics that were central to the research such as SEG and term-time residence. Again, it is only an agency such as HESA who collect data on enrolments that will have this degree of detail on students. As with UCAS, it is cohorts of students that data are available for and sample size does not present a problem with HESA data. These factors were all important in the decision to obtain HESA data for the analysis presented in Chapter 3. The advantages and disadvantages of using each of these administrative data sets are discussed at length in the data section of each Chapter.

1.7 Qualitative data sources

1.7.1 Why focus on Indian mothers as interview participants?

The concept of patriarchy is one that is integral to feminist analysis (Walby 1989). Patriarchy can be understood as a system made up of social structures and practices that men used in their domination of women. Walby (1997, p.5-6) identifies six structures of patriarchy. These include household production, relations in paid work, the state, male violence, patriarchal relations in sexuality and patriarchal relations within cultural institutions.

Early theorisations of patriarchy were criticised for being too limited in their scope. Critics stated that there was a greater need to be more accommodating of the historical and cross-cultural variation in women's subordination. More recently there have been more fluid theorisations of patriarchy that are flexible enough to accommodate patriarchy in its different forms as experienced by women from different groups (Walby 1989).

The literature on Asian families has suggested an emphasis on patriarchy in the Asian family. Warrier (1994) has written about Hindu Prajapati settlers in London, a community which originates from the Western Indian state of Gujarat, and has documented a strongly patrilateral emphasis on kinship within this community. Ghuman (1999) has also highlighted the importance that fathers have in terms of how Asian families operate. Social conformity is expected of South Asian children and any sign of individuality is regarded as a threat to the authority of the head of the family who, invariably, is the father. However, Ghuman does go on to discuss that this may not always be the case, and could vary according to a number of factors:

> "Asian families tend to be dominated by fathers who often use their position of authority to make decisions for the whole family, although there is a considerable variation within this social practice since factors such as religion, social class and the place of origin of the family have an important bearing"
>
> (Ghuman 1999, 5)

In spite of the fact that there is much evidence to suggest fathers are more central to decision making in an Asian family, it does not imply that gaining an understanding of mothers' attitudes would not be insightful.

Second and third generation mothers are increasingly going out to work, thus also gaining independence and personal autonomy from their husbands. Of women aged 25 or over, White and Indian females within England and Wales have almost identical economic activity rates (Bagguley and Hussain 2007). Bhachu (1991) has discussed how the high proportion of Sikh women in the labour market has had a great impact on the educational and career aspirations they have for their daughters. This could also be true for other Indian women. Warrier (1994) found that whilst few Prajapati women had found paid employment a particularly liberating experience, it had nevertheless made them more aware of their rights as workers, both inside and outside the family. Access to wages earned on their own account and by their own efforts has undoubtedly given these women the chance of greater power within the home.

Indian women are playing an increasingly involved role in terms of the way in which a family operates. The role of Asian women within the family has undergone a change and this is partly attributable to increased labour market activity. As noted by Bhachu, this has affected the way that they perceive their daughter's education. It is clear then that it is not only fathers that might be having an input into how their daughters make their decisions about university subject choice.

Furthermore, there are also potential methodological issues related to interviewing fathers. Authors such as Bhopal (2001) have discussed how it is common for interviewers of the same ethnic group to be recruited when ethnic minorities are being researched. Research participants often share more radical opinions when interviewed by a researcher they feel has shared identity. However, gender is also a characteristic that a researcher and participant share.

If fathers were the focus of this study, the data generated from the interviews would be very different to that generated from interviewing mothers. It is true I would be from the same ethnic background as them, but my other characteristics (i.e. that I am young, female and potentially have a stronger educational background) might make it difficult to generate a sample of fathers. It would also make my presence as an interviewer appear particularly intrusive and uncomfortable. Any fathers that might be open to being recruited and interviewed would give very limited, general answers to questions because of a lack of common ground.

1.7.2 Why focus on Indian mothers of daughters?

Indian female students have been marginalised in the debate on Asian women and education. There has been much focus on the education of Bangladeshi and Pakistani women (predominantly from the Muslim faith). This is evident from the literature on the educational experiences of Asian women and that has been presented in this chapter as well as previous chapters. Reasons for this might include lower attainment and lower levels of participation in HE

amongst Bangladeshis and Pakistanis. An additional reason for the focus of attention on these groups is that any research related to Muslims more generally is a “hot topic” given the current political climate surrounding this religious group in relation to integration, fundamentalism and terrorism. There has been relatively little work done on the education of Indian women and as such it is these women that are the focus of the chapter four analysis.

Some recent studies on Asian women and education have incorporated Indian women. It is true that there are not the same concerns about Indian women compared to Bangladeshis and Pakistanis given their generally good educational performance and high levels of economic activity. However, this does not imply that these women should be excluded from the Asian debate. There are a number of ways in which this group could face barriers in education. Constraints could be placed on subject choice as well as what could be considered as a suitable length of time in the education system.

Further research needs to be conducted on the specific ways in which Indian women engage in HE. Subject choice is an important element of participation to investigate. It will have a strong influence on career choice as well as future earnings. What one does for a living can also be important to overall identity and the values by which a person lives. Having a clear understanding of subject choice will allow for a greater comprehension of how Indian families perceive HE more generally and what they believe the greater benefits of HE participation may be.

1.7.3 The decision to interview mothers only

The respondents in this research were the mothers of daughters. The main aim of this research was to develop an understanding of what mothers perceived their roles to be in their daughters’ university subject choices. One approach to this study could have been to add a comparative element that involved additional interviews with the female students. This would have provided an opportunity to investigate whether there was a difference between mothers and daughters in how they understand the mothers’ roles

and where these differences in perception might lie. Interviews with students might also have provided an opportunity for a richer understanding of how the students experienced making their subject choice decisions.

However, there are two main reasons why the students were not interviewed in this study. First of all, this qualitative element of research only made up one third of the overall research presented in this thesis. Time constraints did not permit interviews to be conducted with nineteen respondents. Second of all, there is a greater gap that needs to be addressed in the research on mothers than there is on students and their experiences. Authors such as Bagguley and Hussain have conducted interviews with young student's about their HE experiences. Conducting interviews with mothers has made a greater contribution to the literature as it has in some small way redressed the balance of data on Indian mothers vs. White mothers.

1.8 Conclusion

The purpose of this chapter was to give a brief background into the HE policy context and current key concerns for HE policy makers. Progress has been made within the widening participation agenda and in recent years there has been an increase in participation by students from lower socio-economic and ethnic minority groups. Detailing this context was important for framing the three research papers that make up the substantive element of this thesis. An assessment of the options that were available in terms of quantitative data sources was also discussed in this chapter. The final decisions that were made about appropriate data sources were justified. This was important background knowledge to the comprehensive descriptions and discussions of UCAS and HESA data that are presented in the coming chapters. The next chapter is the first research paper presented in this thesis and is an investigation of degree subject choice by ethnic group.

2. Ethnicity, Socio-economic background and choice of undergraduate degree subject

2.1 Introduction

The aim of this chapter is to investigate the factors that are associated with the subject choices made by applicants to Higher Education (HE) in the UK. The key focus lies in the influence of ethnic origin, and socio-economic group (SEG) is a secondary factor of interest. The latter has rarely been included as a factor in an investigation of ethnicity and subject choice. Differences between male and female applicants in their subject choices will also be explored. Variation in subject choice between ethnic groups will be highlighted.

The analysis is carried out with the use of administrative applications data for academic year 2006 extracted from individual application forms by the Universities and Colleges Admissions Service (UCAS). Patterns for applications and participation in HE may not necessarily be the same. The applicant data that are analysed in this research relate to what young people intend to study at university. Not every student that applies through UCAS is successful in gaining a place. If they are successful, they may not be able to pursue the course they applied to because they did not meet the entry requirements or because the course was cancelled before the start of the academic year, for example. Applications relate more closely to the true hopes and aspirations of students than enrolments as they are not constrained by barriers such as rejections from institutions. Therefore, it is important to highlight here at the outset that the findings for applications may not reflect what results might be obtained with the analysis of enrolment data.

There are a number of reasons why investigating degree subject choice is of particular relevance. The last UK government placed great emphasis on increasing the percentage of young people that go to university, in particular

those from non-traditional backgrounds. It is important that young people are encouraged to apply to courses that match their aspirations and abilities. Making an informed decision and being content with the course that one studies can enhance academic performance and lead to greater success in the labour market. To study a subject is not simply a personal, autonomous practice – it is embedded in wider family, social and cultural networks. Investigating subject choice is important for understanding how these factors may enter the decision making process. HE Institutions (HEIs) can also use research into subject choice for marketing purposes. For example, there is a concern about the scarcity of workers in high demand sectors such as IT (Bratti 2006). More recently there has been a drive backed by the Department for Children, Schools and Families (now the Department for Education) and the Department of Health to recruit more social workers to address a fall in recruitment figures in this profession (Help Give them a Voice 2009). Gaining an understanding of the characteristics driving students' choices can assist in explaining apparent inefficiencies in the labour market and forecast future labour market trends.

There are additional reasons for investigating subject choice. Substantial positive returns can be gained by those that possess an undergraduate degree in the UK. However, graduate earnings can vary greatly according to subject studied and consequent labour market position (Bratti and Mancini 2003). If there is a clear division across ethnic groups in terms of students that select subjects more likely to lead to lucrative, high status professional occupations and students that are drawn to other subjects, then there are important implications on inequality that must be considered. The implications would be even more pressing if an uneven distribution of subject choice and ethnic group is also correlated to SEG (see Table A.1; tables can be found in Appendix A).

This study aims to address deficits in existing research on ethnicity and subject choice. Existing studies have involved the investigation of the impact of ethnic group and social background on choice of field of study separately.

Bratti is one of the few researchers that has examined the relationship between social class and HE subject choice. This study was conducted with a large data set made up of 1981-1991 enrolment data. Ethnicity however was not included in this analysis of now outdated data. Lightbody and Nicholson (1997) on the other hand have limited their small-scale quantitative study to the effect of ethnicity. The research presented here is one of the few studies that incorporate both social background and ethnicity into the understanding of subject choice. Furthermore, with the exception of the aforementioned studies, the majority of past research focusing on ethnicity and subject choice is largely qualitative.

The research questions being addressed in this study are set out and explained in the next section of the chapter. This is followed by a section that identifies the key existing research that has been conducted by other authors and includes a summary of what is already known about the relationship between ethnic group and subject choice. The next section after this highlights the contribution that the research presented in this chapter will make to existing knowledge in the research area. This is followed by a section on data including the advantages and disadvantages of using UCAS administrative data. Three methods were used to analyse the data, and they are discussed in the next section. This is followed by an explanation of the results. A full discussion of these results in the light of the research questions is then given. The final section is a summary and conclusion to the chapter.

2.2 Research Questions

The objectives of this paper can be summarised into five key research questions. They are as follows:

1) How large are differences in degree subject applied for by ethnic group?

The ethnic groups studied here are: White, Indian, Bangladeshi, Pakistani, Chinese, Black African and Black Caribbean. It was the larger, more established ethnic minority groups that were of interest here and as such

none of the mixed or “other” ethnic groups (e.g. Black Other, Asian Other, etc) are analysed. It is true that the latter are groups the UK government are highly interested in, particularly because they are the fastest growing ethnic groups. The percentage of children from a Caribbean, Indian, Pakistani and Chinese heritage with at least one White parent has risen significantly in the past 14 years (Platt 2009).

There are two main reasons why they are omitted here. Firstly, there are already seven larger, established ethnic groups to analyse as well as present and discuss results for. It would be difficult to conduct a sufficient analysis of the mixed ethnic groups in a way that they would not be overshadowed by the discussion of larger ethnic groups. A separate study of the mixed ethnic groups would be more appropriate. Secondly, the mixed groups are ambiguous in nature and the definitions regarding who are included in each group are blurred. It is therefore very difficult to make any concrete claims about findings regarding these groups.

The existing literature that is discussed further on in this chapter points towards differences between ethnic minority groups in terms of the subjects and subsequently careers that they are drawn towards. The first task is to establish how large these differences are in these applications data and whether or not certain ethnic minority groups have greater differences to the White group than others. A segregation index is used in order to measure ethnic differences in degree subject. This method is commonly used to study segregation in primary and secondary education providers.

Segregation indices are used extensively to measure the uneven distribution of children across schools from different socio-economic backgrounds (see Jenkins, Micklewright and Schnepf (2008) and Sloane, Grazier and Jones (2005)). Authors such as Storen and Arnesen (2007) have used this method to measure gender segregation of HE students by field of study in Norway, and Ransom (1990) used an index to study the same topic in an American context. It is a method that has been not been used in studies on HE subject

choice and ethnicity in the UK. Segregation indices are also popular in labour market studies on the analyses of gender pay gaps and the distribution of employees across different occupations from both sexes. Examples include Dolado, Felgueroso and Jimeno-Serrano's (2002) study of occupational gender segregation across the European Union and the USA, Bettio's (2008) comparative study of occupational segregation and the gender wage gap in the USA and Italy and Hoki's (2009) study of the impact of the gender difference in occupational distribution on the gender wage gap in Japan.

2) What are the key differences in subject choice across ethnic groups?

The segregation index used to answer the first research question will give results in the form of "one number" summaries that show which ethnic minority groups are more clustered in their subject choices and which ones are more spread out across subjects. Having found differences in the extent of segregation with the use of an index, the second research question asks what these differences in subject choice might be, something which a "one number" segregation index does not reveal. A number of different cross-tabulations of ethnic group by subject area are created to highlight the important patterns in the distribution of applicants across different subjects. The cross-tabulations will take the index results one step further and show where the most segregated ethnic groups are i.e. which subject areas they are clustered and over-represented in and which subject areas they are under-represented in. It will also be possible to see which subjects are most popular for which ethnic groups, and if certain subjects are popular across all ethnic groups.

3) How might these differences in subject choices be associated with ethnicity when controlling for SEG?

While segregation indices are used by some authors and regression analyses used by others, both methods are used in this study in a manner that has not been done before. The two way cross-tabulations generated in order to

answer the previous research question can be taken further with the use of multinomial logistic regression models. It is possible that it is not just a student's ethnicity that impacts on them being more or less likely to apply to a certain subject. It could be that a student's socio-economic background is an important characteristic that impacts on their choice. With multinomial regression models it is possible to obtain an estimate of the probability of a student applying to one subject group over others. More importantly however, it is possible to avoid over-estimating the impact of ethnicity and examine whether the effect of ethnicity remains whilst holding the impact of SEG constant. In other words, it is possible to tell if it is ethnicity or in fact SEG that is the main demographic characteristic driving a student's subject choice.

4) Does the association between ethnicity and subject choice vary by SEG?

Although ethnic minority groups might be clustered in certain SEGs, it is likely that minorities can be found in every SEG, albeit in small numbers in some cases. It is possible that applicants from the same ethnic group but from different socio-economic backgrounds do not behave in a uniform fashion. The investigation of the association between ethnicity and subject choice can therefore be extended to its variation across SEG. This is an aspect of HE subject choice that remains largely unexplored. It can be achieved by including interaction terms between these two sets of variables in the regression models. If the association between ethnicity and subject choice does vary by SEG, the results could shed further light on the complexity of the relationship between the variables and how some ethnic groups may be more sensitive to SEG effects than others.

5) Are wider ethnic differences more evident amongst male or female applicants?

Two UCAS applicant sub-data sets are analysed in this Chapter, one composed of males and a second composed of females. Analyses are presented that explore the segregation of ethnic minority males compared with white men. This segregation and gap is then compared with any

differences found between ethnic minority female and white female applicants.

Having outlined the aims of this study and the methods used, a brief overview of existing research conducted in this area is presented below.

2.3 Subject choice: what is already known and what is lacking?

In this section, existing work on choice in relation to ethnicity, SEG and gender are discussed. The review of literature includes both qualitative and quantitative research. Throughout the review the emphasis is on subject and course choice, however there is also some discussion of related research areas including choice of occupation and career. Although the focus is on HE choice, the studies reviewed relate to choice at different stages of a student's educational career. Choices and preferences that emerge in compulsory education are dealt with first. This is then followed by a discussion of choice in post-compulsory education in particular at university level. In terms of HE literature, some of the evidence relates to university applications and some of it to enrolments. Any studies that are based on occupation are commented on last.

Lightbody and Nicholson (1997) conducted a small quantitative study on a sample of 158 Scottish students including school pupils, school leavers and first-year students at Further Education (FE) and university. They set out to explore why some courses were more attractive than others, focusing particularly on Asian students. Some participants were found to be under considerable pressure to enter certain professions. A higher percentage of Asian students wished to pursue careers in medicine, law and accountancy. It was evident that this was related to a desire for respect for parents and from peers combined with a clear lack of knowledge regarding alternatives. This is a theme apparent in the findings of Bannerman's (2001) study of attitudes

towards the study of European languages and educational expectations by Asian female students.

Bannerman's research subjects included school pupils in years 9-12 and teachers from the Birmingham area. 204 questionnaires were completed and 80% of school pupils had at least two languages before starting school. Some pupils were surprised by the notion that their ability to handle more than one language might help them to learn additional languages at school. Certain students were quite clear about their route to a profession such as medicine via science A-levels. Very few however had yet finalised their decisions about which courses they would follow. When asked about careers for which languages would be useful, very few clear ideas emerged. Once contact had been established with the schools involved in the study, at least one interview was arranged with a member of staff with the object of discussing the outline of the language teaching policy. Many teachers felt it would be helpful to have positive role models that had studied languages with success from the minority communities. They felt that pressure from parents in the Asian communities often continued to be strongly towards A-levels in Science and Maths subjects and degree courses with vocational and professional aims.

Chinese experiences of British education are rarely investigated. This is surprising as young people from this ethnic group stand out as high achievers. Archer and Francis (2005) conducted a qualitative study on understanding the value that Chinese parents and UK born pupils place on education. The sample was made up mainly of 2nd generation pupils whose parents were from Hong Kong. Semi-structured individual interviews were conducted with pupils, teachers and parents. The authors highlighted a stereotypical view that Chinese parents would prefer that their children aspire to professional occupations. This is to an extent supported in the findings of their study. The findings suggest that this steering towards certain types of occupation is more complex than a fixation with money and is linked to a desire to protect offspring from low paid, low status work they themselves had to endure. It is also deemed as integral for social mobility in the UK.

In terms of gendered subject choices, there has often been a focus on the reluctance for girls to engage with science, engineering and technical (SET) subjects. For example, authors such as Francis (2000) conducted a qualitative study using classroom observation and semi-structured interviews with 100 14-16 year old students to investigate GCSE subject choice. Results showed that male students opt more for the Sciences and Maths, and female students are drawn more towards Arts and Humanities subjects.

This under-representation by females in SET courses persists through secondary and tertiary education. There have been a number of schemes in place to address this including female role models, enriching girls' experiences of learning SET subjects and sensitising teachers to gender issues. Authors such as Siann and Gallaghan (2001) argue that these initiatives have overall not been successful. In their opinion it is the nature of these courses with regards to associated values and priorities that steer female students away from the sciences.

Differential subject choices can be related to gendered attainment. Research findings have shown that the most important factors associated with gendered degree attainment are related to teaching and learning style and the design of curricula. In particular, different methods used for approaching assessments were important. Initiatives set up for addressing gender segregation in science and engineering have had to focus on not only on support for the recruitment of women but also their attainment (Jacobs et al 2007).

Other reasons put forward for the differences between male and female choices include economic factors. Males are argued to be more influenced by careers than females who are thought to put more emphasis on enjoyment of a subject or wider social/family needs. Indeed, Osborne et al. (2003) state that girls tend not to opt for sciences at A Level because they are reluctant to restrict their career choices to sciences. Where girls do choose science subjects at A Level, they continue to do so along traditional lines, with more boys opting for physics and more girls studying biology.

A number of studies have shown that teachers can have an effect on the choices students make. For example, Ashworth and Evans (2001) found in their study a teacher gender effect on degree subject choice. Women taught by male economics teachers at A-level were more likely to go on to study a degree in economics. This was also true of men being taught by female teachers. However, women taught by female economics teachers were less likely to go on to study economics at university.

Ball, Reay and David (2002) in their study asked students for narrative accounts of choice of HE institutions. Ethnic group and SEG can interact together at various stages of educational decision making. The authors argued that differences evident amongst ethnic minority students could not be fully understood without reference to social class. Research methods used in this study included qualitative interviews and small-scale questionnaires. The authors identified two key types of "chooser". These were "contingent" and "embedded" choosers. For contingent choosers, finance was a key constraint. Choices were made on minimal information with little support. They were short-term and vaguely linked to imagined futures. These choosers tended to be students that had little or no family tradition of university attendance. Contingent choosers and their decisions regarding university attendance had specific class connotations that were both in addition to and entwined with its implications for ethnic identity. Ethnic minority students, in particular those from a working class background, felt at risk of alienation and isolation in their HE choices.

Finance was not an issue for embedded choosers. The choices they made were based on extensive research from a variety of information sources. Participation was thought to be the norm and these choosers were more likely to come from a family that had a tradition of university attendance. This study is an example of how acknowledging the importance of SEG in education can enrich the study of ethnicity as a factor.
Subject choice, especially at the tertiary level, is a research area that has rarely been investigated in the UK, particularly using quantitative research methods and large data sets. Subject choice can have a great impact on the educational and career trajectories of students. Tomlinson and Macfarlane

(1995) studied the profile of degree classes in UK universities in 1993 according to gender and degree subject studied. Results indicated that females were awarded fewer first class degrees than males. Subject choice was found to be central to this trend as more firsts were awarded in science and technology and those subjects are preferred by male students. Subjects that are in high demand from ethnic minorities are not necessarily also popular with White students. Figures for year 2000 entry indicated that 22% of Asian students and 14% of Black students applied for Maths and Informatics courses. It is evident that these students were attracted to these subjects more than White students where only 7.5% applied for these courses (Jarvis and Woodrow 2001). In the same year, Nursing was three times more common amongst the Black ethnic group than any other group for those studying towards a HE qualification (Conner et al. 2004).

Bagguley and Hussain (2007) obtained UCAS tabulated data for year 2005 entry. They highlighted five subject areas where South Asian female applicants disproportionately apply and gain acceptance in comparison to White female students. These included Medicine and Dentistry, Subjects allied to Medicine, Mathematical and Computer Sciences, Law, and Business and Administrative studies. These courses accounted for approximately half of all South Asian women's applications and acceptances, compared with about a quarter of the applications and acceptances made by White women. Many of these women choose subjects at degree level that reflect preferences for traditional professions, or what are regarded as disciplines that are comparable in status.

Bhachu's (1991) paper focused on the educational beliefs of the Sikh community. The paper included a brief historical documentation of Sikh settlement in Britain and the way in which interactions with the labour market have helped shape attitudes towards education. The study used predominantly qualitative research methods. Despite the fact that the author did not set out to look specifically at the overlap between SEG and education, Bhachu did find evidence to highlight the interplay between the two in her findings.

The author stressed that in most cases the educational and career choices that the women in the study made were generally in line with the same criteria as women in the indigenous White population and this overlap was related to social class. The choices that working class Sikh women made were not far removed from the choices made by White working class women. The decision making process and key issues considered were not dissimilar. The choices made by middle class Sikh women were also in line with those made by white middle class women. This reinforces the notion that incorporating SEG into an analysis can enhance the understanding of the impact of ethnicity in the processes behind HE choice.

Bratti (2006) is one of the few authors that has carried out an investigation of the impact of social background on choice of field of study.[2] Bratti's study focused specifically on subject choice. Individual-level data provided by the Universities Statistical Records (USR) were used in order to analyse the influence of UK student's social class on the probability of enrolling on different undergraduate degree programmes of study. The USR institutions were responsible for the collection of the statistical returns from all British universities on the basis that they received funding from the University Funding Council (UFC) or that they were affiliate Higher Education Institutions (HEIs). The USR collected enrolment data from 1972 until 1993 when they were replaced by the Higher Education Statistics Agency (HESA).

The data set used included the cohort of enrolled students in each year from the period between 1981 to 1991. Only students with single marital status under the age of 21 studying for a degree on a full-time basis were included. Overseas students were excluded from the study. In addition to social class a number of additional explanatory variables were included such as age at enrolment, gender, secondary school type, best three A-level passes score and region of residence prior to university enrolment. The response variable in this case was made up of three very broadly defined subject categories. A key difference between Bratti's research and the analysis presented in this

[2] See Wakeling (2005) who has used HESA data to study the association between social class and progression to postgraduate study including an investigation of the interplay with other variables, including subject of study.

chapter is that the latter involves using a six category response variable (discussed later in the data sections) instead of only three broadly defined categories.

Bratti's results indicated that there was a very weak association between social class and the probability of enrolling in different subjects. The choice of study field was found to be made on the basis of characteristics unrelated to social class while indicators of school curriculum (including type of school, A-level score and performance in specific A-levels) were all found to have more explanatory power. The recommendation for future research was that more replicate analyses of more recent cohorts of university students should be carried out.

If this is indeed the case, and there is little or no association between social class and subject choice, then controlling for the effects of SEG is likely to have a negligible effect on the relationship between ethnicity and choice of subject. However, it is important to note that Bratti utilises enrolment data from over fifteen years ago, as opposed to the recent application data used here and is limited to pre-1992 universities. These are factors that potentially had a considerable impact on Bratti's findings. It will be of great interest to discover if the results of the analyses presented here coincide with Bratti's conclusion that there is little association between the two variables.

University course can be a strong determinant of subsequent occupation. A study carried out by Jones and Elias (2005) for the Warwick institute for Employment Research utilised data from the Higher Education Statistics Agency (HESA), and information from the Labour Force Survey (LFS) and Youth Cohort Study (YCS) of England and Wales to present a picture of ethnic group participation in Science, Engineering and Technology (SET). It was found that members of both the Bangladeshi and Black Caribbean communities are underrepresented in SET occupations and post-compulsory education. Under representation in post-compulsory education was found to be greater for Black Caribbean females and for SET it was greater for males. Groups that

were over-represented in SET compared to the White population were Black African, Indian and Chinese.

It is possible that subject choice decisions are made in light of labour market opportunities. There are gendered patterns in the jobs that men and women do and labour markets operate in a gendered way. The gendered labour market is evident at the district, regional and national level. More recently research has placed emphasis on the local level. Local labour market circumstances have been shown to exacerbate quite locally specific constraints and opportunities for the women living and working in them. Women living in many areas across England and the UK are more highly represented in low skilled occupations and are less likely to be seen in skilled professional or managerial occupations. Features of the labour market that affect women's employment experiences include employers' policies on work-life balance, access to childcare and good financial incentives. Many women actively seek employment opportunities that are close to home. Women that do not have access to affordable and efficient public transport or to cars for their own modes of transport feel excluded from the opportunities that are available in a labour market that is structured in many ways favour men (Escott and Buckner 2007). These issues may be related to gender differences in subject choice.

2.4 What does this study add to current knowledge?

There have been studies that look at the impact of ethnic group and SEG on subject choice separately. Authors such as Bratti (2006) have looked at the impact of social background on choice of field of study. Other authors such as Lightbody and Nicholson (1997) have looked at the effect of ethnicity. Research conducted to look at the impact of both variables together in the manner presented here is very limited. The analysis presented in this Chapter aims to address this deficit.

The studies discussed in the previous section have looked at the relationship between ethnicity and subject choice as well as occupation. There is evidence

to suggest that some ethnic groups are more likely to opt for particular courses than others, and this can be related to career aspirations. Many of these studies involve the use of descriptive analyses of data sets, small quantitative studies or in depth qualitative analysis. Some authors have understood that investigating ethnicity in isolation does not allow for the appreciation of the complexity of educational choice.

There are two key elements of my study that make it distinguishable from others in the area: First of all, it involves the use of an extensive data set that includes essentially the entire population of university applicants for academic year 2006 entry with use of methods that go beyond basic descriptive analysis. There is little evidence that this has been done before. Secondly, this data set has additional variables including students' SEG backgrounds based on parental occupation.

It is not possible to fully understand the policy implications of the effect of ethnicity without considering SEG. Cassen and Kingdon (2007) found that eligibility for free school meals is strongly associated with low achievement at Key Stage 4 (GCSE and equivalent). However, the strength of the association varies by ethnic group, and is stronger for White British pupils than for other ethnic groups. With the methods used there it will be possible to assess the effect of ethnicity and control for the effects of SEG, as well as investigate the effects of ethnicity across different SEGs.

2.5 Data

This section describes the data used in the analysis. The intention was to gain access to micro-data on applicants from UCAS. Negotiations began with them that would allow access to data with a number of variables. However, discussions with UCAS were unsuccessful. Finally, a free data set from the UCAS website that included the main variables of interest was used. A comprehensive description of this data set is presented in the section. This is then followed by a discussion of the advantages and disadvantages of the data set. At the end of the section is a presentation of key applicant characteristics.

2.5.1 Overview

UCAS is the organisation in the UK responsible for managing applications to HE courses. It processes university and college applications for entry onto full-time undergraduate programmes of study for 325 member institutions (UCAS 2006). The data set includes students that applied through UCAS in late 2005/early 2006 with the intention to either enrol at university in the autumn semester in 2006 or defer their entry for one year until autumn 2007. The sample, including both male and female students, was made up of 408,868 applicants. The data set is made up solely of UK domiciled applicants. Data on international applicants are also available but are not used. Domicile indicates whether applicants are Home (UK), EU (excluding UK), or Other overseas domiciled. A home applicant is one whose region of domicile falls in England, Scotland, Wales or Northern Ireland. An important point to make here is that there are small differences between the HE system in Scotland and the rest of the UK. The implication of this is that Scottish applicants are not as comparable to other UK applicants. However, it is not possible to distinguish Scottish applicants in the data set. In addition, it is not anticipated that this would be highly problematic, as the degree of difference between the systems is not great.

The data used here are UCAS tabulations and are taken from submitted application forms. Annual data sets are available freely from the UCAS web site for the year 1996 entry onwards. The data set chosen for this analysis was the Ethnicity and Social Class data set. Male and female frequencies were presented by UCAS separately and as such it was more feasible to analyse them separately throughout. Other than when the key characteristics of the sub-sample are discussed later on in this section, male and female applicants are analysed separately.

Data are not provided at the individual level but are available as frequency tables. These detailed tabulations allow for the creation of a micro data set containing a small number of variables with the use of frequency weights.

The data that were used were for all Home UK applicants applying for entry onto full-time, undergraduate HE courses offered by universities or colleges in membership with the UCAS scheme. This applies to sub-degree level qualifications as well as degree-level. These include intermediate HE qualifications, many of which are vocational. Foundation degrees and Higher National Certificates (HNC)/Diplomas (HND) are popular examples of these. In 2006, 1.8% of all applications made were for foundation degree courses and 1.4% were for HND courses (UCAS 2009b).

For many students on sub-degree courses, successful completion results in an option to transfer to degree level courses. Applications made to sub-degree level qualifications were not made distinguishable in the data set, with the exception of HND applicants. An important point to consider with this sub-set of applicants being included in this data set is that this has implications in terms of subject choice. For example, approximately a quarter of foundation degree applications made for 2006 entry was for Creative Arts and Design courses. This can mainly be explained by the high proportion of HE institutions including a Foundation degree as an entry requirement to Arts and Design degree courses. Other subjects that proved popular included Mathematical and Computer sciences and Business and Administrative studies. Approximately half of all foundation degree applications were made up of these three subject areas combined (UCAS 2009b).

UCAS provide both acceptance and applicant data. It is applications data that are used in this study, and this is one aspect that distinguishes it from others where enrolment data have been used. Exploring applicant choices is different to exploring choices of students that have been accepted and enrolled onto schemes of study. Applicants may not succeed in obtaining a place to study the subject of their choice. It is possible that students apply to study subjects that have limited intake due to high academic entrance requirements. Students and/or their teachers may overestimate predicted grades in entrance qualifications which could result in a disparity between applicant and acceptance data.

Students have fewer constraints when applying to study courses than when they are accepting offers. They apply for the courses that they wish to attend. A student may go on to study a course that was not their preference for a number of possible reasons. It may be they did not receive an offer from the institution that ran their preferred course or that they received an offer but did not achieve the grades required. It may also be the case that a student is left with no place at all. For example, in 2006, of the 408,868 applicants only 327,613 of these were accepted on HE courses. Therefore, it can be argued that applications are truer to a student's preferred subject of study than acceptances. It does have to be acknowledged however that whilst application data may well be closer to student's actual subject preferences, they may not be a good reflection of what students will eventually go on to study.

For 2006 entry, UCAS applicants were permitted to choose up to six courses. There are exceptions however, as those wishing to study medicine, dentistry, veterinary medicine or veterinary science courses are permitted to make up to four applications. Up to three applications can be made for particular Art and Design courses and any one student can apply to either Oxford or Cambridge universities but not both. There is an exception to this rule if an applicant already holds a degree or will have a degree before September of that year.[3] The courses and institutions that appear on a completed application form are not ranked by any order of preference with regards to a specific course or an institution. Universities do not have access to the names of other institutions or courses that a student may have applied to in advance of making their decisions about applicants.

Where applicants apply to more than one subject area, UCAS record the subject group that is listed most frequently on the application form. This is referred to as the preferred subject. If there is no larger number of applications made for courses in the same subject area, that applicant is recorded in the "no preferred subject" category (UCAS 2009c). For example, a

[3] This was the case for applicants in the 2006 entry data set. For 2008 entry onwards, applicants have been permitted to make up to five choices only.

student that makes three applications to one subject area and three applications to another will be included in this category. 16.3% of male applicants were in this category as were 13.0% of all female applicants. UCAS subject classifications use the Joint Academic Coding System (JACS) which can be presented by broad subject area (subject group) or detailed subject of study (subject line). The data set used here only includes subject information at the broader subject area level. This variable is made up of 28 categories. A list of these subject areas can be seen in Table A.2.

The response variable was subject area. The original subject area variable that was supplied by UCAS was recoded and a new response variable made up of six categories was created. How the categories of the new response variable correlate with categories from the original response variable can be seen in Table A.2. Both the more detailed original variable and the new recoded variable are used for the segregation index and cross-tabulation parts of the analysis. However, only the new recoded variable with fewer categories is used for the multinomial logistic regression element of the analysis. This is because including fewer categories in the response variable makes it easier to detect broad patterns in the data as there are less results to interpret. Having fewer categories in the response variable also makes the task of presenting and discussing the results more manageable.

These new groups were made by grouping together related subject areas. For example, the new category Languages and Communications included the subject areas European Languages, Literature and Related, Linguistics, Classics and related, Mass communications and Documentation and Non-European Languages and Related. The newly created variable had six categories including Professional, Arts, Social Sciences, Sciences and Languages and Communications. There was also one further General/Other category. Six appeared to be substantive enough to include the main groups of subjects without being excessive to the point of having too large a number of parameter estimates.

The way in which the original categories correspond to the new categories in the new subject area variable can be seen in Table A.2. The Professional

category is distinct in that the subjects included are not obviously correlated in their subject matter. These subjects share similarities in that they are generally highly paid and high status although some are more lucrative in the labour market than others. For example, dentistry students can anticipate more pay upon graduation than nursing students. However, there will be a steady demand for even the lesser-paid professions in the most challenging economic climates. This in itself gives an element of financial security to people in these occupations. Subjects were included in this category in the newly created variable because they led to jobs with similar pay outcomes, but also because they shared the characteristic that they lead to formal qualifications in preparation of specific careers that required a degree of specialised knowledge.

In terms of bringing together related subject categories from the original response variable, this was a difficult task and a judgement had to be made. In some cases it was more obvious which categories should be grouped together. For example, the Arts and Humanities category included the Creative Arts & Design, History & Philosophy and Combined Arts categories. In other cases, it was more difficult. For example the Business & Administrative studies category is put under the Social Sciences heading. Some Business Studies courses may include more vocational, management-focused learning in which case an argument could be made to include it in the Professional category. Other Business Studies courses on the other hand include strong Social Science components. They might involve learning about Culture, Consumer Behaviour and Organisational behaviour for example. Indeed institutions such as Brunel University and St. Martin's college[4] teach Business studies courses in their Schools of Social Sciences. In the end, based on this evidence this category was included under the Social Sciences heading. Further to this, it is inevitable that there is a slight amount of overlap between categories. This is because the original response variable with 26 categories itself was derived from over 600 JACS sub-codes each representing different courses and there will already have been some overlap between categories. Therefore, all that could be done was to use judgement

[4] See http://www.ucsm.ac.uk/assbs/contact.htm and http://www.brunel.ac.uk/courses/sro/open_days/opendays2009

based on knowledge of how subjects are grouped together under broad headings. With this in mind there has to be an acknowledgement that the findings of this research relate to overlying patterns in the relationship between subject and ethnicity and not detailed preferences in subject choice. Had the data set included a more detailed subject variable with more categories, it might have been possible to create more accurate categories.

The Professional subject category was not defined to coincide with the preferences of Black and Minority ethnic groups. Rather it was a collection of subjects that shared certain features: clear progression to high status, well-paid careers. For example, a potential concern could be that the education group was not included in the professional category because historically teacher training courses have are relatively unpopular amongst ethnic minority groups. However, there is much research that shows ethnic minority students make up an increasingly larger percentage of trainee teacher cohorts. Throughout the 1980s and early 1990s BME teacher recruitment rose to around 2-3%, which rose to approximately 5% by 2002-3 and 20% in 2004-5. In subsequent years, the figure has remained stable at around 15-20% (Wilkins and Lall 2011). Therefore, it is evident that the professional category was not derived on the basis of perceived preferences for particular ethnic groups.

In Bratti's (2006) study there are only three subject categories in the response variable: Non-Quantitative, Quantitative and Law and Medicine. According to the author, this categorisation is in line with the first hypothesis being tested in his study: that lower social class individuals are more inclined to enrol in technical degree subjects when compared to middle and high social class students. The technical subjects that are referred to are in line with the Quantitative category. The key division that appears in Bratti's limited number of categories is between quantitative and non-quantitative. Quite diverse subjects have been included within the same category on this basis. For example, Engineering and Technology are grouped with Business and Administration Studies. In this study however, the main distinction lies between professional and non-professional subjects. There is also a distinction in the latter between subjects that typically belong to the same

school or faculty. These would be the main differences in the categorisations between the two studies.

The explanatory variables are described further here. The variable ethnic group is one of two ethnicity variables and has six categories: White, Black, Asian, Mixed, Other and Unknown. The unknown category includes all those applicants that did not provide this information. Ethnic origin is the more detailed of the two ethnicity variables with more categories that split each ethnic group, and as such is used here instead of the more general variable. Black Caribbean and Black African are separate categories and are not included in a more general Black category. There are also separate categories for the Indian, Pakistani, Bangladeshi and Chinese groups.

For the variable SEG, UCAS assigns status based on an applicant's reported parental occupation.[5] UCAS uses a reduced version of the National Statistics Socio-economic Classification (NS-SEC), the Standard Occupational Classification 2000 (UCAS 2009d). The variable has a total of eight categories including an unknown category. An important point to consider is that the quality of the socio-economic data depends on the accuracy with which an applicant records their parental occupation. It may be that what is recorded by the student is highly ambiguous and only loosely linked their parent's occupation. It is inevitable that some degree of error is introduced when the occupation is recorded within one of the eight categories.

There is also a possibility that in some cases it is very difficult to decipher what occupation is being referred to, which may lead to a number of applicants being recorded in a category other than in which they belong, that is the unknown category. In this case a number of students will appear in a category in which they do not belong. This has some minor implications for the findings in that the results may therefore not be as accurate as they can be because students will have been recorded in the incorrect categories. However it is expected that in reality the number of students this applies to is

[5] SEG classification is based on highest-earning family member of the household. If an applicant is not in full-time education, they are asked to report their own occupation.

very small hence limiting any negative impact that this might have on the accuracy of the results.

The SEG question on the UCAS application form applies slightly differently to students on their gap year. Applicants not in full-time education are asked to report their own occupation and not that of the highest earning family member. Students not in full-time education include those applying during their gap year. The implication of this is that what these students record may not reflect their socio-economic background especially if they are doing a low-paid low-skilled job and the highest earner in their household has a professional job. There is however no way to tell that an applicant is in fact on their gap year in the data set so it is not possible to control for this type of bias. This is not too great a problem however as the number of students this applies to is small. In 2006, only 7.3% (28,524) of all accepted applicants (390,890) deferred entry until 2007 (UCAS 2009e).

Socio-economic information is not passed onto chosen HE institutions until after a decision has been made about an applicant. This is also true of ethnicity, although in some cases an applicant's surname may be suggestive as to which ethnic group they identify themselves with. In a bid to encourage responses from them, applicants are assured on the application form that this information is not passed onto the institutions that they are applying to. The final variable that was included in the data set is Age, one that it is important to control for, but not of substantial interest here. This variable has four categories: 20 and under, 21 to 24, 25 to 29 and 40 and over. As such it will only be included in the regression element of the analysis.

2.5.2 Advantages and Disadvantages of the Data

Having given a description of the data set, it is important to identify and discuss the advantages and disadvantages of using these administrative data. The overwhelming advantage of using this data set in this analysis is the large size, an important feature to consider when conducting research on

ethnic minority groups. The cohort used in this study is essentially the population of university applicants that applied for 2006 entry. In other words, these are students that applied in late 2005/early 2006 with the intention to enrol at university in the autumn term in 2006. To find a sample survey of this size (408,868) with as substantial a number of ethnic minority cases (e.g. Bangladeshi 1,995 (males) 1,969 (females)) would be impossible.

However, there are a number of limitations with the UCAS data used here. Firstly, each one of the UCAS tabulations from which one can create data sets contains only a handful of variables and it is not possible to add to them. Secondly, the data set includes no identification of the particular path that applicants have gone through. In addition to the main path where students make their six choices on an application form, there is a "clearing process".

Results for most entrance level qualifications are made available in mid-August. Shortly after this, students receive information on whether or not their place has been confirmed on the scheme of study at their chosen institution. If they have not achieved the required entry grades, it is possible their institution has decided they can still have their place. In many cases however, the HE institutions will not have a place for them. The clearing process is open to applicants who have not secured a place at university for the forthcoming academic year. Students who hold no offers are eligible to go through the clearing process. It can help applicants to find suitable vacancies on HE courses that have not yet reached their limit on student intake (UCAS 2009f).

Clearing course vacancies are open from between mid-August until late-September. More than 30,000 people a year gain a place through this process. In 2006, of the 390,890 applicants that were accepted, 38,032 (9.7%) were accepted on full-time undergraduate courses at Universities and Colleges in the UK through clearing (UCAS 2009g). No identification is made of the applicants that may have gone through the clearing process and hence there is no option to omit these students. The preferred subject area recorded for these applicants is the one that reflects their clearing

applications and not the subject area recorded for the main application process. Ideally these applicants would have been omitted, as clearing applicants have to be more flexible in terms of the courses and institutions they can apply to. They will be limited to courses that have vacancies remaining. It is inevitable then that there will be discrepancies between the subject area applied to and the subject area applicants wish to study in some cases.

Missing information is another problem with the data. Students are asked on the application form to give information on socio-economic background. It is provided by the applicant on a voluntary basis and there is a high degree of missing data for this variable. 26.1% (47,241) of male applicants and 26.7% (60,970) of female applicants in the sample did not give this information. It is made clear on the application form that ethnicity and socio-economic information is not disclosed to HEIs. However, it is possible that a number of applicants do not pay due attention to this information, or due to a degree of distrust against UCAS do not provide it. Table A.1 shows Ethnic group by SEG.

Male students in the Bangladeshi group had the highest % of Unknown SEG of all ethnic groups with the 46.5%. The White group had the least number with 19.7% of these applicants not proving SEG information. In terms of female applicants, again Bangladeshi students had the highest with 48.6% and White students had the lowest with 21.6%. It is important that this proportion of missing information on these two variables is pointed out and taken into consideration when interpreting results. Bagguley and Hussain (2007) also had to take this into account in their use of UCAS data. Throughout this analysis these categories are not omitted. Studying the findings of an unknown category can be useful. It may be that the subject choices made by the unknown group are similar to that of another group/s. It may also be the case that the unknown category is mostly heterogeneous and not many similarities can be found across categories. In both instances it will be useful to retain the applicants in the unknown categories for both the ethnicity and socio-economic variables and use them in the analysis.

The degree of missing data on ethnicity is also a disadvantage of this data set. As with the socio-economic question, students are asked on the application form to give this information on a voluntary basis. The percentage of missing data is not as high for the ethnicity variable as it is for the SEG variable with 6.3% (11,389) of all male applicants and 4.6% (10,444) of all female applicants not providing this information. There appears to be an association between missing SEG and missing ethnicity as the majority of students that do not give ethnicity information also do not provide SEG information as seen in Table A.1. With male applicants it is 80.9% of the unknown ethnic group that also have unknown SEG. In terms of female applicants the figure is 81.7%. It is possible that these applicants do not answer either questions on ethnicity or SEG as they are more concerned about giving any information that is not compulsory rather than what information the voluntary questions ask for.

In terms of both the SEG and ethnicity variables, it is possible that the information is missing at random, and if this is the case then this item non-response creates an efficiency loss in the data. However with a large data set like the one used here, this is not a significant concern. Another possibility is that that the applicants that failed to respond to the ethnicity and SEG questions on the application forms are distinct in their subject choices. If this is the case then the data are not missing at random and this has an influence on the results. However, the degree of missing data for either variable is not substantial, and there is no reason to believe based on previous studies conducted with UCAS data that students with unknown ethnicity and unknown SEG are likely to have particularly distinctive undergraduate degree subject choices. Missing data can be found in many datasets and the common procedure followed, which is what is done here, is to state clearly what the non-response figures are so that they are transparent to readers. Furthermore, researchers can look to what others using similar data have observed and theorised about why data is missing. In this case, Bagguley and Hussain was cited (2007).

Another problem can be found with the subject area variable. There are a sizeable number of applicants in the “no preferred subject” category. 16.3% of male applicants were in this category as were 13.0% of all female applicants. It is possible that students in this category make choices in a number of subject areas. However, another possibility is that applications are made to subjects that are recorded in different subject areas but are similar nonetheless. This is why the way in which this category is recorded is unhelpful. It may be that the applicants recorded in a subject area are similar to those recorded in a different identifiable subject area, as mentioned above. In addition, the findings for this category could help build up a profile of students that are perhaps indecisive, unclear and unfocussed in their subject choices. Again, it may be the case that this group is in fact highly heterogeneous. Nonetheless, including this group in the analysis will be insightful in some way.

2.5.3 Key Applicant characteristics

Having outlined the variables in the data set, an overview of the applicants’ key characteristics is given here. It is evident that there are more female applicants than male. When accounting for both data sets 55.8% of all applicants are female and 44.2% are male. Key characteristics are given first for male applicants and then for female applicants. 78.4% of all students are aged 20 or under and 1.9% are aged 40 and over (Table A.3). The majority of applicants were from a White ethnic background (78.5%) and a smaller percentage was from the Bangladeshi and Chinese groups respectively (1.1%). With regards to SEG, the largest group of male applicants (not including the Unknown category) were from a Lower managerial & professional background (22.9%) and the smallest group was from a Lower supervisory & technical occupation background (3.7%) (Table A.1). In accordance with the original subject choice variable, Business & Administrative Studies is the most popular amongst male applicants (10.6%). In terms of the recoded variable, Science subjects were most popular (21.6%) (Table A.2).

With regards to female applicants, 75.2% are aged 20 or under and 3.4% are aged 40 and over (Table A.3). In terms of SEG, the smallest group of applicants were from a Lower supervisory & technical occupation background (3.5%), and applicants from a Lower managerial & professional background (22.5%) formed the largest group (Table A.1). Creative Arts and Design subjects are the most popular for all female applicants (13.0%) (Table A.2). This is true if the no preferred subject category and general, other combined & unknown categories are not taken into account. Subjects in the Technologies category are the least popular for all female applicants (0.1%). In terms of the recoded variable, Social Science subjects were the most popular amongst female applicants (22.7%).

2.6 Methods

2.6.1 Duncan dissimilarity Index

The relationships between the variables are investigated in three ways: via a segregation index, cross-tabulation and multinomial logistic regression. The first method of a segregation index is used to address the first research question of identifying how large the differences are in subject choice by ethnic and socio-economic background. This measure gives a "one number" summary of uneven distributions across different groups. There are a number of segregation indices, some of which are for binary variables (e.g. gender) and some of which measure segregation for multi-category explanatory variables. One of the most commonly used is the Duncan and Duncan dissimilarity index for binary variables. For example, authors such as Jenkins, Micklewright and Schnepf (2008) have used this specific index in their study of social segregation in schools. It was used in the research presented in this chapter to measure segregation by ethnic origin across subject area.

Ethnic origin is a multi-category variable. A number of new binary variables were generated from this variable in order to use this index. Each new binary variable contained a White category and a non-white category. For example, the variable *Bangladeshi* included category 1 (Bangladeshi) and category 0

(White). Those not included in either of these categories were classified as missing values. In this case it would be all applicants who are neither White nor Bangladeshi. Individuals classified in the Unknown category are not included in the calculations. The index value for this variable therefore reflects differences in the distribution of Whites and Bangladeshis across subject areas. Similarly, the variable *Indian* would only include applicants who are White or Indian. This is the case for all of the dummy variables with the exception of *Unknown* where all applicants are included in the calculation of index values. The variable *Unknown* included a known ethnicity category that included all the ethnic groups other than Unknown. In total seven variables were created for ethnic origin.

Index values were obtained for each new binary variable. Using a multi-category index would have provided a one number summary of segregation across all groups. However, a binary segregation index was preferred as it allowed for an understanding of variation across each ethnic minority group and the White group separately. This is because if the index value for a variable was high, then looking at that ethnic group in the cross-tabulations (the second method used) could indicate why this was a high value. Using an index is therefore the most appropriate exploratory technique. In this way an index as a first method and a cross-tabulation as a second method complement each other. As such, obtaining index values for each category rather than one value for all categories was deemed more useful.

The index can be defined as follows:

$$D = \frac{1}{2} \sum \left[\left| \frac{A_i}{y} - \frac{B_i}{z} \right| \right]$$

In this example, A_i and B_i would be the total number of mutually exclusive cases in subject area i. For example, A_i represents the total number of Bangladeshi applicants and B_i the total number of White applicants. *y* represents the sum of A_i across all subject groups, i.e. the total number of Bangladeshi applicants. i varies from 1 to 26 which is the total number of

subject areas. *z* represents the equivalent sum of B_i (across non-members of a group, i.e. White applicants). Using the above example, the index value D would give the proportion of group members that would have to shift subject area (without being replaced) in order that all subject areas have the same share of members and non-members. An index value can fall between 0 and 1 where a higher value indicates a greater extent of segregation (Taylor, Gorard and Fitz 2000).

2.6.2 Cross-tabulations

The second method was to manipulate the data and create a number of cross-tabulations in order to understand key underlying patterns in the distribution of applicants across different subject areas. This method addresses the second research question of this chapter. The first method of using the index provides essentially a summary of inherent segregation and therefore is a good preliminary method. Cross-tabulations show the detailed subject choices that drive the segregation values. For example, a particular ethnic group may have a high index value showing it is more segregated than applicants in other groups in relation to White applicants. Tabulating ethnicity by subject area indicates the preferences applicants have that members from other ethnic group do not.

2.6.3 Multinomial Logistic Regression

The third and final way in which the UCAS data were analysed is with the use of multinomial logistic regression models. This method was used to address the third and fourth research questions. These were:

3) How might differences in subject choices be associated with ethnicity when controlling for SEG?

4) Does the association between ethnicity and subject choice vary by SEG?

Using this method gives insight into what might be associated with variation in subject choice. Multinomial logistic regression models are made up of a response variable with J categories where π_1, π_2, ….. π_J denotes the probabilities of each subject category. The sum total of these probabilities is 1. The model simultaneously compares all J*(J-1) pairs of categories and describes the odds of response in one category relative to another. Only J-1 logit equations need to be specified and the choice of which equations to fit is arbitrary. Logit equations pair each response category with a reference category. A recode of the original subject area variable was used for the response variable.

The new response variable had 6 categories and so in this instance J was 6. The Professional category was used as the reference. The model therefore consists of 5 logit equations. The first equation would be as follows:

$$\log_e\left(\frac{\pi_2}{\pi_1}\right) = \alpha_1 + \beta_1 X$$

Given that the response falls in category 2 or 1 (i.e. Arts or Professional), the above equation gives the log-odds that the response category is 2 rather than 1, the second equation would give the log-odds that the response category is 3 rather than 1 and so on. In this equation there is only one explanatory variable. In order to compare all the categories with each other where the reference category is excluded (e.g. Arts and Social Sciences), the log-odds can be written as the difference in logit equations. This is the reason that it is not necessary to write down all J*(J-1) logit equations in the model. In this case where J = 6, there are 6*(6-1) = 30 possible pairs of response categories and therefore log-odds equations – but it is only necessary to specify 5 logit equations.

It is possible to measure the probability of being in one subject area through frequency tables and cross tabulations. This could be done by creating cross-tabulations that are not just two-way but three and four-way classifications. However using a multinomial logit model does this job more efficiently and produces results that are easier to interpret than those of a four-way cross-

tabulation. Furthermore, when using a cross-tabulation there is no way to control easily for additional factors that may impact on subject choice. It is possible that any identified ethnicity effect is attributable to a number of other differences between White and ethnic minority students which impact on subject choice. Multinomial logistic regression allows for the holding of all other variables constant and gives the advantage of looking at all factors together.

2.7 Results

2.7.1 Duncan dissimilarity Index

This index was used to measure segregation by ethnic origin across subject area. The analysis was first carried out with the original subject area variable with 26 categories and then with the recoded subject area variable with six categories. The results for the original variable and male applicants are discussed first (see Table A4). The Pakistani, Indian and Bangladeshi groups have high index values. The former group has an index value of 0.39. This implies that 39% of applicants would have to shift subject in order to be in proportion to numbers of White applicants. The value for the Black African group is also high compared to the values of other groups. The Black Caribbean group has the lowest segregation index value. The highest index value can be found for the Unknown category. The patterns that emerge with the female results mirror those found with the males, where it is the Black African group that shows the greatest segregation. The values for the Chinese, Pakistani and Indian groups are also high. The Black Caribbean group again shows the least segregation.

In terms of the recoded variable, the same groups show substantial segregation as they did with the original variable. There are fewer categories of subjects to be segregated across in the recoded subject group variable, and so overall the values are lower for that variable. This can be seen in Figures A.1 and A.2 in the appendix. Again, the male applicants are dealt with first. The ethnic minority groups showing substantial segregation are the Indian, Pakistani and Black African groups. The former group has an index

value of 0.27. This implies that 27% of applicants would have to shift subject to be in proportion to the number of applicants to each subject. The Pakistani and Black African groups also show high segregation. Of the South Asian groups, the Bangladeshi group shows the lowest segregation with a value of 0.20. The Chinese group has a lower value still of 0.18. The Black Caribbean group has the lowest index value of the ethnic minority groups and is clearly distinctive from the Black African group. The Unknown ethnic group category has the highest index value.

The index values for the female applicants are overall lower than that for male applicants, the only exception being the Black African group. This would indicate that female applicants are in general distributed more similarly to White women than ethnic minority men are to white men. There is little difference between the male and female applicants with regards to the ethnic groups that have more substantial segregation. Again the Black African, Pakistani and Indian groups have higher index values. The Chinese and Bangladeshi groups have lower values just as they did for the male students. Male and female students from the Black Caribbean both have low index values. The Unknown category has the highest index value.

The results show that ethnic minority students are not the same as White students in their subject choices. There is variation across the ethnic minority groups in terms of how segregated they are from the White group. In some cases, the differences between the minority and White groups are much bigger than for others. The Indian, Bangladeshi, Pakistani and Black African groups are more distinct from the White group than the Black Caribbean group. Overall, these results do not suggest any great difference between male and female applicants as the same ethnic groups appear to have greater segregation for both (see Figures A.3 and A.4).

A further set of index results were calculated to illustrate the contrast between each ethnic group with all other students, and not just the white group. The previous set of results showed how close the subject choices of ethnic minorities were to the White group. The new set however showed how distinctive the subject choices of each ethnic group were compared to all

other students (see table A.5). The analysis was carried out first with the original subject area variable with 26 categories and then with the recoded subject area variable with six categories. It is evident that the results (both male and female) are very similar as the White group dominates the applicant cohort.

2.7.2 Cross-tabulations

The segregation index values gave an indication of uneven distributions of different ethnic groups across different subject areas. Cross tabulations were then used to highlight which subjects have high/low representation. The percentage of both male and female applicants in the No preferred subject group category is high across all ethnic groups (see Tables A.6 and A.8). It is difficult to suggest why this may be the case. As mentioned earlier, the categorisation of preferred subject is problematic. As students were permitted to make six choices for 2006 entry (which are the data used here), it is likely that more students will be included in the No preferred subject group category than would be the case if there were five choices, as was the case from 2008 onwards.

Table A.6 shows the distribution of male applicants across subject area. The Black African group was found to have a similar index value to the Indian and Pakistani groups. They tended to show greater segregation and there are particular subjects that were popular across these groups. For example, 10.0% of Pakistani students, 9.3% of Black African students and 8.9% of Indian students applied to study Subjects allied to medicine as compared with 3.4% of White students. However, there are differences between these and the other ethnic groups in terms of the most popular subjects within the Professional category. Among the Bangladeshi, Pakistani, Indian and White groups it is Medicine & Dentistry that is most popular. Amongst the two Black ethnic groups and the Chinese group it is in fact Engineering subjects that are the most popular. In terms of the other subjects, Mathematical & Computer Science and Business & Admin Studies are popular across most ethnic groups, but in particular for the Bangladeshi, Chinese, Pakistani and

Indian groups. The Black Caribbean group had a low index value indicating fewer dissimilarities with the White group. Examples would be that for both, Creative Arts & Design and Business & Admin subjects are highly popular.

The figures in Table A.8 show the distribution of female applicants in different Ethnic groups by subject area. Unlike for the male applicants, Subjects allied to medicine are the most popular Professional subjects for Bangladeshi, Pakistani and Indian female applicants. There is clearly a gender difference then in these ethnic groups. However this is not a great difference as there is also a high percentage of Indian and Pakistani females applying to study Medicine and Dentistry. Indeed, the Indian group was one of the more segregated groups and a far higher percentage of these students apply to study Medicine & Dentistry compared to any other group, as was the case for male applicants.

In some ethnic groups, there are only subtle gender differences in relation to particular subjects. For example, in the same manner as White males, there are a greater number of female applicants with a preference for Creative Arts & Design subjects from the White ethnic group than from any other ethnic group. Similarly, Creative Arts subjects are popular amongst both female and male applicants from the Black Caribbean ethnic group. In other ethnic groups, the gender differences are greater and clearer to see. For example, more Chinese female applicants apply to study Creative Arts & Design subjects than male applicants from the same ethnic group.

A far higher percentage of Black African students applied to Social Studies subjects compared to other students. It was the most popular category under the Social Sciences heading for female applicants from this ethnic group. This was not the case for male applicants as Business & Admin studies were the most popular Social Sciences subjects. Indeed Business & Admin studies are popular across all ethnic groups with the exception of the Unknown group. Among females, Technologies subjects are unpopular across all ethnic

groups. The percentage of applicants in the No preferred subject area category is high across all ethnic minority groups.

The results show that a high percentage of both males and females for whom ethnicity is unknown have no preferred subject. This is a strange result and it is difficult to speculate why this is the case. However, almost all of the ethnic minority groups (the Black Caribbean and Black African in particular) appear to have more students with no preferred subjects. This could be because they are less definitive about their subject choices and apply to various different courses that belong to different subject groups. As there are also more ethnic minorities that have no preferred subject group, it might be reasonable to suggest that there are more ethnic minority than White applicants in the unknown ethnic category. However it is not possible to know if this really is the case, but it is something to keep in mind when surveying the results nonetheless.

Tables A.6 and A.8 show ethnic origin cross-tabulated with the recoded variable to give the distribution of applicants across the new subject categories. As this is the response variable used in the regression analysis, it was deemed a good descriptive measure before using the next method where additional factors SEG and age are controlled for. For males from the South Asian groups, the Bangladeshi group had one of the lower index values and this is reflected in the way this variable stands out from other Asian groups where the most popular subject is the Social Sciences. However, the second most popular subject group is Professional, illustrating that Bangladeshi applicants are not greatly distinctive from the other South Asian groups (see Table A.6). The Chinese, Indian, Pakistani and Black African groups all have a higher percentage of applications to Professional subjects and lower percentage to Languages and Communications subjects. The Black Caribbean group is more likely to apply to the Sciences and, as with other ethnic minority groups, least likely to apply to Languages and Communications. As suggested by the index results, the most popular subject group for Black Caribbean and White applicants are the same, with applicants tending to choose Science subjects.

The patterns for female applicants generally reflect those seen for males (Table A.8). Again, Social Sciences subjects are most popular with Bangladeshi applicants and the most popular subjects for the Indian, Pakistani and Chinese groups are Professional. The main difference that can be seen is that the most popular subjects for Black African applicants are Social Science whereas for males it was Professional subjects. Again the Black Caribbean and White groups are fairly similar where the most popular subject is Social Sciences.

2.7.3 Multinomial Logistic Regression

It is possible to measure the probability of being in one subject area through the analyses conducted so far. However, SEG has not been controlled for thus far and multinomial logistic regression has the advantage that all observed factors can be studied together. Recoded subject area is used as the response variable with the Professional category as the base outcome. The first model includes only dummy variables for ethnic origin, with White as the reference group, and no controls for either SEG or age. The results from this model do not give more information than the cross tabulation of ethnic origin by recoded subject group and are included only as a preliminary step in the model building process.

Results are presented as Exp. β coefficients or odds ratios. They represent the change in odds of being in a subject category versus the reference category (Professional) associated with being in a different category to the reference in the explanatory variable (Ethnic/Socio-economic/Age group). If the odds of applying to one subject area are the same across groups, the ratio will be 1. A value less than 1 indicates that applying to Professional subjects is more likely and a value greater than 1 indicates that applying to these subjects is less likely. For example, the odds of a Black Caribbean male applying to an Arts subject over a Professional subject, in comparison to the White group, are 1.16. Alternatively, this can be understood as a 16% increase in odds of applying to Arts subjects for applicants from this group.

2.7.3.1 Male applicants

The first model includes only ethnic origin dummy variables. The results are shown in Table A.10. As the effects of SEG and age are not controlled for, this model gives no more information than the cross-tabulation results. The second model includes dummy variables for SEG and age group, with Higher Managerial and Professional and age 20 and under category as the reference groups (Table A.11). It is evident that the results for the Indian, Chinese and Pakistani groups have altered very little in the second model. The regression results suggest that ethnicity is very influential, over and above the other factors in the model, in explaining students' subject choices. The Asian and Chinese groups are still more likely to apply to Professional subjects than the White group in model 2.

Applicants from the Bangladeshi group are also more likely to apply to Professional subjects. The key difference is in the size of the coefficients where the decrease in odds of applying to other subjects is generally smaller than for the other South Asian groups. The exception to this is the Social Sciences. However, the result changes from a 21% to an 11% increase in odds and is no longer significant when the two new variables are added to the model. There is also a change in the result from a 37% to 45% decrease in odds of applying to study the Sciences. Controlling for SEG and age has had an effect on the result so that applicants from the Bangladeshi group are even less likely to study Professional rather than Science subjects.

The results for the Bangladeshi group seem to be the most sensitive to the inclusion of the additional variables. It makes this group distinguishable from all the other Asian groups. Furthermore, it had the lowest segregation index value of all the Asian groups with regards to both the original and recoded subject variables. The cross-tabulations also showed that there was a stronger preference for Social Science subjects for this group than there was for the Indian and Pakistani groups. These findings all point towards a

difference between the Bangladeshi group and the Indian and Pakistani groups.

The Arts category for Black Caribbeans is no longer significant after the inclusion of SEG and age, despite a very small change in odds. The result for the Black African group and the Social Sciences has changed from 1.07 to 1.20, indicating an even greater increase in the odds of applying to these subjects in model 2. Members of this group are more likely to apply to Professional courses than any of the remaining subjects. Overall, there has been little change in the results for the Black ethnic groups. Again, it appears to be the case that ethnicity is the more important factor in explaining subject choice.

Students who come from a higher managerial and professional background are more likely to apply for professional subjects than those from lower occupational status backgrounds. This is inclusive of the Lower managerial and Professional group. The results for the Lower supervisory group and Social Sciences and Languages and Communications categories are not statistically significant. Students from the Lower managerial group are more likely to apply to Languages and Communications subjects. Among those from the Intermediate, Lower Supervisory, Semi-routine and Routine backgrounds Science was the most popular subject choice made (not including the General subjects category).

That many male students are drawn to Science subjects is an issue that has been highlighted in many studies over a long period of time. Authors such as Barmby et al. (2008) have shown that this highly gendered “choosing” of subject is still dominant at a secondary school level. The results presented in this chapter here indicate that this is also true of HE course choice. It is noticeable that the lowest two SEGs have the largest coefficients for all the subject categories, illustrating that they are much more likely to apply to subjects other than Professional. For example, the odds ratio for the Lower

Managerial group and Arts was 1.35. The odds ratio for the Semi-routine group and Arts was 1.46 and for the routine group 1.63.

2.7.3.2 Female applicants

As with the male applicants, the first model also includes only ethnic origin. The second model includes Age and SEG (see Table A.16). The Chinese, Indian and Pakistani groups are all more likely to apply to Professional subjects than Whites. There is very little change in the second model. This mirrors the findings for the male applicants, suggesting the effect of ethnicity is similar by gender. The findings for the Black African group also reflect this pattern. However the results for Social Sciences in both models are not statistically significant. As with the male applicants, the result for the Bangladeshi group and the Social Sciences is also not statistically significant.

The results for the Black Caribbean group change the most in model 2 (Table A.16) as compared with model 1. They are more sensitive to the inclusion of the two additional variables than they were in the male data set. In model 1 the Black Caribbean group are more likely to apply to Professional subjects than Arts, Science and Language subjects, but the opposite is true in model 2. Where results for these groups in these categories were significant in model 1 they are now not statistically significant. Black Caribbeans are more likely to be in the Social Science and General categories than the Professional categories. Overall, after controlling for the effects of SEG and age, this group demonstrates a preference for subjects other than Professional.

Results for the SEG variables highlight an overall preference from all groups for subjects other than Professional. However, in contrast to the male applicants, there is one subject where this does not hold true. Students from the Lower Supervisory and Semi-Routine groups are more likely to apply for Professional than the Languages and Communications category. Whereas with the male applicants there was a greater increase in odds of applying to Sciences across a number of SEGs, the subject category with the largest

coefficients for the females is Social Science. This applies to applicants from all non-higher managerial and professional socio-economic backgrounds.

2.7.4 Multinomial Logistic Regression - Interaction terms

The next stage of the regression analysis involved adding interaction terms[6] to the model. Thus far, controlling for SEG has had little impact on changing the ethnicity results. However, an interaction between SEG and ethnic origin allows the association of ethnic group with subject choice to vary across different socio-economic groups. Each SEG dummy variable was interacted with the ethnic groups. The results are presented in Tables A.13 (males) and 14 (females) and are again presented as Exp. β coefficients. Results significant at either the 5% or 1% level are in bold. For both males and females, the majority of the interaction terms are not significant. A likelihood ratio test was used to test for the inclusion of the interactions to the models as a group. With male applicants where the test statistic is 2987.52 (245 d.f., p=0.00). This is also the case with female applicants, the test statistic is 2571.48 (245 d.f., p=0.00) and is significant. This indicates that the models with the interactions explain more of the variation in the data and fit the data better than those without.

2.7.4.1 Male applicants

In comparing the results for males in Tables A.10 and A.13, it is evident that including interaction terms in the models has had the impact of reducing nearly all the main effects for the Indian, Pakistani, Bangladeshi and Chinese groups. This suggests that students from these groups have an even greater decrease in odds of applying to Professional subjects. The main effect results for the Black Caribbean group are no longer statistically significant after the

[6] The multiplicative interaction effect can be calculated by multiplying together the various terms for each of the explanatory variables and related interaction. It is illustrated by the following formula: $\frac{p}{1-p} = e^{\beta_0}.e^{\beta_1 x_1}.e^{\beta_2 x_2}.e^{\beta_3 (x_1.x_2)}$

interactions are added to the model. The majority of the interaction terms are not significant. Most of the results that were significant had odds ratios greater than 1. This would suggest that overall students from the ethnic minority groups from SEGs other than Higher managerial and Professional are more likely to apply to subjects other than Professional when compare to White students from the highest SEG. The Indian ethnic group has the most number of significant interaction results.

The groups with the most interesting statistically significant interactions are Indian and Chinese. This is because students from these groups that are from the lower SEGs, mainly Routine and Semi-Routine are more likely to apply to some subjects other than Professional. This is in contrast to what the main ethnicity effects for these groups suggest which is an increase in odds of applying to Professional subjects.

Dealing with the Indian group first, this is true of Social Science subjects. The effect for Indian applicants from a Semi-Routine socio-economic background for the Social Science category is calculated by multiplying the main effects for Indian (0.55), Semi-Routine (1.29) and the interaction (1.83). The result is 1.30 indicating a 30% increase in odds of applying for Social Sciences as opposed to Professional subjects when compared to White applicants from the highest SEG. The effect for Indian applicants from a Routine socio-economic background for the same subject category is also 1.30 (0.55*1.38*1.71), again indicating a 30% increase in odds.

In terms of the Chinese group, it is not only with the Social Sciences subjects that show a change in direction of result but Arts subjects as well. With regards to the former subject category, the result for Chinese applicants from an Intermediate socio-economic background is (0.40*1.18*2.18) 1.03. This suggests a small 3% increase in odds of applying to Social Science subjects. With applicants from a Routine background, there is a much greater increase in odds (0.40*1.38*3.56) of 97% (1.97). With regards to the Arts category, Chinese applicants from a Routine background have a 34% increase in odds (0.13*1.61*6.39) of applying to these subjects.

It is also possible to examine these interaction effects by using the parameters estimated to compute predicted probabilities for fixed categories of Ethnicity but different SEGs. Probabilities were calculated for students that were from different Ethnic groups, under the age of 21 and were from the (i) Professional SEG and (ii) Routine SEG. These probabilities are presented in stacked bar charts in order to communicate with greater clarity how the relationship between Ethnic origin and degree subject varies by ethnic group.

Figure A.5 shows the probabilities for male applicants from the Professional SEG of applying to the different subjects. It is evident that applicants from all the ethnic minority groups are more likely to apply to Professional subjects than White students, with the exception being students from the Black Caribbean and Unknown Ethnicity categories. The Pakistani group has the highest probability, closely followed by the Indian group. Applicants from the Bangladeshi group stand out from the rest of the South Asian groups as in comparison it has a much lower probability of applying to Professional subjects.

With regards to students from the Routine SEG, the probabilities for these applicants can be seen in Figure A.6. In studying this chart, it is apparent that the probability of applying to Professional subjects is lower for applicants from all ethnic groups when compared to those from a Professional SEG. What is consistent between the two charts is that students from the Black African, Bangladeshi, Pakistani, Indian and Chinese groups have higher probabilities than White students of applying for Professional degree subjects. It is still the Indian and Pakistani groups that have the highest probabilities of applying to Professional subjects.

2.7.4.2 Female applicants

Comparing the results in Tables A.12 and A.14, it is apparent that including interaction terms in the models also reduces some of the main effects for some of the ethnic groups but not most of them as it did for the males. For the Chinese, Black African and Pakistani groups however they are all reduced.

In terms of the Bangladeshi group the effects are reduced for the Arts and Social Science categories. The main effect results for the Indian group are also reduced across all subject categories with the exception of General/Other. Again, this suggests that students from these ethnic groups have an even greater decrease in odds of applying to subjects other than Professional subjects. Only two of the main effect results for the Black Caribbean group were significant in the model without interactions. None are statistically significant after the interactions are added to the model.

As with the model for male applicants, the majority of the interaction terms are not significant. Overall, the majority of the results that are significant have odds ratios greater than 1 indicating that students from the ethnic minority groups from SEGs other than Higher managerial and Professional are more likely to apply to subjects other than Professional when compared to White students from the highest SEG. The Indian ethnic group has the most number of significant interaction results and this was also the case with male applicants.

The groups with the most meaningful statistically significant interactions are again Indian and Chinese. However this time the Black African group also has a result that is in contrast to what the main ethnicity effect suggests. More specifically, female Black African students from a Semi-Routine occupational background had a 58% (1.58) increase in odds of applying to Science subjects compared to Professional subjects.

With regards to the Indian group, it is again Social Sciences subjects where this effect can be seen. Indian applicants from a Semi-Routine socio-economic background have a 18% increase in odds of applying for Social Sciences as opposed to Professional subjects when compared to White applicants from the highest SEG. The effect for Indian applicants from a Routine socio-economic background for the same subject category is also 1.52 indicating a 52% increase in odds.

For Chinese applicants this can be seen not only with Social Science subjects but also with Arts and Sciences subjects. Dealing with the former first,

applicants from a Routine socio-economic background have an 84% increase in odds (1.84) of applying to Social Science subjects as opposed to Professional subjects. Chinese students from the same socio-economic background also have an 18% increase in odds (1.18) of applying to Arts subjects. Finally, Chinese female applicants, again from a routine occupation background have a 26% (1.26) increase in odds of applying to Science subjects.

Predicted probabilities were calculated for female applicants in the same way they were for male applicants. The probabilities of applicants from the Professional SEG of applying to the different subjects can be seen in Figure A.7. As was the case with male applicants, students from all the ethnic minority groups are more likely to apply to Professional subjects than White students, with the exception being students from the Black Caribbean and Unknown categories. The difference between male and female applicants is that with the latter the Pakistani group has the highest probability, closely followed by the Indian group. However, with female applicants it is the Indian group that has a higher probability than the Pakistani group. Similar to males, Bangladeshi female applicants are distinct from the rest of the South Asian groups as in comparison they have a much lower probability of applying to Professional subjects.

Predicted probabilities for students from the Routine SEG can be seen in Figure A.8. As was the case with male applicants, the probability of applying to Professional subjects is lower for applicants from all ethnic groups from the Routine SEG. Again the Indian and Pakistani groups have the highest probabilities of applying to Professional degree subjects. Other than applicants from the Black Caribbean and Unknown ethnic group, all ethnic minority applicants had higher probabilities of applying for Professional degree subjects than White applicants.

2.8 Sensitivity analysis

Earlier in this chapter, the difficulties related to the grouping of the subject categories for the response variable were discussed. In particular,

the education subject group was highlighted. The rationale for grouping subjects in the way they were was given. One potential concern was that this subject group was included in the social science category of the new response variable rather than the professional category. In light of these concerns, it was important to conduct a sensitivity analysis. In other words, there was a need to explore the potential drawbacks of coming to a judgement as to how subject groups are categorised.

This was achieved by re-running the full models (ethnicity, SEG, age, ethnicity*SEG interactions) for both male and female applicants, but this time with an amended professional category that included education subjects. The results for this analysis can be found in the appendix. The ethnic minority groups still show a statistically significant decrease in odds of applying to social science subjects over professional subjects, compared to White applicants.

This change in coefficients for some ethnic groups demonstrates that the categorisation used for the response variable can have implications for the results obtained. However, very few of the results for the seven ethnic minority groups see a drastic, statistically significant change in results. Furthermore, the original results are not entirely ameliorated. Examining the coefficients for the other subject categories (arts, sciences, languages and communications and general) it is still possible to make the same overall conclusion: ethnic minority students are more likely to apply to study professional subjects than White students.

2.9 Discussion

1) How large are differences in degree subject by ethnic group?

It is evident from previous research that there are differences between ethnic minority groups in terms of their subject preferences. The results presented here suggest in some cases these differences are very large. Some ethnic

minority groups are more distinct to the White group than others. The Pakistani, Indian and Black African groups are the most distinct as suggested by the Duncan and Duncan segregation index results. For example, 39% of Pakistani male applicants would have to move subject area without being replaced so that all subjects would have the same share of Pakistani students. The Chinese and Bangladeshi groups are different to the White group, but not as much as the three aforementioned minority groups. Applicants from the Black Caribbean group were most similar to the White group as only 18% of male applicants from this ethnic group would have to move subject area without being replaced so that all subjects would have the same share of Black Caribbean students. 18% is much lower than the figure of 39% for the Pakistani group. These two figures show that some ethnic minority groups are more different from the White group than others. In terms of similarities and differences between ethnic minority groups, the Pakistani and Indian groups are the two South Asian groups showing the greatest similarity. The two Black ethnic groups are highly distinct from each other.

2) What are the key differences in subject choice across ethnic groups?

All ethnic minority groups other than the Black Caribbean group had a higher percentage of students that applied to Professional subjects. The most popular subjects for the male and female applicants from the Black Caribbean and White groups are the same. For male applicants it is Science subjects and for female it is Social Sciences. Potential reasons for this similarity include overlaps in the educational experiences of Caribbeans and Whites. For example, there have been recent concerns about the attainment of Afro-Caribbean and White males. At GCSE level Afro-Caribbean pupils are on average least successful at avoiding low achievement, and fare similarly to White British pupils of similar backgrounds. This is however complex as there are significant sub-group variations, whereby class accounts for some of the variation in the Afro-Caribbean ethnic group. Indeed results when compared with White British pupils of similar economic backgrounds, Afro-Caribbean pupils do not fare worse (Cassen and Kingdon 2007). Furthermore, it is important to consider that there is evidence to suggest that although Afro-

Caribbean boys fall behind at junior school, this is not always the case at secondary school level and some do indeed catch up with white counterparts (Sammons et al. 1995).

Of the South Asian groups, the Bangladeshi group was most distinctive. Although Professional subjects were popular for Bangladeshi students, they were not the most popular as they were for Indian and Pakistani students. Social Sciences were the most popular for both male and female Bangladeshi applicants. Bangladeshi settlement in the UK has occurred recently, relative to migration from India for example. This community has had comparatively little time to adjust to their new cultural surroundings and navigate the British education system. Their attainment levels have been consistently low for the past few years, although there has been improvement in HE participation rates. This could help explain why this group is most distinctive from the other South Asian groups (Mac an Ghaill and Haywood 2005).

Overall however, it is still fair to suggest that these groups are fairly homogenous. It is clearly evident that the South Asian groups have a very strong inclination to study Professional subjects, irrespective of gender or attainment. The Chinese group is similar to these groups where Professional subjects are also highly popular. These results are in line with Archer and Francis' (2005) qualitative findings that Chinese parents prefer that their children aspire to Professional occupations.

There are a number of reasons why the minority groups might be overwhelmingly drawn towards Professional subjects. With the majority of Professional vocations, the nature of the sectors makes it more feasible to be self-employed. Ethnic minorities are over-represented in self-employment in the UK labour market. One reason for the popularity of this form of employment is that it is effective in avoiding discrimination that can be experienced in the paid labour market. This is a potential explanation for the attraction to Professional subjects. There is however evidence to suggest that self-employment rates for second generation minorities have declined in recent years. This change has been partly attributed to differences in the

educational experiences of that generation (Clark and Drinkwater 2006). If this decline continues over time, it may result in the weakening of a relationship between ethnicity and Professional subject choice.

Another reason that Professional subject choice may be popular is that many first generation members of minority communities will have faced uncertainty. For example, they may have come to the UK from their countries of origin as refugees. It could be that experience of situations where fast adaptability was imperative for survival in unfamiliar surroundings has culminated into a fierce respect for vocations that there will always be a healthy demand for, are stable and offer good pay.

3) How might these differences in subject choices be associated with ethnicity when controlling for SEG?

Overall, the ethnicity results changed very little when SEG and age were included in the regression models. At most, the increase or decrease in odds was marginal. In the majority of cases the odds ratios for the ethnic minority groups did not either change direction or become statistically insignificant after controlling for the two extra explanatory variables. The two ethnic minority groups that were sensitive to the inclusion of these additional variables were the Bangladeshi (male applicants only) and Black Caribbean groups (both male and female applicants). Even when this was true, it was only apparent with one or two subject groups and not across all subject groups.

4) Does the association between ethnicity and subject choice vary by SEG?

The results for ethnic groups from different socio-economic backgrounds highlight the multiplicity of routes into HE in terms of subject choice even when applicants are from the same ethnic background. Of the interactions that were significant, they were for Indian and Chinese ethnic groups and the lower SEGs, in particular routine and semi-routine backgrounds. For example,

where the results for an Indian applicant might suggest a much stronger likelihood of applying to Professional subjects when compared to White applicants, the parameter estimates for the interaction terms for an Indian applicant from a Routine background tell a different story and show a greater likelihood of applying to study subjects other than Professional. There appears to be a pattern with the subject categories this applies to, specifically Arts and Social Sciences. The former category in particular includes subjects that are more popular with White applicants than ethnic minority groups as seen in the cross-tabulation results.

It could be inferred then that SEG is more prominent in predicting subject choice for ethnic minorities coming from a lower SEG than applicants from more affluent socio-economic backgrounds. The results indicate that the differences in choice of HE subject between ethnic minorities and Whites are not as large for applicants from less affluent SEGs. This reiterates some of the findings in Bhachu's (1991) study where working class Indian Sikh girls' educational choices were not dissimilar to choices made by white girls from a similar class background.

5) Are wider ethnic differences more evident amongst male or female applicants?

A comparison was made between the segregation of ethnic minority males with white males to the segregation of ethnic minority females to white females. The Duncan segregation index values for female applicants were overall lower than they were for male applicants. This showed that female applicants were in general distributed more similarly to White women than ethnic minority men were to their white male counterparts. There was however little difference between the male and female applicants with regards to the ethnic groups that have more substantial segregation.

2.10 Conclusion

Some of the key factors that impact upon the subject choices made by UK applicants to HE were explored in this Chapter. Ethnicity and SEG were the main variables of interest. The aim of this chapter was to address the gap in existing research and look at the impact of both ethnic group and SEG variables together and not separately as previous authors had. This study does not only go further than existing research in terms of studying both factors together, it also adds value because it is a large-scale quantitative analysis. Finally, the analysis involved a combination of methods that has rarely, if ever, been used before (namely a segregation index and multinomial logistic regression), in a study of subject choice.

Five research questions were addressed in total. It was evident that variation does exist between groups in terms of the subjects they apply to. Indians, Pakistanis and Black Africans were found to be the most distinctive in their subject choices. This was true for both male and female applicants. All ethnic minorities were more likely to apply to subjects in the Professional category than White students, with the exception of Black Caribbeans. The effect of ethnicity changes very little when controlling for SEG indicating that ethnicity and SEG are not highly correlated. Interaction terms between Ethnicity and SEG showed that there was diversity within ethnic groups. Less affluent ethnic minorities were found not to be as distinctive in their subject choices than those from higher SEGs.

Appendix A

Table A.1: Socio-Economic Group by Ethnic Origin

	Bang	Indian	Pak	Chinese	B.Car	B.African	White	Unknown	Total
Males									
Higher Managerial	3.1	12.5	14.0	7.1	6.5	7.2	19.4	5.7	17.0
Lower Managerial	8.9	15.9	17.1	12.1	19.4	23.3	25.4	6.2	22.9
Intermediate Small	2.9	8.0	10.4	5.2	7.6	14.3	11.5	2.4	10.4
Employers	9.7	10.5	7.6	14.6	1.5	3.4	5.7	1.4	5.7
Lower Supervisory	0.7	0.5	3.6	2.5	0.9	2.5	4.3	0.6	3.7
Semi-Routine	20.1	23.4	13.5	10.2	13.8	13.6	9.4	2.1	9.7
Routine	8.3	3.1	7.6	8.2	3.9	3.3	4.5	0.8	4.5
Unknown	46.5	26.1	26.3	40.1	46.3	32.4	19.7	80.9	26.1
Total	100	100	100	100	100	100	100	100	100
n	1,995	8,328	5,836	1,941	2,169	7,278	141,816	11,389	180,752
Females									
	Bang	**Indian**	**Pak**	**Chinese**	**B.Car**	**B.African**	**White**	**Unknown**	**Total**
Higher Managerial	2.1	12.2	6.7	11.4	5.9	6.4	16.2	4.6	14.6
Lower Managerial	7.4	17.1	11.6	15.6	20.5	18.8	24.5	6.0	22.6
Intermediate	2.5	10.9	5.7	7.9	14.3	8.1	12.1	2.5	11.2
Small Employers	8.7	7.5	14.3	8.2	2.6	1.3	5.9	1.4	5.8
Lower Supervisory	0.5	3.1	2.1	0.7	1.8	0.6	4.0	0.5	3.5
Semi-Routine	22.3	13.9	10.3	23.4	15.1	14.9	11.0	2.6	11.1
Routine	7.9	7.6	6.9	4.2	2.9	2.4	4.7	0.8	4.6
Unknown	48.6	27.7	42.5	28.6	36.9	47.6	21.6	81.7	26.7
Total	100	100	100	100	100	100	100	100	100
n	1,969	8,649	5,869	1,994	4,152	8,842	186,197	10,444	228,116

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place. Abbreviations: "Bang" – Bangladeshi, "Pak" – Pakistani, "B. Car" – Black Caribbean and "B. African" – Black African.

Table A.2: Subject area frequencies for all applicants

	Male applicants (%)	Female applicants (%)
Professional	20.5	22.0
Architecture & Planning	2.9	0.8
Law	3.3	4.4
Engineering	6.5	0.5
Medicine & Dentistry	3.8	3.8
Subjects allied to Medicine	4.0	12.6
Arts & Humanities	15.4	18.4
Creative Arts and Design	10.4	13.0
History & Philosophical Studies	3.7	2.9
Combined Arts	1.3	2.5
Social Sciences	17.7	22.7
Education	1.1	6.2
Social Studies	5.6	8.3
Business & Admin Studies	10.6	7.7
Combined Social Sciences	0.4	0.5
Sciences	21.6	13.3
Mathematical & Computer Science	8.7	1.7
Physical Sciences	4.4	2.2
Technologies	0.6	0.1
Veterinary Science, Agriculture & Related	0.7	1.2
Biological Sciences	6.8	7.7
Combined Sciences	0.5	0.4
Languages &Communication	4.6	6.8
European Languages, Literature & Related	0.6	1.2
Linguistics, Classics & related	1.8	3.4
Mass Communications & Documentation	1.9	1.9
Non-European Languages & Related	0.2	0.2
General	20.2	16.7
General, Other Combined & Unknown	0.2	0.3
Sciences Combined With Social Sciences or Arts	2.3	2.0
Social Sciences Combined with Arts	1.3	1.4
No preferred Subject	16.3	13.0
Total	100.0	100.0
n	180,752	228,116

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place.

Table A.3: Age by Ethnic Origin

	Bang	Indian	Pak	Chinese	B.Car	B.African	White	Unknown	Total
Male Applicants									
Under 20	81.7	86.8	78.6	84.5	66.3	46.7	82.1	47.2	78.4
21-24	13.0	9.3	15.4	11.7	17.8	18.6	9.7	26.5	11.4
25-39	5.0	3.5	5.5	3.3	13.0	28.6	6.7	20.8	8.3
40+	0.4	0.4	0.5	0.6	3.0	6.1	1.5	5.5	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,995	8,328	5,836	1,941	2,169	7,278	141,816	11,389	180,752
Female Applicants									
Under 20	86.8	86.1	79.7	82.4	57.7	49.4	77.7	43.5	75.2
21-24	8.1	8.7	13.1	9.5	15.4	16.8	9.3	21.7	10.3
25-39	5.0	6.9	4.5	6.6	19.3	26.7	9.9	24.9	11.1
40+	0.2	0.8	0.6	1.3	7.6	7.1	3.1	9.9	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,969	8,649	5,869	1,994	4,152	8,842	186,197	10,444	228,116

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place. Abbreviations: "Bang" – Bangladeshi, "Pak" – Pakistani, "B. Car" – Black Caribbean and "B. African" – Black African.

Table A.4: Duncan index values for each ethnicity dummy variable

Ethnic origin dummy variables		
Male applicants	**Index value – recoded subject area (6 categories)**	**Index value– subject area (28 categories)**
Unknown	0.62	0.66
Pakistani	0.26	0.39
Indian	0.27	0.34
Bangladeshi	0.20	0.33
Black African	0.26	0.31
Chinese	0.18	0.26
Black Caribbean	0.09	0.18
Female applicants	**Index value –recoded subject area**	**Index value– subject area**
Unknown	0.62	0.65
Black African	0.27	0.35
Chinese	0.12	0.29
Pakistani	0.24	0.28
Indian	0.21	0.28
Bangladeshi	0.18	0.24
Black Caribbean	0.11	0.19

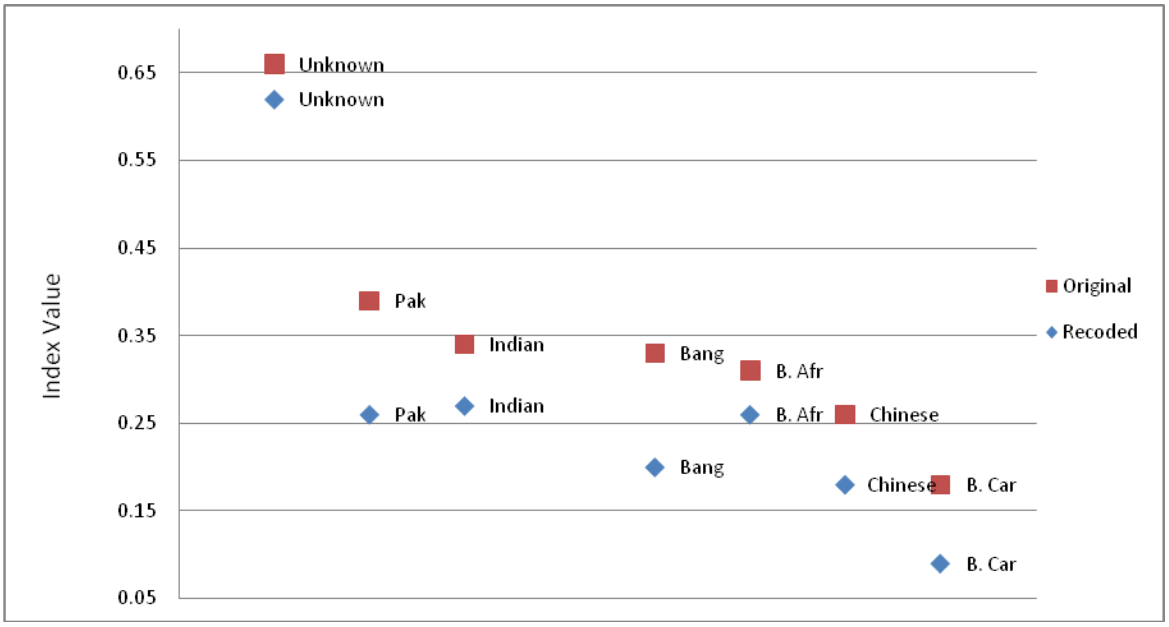
UCAS applicant data 2006. Figures rounded to 2 decimal places.

Table A.5: Duncan index values for each ethnicity dummy variable – ethnic minority groups in comparison to all other students

Ethnic origin dummy variables		
Male applicants	**Index value – recoded subject area (6 categories)**	**Index value– subject area (28 categories)**
Unknown	0.62	0.65
Pakistani	0.25	0.36
Indian	0.26	0.33
Bangladeshi	0.18	0.30
Black African	0.21	0.26
Chinese	0.18	0.25
Black Caribbean	0.06	0.15
Female applicants	**Index value –recoded subject area**	**Index value– subject area**
Unknown	0.62	0.65
Black African	0.26	0.32
Chinese	0.12	0.28
Indian	0.20	0.27
Pakistani	0.23	0.26
Bangladeshi	0.17	0.21
Black Caribbean	0.09	0.16

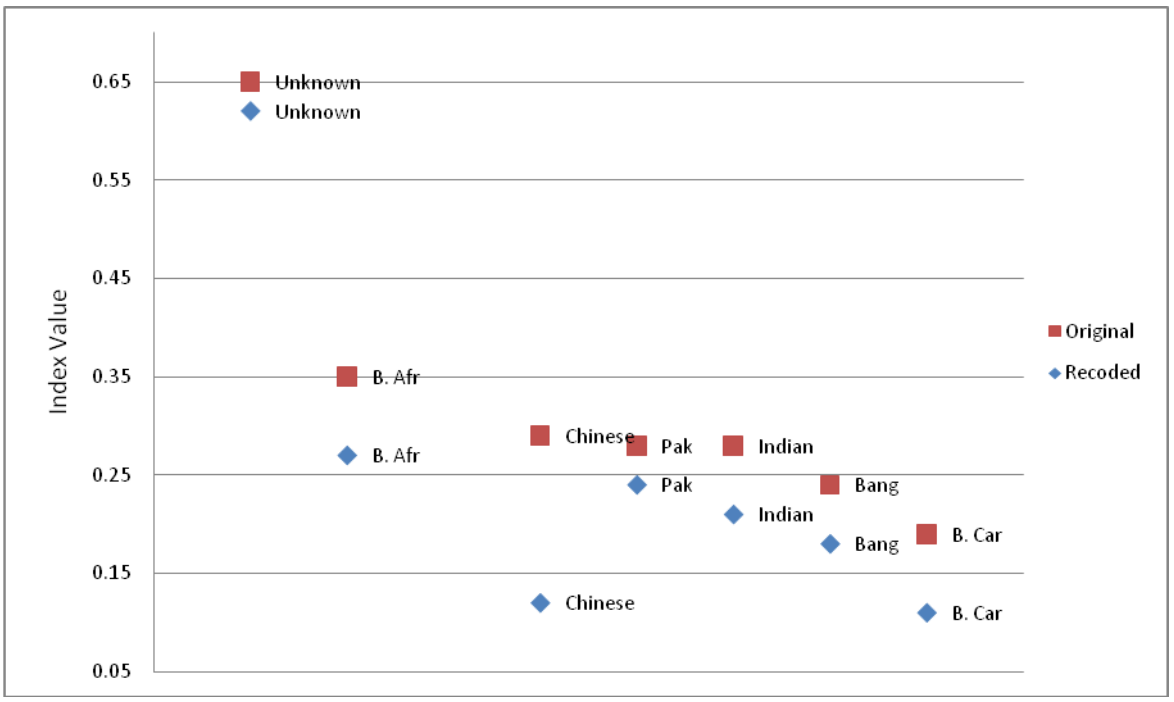
UCAS applicant data 2006. Figures rounded to 2 decimal places.

Figure A.1: Segregation index values for both original and recoded subject area variables (Male applicants)



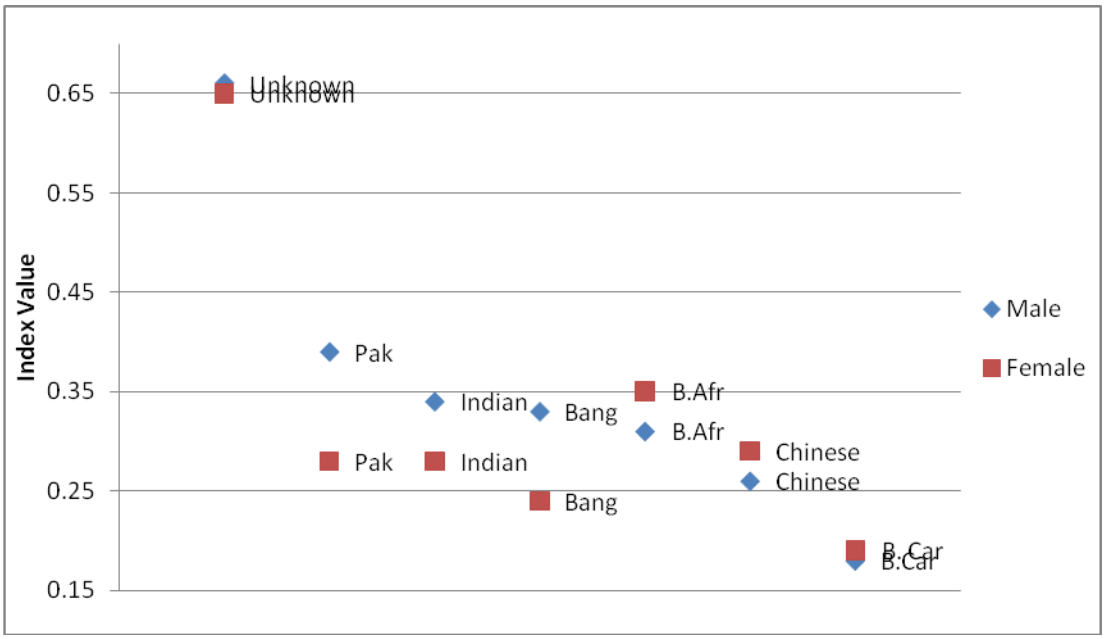
Scatter plot based on figures for male applicants presented in Table A.4.

Figure A.2: Segregation index values for both original and recoded subject area variables (Female applicants)



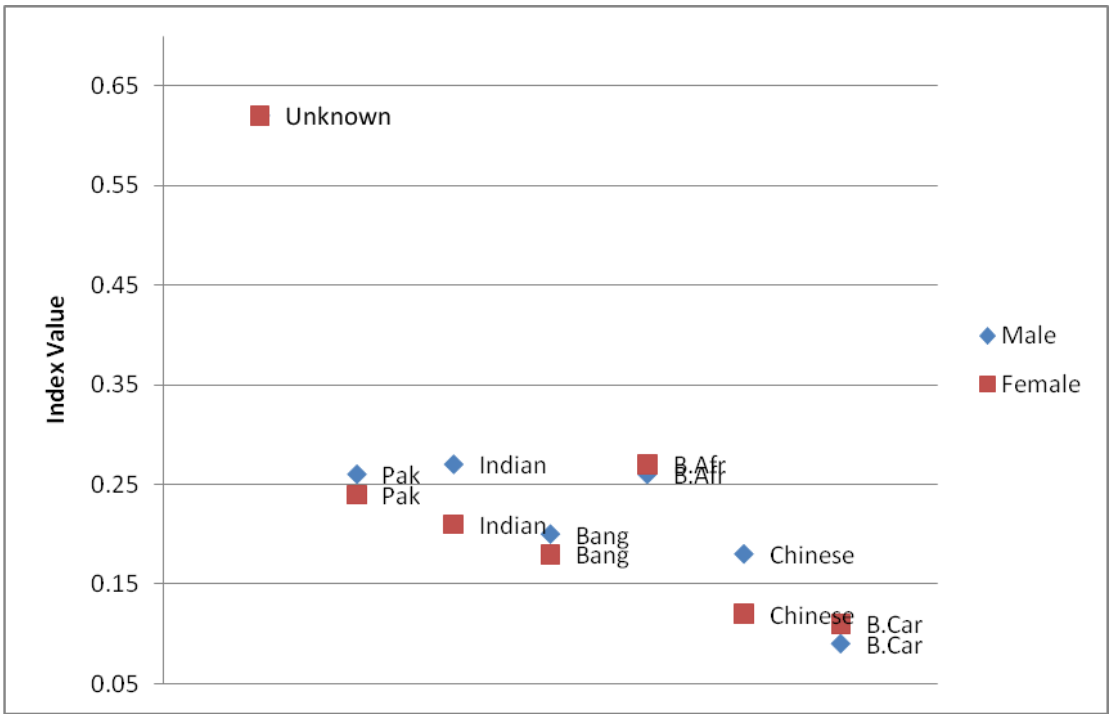
Scatter plot based on figures presented in Table A.4.

Figure A.3: Male vs. Female segregation index values (Original variable)



Scatter plot based on figures presented in Table A.4.

Figure A.4: Male vs. Female segregation index values (Recoded variable)



Scatter plot based on figures presented in Table A.4.

Table A.6: Subject area by Ethnic Group (Male applicants)

	Bang	Pak	Indian	Chinese	B. Car	B.African	White	Unknown
Professional								
Architect & Planning	2.2	2.1	3.0	3.1	2.5	2.3	3.2	0.5
Law	7.0	8.4	4.7	3.5	3.7	4.4	3.0	0.8
Engineering	5.2	5.9	5.9	12.1	4.8	10.0	6.7	1.7
Med. & Dentistry	7.5	10.7	12.8	9.6	1.7	4.1	8.4	1.4
Allied to Medicine	5.5	10.0	8.9	4.0	3.1	9.3	3.4	1.2
Arts								
Creative Arts & Design	4.5	2.1	3.2	9.1	15.3	4.7	12.0	12.8
History & Philosophy	0.9	0.6	0.7	0.8	0.8	0.4	4.6	1.3
Combined Arts	0.4	0.2	0.4	0.3	1.0	0.2	1.6	0.6
Social Sciences								
Education	0.4	0.3	0.1	0.1	0.8	0.2	1.3	0.1
Social Studies	6.7	4.0	6.6	5.4	6.1	11.0	5.6	2.0
Business & Admin	21.4	20.5	20.3	14.6	13.8	16.3	9.7	2.6
Combined Social Sci.	0.7	0.9	0.4	1.1	0.5	0.7	0.4	0.1
Sciences								
Math & Comp Sciences	16.9	13.9	13.1	16.9	10.1	10.2	8.4	2.3
Physical Sciences	1.1	1.3	1.6	1.6	1.2	0.7	5.2	1.2
Technologies	0.1	0.2	0.1	0.1	0.6	0.2	0.7	0.1
Vet Sci, Agr. & Related	0.0	0.0	0.1	0.1	0.1	0.1	0.8	0.1
Biological Sciences	2.7	1.9	2.8	4.0	9.9	3.2	7.8	1.3
Combined Sci.	0.2	0.2	0.3	0.6	0.3	0.4	0.6	0.1
Lang&Comms.								
Euro Lang, Lit. & Related	0.0	0.1	0.1	0.2	0.2	0.2	0.8	0.2
Linguistics & Classics	0.6	0.4	0.4	0.7	0.4	0.2	2.2	0.8
Mass Comms. &Docs	1.0	0.7	0.7	0.7	2.4	1.1	2.2	0.8
Non-European Lang.	0.2	0.2	0.1	0.3	0.1	0.0	0.3	0.1
General								
General/Other	0.0	0.2	0.1	0.3	0.1	0.2	0.3	0.1
Sci & Social Sci.& Arts	1.4	1.2	1.6	1.3	2.0	1.5	2.3	0.5
Social Sciences & Arts	0.7	0.4	0.6	0.5	1.2	0.6	1.5	0.6
No pref.	13.2	14.1	10.8	8.2	17.4	17.8	11.9	77.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,995	5,836	8,328	1,941	2,169	7,278	141,816	11,389

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place. Abbreviations: "Bang" – Bangladeshi, "Pak" – Pakistani, "B. Car" – Black Caribbean and "B. African" – Black African.

Table A.7: Recoded subject area by ethnic group (Male applicants)

	Bang	Pak	Indian	Chinese	B. Car	B.African	White	Unknown
Professional	27.4	37.1	35.3	32.3	15.8	30.1	19.5	5.5
Arts	5.7	2.8	4.2	10.2	17.1	5.3	18.2	4.7
Social Sci.	29.0	25.8	28.2	20.6	21.2	28.2	17.0	4.8
Sciences	20.9	17.3	18.0	24.9	22.1	14.9	23.6	5.1
Lang&Comms.	1.7	1.2	1.3	1.9	3.1	1.6	5.5	1.6
General	15.3	15.9	13.1	10.3	20.7	20.1	16.3	78.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,995	5,836	8,328	1,941	2,169	7,278	141,816	11,389

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place. Abbreviations: “Bang” – Bangladeshi, “Pak” – Pakistani, “B. Car” – Black Caribbean and “B. African” – Black African.

Table A.8: Subject area by Ethnic Group (Female applicants)

	Bang	Pak	Indian	Chinese	B. Car	B. African	White	Unknown
Professional								
Architect & Planning	0.4	0.5	0.9	2.8	0.5	0.7	0.8	0.3
Law	10.5	11.5	9.0	6.1	6.0	6.7	3.9	1.4
Engineering	0.5	0.3	0.4	2.2	0.3	1.1	0.5	0.3
Med. & Dentistry	4.8	10.6	11.9	10.4	1.8	5.3	3.2	1.6
Allied to Medicine	12.1	12.1	14.6	9.8	10.2	20.6	12.6	3.9
Arts								
Arts & Design	4.2	3.4	5.2	12.2	14.0	4.3	14.7	3.9
Hist. & Philosophy	1.4	0.8	1.0	1.0	0.9	0.5	3.4	0.9
Combined Arts	0.8	0.7	1.0	1.0	1.9	0.7	2.8	0.8
Social Sciences								
Education	6.2	6.6	3.5	0.8	3.8	1.3	6.7	0.8
Social Studies	10.5	7.9	7.3	4.2	15.8	20.3	8.0	2.7
Business & Admin	15.4	12.6	15.9	18.8	11.3	12.9	7.0	2.2
Combined Soc.Sci.	0.8	1.0	0.9	0.6	0.5	0.7	0.5	0.1
Sciences								
Math & Comp Sci.	4.7	3.7	4.3	5.5	1.7	2.3	1.5	0.6
Physical Sciences	0.9	0.9	1.2	1.8	0.8	0.4	2.5	0.5
Technologies	0.1	0.0	0.1	0.4	0.2	0.1	0.1	0.0
Vet. Sci/Agriculture	0.1	0.0	0.2	0.3	0.2	0.1	1.4	0.2
Biological Sciences	7.9	5.6	7.0	6.1	8.2	4.5	8.3	1.8
Combined Sci.	0.1	0.2	0.3	0.6	0.2	0.2	0.5	0.1
Lang.&Comms.								
Euro Langs & Lit.	0.2	0.1	0.2	0.4	0.5	0.2	1.5	0.4
Ling,Classics	3.3	1.9	2.1	1.7	1.4	0.7	3.9	1.1
MassComms&Docs	1.5	1.0	1.5	1.6	3.6	1.8	2.0	0.5
Non-European Lang	0.1	0.4	0.1	0.3	0.1	0.1	0.3	0.1
General								
General/Other	0.4	0.4	0.1	0.3	0.1	0.1	0.3	0.1
Sci & SocSci.&Arts	1.6	2.0	1.7	1.8	1.8	1.4	2.1	0.4
SocSci & Arts	1.0	0.9	1.2	1.3	1.4	1.0	1.5	0.6
No pref.	10.9	11.3	8.6	8.5	13.0	12.0	10.0	74.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,969	5,869	8,649	1,994	4,152	8,842	186,197	10,444

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal place. Abbreviations: "Bang" – Bangladeshi, "Pak" – Pakistani, "B. Car" – Black Caribbean and "B. African" – Black African.

Table A.9: Recoded Subject area by Ethnic Group (Female applicants)

	Bang	Pak	Indian	Chinese	B. Carib	B.African	White	Unknown
Professional	28.2	38.6	36.8	31.2	18.7	34.4	21.0	7.5
Arts	6.5	4.9	7.2	14.1	16.8	5.6	20.8	5.6
Social Sciences	32.9	28.2	27.5	24.4	31.3	35.1	22.4	5.8
Sciences	13.6	10.4	13.0	14.5	11.2	7.6	14.2	3.3
Lang&Comms.	5.0	3.3	3.9	3.9	5.6	2.8	7.6	2.1
General	13.8	14.6	11.6	11.8	16.3	14.5	13.9	75.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	1,969	5,869	8,649	1,994	4,152	8,842	186,197	10,444

UCAS applicant data 2006. Figures presented as column percentages and rounded to 1 decimal point. Abbreviations: "Bang" – Bangladeshi, "Pak" – Pakistani, "B. Car" – Black Caribbean and "B. African" – Black African.

Table A.10: Multinomial Logistic regression model results (Model 1, Male applicants)

	Arts	Social Sciences	Sciences	Languages & Communications	General
Ethnic Origin					
Bangladeshi	**0.22 (14.5)**	**1.21 (3.2)**	**0.63 (7.1)**	**0.21 (8.6)**	**0.67 (5.6)**
Chinese	**0.33 (13.3)**	**0.73 (4.9)**	**0.64 (7.4)**	**0.20 (9.3)**	**0.38 (11.8)**
Indian	**0.13 (36.0)**	**0.91 (3.1)**	**0.42 (26.5)**	**0.13 (20.6)**	**0.45 (22.2)**
Pakistani	**0.08 (30.8)**	**0.80 (6.6)**	**0.39 (24.5)**	**0.12 (17.7)**	**0.51 (16.6)**
B.African	**0.19 (29.8)**	**1.07 (2.2)**	**0.41 (23.6)**	**0.18 (17.4)**	**0.80 (6.4)**
B.Caribbean	**1.16 (2.0)**	**1.54 (6.0)**	**1.16 (2.1)**	**0.71 (2.6)**	**1.57 (6.2)**
UnknownEth	0.91 (1.5)	1.01 (0.1)	**0.77 (4.6)**	1.01 (0.1)	**16.94 (67.0)**
n	180,752	180,752	180,752	180,752	180,752

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Abbreviations: "B. Caribbean" – Black Caribbean, "B. African" – Black African and "UnknownEth" – Unknown Ethnicity.

Table A.11: Multinomial Logistic regression model results (Model 1, raw betas, Male applicants)

	Arts	Social Sciences	Sciences	Languages & Communications	General
Ethnic Origin					
Bangladeshi	**-1.50(14.5)**	**0.19 (3.2)**	**-0.47 (7.1)**	**-1.54 (8.6)**	**-0.40 (5.6)**
Chinese	**-1.09 (13.3)**	**-0.32(4.9)**	**-0.45 (7.4)**	**-1.59 (9.3)**	**-0.97 (11.8)**
Indian	**-2.05 (36.0)**	**-0.09(3.1)**	**-0.87 (26.5)**	**-2.05 (20.6)**	**-0.81 (22.2)**
Pakistani	**-2.52 (30.8)**	**-0.23 (6.6)**	**-0.95 (24.5)**	**-2.14 (17.7)**	**-0.67 (16.6)**
B.African	**-1.67 (29.8)**	**0.07 (2.2)**	**-0.90 (23.6)**	**-1.70 (17.4)**	**-0.23 (6.4)**
B.Caribbean	**0.15 (2.0)**	**0.43 (6.0)**	**0.14 (2.1)**	**-0.35 (2.6)**	**0.45 (6.2)**
UnknownEth	-0.09 (1.5)	-0.01 (0.1)	**-0.27 (4.6)**	0.01 (0.1)	**2.83 (67.0)**
Constant	-0.07(8.1)	**-0.13(15.3)**	**0.19(23.8)**	**-1.27(-98.7)**	**-0.18(20.0)**
n	180,752	180,752	180,752	180,752	180,752

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model Log Likelihood statistics: -296459.84

Table A.12: Multinomial Logistic regression model results (Model 2, Male applicants)

	Arts	Social Sciences	Sciences	Languages & Communications	General
Ethnic Origin					
Bangladeshi	**0.19 (15.8)**	1.11 (1.7)	**0.55 (9.1)**	**0.20 (8.9)**	**0.53 (8.8)**
Chinese	**0.31 (14.2)**	**0.69(5.8)**	**0.58 (8.8)**	**0.19 (9.6)**	**0.34 (13.0)**
Indian	**0.12(37.1)**	**0.87 (4.9)**	**0.38 (29.1)**	**0.12 (21.2)**	**0.41 (24.1)**
Pakistani	**0.07 (32.0)**	**0.76 (7.8)**	**0.35 (26.3)**	**0.12 (17.8)**	**0.42 (21.0)**
B. African	**0.20 (28.5)**	**1.20 (5.5)**	**0.51 (17.4)**	**0.24 (14.7)**	**0.67 (11.0)**
B. Caribbean	1.15 (1.8)	**1.58 (6.4)**	**1.23 (2.9)**	**0.76 (2.0)**	**1.39 (4.5)**
Unknown Eth	**0.87 (2.2)**	1.05 (0.9)	**0.85 (2.7)**	**1.22 (2.2)**	**12.29 (57.7)**
SEG					
Lower Managerial	**1.34 (11.8)**	**1.36 (12.8)**	**1.24 (9.6)**	**1.39 (9.0)**	**1.45 (14.3)**
Intermediate	**1.32 (9.1)**	**1.27 (8.0)**	**1.35 (10.9)**	**1.32 (6.1)**	**1.39 (10.4)**
Small Employers	**1.41 (9.1)**	**1.22 (5.5)**	**1.35 (8.8)**	**1.18 (2.8)**	**1.51 (10.7)**
Lower Supervisory	**1.17 (3.5)**	1.01 (0.1)	**1.31 (6.9)**	1.02 (0.3)	**1.34 (6.5)**
Semi-Routine	**1.46 (11.7)**	**1.40 (11.1)**	**1.50 (14.1)**	**1.37 (6.5)**	**1.57 (13.8)**
Routine	**1.63 (11.4)**	**1.45 (9.2)**	**1.76 (14.9)**	**1.45 (5.6)**	**1.75 (13.2)**
Unknown SEG	**1.64 (18.6)**	**1.42 (13.7)**	**1.52 (17.1)**	**1.30 (6.2)**	**2.39 (33.3)**
Age					
21-24	**0.92 (3.1)**	**0.66 (15.5)**	**0.60 (19.7)**	**0.59 (11.5)**	**1.28 (10.4)**
25-30	**0.54 (19.9)**	**0.54 (21.6)**	**0.37 (33.1)**	**0.34 (18.5)**	**0.83 (7.0)**
40+	**0.85 (2.8)**	**0.80 (4.0)**	**0.34 (15.7)**	**0.44 (7.0)**	1.00 (0.0)
n	**180,752**	**180,752**	**180,752**	**180,752**	180,752

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Abbreviations: "B. Car" – Black Caribbean, "B. African" – Black African, "UnknownEth" – Unknown Ethnicity and "Unknown SEG" – Unknown Socio-economic group.

Table A.13: Multinomial Logistic regression model results (Model 2, raw betas, Male applicants)

	Arts	Social Sciences	Sciences	Languages & Communications	General
Ethnic Origin					
Bangladeshi	**-1.64 (15.8)**	0.11 (1.7)	**-0.60 (9.1)**	**-1.60 (8.9)**	**-0.64 (8.8)**
Chinese	**-1.17 (14.2)**	**-0.38 (5.8)**	**-0.54 (8.8)**	**-1.65 (9.6)**	**-1.07 (13.0)**
Indian	**-2.12 (37.1)**	**-0.14 (4.9)**	**-0.96 (29.1)**	**-2.11 (21.2)**	**-0.89 (24.1)**
Pakistani	**-1.62 (32.0)**	**-0.27 (7.8)**	**-1.04 (26.3)**	**-2.16 (17.8)**	**-0.86 (21.0)**
B. African	**0.14 (28.5)**	**0.18 (5.5)**	**-0.68 (17.4)**	**-1.44 (14.7)**	**-0.40 (11.0)**
B. Caribbean	-0.14 (1.8)	**0.46 (6.4)**	**0.21 (2.9)**	**-0.27 (2.0)**	**0.33 (4.5)**
Unknown Eth	**-0.14 (2.2)**	0.05 (0.9)	**-0.16 (2.7)**	**0.20 (2.2)**	**2.51 (57.7)**
SEG					
Lower Managerial	**0.29 (11.8)**	**0.30 (12.8)**	**0.22 (9.6)**	**0.33 (9.0)**	**0.37 (14.3)**
Intermediate	**0.28 (9.1)**	**0.24 (8.0)**	**0.30 (10.9)**	**0.28 (6.1)**	**0.33 (10.4)**
Small Employers	**0.34 (9.1)**	**0.20 (5.5)**	**0.30 (8.8)**	**0.16 (2.8)**	**0.41 (10.7)**
Lower Supervisory	**0.16 (3.5)**	-0.00 (0.1)	**0.27 (6.9)**	0.02 (0.3)	**0.29 (6.5)**
Semi-Routine	**0.38 (11.7)**	**0.34 (11.1)**	**0.41 (14.1)**	**1.37 (6.5)**	**0.45 (13.8)**
Routine	**0.49 (11.4)**	**0.37 (9.2)**	**0.57 (14.9)**	**0.32 (5.6)**	**0.56 (13.2)**
Unknown SEG	**0.50 (18.6)**	**0.35 (13.7)**	**0.42 (17.1)**	**1.30 (6.2)**	**0.87 (33.3)**
Age					
21-24	**-0.08 (3.1)**	**-0.41 (15.5)**	**-0.51 (19.7)**	**-0.53 (11.5)**	**0.25 (10.4)**
25-30	**-0.62 (19.9)**	**-0.62 (21.6)**	**-1.00 (33.1)**	**-1.09 (18.5)**	**-0.19 (7.0)**
40+	**-0.17 (2.8)**	**-0.22 (4.0)**	**-1.09 (15.7)**	**-0.82 (7.0)**	0.00 (0.0)
Constant	**-0.29(15.7)**	**-0.27(15.1)**	**-0.06(3.6)**	**-1.36(49.3)**	-0.61(30.8)
n	**180, 752**	**180, 752**	**180, 752**	**180, 752**	**180, 752**

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistics: -293966.21. Abbreviations: "B. Caribbean" – Black Caribbean, "B. African" – Black African, "UnknownEth" – Unknown Ethnicity and "Unknown SEG" – Unknown Socio-economic group.

Table A.14: Multinomial Logistic regression model results (Model 1, Female applicants)

	Arts	SocSci	Sciences	Lang&Comms	General
Ethnic Origin					
Bangladeshi	**0.23 (14.9)**	1.09 (1.4)	**0.71 (4.6)**	**0.49 (6.5)**	**0.74 (4.1)**
Chinese	**0.46 (10.9)**	**0.73 (5.2)**	**0.68 (5.3)**	**0.35 (8.8)**	**0.57 (7.3)**
Indian	**0.20 (36.6)**	**0.70 (12.8)**	**0.52 (18.5)**	**0.29 (21.2)**	**0.47 (20.1)**
Pakistani	**0.13 (32.7)**	**0.68 (11.6)**	**0.40 (20.0)**	**0.24 (19.1)**	**0.57 (13.9)**
B. African	**0.16 (37.0)**	0.95 (1.8)	**0.33 (25.9)**	**0.23 (22.3)**	**0.63 (13.4)**
B. Caribbean	0.91 (1.9)	**1.56 (9.7)**	**0.88 (2.1)**	**0.82 (2.6)**	**1.31 (5.1)**
Unknown Eth	**0.74 (5.4)**	**0.72 (6.1)**	**0.64 (6.8)**	**0.78 (3.3)**	**15.11 (71.0)**
n	**228, 116**	**228, 116**	**228, 116**	**228, 116**	**228, 116**

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Abbreviations: "B. Caribbean" – Black Caribbean, "B. African" – Black African, "UnknownEth" – Unknown Ethnicity and "Unknown SEG" – Unknown Socio-economic group.

Table A.15: Multinomial Logistic regression model results (Model 1, raw betas, Female applicants)

	Arts	SocSci	Sciences	Lang&Comms	General
Ethnic Origin					
Bangladeshi	**−1.47 (14.9)**	0.08 (1.4)	**−0.34 (4.6)**	**−0.71 (6.5)**	**−0.31(4.1)**
Chinese	**−0.79 (10.9)**	**−0.32 (5.2)**	**−0.38 (5.3)**	**−1.06 (8.8)**	**−0.56 (7.3)**
Indian	**−1.62 (36.6)**	**−0.36 (12.8)**	**−0.66 (18.5)**	**−1.24 (21.2)**	**−0.75 (20.1)**
Pakistani	**−2.05 (32.7)**	**−0.38 (11.6)**	**−0.93 (20.0)**	**−1.44 (19.1)**	**−0.57 (13.9)**
B. African	**−1.82 (37.0)**	−0.05 (1.8)	**−1.12 (25.9)**	**−1.48 (22.3)**	**−0.46 (13.4)**
B. Caribbean	−0.10 (1.9)	**0.45 (9.7)**	**−0.13 (2.1)**	**−0.20 (2.6)**	**0.27 (5.1)**
Unknown Eth	**−0.30 (5.4)**	**−0.33 (6.1)**	**−0.44 (6.8)**	**−0.25 (3.3)**	**2.72 (71.0)**
Constant	−0.01(1.0)	**−0.07(9.6)**	**−0.39(48.6)**	**−1.01(103.4)**	**−0.41(51.0)**
n	**228, 116**	**228, 116**	**228, 116**	**228, 116**	**228, 116**

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Abbreviations: "B. Caribbean" – Black Caribbean, "B. African" – Black African, "UnknownEth" – Unknown Ethnicity and "Unknown SEG" – Unknown Socio-economic group.

Table A.16: Multinomial Logistic regression model results (Model 2, Female applicants)

	Arts	SocSci	Sciences	Lang	General
Ethnic Origin					
Bangladeshi	**0.19 (16.6)**	0.93 (1.3)	**0.60 (6.7)**	**0.45 (7.3)**	**0.60 (6.8)**
Chinese	**0.42 (11.9)**	**0.68 (6.3)**	**0.63 (6.5)**	**0.33 (9.3)**	**0.53 (8.2)**
Indian	**0.17 (39.4)**	**0.64 (15.6)**	**0.45 (22.2)**	**0.25 (23.4)**	**0.43 (22.5)**
Pakistani	**0.11 (34.4)**	**0.61 (14.6)**	**0.36 (22.0)**	**0.22 (19.7)**	**0.49 (17.5)**
B. African	**0.20 (32.4)**	0.99 (0.2)	**0.42 (19.5)**	**0.33 (16.7)**	**0.62 (13.6)**
B. Caribbean	1.07 (1.3)	**1.61 (10.4)**	1.10 (1.5)	1.10 (1.3)	**1.31 (5.1)**
Unknown Eth	0.91 (1.7)	**0.74 (5.5)**	0.88 (1.95)	**1.24 (2.8)**	**13.39 (65.8)**
SEG					
Lower Managerial	**1.28 (11.4)**	**1.45 (16.8)**	**1.15 (5.8)**	**1.17 (5.6)**	**1.39 (13.1)**
Intermediate	**1.08 (2.8)**	**1.37 (12.4)**	**1.06 (2.1)**	0.98 (0.6)	**1.28 (8.3)**
Small Employers	**1.21(5.9)**	**1.71 (17.0)**	**1.16 (4.3)**	0.98 (0.6)	**1.49 (10.8)**
Lower Supervisory	**1.14 (3.2)**	**1.61 (12.4)**	**1.16 (3.4)**	**0.79 (4.3)**	**1.35 (6.7)**
Semi Routine	**1.11 (3.8)**	**1.64 (19.6)**	**1.11 (3.7)**	**0.88 (3.4)**	**1.32 (9.20)**
Routine	**1.41 (9.4)**	**1.85 (17.9)**	**1.28 (6.4)**	1.07 (1.3)	**1.62 (12.1)**
Unknown SEG	**1.39 (14.1)**	**1.65 (22.4)**	**1.18 (6.6)**	0.96 (1.5)	**1.99 (27.2)**
Age					
21-24	**0.53 (27.2)**	**0.74 (14.3)**	**0.41 (31.6)**	**0.32 (28.6)**	**0.85 (7.5)**
25-39	**0.24 (55.3)**	**0.63 (24.0)**	**0.25 (47.7)**	**0.13 (41.0)**	**0.57 (25.4)**
40+	**0.46 (19.8)**	**0.82 (6.2)**	**0.23 (25.7)**	**0.19 (20.3)**	**0.80 (6.6)**

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Abbreviations: "B. Caribbean" – Black Caribbean, "B. African" – Black African, "UnknownEth" – Unknown Ethnicity and "Unknown SEG" – Unknown Socio-economic group.

Table A.17: Multinomial Logistic regression model results (Model 2, raw betas, Female applicants)

	Arts	SocSci	Sciences	Lang	General
Ethnic Origin					
Bangladeshi	**-1.65 (16.6)**	-0.07 (1.3)	**-0.51 (6.7)**	**-0.81 (7.3)**	**-0.51 (6.8)**
Chinese	**-0.86 (11.9)**	**-0.39 (6.3)**	**-0.47 (6.5)**	**-1.12 (9.3)**	**-0.64 (8.2)**
Indian	**-1.76 (39.4)**	**-0.44 (15.6)**	**-0.80 (22.2)**	**-1.37 (23.4)**	**-0.84 (22.5)**
Pakistani	**-2.17 (34.4)**	**-0.49 (14.6)**	**-1.03 (22.0)**	**-1.50 (19.7)**	**-0.73 (17.5)**
B. African	**-1.61 (32.4)**	-0.01 (0.2)	**-0.86 (19.5)**	**-1.12 (16.7)**	**-0.47 (13.6)**
B. Caribbean	0.71 (1.3)	**0.48 (10.4)**	0.09 (1.5)	0.10 (1.3)	**0.27 (5.1)**
Unknown Eth	-0.10 (1.7)	**-0.31 (5.5)**	-0.13 (1.95)	**0.22 (2.8)**	**2.59 (65.8)**
SEG					
Lower Managerial	**0.25 (11.4)**	**0.37(16.8)**	**0.14 (5.8)**	**0.16 (5.6)**	**0.33 (13.1)**
Intermediate	**0.72 (2.8)**	**0.32 (12.4)**	**0.06 (2.1)**	-0.02 (0.6)	**0.24 (8.3)**
Small Employers	**0.19 (5.9)**	**0.53 (17.0)**	**0.15 (4.3)**	-0.02 (0.6)	**0.40 (10.8)**
Lower Supervisory	**0.13 (3.2)**	**0.47 (12.4)**	**0.14 (3.4)**	**-0.23 (4.3)**	**0.30 (6.7)**
Semi Routine	**0.10 (3.8)**	**-0.32 (19.6)**	**0.11 (3.7)**	**-0.13 (3.4)**	**0.27 (9.20)**
Routine	**0.34 (9.4)**	**0.53 (17.9)**	**0.25 (6.4)**	0.07 (1.3)	**0.48 (12.1)**
Unknown SEG	**0.33 (14.1)**	**0.47 (22.4)**	**0.17 (6.6)**	-0.05 (1.5)	**0.69 (27.2)**
Age					
21-24	**-0.64 (27.2)**	**-0.30 (14.3)**	**-0.88 (31.6)**	**-1.14 (28.6)**	**-0.17 (7.5)**
25-39	**-1.43 (55.3)**	**-0.46 (24.0)**	**-1.37 (47.7)**	**-2.07 (41.0)**	**-0.56 (25.4)**
40+	**-0.77 (19.8)**	**-0.20 (6.2)**	**-1.46 (25.7)**	**-1.66 (20.3)**	**-0.24 (6.6)**
Constant	**0.04(2.6)**	**-0.20(11.7)**	**-0.24(3.6)**	**-0.73 (34.3)**	**-0.66(30.8)**
n	**228,116**	**228,116**	**228,116**	**228,116**	**228,116**

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistics: -376285.12.

Table A.18: Multinomial Logistic regression model results (Interaction terms, Male applicants)

	Arts	SocSci	Sci	Lang&comms	General
ETHNIC ORIGIN					
Bangladeshi	**0.14 (3.3)**	0.50 (2.0)	**0.31 (3.1)**	0.29 (1.7)	**0.39 (2.3)**
Chinese	**0.13 (6.7)**	**0.40 (4.8)**	**0.47 (4.7)**	**0.03 (3.4)**	**0.30 (5.1)**
Indian	**0.06 (14.2)**	**0.55 (7.7)**	**0.23 (15.6)**	**0.13 (8.9)**	**0.28 (11.7)**
Pakistani	**0.03 (8.2)**	**0.45 (6.1)**	**0.15 (10.6)**	**0.10 (5.4)**	**0.33 (7.0)**
Black African	**0.23 (7.1)**	0.85 (1.3)	**0.46 (5.7)**	**0.18 (4.5)**	**0.72 (2.4)**
Black Caribbean	0.86 (0.5)	1.49 (1.6)	1.19 (0.7)	1.06 (0.1)	1.20 (0.7)
Unknown Eth	1.07 (0.5)	0.85 (1.1)	0.86 (1.1)	1.17 (0.8)	**2.14 (6.5)**
SEG					
Lower Managerial	**1.29 (9.9)**	**1.29 (9.8)**	**1.19 (7.3)**	**1.35 (8.1)**	**1.38 (11.7)**
Intermediate	**1.27 (7.3)**	**1.18 (5.0)**	**1.31 (9.0)**	**1.27 (5.0)**	**1.31 (7.9)**
Small Employers	**1.30 (6.5)**	1.08 (1.8)	**1.25 (5.8)**	1.10 (1.5)	**1.38 (7.6)**
Lower Supervisory	**1.11 (2.2)**	0.94 (1.4)	**1.23 (5.0)**	0.97 (0.4)	**1.23 (4.4)**
Semi-Routine	**1.38 (9.3)**	**1.29 (7.2)**	**1.42 (10.7)**	**1.29 (4.9)**	**1.45 (10.3)**
Routine	**1.61 (10.2)**	**1.38 (6.7)**	**1.67 (11.8)**	**1.37 (4.5)**	**1.66 (10.6)**
Unknown SEG	**1.55 (15.5)**	**1.30 (8.5)**	**1.40 (12.5)**	**1.28 (5.7)**	**1.77 (19.5)**
AGE					
21-24	**0.92 (3.0)**	**0.66 (15.3)**	**0.60 (19.4)**	**0.59 (11.3)**	**1.29 (10.4)**
25-30	**0.54 (19.6)**	**0.54 (21.3)**	**0.37 (32.7)**	**0.34 (18.4)**	**0.83 (7.0)**
40+	**0.86 (2.6)**	**0.81 (3.8)**	**0.34 (15.5)**	**0.45 (6.9)**	0.99 (0.3)
ETHNIC ORIGIN*SEG					
Bang X Lower Managerial	1.14 (0.2)	2.10 (1.8)	1.99 (1.6)	0.62 (0.5)	1.19 (0.4)
Bang X Intermediate	0.00 (0.0)	1.71 (1.1)	1.21 (0.4)	0.57 (0.5)	0.80 (0.4)
Bang X Small Employers	2.32 (1.3)	1.90 (1.6)	1.72 (1.2)	0.62 (0.5)	1.14 (0.3)
Bang X Lower Supervisory	0.00 (0.0)	2.18 (1.0)	1.48 (0.5)	0.00 (0.0)	0.68 (0.3)
Bang X Semi-Routine	1.52 (0.6)	**2.24 (2.1)**	2.10 (1.7)	0.72 (0.4)	1.53 (0.9)
Bang X Routine	0.68 (0.5)	1.77 (1.4)	1.18 (0.4)	1.17 (0.2)	0.92 (0.2)
Bang X Unknown SEG	1.59 (0.7)	**2.78 (2.8)**	2.05 (1.8)	0.60 (0.7)	1.86 (1.4)
Chinese X Lower Managerial	**2.32 (2.2)**	1.60 (1.9)	1.18 (0.7)	5.00 (1.5)	1.16 (0.5)
Chinese X Intermediate	1.16 (0.3)	**2.18 (2.8)**	0.85 (0.6)	1.63 (0.3)	0.87 (0.4)
Chinese X Small Employers	**3.03 (2.8)**	**1.95 (2.4)**	1.41 (1.4)	8.14 (1.9)	0.89 (0.3)
Chinese X Lower Supervisory	10.14 (1.6)	7.24 (1.6)	5.31 (1.4)	0.00 (0.0)	9.35 (1.8)
Chinese X Semi-Routine	**3.04 (3.1)**	**1.93 (2.8)**	1.38 (1.6)	6.89 (1.8)	1.11 (0.4)
Chinese X Routine	**6.39 (3.5)**	**3.56 (3.0)**	1.94 (1.6)	0.00 (0.0)	1.59 (0.8)
Chinese X Unknown SEG	**3.00 (3.1)**	**1.83 (2.6)**	1.51 (1.9)	**9.65 (2.2)**	1.57 (1.6)
Indian X Lower Managerial	**2.20 (3.2)**	**1.62 (4.7)**	**1.78 (4.7)**	1.14 (0.4)	**1.69 (3.8)**
Indian X Intermediate	**2.49 (3.5)**	**1.53 (3.6)**	**1.49 (2.9)**	0.71 (0.9)	**1.61 (3.1)**
Indian X Small Employers	**2.86 (3.8)**	**1.97(5.2)**	**1.65 (3.2)**	0.90 (0.2)	**1.54 (2.5)**
Indian X Lower Supervisory	**3.43 (3.7)**	**1.64(2.8)**	**2.22 (4.3)**	0.30 (1.2)	**1.60 (2.2)**
Indian X Semi-Routine	**2.43 (3.5)**	**1.83 (5.4)**	**1.65 (3.8)**	1.00 (0.0)	**1.49 (2.8)**
Indian X Routine	1.17 (0.5)	**1.71 (3.9)**	**2.13 (5.1)**	1.08 (0.2)	**1.44 (2.1)**
Indian X Unknown SEG	**2.45 (3.9)**	**1.75 (5.8)**	**1.90 (5.7)**	0.81 (0.6)	**1.65 (3.9)**
Pakistani X Lower Managerial	**2.52 (2.0)**	**1.52 (2.6)**	**1.99 (3.2)**	1.02 (0.0)	1.41 (1.8)
Pakistani X Intermediate	**3.36 (2.4)**	**1.75 (2.9)**	1.64 (1.9)	0.97 (0.0)	1.33 (1.2)
Pakistani X Small Employers	2.29 (1.8)	**2.17 (4.8)**	**3.03 (5.3)**	1.94 (1.2)	1.24 (1.1)
Pakistani X Lower Supervisory	**4.42 (2.6)**	**1.88 (2.5)**	**3.05 (3.9)**	0.00 (0.0)	1.46 (1.2)
Pakistani X Semi Routine	1.86 (1.3)	**1.65 (2.9)**	**2.66 (4.5)**	1.25 (0.4)	1.35 (1.5)
Pakistani X Routine	1.39 (0.6)	1.34 (1.6)	**2.40 (3.9)**	2.32 (1.5)	1.12 (0.5)
Pakistani X Unknowns SEG	2.23 (1.9)	**1.96 (4.7)**	**2.84 (5.4)**	1.22 (0.4)	**1.56 (2.6)**
B. Caribbean X Lower Managerial	1.18 (0.5)	0.93 (0.3)	0.97 (0.1)	0.54 (1.3)	1.12 (0.4)
B. Caribbean X Intermediate	1.42 (1.0)	1.29 (0.8)	0.96 (0.1)	0.69 (0.7)	1.06 (0.2)
B. Caribbean X Small Employers	1.97 (1.1)	2.08 (1.3)	**2.91 (2.1)**	2.74 (1.3)	**3.07 (2.1)**
B. Caribbean X Lower Supervisory	1.84 (1.1)	0.90 (0.2)	1.39 (0.7)	0.99 (0.0)	0.87 (0.2)
B. Caribbean X Semi routine	1.50 (1.2)	1.20 (0.6)	1.12 (0.4)	1.32 (0.6)	1.20 (0.5)
B. Caribbean X Routine	1.75 (1.0)	1.78 (1.1)	1.91 (1.2)	0.56 (0.5)	2.72 (1.9)
B. Caribbean X Unknown SEG	1.39 (1.1)	0.99 (0.0)	0.93 (0.3)	0.48 (1.5)	1.21 (0.6)
B. African X Lower Managerial	0.93 (0.3)	1.26 (1.6)	1.01 (0.1)	1.14 (0.3)	0.83 (1.2)
B. African X Intermediate	0.97 (0.1)	**1.85 (3.6)**	1.05 (0.3)	2.06 (1.5)	1.28 (1.3)
B. African X Small Employers	1.47 (0.9)	**1.81 (2.0)**	1.60 (1.4)	0.94 (0.1)	1.29 (0.8)
B. African X Lower Supervisory	0.00 (0.0)	1.02 (0.1)	0.58 (1.2)	1.16 (0.1)	0.75 (0.8)
B. African X Semi-Routine	0.75 (1.2)	**1.47 (2.5)**	1.17 (0.9)	1.42 (0.8)	1.02 (0.1)
B. African X Routine	0.78 (0.7)	**1.60 (2.4)**	1.01 (0.1)	2.19 (1.4)	0.74 (1.3)
B. African X Unknown SEG	0.70 (1.9)	**1.50 (3.1)**	1.21 (1.3)	1.30 (0.6)	1.08 (0.5)
Unknown Eth X Lower Managerial	0.95 (0.3)	1.31 (1.4)	1.13 (0.7)	0.99 (0.1)	0.88 (0.7)
Unknown Eth X Intermediate	1.21 (0.7)	1.09 (0.3)	1.15 (0.6)	1.78 (1.9)	0.71 (1.5)
Unknown Eth X Small Employers	0.94 (0.2)	1.53 (1.3)	0.76 (0.8)	0.90 (0.2)	1.65 (1.9)
Unknown Eth X LowerSupervisory	1.83 (1.3)	1.57 (0.8)	0.90 (0.2)	**5.10 (3.2)**	1.48 (0.9)
Unknown Eth X Semi Routine	0.72 (1.2)	1.25 (0.9)	0.90 (0.4)	1.26 (0.7)	0.70 (1.5)
Unknown Eth X Routine	**0.41 (2.2)**	0.49 (1.6)	0.85 (0.5)	0.77 (0.5)	0.64 (1.5)
Unknown Eth X Unknown SEG	0.77 (1.6)	**1.40 (2.0)**	0.93 (0.5)	**0.59 (2.0)**	**15.21(20.0)**
n	180,752	180,752	180,752	180,752	180,752

Exp (β) rounded to 2 decimal points & corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold.

Table A.19: Multinomial Logistic regression model results (Interaction terms, raw betas, Male applicants)

	Arts	SocSci	Sci	Lang&comms	General
ETHNIC ORIGIN					
Bangladeshi	**−1.96 (3.3)**	−0.69 (2.0)	**−1.17 (3.1)**	−1.24 (1.7)	**−0.95 (2.3)**
Chinese	**−2.07 (6.7)**	**−0.92 (4.8)**	**−0.77 (4.7)**	**−3.37 (3.4)**	**−1.21 (5.1)**
Indian	**−2.86 (14.2)**	**−0.59 (7.7)**	**−1.45 (15.6)**	**−2.03 (8.9)**	**−1.26(11.7)**
Pakistani	**−3.38 (8.2)**	**−0.80 (6.1)**	**−1.92 (10.6)**	**−2.44 (5.4)**	**−1.11 (7.0)**
Black African	**−1.37 (7.1)**	−0.16 (1.3)	**−0.79 (5.7)**	**−1.73 (4.5)**	**−0.33 (2.4)**
Black Caribbean	−0.16 (0.5)	0.40 (1.6)	0.18 (0.7)	0.05 (0.1)	0.18 (0.7)
Unknown Eth	0.06 (0.5)	−0.16 (1.1)	0.27 (1.1)	0.16 (0.8)	**0.76 (6.5)**
SEG					
Lower Managerial	**0.26 (9.9)**	**0.25 (9.8)**	**0.18 (7.3)**	**0.30 (8.1)**	**0.32 (11.7)**
Intermediate	**0.24 (7.3)**	**0.16 (5.0)**	**0.27 (9.0)**	**0.23 (5.0)**	**0.27 (7.9)**
Small Employers	**0.27 (6.5)**	0.08 (1.8)	**0.22 (5.8)**	0.09 (1.5)	**0.32 (7.6)**
Lower Supervisory	**0.10 (2.2)**	−0.07 (1.4)	**0.21 (5.0)**	−0.03 (0.4)	**0.21 (4.4)**
Semi-Routine	**0.32 (9.3)**	**0.25 (7.2)**	**0.35 (10.7)**	**0.25 (4.9)**	**0.37(10.3)**
Routine	**0.47 (10.2)**	**0.32 (6.7)**	**0.51 (11.8)**	**0.31 (4.5)**	**0.51 (10.6)**
Unknown SEG	**0.44 (15.5)**	**0.25 (8.5)**	**0.33 (12.5)**	**0.24 (5.7)**	**0.57 (19.5)**
AGE					
21-24	**−0.08 (3.0)**	**−0.41 (15.3)**	**−0.50 (19.4)**	**−0.53 (11.3)**	**0.25 (10.4)**
25-30	**−0.61 (19.6)**	**−0.62 (21.3)**	**−0.99 (32.7)**	**−1.08 (18.4)**	**−0.19 (7.0)**
40+	**−0.15 (2.6)**	**−0.22 (3.8)**	**−1.08 (15.5)**	**−0.80 (6.9)**	−0.02 (0.3)
ETHNIC ORIGIN*SEG					
Bang X Lower Managerial	0.13 (0.2)	0.74 (1.8)	0.69 (1.6)	−0.47 (0.5)	0.18 (0.4)
Bang X Intermediate	−15.3 (0.0)	0.53 (1.1)	0.19 (0.4)	−0.57 (0.5)	−0.22 (0.4)
Bang X Small Employers	0.84 (1.3)	0.64 (1.6)	0.54 (1.2)	−0.47 (0.5)	0.13 (0.3)
Bang X Lower Supervisory	0.15 (0.0)	0.78 (1.0)	0.39 (0.5)	−15.90 (0.0)	−0.39 (0.3)
Bang X Semi-Routine	1.11 (0.6)	**0.81 (2.1)**	0.69 (1.7)	−0.32 (0.4)	0.42 (0.9)
Bang X Routine	−0.38 (0.5)	0.57 (1.4)	0.16 (0.4)	0.16 (0.2)	−0.08 (0.2)
Bang X Unknown SEG	0.46 (0.7)	**1.02 (2.8)**	0.72 (1.8)	−0.52 (0.7)	0.62 (1.4)
Chinese X Lower Managerial	**0.84 (2.2)**	0.47 (1.9)	0.16 (0.7)	1.61 (1.5)	0.15 (0.5)
Chinese X Intermediate	0.15 (0.3)	**0.78 (2.8)**	−0.16 (0.6)	0.49 (0.3)	−0.14 (0.4)
Chinese X Small Employers	**1.11(2.8)**	**0.67 (2.4)**	0.34 (1.4)	2.10 (1.9)	−0.11 (0.3)
Chinese X Lower Supervisory	2.32 (1.6)	1.98 (1.6)	1.67 (1.4)	−12.24 (0.0)	2.24 (1.8)
Chinese X Semi-Routine	**1.11 (3.1)**	**0.66 (2.8)**	0.32 (1.6)	1.93 (1.8)	0.11 (0.4)
Chinese X Routine	**1.86 (3.5)**	**1.27(3.0)**	0.66 (1.6)	−13.03 (0.0)	0.46 (0.8)
Chinese X Unknown SEG	**1.10 (3.1)**	**0.61(2.6)**	0.38 (1.9)	**2.27 (2.2)**	0.45 (1.6)
Indian X Lower Managerial	**0.79 (3.2)**	**0.48 (4.7)**	**0.57(4.7)**	0.13 (0.4)	**0.52(3.8)**
Indian X Intermediate	**0.91 (3.5)**	**0.42 (3.6)**	**0.40 (2.9)**	−0.35 (0.9)	**0.48 (3.1)**
Indian X Small Employers	**1.05 (3.8)**	**0.68(5.2)**	**0.50 (3.2)**	−0.10 (0.2)	**0.43 (2.5)**
Indian X Lower Supervisory	**1.23 (3.7)**	**0.49(2.8)**	**0.80 (4.3)**	−1.21 (1.2)	**0.47 (2.2)**
Indian X Semi-Routine	**0.89 (3.5)**	**0.60 (5.4)**	**0.50 (3.8)**	0.00 (0.0)	**0.40 (2.8)**
Indian X Routine	0.16 (0.5)	**0.54 (3.9)**	**0.76 (5.1)**	0.08 (0.2)	**0.37 (2.1)**
Indian X Unknown SEG	**0.90 (3.9)**	**0.56 (5.8)**	**0.64 (5.7)**	−0.21 (0.6)	**0.50 (3.9)**
Pakistani X Lower Managerial	**0.92 (2.0)**	**0.42 (2.6)**	**0.69 (3.2)**	0.01 (0.0)	0.34 (1.8)
Pakistani X Intermediate	**1.21 (2.4)**	**0.56 (2.9)**	0.50 (1.9)	−0.03 (0.0)	0.28 (1.2)
Pakistani X Small Employers	0.83 (1.8)	**0.77 (4.8)**	**1.11 (5.3)**	0.66 (1.2)	0.21 (1.1)
Pakistani X Lower Supervisory	**1.49 (2.6)**	**0.63 (2.5)**	**1.12 (3.9)**	−14.5 (0.0)	0.37 (1.2)
Pakistani X Semi Routine	0.62 (1.3)	**0.50 (2.9)**	**0.98 (4.5)**	0.22 (0.4)	0.30 (1.5)
Pakistani X Routine	0.33 (0.6)	0.29 (1.6)	**0.87 (3.9)**	0.84 (1.5)	0.11 (0.5)
Pakistani X Unknowns SEG	0.80 (1.9)	**0.67 (4.7)**	**1.05 (5.4)**	0.19 (0.4)	**0.44(2.6)**
B. Caribbean X Lower Managerial	0.17 (0.5)	−0.07 (0.3)	−0.03 (0.1)	−0.62 (1.3)	0.11 (0.4)
B. Caribbean X Intermediate	0.35 (1.0)	0.25 (0.8)	−0.04 (0.1)	−0.37 (0.7)	0.05 (0.2)
B. Caribbean X Small Employers	0.68 (1.1)	0.73 (1.3)	**1.07 (2.1)**	1.01 (1.3)	**1.12 (2.1)**
B. Caribbean X Lower Supervisory	0.61 (1.1)	−0.11 (0.2)	0.33 (0.7)	−0.01 (0.0)	−0.13 (0.2)
B. Caribbean X Semi routine	0.41 (1.2)	0.18 (0.6)	0.11 (0.4)	0.28 (0.6)	0.18 (0.5)
B. Caribbean X Routine	0.56 (1.0)	0.58 (1.1)	0.65 (1.2)	−0.58 (0.5)	1.00 (1.9)
B. Caribbean X Unknown SEG	0.33 (1.1)	−0.01 (0.0)	−0.08 (0.3)	−0.73 (1.5)	0.18 (0.6)
B. African X Lower Managerial	−0.08 (0.3)	0.23 (1.6)	0.01 (0.1)	0.13 (0.3)	−0.19 (1.2)
B. African X Intermediate	−0.03 (0.1)	**0.61 (3.6)**	0.05 (0.3)	0.72 (1.5)	0.25 (1.3)
B. African X Small Employers	0.38 (0.9)	**0.59 (2.0)**	0.47 (1.4)	−0.06 (0.1)	0.25 (0.8)
B. African X Lower Supervisory	−15.8 (0.0)	0.02 (0.1)	−0.54 (1.2)	0.15 (0.1)	−0.29 (0.8)
B. African X Semi-Routine	−0.29 (1.2)	**0.38 (2.5)**	0.16 (0.9)	0.35 (0.8)	0.02 (0.1)
B. African X Routine	−0.24 (0.7)	**0.47 (2.4)**	−0.00 (0.1)	0.78 (1.4)	−0.31 (1.3)
B. African X Unknown SEG	−0.40 (1.9)	**0.41 (3.1)**	0.19 (1.3)	0.26 (0.6)	0.08 (0.5)
Unknown Eth X Lower Managerial	−0.06 (0.3)	0.27 (1.4)	0.12 (0.7)	−0.01 (0.1)	−0.12 (0.7)
Unknown Eth X Intermediate	0.19 (0.7)	0.08 (0.3)	0.14 (0.6)	0.58 (1.9)	−0.34 (1.5)
Unknown Eth X Small Employers	−0.06 (0.2)	0.43 (1.3)	−0.28 (0.8)	−0.11 (0.2)	0.50 (1.9)
Unknown Eth X LowerSupervisory	0.60 (1.3)	0.45 (0.8)	−0.11 (0.2)	**1.63(3.2)**	0.40 (0.9)
Unknown Eth X Semi Routine	−0.32 (1.2)	0.22 (0.9)	−0.10 (0.4)	0.23 (0.7)	−0.36 (1.5)
Unknown Eth X Routine	**−0.90 (2.2)**	−0.71 (1.6)	−0.16 (0.5)	−0.26 (0.5)	−0.45 (1.5)
Unknown Eth X Unknown SEG	−0.26 (1.6)	**0.34 (2.0)**	−0.08 (0.5)	**−0.52(2.0)**	**2.72(20.0)**
Constant	**−0.26 (13.3)**	**−0.21(11.1)**	**0.10(5.8)**	**−1.33 (46.8)**	**−0.51(24.3)**
n	180,752	180,752	180,752	180,752	180,752

Raw (β) rounded to 2 decimal points & corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistic: -292472.45(330).

Table A.20: Multinomial Logistic regression model sensitivity results (Interaction terms, Males)

	Arts		SocSci		Sci		Lang&comms		General	
ETHNIC ORIGIN										
Bangladeshi	**0.15**	**(3.2)**	0.55	(1.7)	**0.32**	**(3.0)**	0.30	(1.6)	**0.40**	**(2.2)**
Chinese	**0.13**	**(6.5)**	**0.43**	**(4.4)**	**0.48**	**(4.5)**	**0.04**	**(3.3)**	**0.31**	**(5.0)**
Indian	**0.06**	**(14.1)**	**0.60**	**(6.6)**	**0.24**	**(15.2)**	**0.14**	**(8.7)**	**0.29**	**(11.3)**
Pakistani	**0.04**	**(8.1)**	**0.49**	**(5.4)**	**0.15**	**(10.4)**	**0.09**	**(5.3)**	**0.34**	**(6.7)**
Black African	**0.27**	**(6.9)**	0.94	(0.5)	**0.47**	**(5.4)**	**0.18**	**(4.4)**	**0.75**	**(2.1)**
Black Caribbean	0.86	(0.5)	1.54	(1.8)	1.20	(0.8)	1.06	(0.2)	1.21	(0.7)
Unknown Eth	1.11	(0.0)	0.93	(0.5)	0.90	(0.8)	1.21	(1.0)	**2.22**	**(6.8)**
SEG										
Lower Managerial	**1.26**	**(8.9)**	**1.23**	**(7.9)**	**1.16**	**(6.3)**	**1.32**	**(7.4)**	**1.34**	**(10.8)**
Intermediate	**1.22**	**(6.4)**	**1.10**	**(2.9)**	**1.27**	**(8.1)**	**1.22**	**(4.3)**	**1.26**	**(7.0)**
Small Employers	**1.27**	**(6.0)**	1.02	(0.5)	**1.22**	**(5.2)**	1.07	(1.1)	**1.35**	**(7.1)**
Lower Supervisory	1.08	(1.6)	**0.87**	**(3.0)**	**1.20**	**(4.4)**	0.95	(0.8)	**1.20**	**(3.8)**
Semi-Routine	**1.29**	**(7.5)**	**1.12**	**(3.1)**	**1.32**	**(8.8)**	**1.20**	**(3.6)**	**1.36**	**(8.6)**
Routine	**1.52**	**(9.2)**	**1.23**	**(4.4)**	**1.57**	**(10.7)**	**1.29**	**(3.6)**	**1.57**	**(9.6)**
Unknown SEG	**1.5**	**(14.4)**	**1.20**	**(6.2)**	**1.35**	**(11.4)**	**1.23**	**(4.9)**	**1.71**	**(18.6)**
AGE										
21-24	**0.9**	**(3.9)**	**0.60**	**(18.5)**	**0.59**	**(20.6)**	**0.58**	**(11.8)**	**1.26**	**(9.6)**
25-30	**0.53**	**(20.6)**	**0.48**	**(24.7)**	**0.36**	**(33.9)**	**0.33**	**(18.8)**	**0.81**	**(7.9)**
40+	**0.83**	**(3.2)**	**0.73**	**(5.5)**	**0.33**	**(16.2)**	**0.43**	**(7.2)**	0.95	(0.9)
ETHNIC ORIGIN*SEG										
Bang X Lower Managerial	1.16	(0.2)	2.13	(1.9)	2.01	(1.6)	0.63	(0.5)	1.20	(0.4)
Bang X Intermediate	0.99	(0.0)	1.86	(1.3)	1.26	(0.4)	0.59	(0.4)	0.83	(0.3)
Bang X Small Employers	2.37	(1.3)	1.98	(1.7)	1.75	(1.3)	0.64	(0.5)	1.17	(0.3)
Bang X Lower Supervisory	0.98	(0.0)	2.32	(1.1)	1.51	(0.5)	0.00	(0.0)	0.70	(0.3)
Bang X Semi-Routine	1.61	(0.7)	**2.52**	**(2.4)**	2.12	(1.8)	0.77	(0.3)	1.61	(1.1)
Bang X Routine	0.71	(0.5)	1.89	(1.6)	1.22	(0.5)	1.22	(0.2)	0.96	(0.1)
Bang X Unknown SEG	1.62	(0.8)	**2.89**	**(2.9)**	2.09	(1.9)	0.61	(0.6)	1.89	(1.5)
Chinese X Lower Managerial	**2.38**	**(2.2)**	**1.65**	**(2.0)**	1.20	(0.8)	5.10	(1.5)	1.19	(0.5)
Chinese X Intermediate	1.2	(0.4)	**2.34**	**(3.1)**	0.88	(0.4)	1.68	(0.4)	0.90	(0.3)
Chinese X Small Employers	**3.1**	**(2.8)**	**2.05**	**(2.6)**	1.45	(1.5)	8.33	(1.9)	0.91	(0.2)
Chinese X Lower Supervisory	**10.5**	**(1.6)**	7.88	(1.7)	5.48	(1.5)	0.00	(0.0)	9.64	(1.8)
Chinese X Semi-Routine	**3.23**	**(3.3)**	**2.19**	**(3.3)**	1.47	(1.9)	7.33	(1.9)	1.18	(0.6)
Chinese X Routine	**6.83**	**(3.7)**	**4.09**	**(3.3)**	2.07	(1.7)	0.00	(0.0)	1.69	(1.0)
Chinese X Unknown SEG	**3.13**	**(3.2)**	**2.00**	**(3.0)**	**1.53**	**(2.1)**	**10.06**	**(2.2)**	**1.63**	**(1.8)**
Indian X Lower Managerial	**2.26**	**(3.3)**	**1.69**	**(5.1)**	**1.82**	**(4.9)**	1.17	(0.5)	**1.73**	**(3.9)**
Indian X Intermediate	**2.58**	**(3.6)**	**1.64**	**(4.2)**	**1.54**	**(3.1)**	0.73	(0.8)	**1.67**	**(3.3)**
Indian X Small Employers	**2.9**	**(3.9)**	**2.04**	**(5.4)**	**1.67**	**(3.3)**	0.91	(0.2)	**1.57**	**(2.6)**
Indian X Lower Supervisory	**3.53**	**(1.2)**	**1.77**	**(3.2)**	**2.29**	**(4.5)**	0.31	(1.2)	**1.64**	**(2.2)**
Indian X Semi-Routine	**2.6**	**(3.8)**	**2.11**	**(6.7)**	**1.76**	**(4.3)**	1.07	(0.2)	**1.60**	**(3.1)**
Indian X Routine	1.21	(0.6)	**1.81**	**(4.3)**	**2.20**	**(5.4)**	1.12	(0.3)	**1.49**	**(2.2)**
Indian X Unknown SEG	**2.54**	**(4.1)**	**1.88**	**(6.5)**	**1.97**	**(6.0)**	0.84	(0.5)	**1.71**	**(4.2)**
Pakistani X Lower Managerial	**2.57**	**(2.0)**	**1.57**	**(2.8)**	**2.04**	**(3.3)**	1.04	(0.1)	1.44	(1.9)
Pakistani X Intermediate	**3.46**	**(2.5)**	**1.85**	**(3.2)**	**1.69**	**(2.0)**	1.00	(0.0)	1.37	(1.3)
Pakistani X Small Employers	2.33	(1.8)	**2.24**	**(5.0)**	**3.08**	**(5.4)**	1.97	(1.3)	1.26	(1.2)
Pakistani X Lower Supervisory	**4.47**	**(2.6)**	**1.92**	**(2.5)**	**3.08**	**(3.9)**	0.00	(0.0)	1.47	(1.2)
Pakistani X Semi Routine	1.98	(1.4)	**1.87**	**(3.7)**	**2.84**	**(4.8)**	1.33	(0.5)	1.44	(1.8)
Pakistani X Routine	1.46	(0.7)	**1.44**	**(2.0)**	**2.51**	**(4.1)**	2.42	(1.6)	1.17	(0.7)
Pakistani X Unknowns SEG	**2.3**	**(1.9)**	**2.09**	**(5.2)**	**2.94**	**(5.6)**	1.25	(0.5)	**1.60**	**(2.8)**
B. Caribbean X Lower Managerial	1.19	(0.5)	0.94	(0.2)	0.98	(0.1)	0.54	(1.3)	1.12	(0.4)
B. Caribbean X Intermediate	1.46	(1.1)	1.38	(1.1)	0.99	(0.0)	0.71	(0.7)	1.08	(0.2)
B. Caribbean X Small Employers	1.39	(0.6)	1.23	(0.4)	2.05	(1.6)	1.93	(0.9)	2.17	(1.6)
B. Caribbean X Lower Supervisory	1.96	(1.3)	1.04	(0.1)	1.48	(0.8)	1.05	(0.1)	0.93	(0.1)
B. Caribbean X Semi routine	1.67	(1.5)	1.51	(1.3)	1.24	(0.7)	1.47	(0.8)	1.33	(0.8)
B. Caribbean X Routine	1.28	(0.5)	1.14	(0.3)	1.39	(0.7)	0.41	(0.8)	1.99	(1.4)
B. Caribbean X Unknown SEG	1.45	(1.2)	1.09	(0.3)	0.97	(0.1)	0.50	(1.4)	1.26	(0.8)
B. African X Lower Managerial	0.95	(0.2)	1.32	(2.0)	1.03	(0.2)	1.16	(0.4)	0.85	(1.0)
B. African X Intermediate	1.01	(0.0)	**2.03**	**(4.2)**	1.09	(0.5)	2.14	(1.6)	1.33	(1.5)
B. African X Small Employers	1.51	(1.0)	**1.94**	**(2.3)**	1.65	(1.5)	0.97	(0.0)	1.32	(0.9)
B. African X Lower Supervisory	0.97	(0.1)	1.15	(0.4)	0.61	(1.1)	1.20	(0.2)	0.77	(0.7)
B. African X Semi-Routine	0.81	(0.8)	**1.77**	**(3.7)**	1.27	(1.4)	1.54	(0.9)	1.10	(0.6)
B. African X Routine	0.82	(0.6)	**1.79**	**(2.9)**	1.05	(0.2)	2.30	(1.5)	0.77	(1.1)
B. African X Unknown SEG	0.69	(1.7)	**1.65**	**(3.7)**	1.26	(1.5)	1.35	(0.7)	1.12	(0.8)
Unknown Eth X Lower Managerial	0.97	(0.2)	1.37	(1.6)	1.15	(0.8)	1.01	(0.0)	0.90	(0.6)
Unknown Eth X Intermediate	1.15	(0.6)	0.96	(0.2)	1.09	(0.4)	1.70	(1.7)	0.68	(1.7)
Unknown Eth X Small Employers	0.86	(0.5)	1.27	(0.7)	0.69	(1.1)	0.82	(0.4)	1.51	(1.6)
Unknown Eth X LowerSupervisory	1.89	(1.3)	1.72	(1.0)	0.93	(0.1)	**5.27**	**(3.2)**	1.53	(1.0)
Unknown Eth X Semi Routine	0.73	(1.2)	1.28	(1.0)	0.91	(0.4)	1.27	(0.7)	0.71	(1.5)
Unknown Eth X Routine	**0.43**	**(2.1)**	0.57	(1.3)	0.91	(0.3)	0.82	(0.4)	0.68	(1.2)
Unknown Eth X Unknown SEG	0.79	(1.4)	**1.49**	**(2.4)**	0.95	(0.3)	0.61	(1.9)	**15.58**	**(20.2)**
Constant	−0.29 (15.2)		−0.29(15.0)		0.07(3.9)		−1.37 (48.1)		−0.54(26.1)	
n	180,752		180,752		180,752		180,752		180,752	

Exp (β) rounded to 2 decimal points & corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistic: −291951.01(330).

Table A.21: Multinomial Logistic regression model results (Interaction terms, Female applicants)

	Arts	SocSci	Sci	Lang&Comms	General
ETHNIC ORIGIN					
Bangladeshi	**0.07 (2.6)**	0.47 (1.6)	0.97 (0.1)	0.15 (1.8)	0.83 (0.4)
Chinese	**0.14 (7.3)**	**0.43 (4.5)**	**0.37 (4.7)**	**0.18 (4.9)**	**0.36 (4.3)**
Indian	**0.09 (17.1)**	**0.34 (12.3)**	**0.17 (14.5)**	**0.17 (11.8)**	**0.25 (11.8)**
Pakistani	**0.06 (10.0)**	**0.38 (7.0)**	**0.21 (8.6)**	**0.09 (7.1)**	**0.33 (6.4)**
B. African	**0.14 (10.8)**	**0.64 (4.2)**	**0.23 (8.8)**	**0.15 (7.4)**	**0.51 (5.0)**
B. Caribbean	1.12 (0.6)	1.40 (1.7)	1.21 (0.9)	1.18 (0.6)	1.18 (0.7)
Unknown Eth	1.00 (0.0)	0.98 (0.1)	0.85 (1.0)	0.98 (0.1)	**2.33 (6.1)**
SEG					
Lower Managerial	**1.24 (9.2)**	**1.39 (13.8)**	**1.09 (3.6)**	**1.12 (3.9)**	**1.33 (10.8)**
Intermediate	1.02 (0.8)	**1.31 (9.7)**	1.00 (0.1)	0.93 (1.9)	**1.20 (5.7)**
Small Employers	**1.16 (4.1)**	**1.62 (13.8)**	**1.08 (2.1)**	**0.91 (2.0)**	**1.41 (8.5)**
Lower Supervisory	**1.09 (2.1)**	**1.53 (10.6)**	1.09 (1.9)	**0.73 (5.4)**	**1.25 (4.8)**
Semi-Routine	1.02 (0.8)	**1.52 (15.0)**	1.01 (0.3)	**0.81 (5.3)**	**1.21 (5.8)**
Routine	**1.30 (6.7)**	**1.71 (14.1)**	**1.17 (3.6)**	0.99 (0.2)	**1.50 (9.3)**
Unknown SEG	**1.28 (10.2)**	**1.45 (15.1)**	**1.07 (2.6)**	**0.89 (3.4)**	**1.51 (15.0)**
AGE					
21-24	**0.53 (26.9)**	**0.75 (13.9)**	**0.42 (31.3)**	**0.32 (28.3)**	**0.85 (7.1)**
25-30	**0.24 (54.8)**	**0.64 (23.3)**	**0.26 (47.2)**	**0.13 (40.7)**	**0.58 (24.5)**
40	**0.47 (19.4)**	**0.83 (5.7)**	**0.24 (25.5)**	**0.19 (20.1)**	**0.78 (6.6)**
ETHNIC ORIGIN*SEG					
Bang X Lower Managerial	3.07 (1.0)	1.77 (1.1)	0.67 (0.9)	3.37 (1.1)	0.61 (0.9)
Bang X Intermediate	3.24 (1.0)	1.81 (1.0)	0.72 (0.5)	2.53 (0.7)	0.71 (0.5)
Bang X Small Employers	2.53 (0.9)	1.81 (1.2)	0.43 (1.8)	3.42 (1.1)	0.49 (1.3)
Bang X Lower Supervisory	6.72 (1.2)	4.20 (1.5)	0.62 (0.4)	0.00 (0.0)	0.00 (0.0)
Bang X Semi-Routine	3.65 (1.2)	1.86 (1.3)	0.61 (1.2)	3.21 (1.1)	0.66 (0.9)
Bang X Routine	2.04 (0.7)	1.71 (1.0)	0.60 (1.1)	3.27 (1.1)	0.78 (0.5)
Bang X Unknown SEG	2.89 (1.0)	2.39 (1.8)	0.68 (1.0)	2.86 (1.0)	0.92 (0.2)
Chinese X Lower Managerial	**4.13 (4.4)**	1.33 (1.1)	**1.90 (2.4)**	1.69 (1.1)	1.46 (1.2)
Chinese X Intermediate	1.28 (0.6)	0.81 (0.7)	1.11 (0.3)	0.80 (0.4)	1.25 (0.7)
Chinese X Small Employers	1.69 (1.3)	0.91 (0.4)	1.49 (1.3)	2.29 (1.7)	0.69 (1.0)
Chinese X Lower Supervisory	0.00 (0.0)	0.79 (0.3)	0.49 (0.7)	2.50 (0.8)	1.16 (0.2)
Chinese X Semi Routine	**3.89 (4.3)**	**1.81 (2.6)**	**1.96 (2.7)**	1.92 (1.5)	1.25 (0.8)
Chinese X Routine	**6.46 (4.2)**	**2.50 (2.5)**	**2.91 (2.5)**	2.57 (1.3)	1.94 (1.4)
Chinese X Unknown SEG	**4.87 (5.1)**	**2.71 (4.5)**	**2.26 (3.2)**	**2.86 (2.5)**	**2.65 (3.6)**
Indian X Lower Managerial	**1.71 (3.1)**	**1.73 (4.9)**	**2.30 (5.8)**	**1.55 (2.2)**	**1.49 (2.7)**
Indian X Intermediate	**1.79 (2.9)**	**1.86 (5.0)**	**2.57 (6.0)**	**1.59 (2.0)**	**1.88 (3.9)**
Indian Small Employers	**2.29 (3.9)**	**2.32 (6.2)**	**3.05 (6.5)**	**1.79 (2.2)**	**1.63 (2.6)**
Indian X Lower Supervisory	**1.68 (1.7)**	**1.83 (3.3)**	**2.86 (4.7)**	**2.39 (2.6)**	**1.80 (2.4)**
Indian X Semi-Routine	**2.66 (5.3)**	**2.28 (7.1)**	**3.44 (8.3)**	**1.72 (2.4)**	**2.16 (4.9)**
Indian X Routine	**3.62 (6.4)**	**2.61 (6.9)**	**3.30 (6.8)**	1.63 (1.8)	**2.13 (4.1)**
Indian X Unknown SEG	**2.06 (4.4)**	**2.30 (8.1)**	**2.69 (7.3)**	**1.68 (2.6)**	**2.20 (5.8)**
Pakistani X Lower Managerial	1.73 (1.7)	1.40 (2.0)	1.49 (1.8)	**2.43 (2.3)**	1.21 (0.9)
Pakistani X Intermediate	**2.60 (2.6)**	1.46 (1.9)	**1.96 (2.6)**	2.39 (1.8)	1.31 (1.1)
Pakistani X Small Employers	1.61 (1.5)	**1.49 (2.4)**	**1.63 (2.2)**	**2.26 (2.1)**	1.31 (1.3)
Pakistani X Lower Supervisory	1.96 (1.4)	1.28 (0.9)	1.31 (0.7)	**4.49 (2.8)**	1.44 (1.1)
Pakistani X Semi-Routine	**2.52 (2.8)**	**1.69 (3.0)**	**2.13 (3.3)**	**4.28 (3.6)**	**2.05 (3.4)**
Pakistani X Routine	1.28 (0.6)	1.40 (1.8)	**1.65 (2.1)**	2.13 (1.7)	1.04 (0.2)
Pakistani X Unknown SEG	**2.05 (2.5)**	**1.99 (4.7)**	**1.89 (3.2)**	**2.77 (2.8)**	**1.83 (3.3)**
B. Caribbean X Lower Managerial	0.93 (0.3)	1.26 (1.0)	0.89 (0.5)	1.00 (0.0)	1.14 (0.5)
B. Caribbean X Intermediate	1.02 (0.1)	0.92 (0.4)	0.74 (1.1)	0.72 (1.0)	1.13 (0.5)
B. Caribbean X Small Employers	1.29 (0.7)	0.78 (0.7)	0.70 (0.8)	1.75 (1.2)	0.75 (0.7)
B. Caribbean X Lower Supervisory	0.59 (1.2)	0.85 (0.4)	0.66 (0.9)	0.83 (0.3)	0.82 (0.4)
B. Caribbean X Semi Routine	1.02 (0.1)	1.14 (0.6)	0.98 (0.1)	0.90 (0.3)	1.09 (0.3)
B. Caribbean X Routine	0.99 (0.0)	1.34 (0.8)	1.24 (0.5)	1.30 (0.5)	1.31 (0.7)
B. Caribbean X Unknown SEG	0.93 (0.3)	1.31 (1.3)	0.99 (0.1)	0.88 (0.4)	1.27 (1.0)
B. African X Lower Managerial	1.14 (0.6)	1.24 (1.7)	**1.55 (2.3)**	**1.88 (2.2)**	1.06 (0.4)
B. African X Intermediate	**1.98 (2.8)**	**1.67 (3.6)**	**1.86 (2.7)**	**2.05 (2.0)**	1.21 (1.1)
B. African X Small Employers	**2.50 (2.2)**	1.18 (0.6)	**4.59 (4.5)**	**4.90 (3.2)**	1.83 (1.9)
B. African X Lower Supervisory	1.72 (0.9)	1.10 (0.3)	**3.51 (2.8)**	**5.41 (2.7)**	0.90 (0.2)
B. African X Semi-Routine	**1.65 (2.2)**	**1.62 (3.8)**	**2.10 (3.7)**	**2.72 (3.2)**	1.21 (1.2)
B. African X Routine	**2.12 (2.3)**	1.36 (1.4)	**2.55 (3.2)**	**3.24 (2.7)**	1.25 (0.8)
B. African X Unknown SEG	**1.48 (2.0)**	**1.90 (5.6)**	**2.00 (3.8)**	**2.43 (3.2)**	**1.48 (2.7)**
Unknown Eth X Lower Managerial	1.09 (0.4)	0.87 (0.7)	1.00 (0.0)	1.25 (0.9)	0.96 (0.2)
Unknown Eth X Intermediate	0.96 (0.2)	**0.58 (2.1)**	0.87 (0.5)	1.17 (0.5)	0.71 (1.5)
Unknown Eth X Small Employers	1.07 (0.2)	1.16 (0.4)	1.74 (1.5)	1.66 (1.1)	**1.89 (2.1)**
Unknown Eth X Lower Supervisory	1.37 (0.6)	0.90 (0.2)	0.98 (0.0)	2.92 (1.9)	1.13 (0.3)
Unknown Eth X Semi Routine	**0.60 (2.0)**	**0.50 (2.8)**	0.67 (1.4)	0.79 (0.7)	0.80 (1.0)
Unknown Eth X Routine	0.67 (1.1)	**0.45 (2.0)**	0.72 (0.8)	1.28 (0.5)	**0.49 (2.0)**
Unknown Eth X Unknown SEG	0.77 (1.5)	0.79 (1.3)	0.94 (0.3)	0.88 (0.6)	**11.86 (16.6)**
n	228,116	228,116	228,116	228,116	228,116

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold.

Table A.22: Multinomial Logistic regression model results (Interactions, raw betas, Female applicants)

	Arts	SocSci	Sci	Lang&Comms	General
ETHNIC ORIGIN					
Bangladeshi	**-2.70 (2.6)**	-0.76 (1.6)	-0.03 (0.1)	-1.90 (1.8)	-0.19 (0.4)
Chinese	**-2.00 (7.3)**	**-0.84 (4.5)**	**-1.00 (4.7)**	**-1.72 (4.9)**	**-1.02 (4.3)**
Indian	**-2.41 (17.1)**	**-1.09(12.3)**	**-1.68 (14.5)**	**-1.80 (11.8)**	**-1.39 (11.8)**
Pakistani	**-2.78 (10.0)**	**-0.96 (7.0)**	**-1.55 (8.6)**	**-2.43 (7.1)**	**-1.10 (6.4)**
B. African	**-1.98 (10.8)**	**-0.45 (4.2)**	**-1.47 (8.8)**	**-1.91 (7.4)**	**-0.67 (5.0)**
B. Caribbean	0.17 (0.6)	0.34 (1.7)	0.19 (0.9)	0.16 (0.6)	0.16 (0.7)
Unknown Eth	0.00 (0.0)	-0.02 (0.1)	-0.16 (1.0)	-0.02 (0.1)	**0.85 (6.1)**
SEG					
Lower Managerial	**0.21 (9.2)**	**0.33 (13.8)**	**0.09 (3.6)**	**0.11 (3.9)**	**0.29 (10.8)**
Intermediate	0.02 (0.8)	**0.27 (9.7)**	0.00 (0.1)	-0.07 (1.9)	**0.18 (5.7)**
Small Employers	**0.15 (4.1)**	**0.48 (13.8)**	**0.08 (2.1)**	**-0.09 (2.0)**	**0.34 (8.5)**
Lower Supervisory	**0.08 (2.1)**	**0.43 (10.6)**	0.08 (1.9)	**-0.31 (5.4)**	**0.22 (4.8)**
Semi-Routine	0.02 (0.8)	**0.42 (15.0)**	0.01 (0.3)	**-0.21 (5.3)**	**0.19 (5.8)**
Routine	**0.26 (6.7)**	**0.54 (14.1)**	**0.16 (3.6)**	-0.01 (0.2)	**0.40 (9.3)**
Unknown SEG	**0.25 (10.2)**	**0.37 (15.1)**	**0.07 (2.6)**	**-0.12 (3.4)**	**0.41 (15.0)**
AGE					
21-24	**-0.63 (26.9)**	**-0.29 (13.9)**	**-0.87 (31.3)**	**-1.14 (28.3)**	**-0.16 (7.1)**
25-30	**-1.42 (54.8)**	**-0.45 (23.3)**	**-1.36 (47.2)**	**-2.06 (40.7)**	**-0.55 (24.5)**
40	**-0.76 (19.4)**	**-0.19 (5.7)**	**-1.44 (25.5)**	**-1.65 (20.1)**	**-0.25 (6.6)**
ETHNIC ORIGIN*SEG					
Bang X Lower Managerial	1.12 (1.0)	0.57 (1.1)	-0.41 (0.9)	1.22 (1.1)	-0.49 (0.9)
Bang X Intermediate	1.18 (1.0)	0.59 (1.0)	-0.33 (0.5)	0.93 (0.7)	-0.34 (0.5)
Bang X Small Employers	0.93 (0.9)	0.59 (1.2)	-0.86 (1.8)	1.23 (1.1)	-0.71 (1.3)
Bang X Lower Supervisory	1.91 (1.2)	1.43 (1.5)	-0.48 (0.4)	-14.1 (0.0)	-15.7 (0.0)
Bang X Semi-Routine	1.30 (1.2)	0.62 (1.3)	-0.50 (1.2)	1.17 (1.1)	-0.42 (0.9)
Bang X Routine	0.71 (0.7)	0.53 (1.0)	-0.52 (1.1)	1.19 (1.1)	-0.25 (0.5)
Bang X Unknown SEG	1.06 (1.0)	0.87 (1.8)	-0.39 (1.0)	1.05 (1.0)	-0.09 (0.2)
Chinese X Lower Managerial	**1.42(4.4)**	0.28 (1.1)	**0.64 (2.4)**	0.52 (1.1)	0.38 (1.2)
Chinese X Intermediate	0.25 (0.6)	-0.21 (0.7)	0.11 (0.3)	-0.23 (0.4)	0.22 (0.7)
Chinese X Small Employers	0.52 (1.3)	-0.10 (0.4)	0.40 (1.3)	0.83 (1.7)	-0.38 (1.0)
Chinese X Lower Supervisory	-14.9 (0.0)	-0.24 (0.3)	-0.72 (0.7)	0.91 (0.8)	0.15 (0.2)
Chinese X Semi Routine	**1.36 (4.3)**	**0.59 (2.6)**	**0.67 (2.7)**	0.65 (1.5)	0.23 (0.8)
Chinese X Routine	**1.87 (4.2)**	**0.92 (2.5)**	**1.07 (2.5)**	0.94 (1.3)	0.66 (1.4)
Chinese X Unknown SEG	**1.58 (5.1)**	**1.00 (4.5)**	**0.82 (3.2)**	**1.05 (2.5)**	**0.97 (3.6)**
Indian X Lower Managerial	**0.54 (3.1)**	**0.55 (4.9)**	**0.83 (5.8)**	**0.44 (2.2)**	**0.40 (2.7)**
Indian X Intermediate	**0.58 (2.9)**	**0.62 (5.0)**	**0.94 (6.0)**	**0.46 (2.0)**	**0.63 (3.9)**
Indian Small Employers	**0.83 (3.9)**	**0.84 (6.2)**	**1.11 (6.5)**	**0.58 (2.2)**	**0.49 (2.6)**
Indian X Lower Supervisory	**0.52 (1.7)**	**0.61 (3.3)**	**1.05 (4.7)**	**0.87 (2.6)**	**0.59 (2.4)**
Indian X Semi-Routine	**0.98 (5.3)**	**0.82 (7.1)**	**1.23 (8.3)**	**0.54 (2.4)**	**0.77 (4.9)**
Indian X Routine	**1.29 (6.4)**	**0.96 (6.9)**	**1.19 (6.8)**	0.49 (1.8)	**0.77 (4.1)**
Indian X Unknown SEG	**0.72 (4.4)**	**0.83 (8.1)**	**0.99 (7.3)**	**0.52 (2.6)**	**0.79 (5.8)**
Pakistani X Lower Managerial	0.55 (1.7)	0.33 (2.0)	0.40 (1.8)	**0.89 (2.3)**	0.19 (0.9)
Pakistani X Intermediate	**0.96 (2.6)**	0.38 (1.9)	**0.67 (2.6)**	0.87 (1.8)	0.27 (1.1)
Pakistani X Small Employers	0.48 (1.5)	**0.40 (2.4)**	**0.49 (2.2)**	**0.82 (2.1)**	0.27 (1.3)
Pakistani X Lower Supervisory	0.67 (1.4)	0.25 (0.9)	0.27 (0.7)	**1.50 (2.8)**	0.36 (1.1)
Pakistani X Semi-Routine	**0.92(2.8)**	**0.52 (3.0)**	**0.76 (3.3)**	**1.45 (3.6)**	**0.72 (3.4)**
Pakistani X Routine	0.24 (0.6)	0.34 (1.8)	**0.50 (2.1)**	0.75 (1.7)	0.04 (0.2)
Pakistani X Unknown SEG	**0.72 (2.5)**	**0.69 (4.7)**	**0.64 (3.2)**	**1.02(2.8)**	**0.61 (3.3)**
B. Caribbean X Lower Managerial	-0.07 (0.3)	0.23 (1.0)	-0.12 (0.5)	0.00 (0.0)	0.13 (0.5)
B. Caribbean X Intermediate	0.02 (0.1)	-0.08 (0.4)	-0.30 (1.1)	-0.33 (1.0)	0.12 (0.5)
B. Caribbean X Small Employers	0.25 (0.7)	-0.25 (0.7)	-0.36 (0.8)	0.56 (1.2)	-0.28 (0.7)
B. Caribbean X Lower Supervisory	-0.54 (1.2)	-0.16 (0.4)	-0.42 (0.9)	-0.19 (0.3)	-0.20 (0.4)
B. Caribbean X Semi Routine	0.01 (0.1)	0.13 (0.6)	-0.03 (0.1)	-0.11 (0.3)	-0.09 (0.3)
B. Caribbean X Routine	-0.01 (0.0)	0.29 (0.8)	0.22 (0.5)	0.26 (0.5)	0.27 (0.7)
B. Caribbean X Unknown SEG	-0.07 (0.3)	0.27 (1.3)	-0.01 (0.1)	-0.12 (0.4)	0.24 (1.0)
B. African X Lower Managerial	0.13 (0.6)	0.22 (1.7)	**0.44(2.3)**	**0.63(2.2)**	0.06 (0.4)
B. African X Intermediate	**0.68 (2.8)**	**0.51 (3.6)**	**0.62(2.7)**	**0.72 (2.0)**	0.19 (1.1)
B. African X Small Employers	**0.92 (2.2)**	0.17 (0.6)	**1.52(4.5)**	**1.59 (3.2)**	0.60 (1.9)
B. African X Lower Supervisory	0.54 (0.9)	0.10 (0.3)	**1.25(2.8)**	**1.69 (2.7)**	-0.11 (0.2)
B. African X Semi-Routine	**0.50 (2.2)**	**0.48 (3.8)**	**0.74(3.7)**	**1.00 (3.2)**	0.19 (1.2)
B. African X Routine	**0.75 (2.3)**	0.31 (1.4)	**0.94 (3.2)**	**1.18 (2.7)**	0.22 (0.8)
B. African X Unknown SEG	**0.39 (2.0)**	**0.64(5.6)**	**0.69 (3.8)**	**0.89 (3.2)**	**0.39 (2.7)**
Unknown Eth X Lower Managerial	0.09 (0.4)	-0.14 (0.7)	0.00 (0.0)	0.23 (0.9)	-0.04 (0.2)
Unknown Eth X Intermediate	-0.04 (0.2)	**-0.55 (2.1)**	-0.14 (0.5)	0.16 (0.5)	-0.34 (1.5)
Unknown Eth X Small Employers	0.07 (0.2)	0.14 (0.4)	0.56 (1.5)	0.51 (1.1)	**0.64(2.1)**
Unknown Eth X Lower Supervisory	0.32 (0.6)	-0.11 (0.2)	-0.02 (0.0)	1.07 (1.9)	0.12 (0.3)
Unknown Eth X Semi Routine	**-0.51 (2.0)**	**-0.70 (2.8)**	-0.40 (1.4)	-0.24 (0.7)	-0.22 (1.0)
Unknown Eth X Routine	-0.40 (1.1)	**-0.80 (2.0)**	-0.33 (0.8)	0.24 (0.5)	**-0.71 (2.0)**
Unknown Eth X Unknown SEG	-0.26 (1.5)	-0.23 (1.3)	-0.06 (0.3)	-0.68 (0.6)	**2.47 (16.6)**
Constant	0.09 (5.2)	-0.14(7.8)	-0.18(9.8)	-0.68 (30.7)	-0.56(26.8)
n	228,116	228,116	228,116	228,116	228,116

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistic: 374999.38 (330)

Table A.23: Multinomial Logistic regression model sensitivity results (Interactions, Female applicants)

	Arts		SocSci		Sci		Lang&comms		General	
ETHNIC ORIGIN										
Bangladeshi	**0.07**	**(2.6)**	0.45	(1.4)	1.04	(0.1)	0.16	(1.8)	0.89	(0.3)
Chinese	**0.16**	**(6.6)**	**0.69**	**(2.0)**	**0.45**	**(3.9)**	**0.22**	**(4.4)**	**0.44**	**(3.5)**
Indian	**0.11**	**(15.9)**	**0.51**	**(7.5)**	**0.22**	**(13.0)**	**0.20**	**(10.6)**	**0.30**	**(10.3)**
Pakistani	**0.07**	**(9.5)**	**0.50**	**(4.7)**	**0.25**	**(7.8)**	**0.10**	**(6.7)**	**0.39**	**(5.6)**
Black African	**0.16**	**(9.9)**	0.95	(0.4)	**0.27**	**(7.8)**	**0.17**	**(6.8)**	**0.60**	**(3.8)**
Black Caribbean	1.27	(1.2)	**2.02**	**(3.5)**	1.37	(1.5)	1.34	(1.1)	1.33	(1.2)
Unknown Eth	1.14	(0.9)	**1.39**	**(2.1)**	0.96	(0.2)	1.12	(0.6)	**2.64**	**(7.1)**
SEG										
Lower Managerial	**1.11**	**(5.0)**	**1.18**	**(6.8)**	0.99	(0.6)	1.01	(0.3)	**1.20**	**(7.2)**
Intermediate	**0.89**	**(4.3)**	1.00	(0.1)	**0.88**	**(4.6)**	**0.82**	**(5.8)**	1.05	(1.6)
Small Employers	0.98	(0.7)	**1.25**	**(6.1)**	**0.91**	**(2.5)**	**0.77**	**(5.8)**	**1.19**	**(4.6)**
Lower Supervisory	**0.87**	**(3.6)**	1.00	(0.0)	**0.87**	**(3.3)**	**0.59**	**(9.7)**	1.01	(0.2)
Semi-Routine	**0.86**	**(5.7)**	**1.10**	**(3.4)**	**0.85**	**(5.6)**	**0.68**	**(10.1)**	1.01	(0.4)
Routine	**1.06**	**(1.7)**	**1.25**	**(5.6)**	0.96	(1.2)	**0.81**	**(4.2)**	**1.22**	**(5.0)**
Unknown SEG	**1.15**	**(6.2)**	**1.25**	**(8.7)**	0.96	(1.4)	**0.80**	**(6.8)**	**1.36**	**(11.7)**
AGE										
21-24	**0.58**	**(23.9)**	**0.86**	**(6.8)**	**0.46**	**(28.8)**	**0.35**	**(26.4)**	**0.93**	**(3.2)**
25-30	**0.27**	**(51.5)**	**0.75**	**(14)**	**0.29**	**(43.9)**	**0.14**	**(38.6)**	**0.65**	**(19.9)**
40+	**0.51**	**(18.0)**	0.95	(1.4)	**0.26**	**(24.5)**	**0.21**	**(19.3)**	**0.85**	**(4.6)**
ETHNIC ORIGIN*SEG										
Bang X Lower Managerial	3.25	(1.1)	2.40	(1.5)	0.70	(0.8)	3.56	(1.2)	0.65	(0.8)
Bang X Intermediate	3.44	(1.0)	2.58	(1.4)	0.77	(0.5)	2.70	(0.8)	0.76	(0.4)
Bang X Small Employers	2.69	(0.9)	2.47	(1.5)	0.45	(1.7)	3.64	(1.2)	0.53	(1.2)
Bang X Lower Supervisory	9.44	(1.4)	10.95	(2.4)	0.87	(0.1)	0.00	(0.0)	0.00	(0.0)
Bang X Semi-Routine	4.21	(1.4)	**3.15**	**(2.0)**	0.70	(0.9)	3.71	(1.2)	0.76	(0.6)
Bang X Routine	2.21	(0.7)	2.38	(1.5)	0.65	(0.9)	3.55	(1.2)	0.84	(0.3)
Bang X Unknown SEG	2.90	(1.0)	**3.07**	**(2.0)**	0.68	(1.0)	2.87	(1.0)	0.92	(0.2)
Chinese X Lower Managerial	**4.43**	**(4.6)**	1.46	(1.5)	**2.04**	**(2.7)**	1.81	(1.3)	1.57	(1.5)
Chinese X Intermediate	1.42	(0.8)	0.98	(0.1)	1.24	(0.7)	0.89	(0.2)	1.38	(1.0)
Chinese X Small Employers	1.96	(1.7)	1.12	(0.4)	1.73	(1.8)	**2.66**	**(2.1)**	0.80	(0.6)
Chinese X Lower Supervisory	0.00	(0.0)	1.24	(0.3)	0.61	(0.5)	3.13	(1.0)	1.45	(0.5)
Chinese X Semi-Routine	**4.63**	**(4.9)**	**2.53**	**(4.1)**	**2.34**	**(3.4)**	2.29	(1.9)	1.50	(1.4)
Chinese X Routine	**7.87**	**(4.6)**	**3.50**	**(3.3)**	**3.55**	**(3.0)**	3.13	(1.6)	2.36	(1.8)
Chinese X Unknown SEG	**5.03**	**(5.2)**	**2.84**	**(4.7)**	**2.33**	**(3.3)**	**2.95**	**(2.6)**	**2.73**	**(3.7)**
Indian X Lower Managerial	**1.83**	**(3.4)**	**1.93**	**(5.8)**	**2.45**	**(6.3)**	**1.66**	**(2.6)**	**1.59**	**(3.1)**
Indian X Intermediate	**1.86**	**(3.1)**	**2.00**	**(5.5)**	**2.68**	**(6.3)**	**1.66**	**(2.2)**	**1.95**	**(4.1)**
Indian X Small Employers	**2.48**	**(4.3)**	**2.64**	**(7.1)**	**3.30**	**(7.0)**	**1.94**	**(2.5)**	**1.76**	**(3.0)**
Indian X Lower Supervisory	**1.98**	**(2.2)**	**2.63**	**(5.2)**	**3.39**	**(5.6)**	**2.82**	**(3.1)**	**2.13**	**(3.1)**
Indian X Semi-Routine	**2.84**	**(5.7)**	**2.61**	**(8.1)**	**3.67**	**(8.8)**	**1.84**	**(2.7)**	**2.30**	**(5.4)**
Indian X Routine	**3.67**	**(6.6)**	**2.63**	**(6.9)**	**3.34**	**(7.0)**	1.65	(1.8)	**2.16**	**(4.2)**
Indian X Unknown SEG	**2.03**	**(4.3)**	**2.19**	**(7.4)**	**2.66**	**(7.2)**	**1.66**	**(2.6)**	**2.17**	**(5.8)**
Pakistani X Lower Managerial	1.82	(1.8)	**1.54**	**(2.4)**	**1.56**	**(2.0)**	**2.56**	**(2.4)**	1.27	(1.1)
Pakistani X Intermediate	**2.63**	**(2.7)**	1.44	(1.7)	**1.98**	**(2.7)**	2.41	(1.9)	1.33	(1.1)
Pakistani X Small Employers	1.72	(1.7)	**1.65**	**(2.9)**	**1.74**	**(2.6)**	**2.42**	**(2.2)**	1.40	(1.6)
Pakistani X Lower Supervisory	2.30	(1.7)	**1.82**	**(2.1)**	1.53	(1.2)	**5.28**	**(3.2)**	1.69	(1.6)
Pakistani X Semi Routine	**2.59**	**(2.8)**	**1.77**	**(3.1)**	**2.19**	**(3.4)**	**4.40**	**(3.7)**	**2.10**	**(3.5)**
Pakistani X Routine	1.38	(0.9)	**1.53**	**(2.2)**	**1.78**	**(2.4)**	2.29	(1.9)	1.13	(0.5)
Pakistani X Unknown SEG	**1.93**	**(2.3)**	**1.76**	**(3.6)**	**1.78**	**(3.0)**	**2.61**	**(2.6)**	**1.73**	**(3.0)**
B. Caribbean X Lower Managerial	0.91	(0.4)	1.24	(1.0)	0.87	(0.6)	0.98	(0.1)	1.12	(0.4)
B. Caribbean X Intermediate	1.02	(0.1)	0.96	(0.2)	0.75	(1.1)	0.73	(1.0)	1.14	(0.5)
B. Caribbean X Small Employers	1.33	(0.8)	0.79	(0.7)	0.72	(0.8)	1.79	(1.3)	0.77	(0.6)
B. Caribbean X Lower Supervisory	0.59	(1.2)	0.88	(0.3)	0.66	(0.9)	0.83	(0.3)	0.82	(0.4)
B. Caribbean X Semi routine	1.05	(0.2)	1.25	(1.0)	1.00	(0.0)	0.92	(0.3)	1.12	(0.4)
B. Caribbean X Routine	0.97	(0.1)	1.36	(0.9)	1.22	(0.5)	1.27	(0.5)	1.28	(0.6)
B. Caribbean X Unknown SEG	0.84	(0.8)	1.10	(0.5)	0.89	(0.5)	0.79	(0.8)	1.14	(0.6)
B. African X Lower Managerial	1.26	(1.1)	**1.48**	**(3.1)**	**1.71**	**(2.8)**	**2.07**	**(2.5)**	1.17	(1.0)
B. African X Intermediate	**2.12**	**(3.1)**	**2.01**	**(4.9)**	**1.99**	**(3.0)**	**2.19**	**(2.2)**	1.30	(1.4)
B. African X Small Employers	**2.81**	**(2.5)**	1.42	(1.2)	**5.15**	**(5.0)**	**5.49**	**(3.4)**	**2.06**	**(2.3)**
B. African X Lower Supervisory	2.07	(1.2)	1.60	(1.2)	**4.21**	**(3.3)**	**6.51**	**(3.0)**	1.08	(0.1)
B. African X Semi-Routine	**1.81**	**(2.6)**	**1.99**	**(5.4)**	**2.30**	**(4.1)**	**2.99**	**(3.5)**	1.33	(1.7)
B. African X Routine	**2.62**	**(3.0)**	**1.98**	**(3.2)**	**3.15**	**(3.9)**	**4.00**	**(3.2)**	**1.55**	**(1.6)**
B. African X Unknown SEG	**1.55**	**(2.2)**	**2.07**	**(6.3)**	**2.09**	**(4.1)**	**2.54**	**(3.3)**	**1.55**	**(3.1)**
Unknown Eth X Lower Managerial	1.15	(0.7)	0.91	(0.4)	1.05	(0.2)	1.32	(1.1)	1.00	(0.0)
Unknown Eth X Intermediate	1.00	(0.0)	**0.56**	**(2.1)**	0.91	(0.3)	1.23	(0.7)	0.74	(1.4)
Unknown Eth X Small Employers	0.88	(0.4)	0.72	(0.9)	1.43	(1.0)	1.36	(0.7)	1.55	(1.6)
Unknown Eth X LowerSupervisory	1.29	(0.6)	0.71	(0.6)	0.92	(0.2)	2.73	(1.9)	1.06	(0.1)
Unknown Eth X Semi Routine	0.67	(1.6)	**0.54**	**(2.3)**	0.74	(1.0)	0.87	(0.4)	0.89	(0.6)
Unknown Eth X Routine	0.82	(0.5)	0.61	(1.2)	0.87	(0.3)	1.56	(1.0)	0.60	(1.5)
Unknown Eth X Unknown SEG	0.80	(1.4)	0.81	(1.2)	0.97	(0.2)	0.91	(0.4)	**12.25**	**(17.1)**
Constant	-0.12 (7.1)		-0.66(34.1)		-0.39(21.7)		-0.89 (41.1)		-0.77(38.1)	
n	228,116		228,116		228,116		228,116		228,116	

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. Model log likelihood statistic: -371689.56 (330)

Figure A.5: Predicted probabilities of applying to subjects for students from Higher Managerial & Professional Backgrounds based on results presented in Table A.19 (Males)

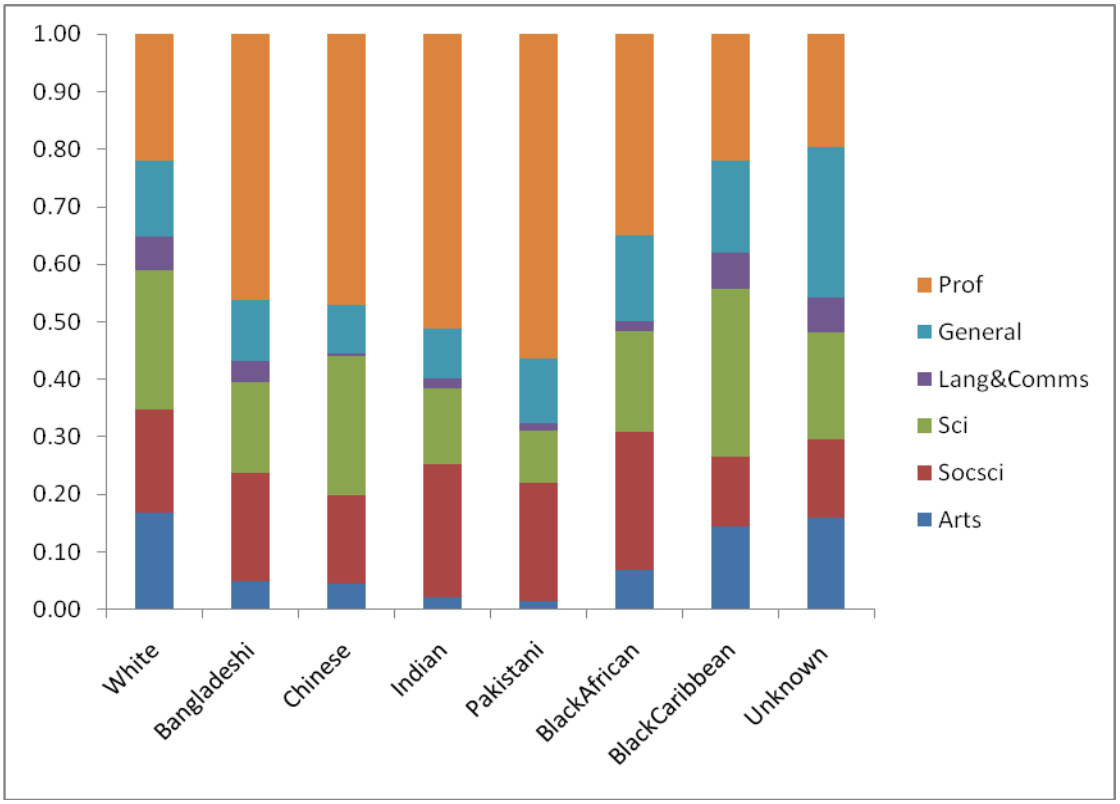


Figure A.6: Predicted probabilities of applying to subjects for students from Routine Backgrounds based on results presented in Table A.19 (Males)

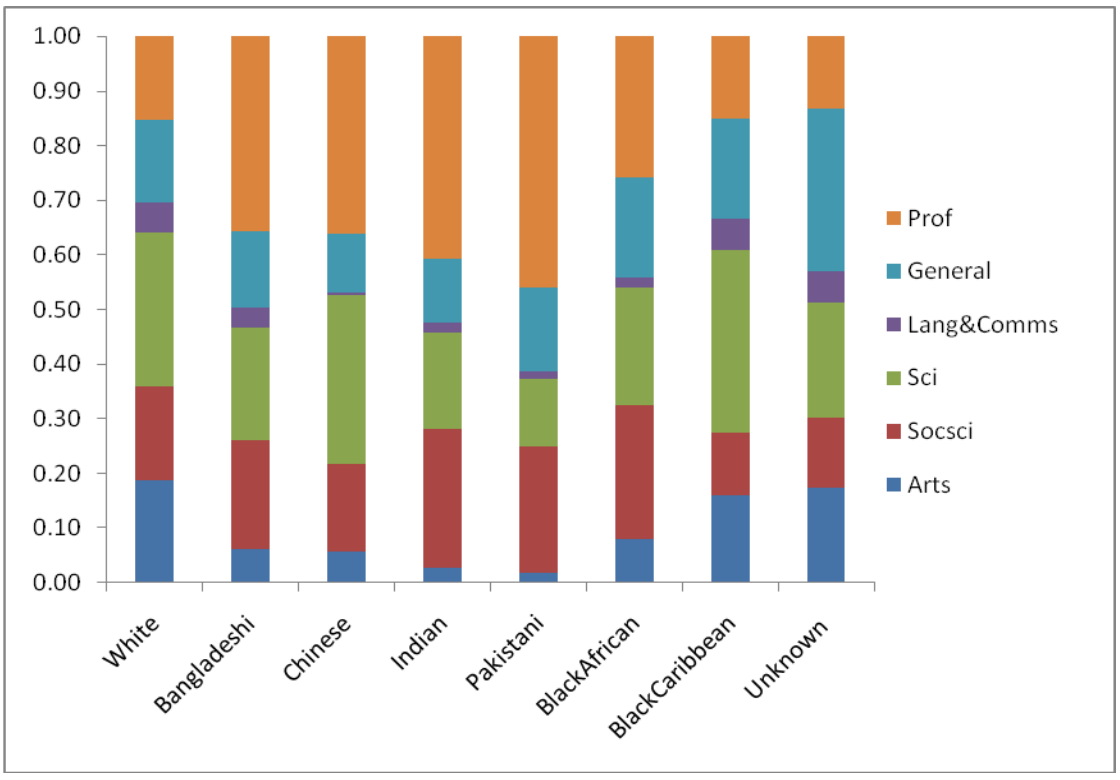


Figure A.7: Predicted probabilities of applying to subjects for students from Higher Managerial and Professional Backgrounds based on results presented in Table A.22 (Females)

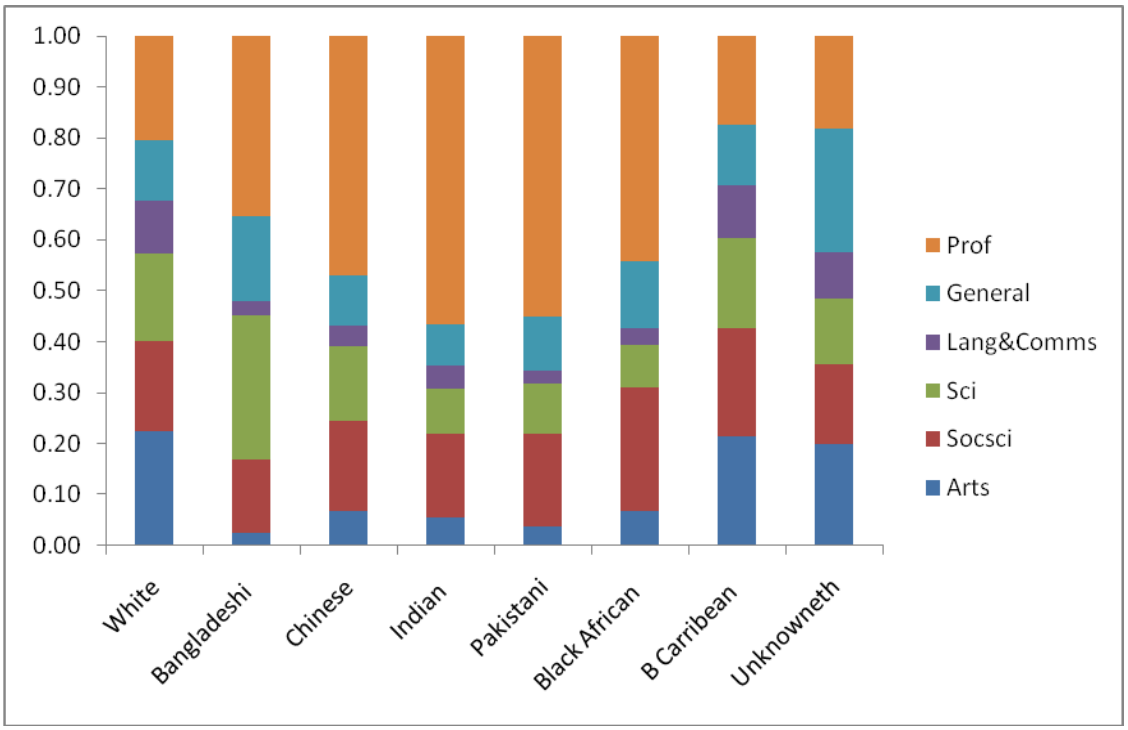
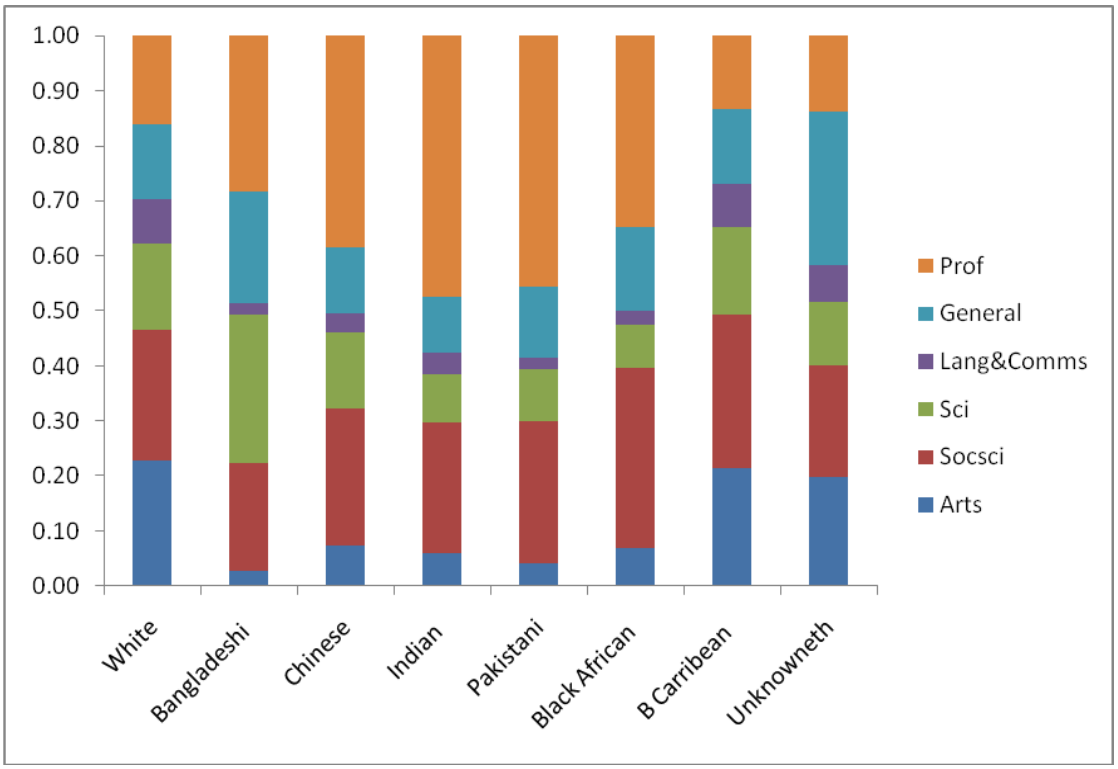


Figure A.8: Predicted probabilities of applying to subjects for students from Routine Backgrounds based on results presented in Table A.22 (Females)



3. Home or away? An analysis of the housing choices of British South Asian female university students.

3.1 Introduction

Students are faced with a number of decisions with regards to what they hope to study and on what basis (part-time vs. full-time), if they desire to remain at home or move away and which institution they wish to attend. It is term-time accommodation status, i.e a student's decision to move away or stay residing in the parental/guardian home during their first year of university that is the focus of this chapter. This topic is analysed with the use of administrative enrolment data for academic years 1998/99 and 2005/06 from the Higher Education Statistics Agency (HESA).

The decision to stay in the parental home or move away whilst attending university is a critical one for many Asian women as documented by authors such as Bagguley & Hussain (2007). Findings from qualitative research have indicated reluctance amongst Asian students to look beyond HE providers. The main objectives of this study are to see if these patterns can be seen more generally and to quantify the differences in the wider population of Asian female students. In this chapter South Asian (Indian, Bangladeshi and Pakistani) female students are compared to White females, conditioning on the fact that they are enrolled at university, identify similarities and differences between females from the three Asian groups and compare changes over time.

There is little current knowledge on which students stay local and indeed what their characteristics are. More information is needed in order that education providers can meet the needs of local students and understand the threat to their access to a wider range of quality of institution. This is an area of HE choice that has received little attention from other researchers. It has

rarely been analysed in the level of detail it is analysed in here and this research is unique because it also includes a study of changes over time.

The next section of this chapter includes a discussion of the research questions addressed in the Chapter. This is followed by an explanation on how the analyses presented will add value and make a contribution to this particular research area and a discussion of existing studies that will help contextualise the research presented. This is followed by a description of the data set and variables. The subsequent section includes a definition of the binary logistic regression model and a description of the results. This is followed in the next section by a discussion of the results with relation to the research questions set out in Section 3. The final two sections of the chapter include a discussion of the limitations of this research and a Conclusion.

3.2 Research Questions

There are five main research questions that will be addressed. They are as follows:

1) How does type of term-time accommodation vary for female students across White, Indian, Bangladeshi and Pakistani ethnic groups?

The relationship between ethnicity and term-time accommodation status will be explored controlling for other factors. This is a research area that has had little attention. A binary logistic regression will model this, the use of which is explained further on in this chapter. Increasing knowledge on which students wish to continue staying at home can improve awareness of some of the issues that students face such as funding, housing costs and social pressures to remain living with the family. It is possible that students may benefit more by choosing to move away from home rather than stay in their local area. As a student widens the range within which they are able or willing to travel in order to study, they will have more choice of institution and course.

2) Is there a relationship between socio-economic group and term-time accommodation?

Papageorgiou (2008) set out to investigate distance travelled by students to HEI and its correlation to a number of socio-cultural characteristics. UCAS applicant and acceptance data for 2006 were used to examine where applicants chose to apply and where they were accepted. A relationship between distance to be travelled and socio-economic group (SEG) was evident in the findings. Applicants from the Higher Managerial and Professional group, the highest SEG, had the lowest rate of local applications and the greatest proportion of applicants applying the furthest from home. In contrast, students from the Routine occupation group, the lowest SEG, had the highest rate of local applicants. A number of factors were included in the study. A correlation between a decision to stay at home and ethnicity was not explored, but will be addressed in this study. The relationship between each of the variables and distance were examined separately. The author did not conduct a regression analysis where the effects of each factor could be seen controlling for other factors.

Papageorgiou (2008) has shown that there is a strong relationship between socio-economic background and distance to HEI. Students from lower SEGs may have lower aspirations to move away. The expenses related to visiting a distant university on an open day may be a deterring factor in the first instant. The costs of relocating could be an incentive for less privileged students to stay closer to home. These are not one off costs but on-going as students will travel to their university location from their family home a minimum of three times a year during vacation periods. Furthermore, the prospect of funding rent and bills as well as course related expenses could deter many from less affluent backgrounds from moving out. These expenses will be less of a concern for students from more affluent families.

It is evident that ethnic minorities are distributed unevenly across socio-economic groups, and some groups are more likely to experience deprivation than others. Platt (2007) found in her review of literature on poverty and ethnicity that ethnic minority groups had higher rates of poverty than the

average for the population. Bangladeshis and Pakistanis were among those that experienced the highest rates of poverty and deprivation. Bangladeshis in particular were identified as having the greatest and severest poverty, and this was true even when different measures of deprivation were used. It is clear then that lower socio-economic background could explain why students from certain ethnic groups are less likely to leave the parental/guardian home whilst studying at university.

3) Is there a relationship between academic ability and term-time accommodation? Does this relationship vary across ethnic group?

In this study, A-Level score is used as a measure for academic ability. Students with lower scores will have less choice over institutions and where they can go to study. They will tend to be limited to lower status institutions that have lower entry requirements. Students with high scores will have more of an option of attending low and high status HEIs. A-level success varies across ethnic group (Leslie and Drinkwater 1999). It is possible that students from certain ethnic groups are less likely to leave the parental home due to their lower attainment.

Top-ranked universities are generally widely spaced geographically (Vignoles et al. 2008). Students with higher A-level scores may have more incentive and opportunity to move out of the parental home and closer to the top-ranked institutions. If students from some ethnic groups are more likely to remain in the parental home, even with higher A-level scores, it is possible that their decision is more related to cultural pressures and/or a reluctance to leave home. Investigating how the relationship between A-level score and term-time accommodation varies across ethnic group will help demonstrate if this is indeed the case.

4) Are female students from some ethnic groups more or less likely to move out of their region to attend university, conditioning on the fact they are not residing in the parental/guardian home?

Once Asian female students have made the decision not to stay in their local area, do they behave in the same way as White students that have also moved away? The HESA data sets used in this analysis include information on students home and institution regions. It will be possible to identify if students that move out stay in their region or move into a new region. There may be a correlation where students from the ethnic groups most likely to stay living in the parental/guardian home are also more likely to stay closer to home if they do indeed move out. There are a number of reasons why this could be the case.

Students coming from backgrounds where fewer people leave home in order to attend university might exercise the most caution when relocating, not least as a result of financial concerns. They may have commitments at home that they would want to keep by way of part-time jobs, for example. First generation members of the Asian communities are more likely to be self-employed and commitments related to the running of family businesses could be a factor that deters Asian students from moving away in order to study (Clark and Drinkwater 2006). Staying close to home would make it more feasible to keep any such commitments. Furthermore, if students have had to overcome cultural pressures to stay residing in the parental home, families may be more likely to be supportive if they are within easy reach of the student. They may be more aware of surrounding areas with regards to safety, transport links and access to amenities and take comfort in the fact they can keep close contact with the student even if they are not living in the family home.

5) How does the picture change between 1998 and 2005? Do changes in funding and an increase in widening participation initiatives overlap with changes in term-time accommodation?

It is important to understand students decisions in relation to the wider context in which they are made. For example, developments over this period of time in terms of participation and funding may have had an impact on the decisions that students make about their term-time accommodation. As the overall participation rate has increased, the composition of the student body

will have changed including more students from lower socio-economic backgrounds. These students may well be more inclined to look mainly in their local area for HE provision. With access to data sets for two years, it will be possible to not only explore differences across ethnic groups at any one time but also to compare how changes in term-time accommodation patterns coincide with key developments in UK HE.

In line with an increase in widening participation initiatives, women from all the Asian groups have had a growth in participation in HE since the early 1990s. Indian women have high participation that is growing moderately. Between academic years 1994/95 and 2004/05, there was an 85% increase in the number of first year UK domiciled full-time first degree female students for this group. Pakistani women's participation is moderate but rapidly growing, where this group saw a 159% increase. Bangladeshi women have the lowest participation of the three groups but their rates are also increasing rapidly with a substantial increase of 274%. Making a comparison between the Asian groups and White women will also make up an important part of this analysis. The White female group had the lowest percentage increase of students with 43% (Bagguley and Hussain 2007:10). It is possible that changes in the number of Asian women going to university have had an impact on the HE routes they follow in some way. Analysing two data sets will help me to explore this issue.

In terms of developments in funding during this period, the changes have been more subtle. The key change in student finance in recent years has been the introduction of tuition fees in 2006 (Directgov[7]). It will not be possible to study the impact of this change here as data were not available for that year. However, there have been other more general developments in HE that make comparing the data sets of interest. In particular, there has been an increase in widening participation initiatives. An example of this is Aimhigher which was launched in 2001 (Department for Children, Schools and Families (DCSF) 2008). The programme is focused particularly on young people from disadvantaged socio-economic backgrounds, some ethnic minority groups

[7] No date given.

and people with disabilities. Schools involved with this initiative have had significant increases in participation rates.

The Sutton Trust offer summer schools that give an opportunity to experience university life, and over 800 young people participate every year. This is another important scheme that started in 1997 and consists of lectures, seminars and tutorials but also various social activities (Sutton Trust[8]). It should be made clear that it is not possible to identify whether or not a student was involved with any such initiatives in these data sets. Nonetheless, analysing these data sets for two years could still give a very broad indication of how these initiatives and changes may have had a general impact on how students participate in HE. Furthermore, the results for the 2005 data will provide a benchmark for any future analyses carried out with the use of later data.

There will have been an inevitable change in the make-up of the student body as a result of developments in funding and an increase in widening participation initiatives. It is my expectation that 1998 and 2005 results will not be consistent with each other. Furthermore, the percentage of students anticipating leaving with debts has risen over time. According to Callender and Wilkinson (2003) (cited in Callender and Jackson (2005:511)), in 1999 the figure was 81% and this rose to 92% in 2003. The average debt of students graduating has also risen. In 1998 it was approximately £3,466 which then increased to £8,666 in 2005. Students that move away will have higher debt than those that remain in the family home. It is possible to predict that in 2005 more students will be living in the parental home or moving within their region if they do move out on the basis that there has been an increase in anticipation of debt upon graduation, and an increase in average debt over time.

In this case, I would expect these new students are more likely to move away only if they feel that they can get a better return on their investment. For example, a course at a far off HEI could be renowned for the destinations of

[8] No date given.

past graduates. This course may be regarded as being one of the best as viewed by potential employers and therefore has a positive impact on employability and prospective earnings. Authors such as Berger (1988) argue that future earnings potential is given great consideration when students consider a subject to study. I would argue that this extends further to specific courses within subjects. Similarly, if a work placement element is offered at a far off university that is not offered on the same courses at local universities, a student may be more willing to move. The opportunity to experience working in an organisation that is linked to the industry in which the student may wish to work in upon graduation, and the added benefits of networking and securing future employment could encourage students to move further away from their family home.

It would not be appropriate however to suggest that students only make their HEI choices on the basis of career plans and prospective financial rewards. Research conducted by Purcell et al. (2008:9) involved an exploration of the reasons why students apply to enter HE. Future track data collected from a major longitudinal study of 129,020 applicants to full-time HE courses in the UK who applied through UCAS in 2006 were used in this research. 72% of students responded that part of the reason they were applying to enter HE was they wanted to study the particular subject/course. 62% cited realising their potential as another reason for applying. However, when it came to giving a main reason, long-term career plans and opportunity to get a good job were the two most popular reasons. The decision to apply to HE is more complex than future monetary rewards, however it is evident that these are central to the decision. This is especially true when financial concerns about attending university are more prominent in 2005 than in 1998.

3.3 Existing Research and Contribution to the Literature

Some of the existing studies in relevant research areas such as that conducted by Papageorgiou (2008) have already been discussed and used to frame the research questions. This section includes in it a discussion on

some of the other key literature on ethnicity, socio-economic group and term-time accommodation. Whilst discussing the work of other authors, the way in which this research makes a contribution to existing knowledge on Asian women and university accommodation is also highlighted throughout this section.

Some of the studies mentioned involve small-scale qualitative research. Others are based on larger survey-based quantitative studies. The first few studies that are discussed are those that have raised the importance of issues around student accommodation for Asian women. The key studies related to student accommodation patterns are discussed next. Research that relates to living trends amongst young people more generally are discussed towards the end of the section.

There has been more concern about the economic activity and labour market experiences of British South Asian women rather than their educational experiences. However, interest in the educational experience of members of these communities is growing. Existing research has touched upon a number of issues ranging from attainment levels to the impact of religious and cultural attitudes on education. A key objective is to build on the work of authors such as Bagguley and Hussain (2007) who identified many of the same themes around the decision to live at home whilst being at university but did not analyse with large-scale quantitative data.

HESA micro-data on enrolled undergraduate students that included information on key student characteristics are used in this analysis. More quantitative research with large samples of Asian students such as that presented in this chapter will not only assist in contextualising existing qualitative research but will also highlight key trends that probe further in-depth analysis. It will be possible to observe if these findings reflect the attitudes, processes and mechanisms highlighted in related qualitative work.

If some students are more likely to stay at home due to financial concerns or cultural attitudes, then it is imperative that local education and training opportunities match their aspirations and abilities (Paton 2007). It is not

clear, from either an ethnicity or socio-economic perspective, who the students that stay local are or what characteristics they have. It is important to have a clear picture of this before these students' needs are fully addressed.

More students from deprived backgrounds live at home and attend university part-time, illustrating that proximity is clearly of varying importance to different students. Vignoles et al. (2008) discuss how school leavers from more deprived backgrounds have a lower take up of HE due to the higher costs of attending for this group. These authors highlight the persistent inequality by neighbourhood regarding HE access. The costs of commuting and re-location are high barriers to university entrance particularly for lower-income students.

Authors such as Bagguley and Hussain (2007) have discussed how for South Asian women the decision to stay at home or move away is an important one. From discussions with students and careers officers, the former found that accommodation was a key factor differentiating Bangladeshi and Pakistani women from non-Muslim Indian women in their research. It became apparent that moving out of home was much more of an option for the latter than the former. The latter found in their research in Lancashire that for some South Asian women receiving support from their family to enter HE was dependent on their living at home and attending a local institution.

Conner et al.'s (1999) study included a major national survey of students applying for full-time undergraduate courses in 1998. There were over 20,000 responses to the survey. The survey was part of a study focused around student choice with particular emphasis on choice of institution. Students from different groups identified different factors that were important for them in their choices. Asian students stated distance from home as one of their most important factors that they considered when making their institution choices along with entry requirements, teaching reputation and employment prospects among others. It is evident then that the issue of local education is clearly relevant to the topic of Asian women and HE. It is yet to be explored with larger-scale data in order that it is

possible to see the extent to which these trends are widespread and what challenges they present for policy makers and local education providers.

Purcell et al. (2008) set out to explore the process of entry into and through HE. Future track data collected from a major longitudinal study of 129,020 applicants to full-time HE courses in the UK who applied through UCAS in 2006 were used in this research. One of the questions that participants were asked was regarding how they chose their HEIs. It was found that a third of Asian students chose HEIs on the basis that they could continue to live at home.

Not being in a position to move away in order to study when entering HE can have future repercussions. Faggian et al. (2006) reported that reduced mobility at the point of entrance can have longer-term implications for graduates. Their subsequent migration tendencies and consequently long-term incomes are reduced when compared to those that were mobile at the same stage. In their investigation using HESA data on students that graduated between 1998 and 2001, these authors found non-White students were less likely to migrate than White students. These included students categorised as Black or Asian, with no differentiation made within these groups. The research in this chapter goes a step further and breaks down the general "Asian" category and makes a differentiation between the Indian, Bangladeshi and Pakistani groups.

Studying the housing choices of female students is not only relevant to a broader understanding about the paths they follow into HE, but also to an understanding of their transitions into adulthood. Housing transitions from dependent living arrangements into independent living form an important part of the larger transition from youth to adulthood (Heath 2008). Ford et al. (2002) identified 5 distinct housing pathways, one of which is the student pathway. This was characterised by a high degree of foresight, access to the niche student housing market and considerable family support (cited in Heath 2008).

Other authors such as Cassidy, O'Connor and Dorrer (2006) analysed how minority ethnic and white young people experience transitions to adulthood. Young Pakistani people, in particular, were less likely than their White peers to move away to study and were more likely to express concerns about absence of family support and distractions from education goals and/or religious commitments away from home. Most participants chose to attend a university in their home town. Compared with Pakistani young people, moving away to study seemed to be more usual for Indian participants. They often explained their choices in terms of career opportunities. Heath (2008) has highlighted how South Asian young people tend to live at home until marriage unlike their White and Black peers who tend to have a variety of reasons for leaving home.

In this section existing work on term-time accommodation status has been explored. It has become apparent that this topic has not been analysed with the use of large-scale quantitative data. How patterns of moving away vs. remaining at home may have changed over time, in particular for Asian groups, is an area that has not been researched. It is not clear what factors effect this decision, or if certain factors have become more or less important over time. It is these issues that are addressed here. The next section gives a description of the data used in the analysis.

3.4 Data

HESA is the official organisation entrusted with collecting, analysing and disseminating quantitative information about UK HE. It was set up in response to a need for more coherence in statistics by various government departments, the higher education funding councils and the universities and colleges in 1993. The agency holds data on each publicly funded HEI[9], but not on privately funded degree awarding institutions. HEIs are obliged to send HESA a return every year containing a record for each student and staff member that they have. All these staff and student records are held

[9] It should be noted that students enrolled at the London Metropolitan University are not present in the data set as they have asked HESA not to release individual level data at present.

indefinitely since they are used to monitor HE participation over time. Access was gained to individual level administrative micro-data including particular variables with information on all UK domiciled undergraduate HE students, including those studying part-time. The data were received in text format and were later converted to data files that could be read into a statistics programme (STATA) for analysis. English domiciled students are defined as those whose normal residence is in England. I limited my study to these students only. The reason for this is discussed later in this section when discussing IMD scores.

The National Qualifications Framework (NQF) sets out the levels against which a qualification can be recognised. It comprises nine levels, from entry level to level 8. Where qualifications share the same level, they are broadly similar in terms of the demand they place on the learner. HE students are identified as those on programmes of study for which the level of instruction is above that of NQF level 3 (Ofqual[10]). Overseas visiting and exchange students, and those studying outside of the UK for the whole of their programme of study are not present in these data sets. I decided only to include students identified in their first year of study. Changes are made to course options and institutions every year. Universities opt to introduce or take away courses and institutions merge or change structure on a regular basis. Limiting the sample to only one cohort meant that these students will have had the same choices available to them. An advantage of these data sets is that excluding students in others years did not render the sample sizes too small.

The focus of the study is differences between female students of specific ethnic groups. Therefore, all students that were not from these groups were excluded. I further restricted my sample to students aged 20 or under with A-levels as their highest qualification on entry[11]. This is because these students were more similar as these are traditional qualifications that are mostly taken by young people at a similar age. They will have broadly similar

[10] No date given.
[11] What is reported as highest qualification on entry is not necessarily what was required for entry onto the course being studied.

options that may not be available to adult learners returning to education with Access courses, for example.

The number of Indian, Pakistani, Bangladeshi and White first year English Domiciled HE female students aged 20 or under with GCE A-level as their highest qualification on entry studying on a full time basis in the 1998/99 data set is 62,072 and in the 2005/06 data set is 95,713. Table B.1 shows the Ethnic breakdown of the two data sets (All tables can be found in Appendix B). It is evident that the number of students enrolled has changed between 1998 and 2005 and there has been an increase in participation between the years. The ethnic minority groups all make up more of the sample in 2005 than in 1995. The Pakistani group has the greatest percentage point increase of 1.1.

The variables analysed that were available in both data sets include: ethnicity, A-level tariff score, term-time accommodation status, domicile (parental address) region, institution region and Lower Super Output Area (LSOA) for the parental address. Information on Index of Multiple Deprivation (IMD) scores, based on students' LSOAs, was not available but was later attached to the data set. The method used for constructing the IMD is explained further on in the chapter. In the 2005 data set, a socio-economic group variable was also available.

3.4.1 A-level Tariff Score

The scale on which A-level results are measured changed between 1998 and 2005. The 1998 data set includes separate variables for A/AS-Levels and Scottish Highers point scores. The score is a sum of the three best passes for each of these two qualifications or its equivalent. The 1998 dataset included a binary identifier variable for students that held Highers qualifications versus those that did not. Given the restriction to students domiciled in England, the number of students with the Highers qualification in 1998 was so small they were dropped from the analysis. Students could have a maximum of 30

points. Each GCE A-level grade was awarded the following points: A=10, B=8, C=6, D=4 and E=2.

Each HEI varies on whether or not they wish to include results for General Studies examinations in Tariff score. It is difficult to know which HEIs have included them, and this information is not available in the data sets. However the implications of this will not be great. Some universities do consider this A-level in confirming a student's place at the university if they have not met their grade requirements in their other subjects. This is because it can demonstrate that a student has more potential than just within the boundaries of the other subjects they are studying. However, only a small proportion of students study this subject as on the whole universities do not regard General Studies as a main qualification and most are unwilling to include the subject in their offers (TSR 2009). Therefore, the variation amongst universities in their willingness to accept the subject has little ramifications for this research as it does not apply to most students.

In each year, the % of students for which information on this variable was missing is not great. In 1998, this information was available for 85.4% of the sample. The coding for the variable Highest Qualification on entry does not allow to separate between students with GCE A Level qualifications and equivalent qualifications. These include Scottish Highers, GNVQ/GSVQ level 3, NVQ/SVQ level 3, BTEC and Scottish National Certificates/Diplomas. For this reason 12.4% (8,746) of students were in the not applicable category for the A Level Tariff variable. These students were excluded from the analysis as it was concluded that they did not have GCE A Level qualifications but equivalent qualifications.

In terms of the 2005 data set, 88.8% of the sample had A-Level Tariff score information. For 4.5% (4,481) of students it was not applicable, and again these students were excluded from the analysis as they were with the 1998 data set. The Bangladeshi group had the highest % of missing data with 9.1%, followed by the White (7.2%) and Pakistani (7.0%) groups. The Indian group had the lowest percentage with 4.2%.

In 2002, a new Tariff point system was introduced. Firstly, there was an alteration in terms of the qualifications that were included. Where as in 1998, the score was a sum of the three best passes, in 2005 the total tariff score includes all qualifications and not just the best three. Secondly the more recent 2005 data set included a single variable for each where points for both the A/AS level and Scottish Highers would now be measured on the same scale. The new system changed the way in which points would be scored. For example, an "A" grade would now be the equivalent of 120 points[12]. In order to make the interpretation of changes over time easier, the two A/AS-level variables were standardised. They were both transformed into z-scores. The results would then show how many standard deviations away from the mean a student's score was. Those students with missing Tariff information were given z-scores of 0.

Mean z-scores by ethnic group for 1998/99 and 2005/06 can be found in Table B.2. In 1998/99, the White group had the only mean z-score above 0. After this, the ethnic group with the highest z-score was the Indian group. The Bangladeshi group had the lowest mean z-score. The increase in widening participation activity during the seven year period may have had an impact on giving students with lower attainment the opportunity to participate in HE. This is apparent by the fact that all the ethnic groups have lower z-scores in 2005 than 1998. The White group has only a marginal decrease and the Pakistani group has the greatest increase. Again it is the White group that has the highest mean score in 2005, followed by the Indian group. The students with the lowest mean score are those from the Bangladeshi group.

3.4.2 Term-Time Accommodation

This variable has five categories: Institution maintained, Parental/Guardian home, Own home, Other and Not known. This information relates to where a student lives during the academic year and it is compulsory for full-time students to give this information on their enrolment forms. If a student is in

[12] See: http://www.ucas.com/students/ucastariff/tarifftables/ for a full explanation of methods used for calculating points.

temporary accommodation but has permanent accommodation agreed, they are instead asked to give information on their planned accommodation. Institution owned housing and property leased by the institution and sub-let to students is categorised as Institution maintained. Those students in the Own home category are those renting private accommodation in addition to those who are home owners.

Students whose Term-time accommodation was unknown were not included in the analyses. In the 1998 data set the Pakistani group had the highest % in the unknown category (6.0%) followed by the White (5.8%) and Bangladeshi group (5.6%). The Indian group had the lowest % of students with unknown ethnicity (4.4%). Overall, 5.7% (3,749) of the sample were in the unknown category. The figures for unknown Term-time accommodation for the 2005 data set are as follows: White (4.1%), Bangladeshi (3.1%), Indian (2.7%) and Pakistani (2.7%). In total, 3.9% (4,096) of students in the sample are in the unknown category. In percentage terms fewer students are in the Unknown category in 2005 than in 1998.

A breakdown of students living in different types of accommodation by ethnic group for 1998 and 2005 can be seen in Table B.3. It is clear that accommodation does vary by ethnicity where the White group has the lowest percentage of students living in the parental/guardian home. In terms of the Asian groups, it was the Indian group that had the lowest number of students in the parental/guardian home. This was true for both academic years. It is evident that between 1998 and 2005, there has been an overall increase of 6.4 percentage points in the number of students living in the parental/guardian home. The Bangladeshi group had the lowest increase (4.3%) in students living in the parental/guardian home and the Pakistani group had the highest increase (9.8%). The Indian group had an increase of 6.4% and the White group had an increase of 5.3%.

3.4.3 Domicile and Institution region

Information on the region a student comes from relates to their permanent home address (see Table B.4). HESA use students' home postcodes to derive

this information. In 1998/99 they were mapped from either National Statistics or Geoplan postcode marketing depending upon which data were available. In 2005, regions were mapped using the National Statistics Postcode Directory. In the case of institution, this is allocated to the administrative centre of the institution.

A breakdown of ethnicity and institution region can be found in Table B.5. It is important to take into account that there may be students registered at institutions but who are studying in regions other than that of the administrative centre. No identification of these students is available in the data sets. During the seven-year period some new institutions have emerged and others have become affiliated with other institutions or simply changed their name. However, the number of institutions that have changed in their classification is not substantial.

It is evident from the figures presented in Table B.4 that a high percentage of Asian students are from the London and West Midlands areas, and this is true in 1998 and 2005. In the earlier year, 40.0% of Indians, 28.6% of Pakistanis and 54.5% of Bangladeshis were from London. When comparing these figures with those in Table B.5, it is clear that the regions that the majority of Asian students are from are also popular regions for them to attend university in. Universities in the London and West Midlands regions are highly popular for Asian students. For example, in 1998 35% of Indians, 33% of Pakistanis and 58.3% of Bangladeshis attended universities in the London region. This strong correlation that is evident in the 1998 data set is also apparent in the 2005 results.

In the later data set, the majority of Asian students are still from London and the West Midlands, and a high percentage of White students are from the South East and South West regions. Students that came from the South East region made up the largest percentage of the White group in both 1998 (17.9%) and 2005 (18.7%). A high percentage of White Students are also from the North West. In contrast to the Asian groups, universities in the North West were highly popular for White students with 14.4% in 1998 and 16.2% in 2005 attending universities in this region. However, HEIs in the South East region

are also popular with these students where 12.8% of White students in 1998 and 14.2% in 2005 attended university in this region.

3.4.4 Same Region

A new binary variable Same Region was derived with the use of the Domicile and Institution region variables. Where students' domicile and institution region were the same, they were coded as 1. If they were enrolled at a HEI in a different region to the one in which they were domiciled they were coded as 0. As more students chose to live at home during their studies, those that moved out chose to stay closer to home. In 1998, 23.1% of all students that moved out of the parental/guardian home stayed in their region, and this figure rose to 30.0% in 2005. A breakdown of Ethnicity by Same Region is given in Table B.6. As I am studying those that do leave home, those students that remain living in the parental home are not included in this Table. As well as being most likely to stay at home, the Bangladeshi and Pakistani groups have the largest percentage of students that stay in their region to study given that they move out of the parental home, and this is true for both 1998 and 2005. In 2005, there was an overall increase in students remaining in their region to attend university. It was greatest for the Bangladeshi (18.3%) and Pakistani (10.5%) groups and somewhat less for the White (6.7%) and Indian (5.1%) groups.

3.4.5 Index of Multiple Deprivation

Deprivation indices vary in their measurement across England, Scotland, Wales and Northern Ireland. The reason for limiting the sample to English domiciled students was that it made the calculation of IMD scores more efficient due to issues around merging IMD information into the main data sets. This process is discussed in more detail further on in this section. The negative implications of including only English students are limited. This is because the number of Asian students from Scotland, Wales and Northern

Ireland were small and omitting these students made little difference to the sample sizes.

The IMD 2007 was used and is a measure of small area deprivation. It is made up of seven domain indices that are weighted and combined to create the overall IMD. These domains are income, employment, health deprivation and disability, education skills and training, barriers to housing and services, crime and living environment. The higher an IMD score an LSOA has, the more deprived it is relative to another with a lower score (Communities and Local Government 2007).

The LSOA information relates to a student's domicile home address. SOAs are geographic measurements that have been designed to improve the reporting of small area statistics. The LSOA is the lowest layer and has the smallest minimum population of 1000 and mean population of 1500 (ONS 2008). This information was missing for 3.2 (2,083) % of students in 1998, and 3.1 (3,008) % in 2005. Overall, there are a very small percentage of IMD missing values.

As LSOA information was available for 1998 and 2005, IMD scores were attached to both data sets. The score for each LSOA in England is available from the Communities and Neighbourhoods government website in Excel format. This file was converted into a data file and then merged with each of the data sets for 1998 and 2005 so that IMD scores were linked in with LSOAs. Had Scottish, Welsh and Irish students been included, this process would have had to be repeated for each country. Also, separate variables would have to be generated for these countries were they to be included. Therefore, only including English students in the study made the process of including IMD-score as a variable more efficient.

The new variable was the only (geographical) socio-economic indicator in the 1998 data set. In 2005, it was used as one of two socio-economic variables as information was also available on SEG on the basis of parental occupation. Comparing the mean IMD scores for each ethnic group between the two years indicates little change. In 2005, it is still the White group that has the lowest

mean score and is the least deprived, and the Bangladeshi group that has the highest mean score and is the most deprived (see Table B.7).

3.4.6 Socio-economic group

An SEG variable was only available in the 2005 data set. It is the same variable that was used in Chapter Two. Information on this variable is obtained from UCAS application forms which UCAS then pass on to HESA. Ideally, this variable would have also been available in the 1998 data set. It was made up of ten categories and grouped on the basis of occupation. Students that are in full-time education at the time of application are asked to state the occupation of the highest-earning family member of the household in which they live. If this household member is retired or unemployed, the student is asked to state their most recent occupation. Those that are not in full-time education and/or are aged 21 or over are asked to state their own occupation.

It is not surprising that the breakdown of ethnicity by SEG indicates that in 2005 the highest percentage of HE students are from Higher Managerial and Professional backgrounds, and this is true for every ethnic group (see Table B.8). The White (51.2%) and Indian (31.3%) groups appear to be clustered in the top three groups. This is less true for the other Asian groups where Pakistani (22.7%) and Bangladeshi (16.2%) groups are distributed more evenly across the other SEGs. It is the Bangladeshi group that has the highest percentage (18.3%) of students from a Routine occupational background.

There is an important characteristic that needs to be considered when discussing this variable. Firstly, the quality of the socio-economic data depends on the accuracy with which an applicant records their parental occupation. What is recorded may be vague and loosely linked to the sector and position of their parent(s). As such some degree of error is introduced when the occupation is recorded within one of the categories. However, this is clearly not an important feature of the data as overall 0.0% of the total sample are in the Not Classified category.

The percentage of students in the total sample for whom socio-economic information was unknown was 17.4%. There is a correlation between ethnicity and unknown information. The ethnic minority groups all have a higher percentage of students in this category. The Bangladeshi group had the highest percentage with 46.4% i.e. almost half of all students from the ethnic minority group in the category. The same figure for Pakistani students is 38.9% and 25.6% for Indian. The White group had the fewest students in this category (15.7%) by comparison. As there is a correlation between ethnicity and unknown SEG, any estimates produced for this variable where missing cases were excluded would be biased. The common method used for dealing with this problem is to model these data. In the regression analysis that is presented here, dummy variables for these categories will be used in order to account for them. Furthermore, the information available on IMD scores, for which data are missing or unclassified to a much lesser extent, can be used as a geographical proxy for SEG. This can help reduce any bias that exists due to missing data for this variable.

3.4.7 Issues of comparison

The two data sets are not the same in the categorisation of some variables, and it is evident there has been modification between the two years. This is a common problem when comparisons are made over time or even with the use of longitudinal data. Where there have been differences, they have been made clear from the outset in order that they are taken into account when analysing the results. It would be preferable if there was complete consistency throughout. It is clear however that this issue of differences does not extend to all variables, and does not render broad comparison impossible. There are no especially large differences or v in classification for any of the variables.

3.5 Results

3.5.1 Binary Logistic Regression

It is clear that there is variation in term-time accommodation by ethnic group, but is this still true when controlling for other factors? A binary logistic regression was used to analyse if this was indeed the case. Logistic regression models give the probability of a positive response, in this case living in the parental/guardian home in the first year of study, given the values of other variables. The response in this model can be expressed as follows:

$$\log\left[\frac{\pi_{(x)}}{1-\pi_{(x)}}\right] = \beta X$$

(Agresti 1996, 77).

$\pi_{(x)}$ is the probability of living at home (outcome 1) and 1 – $\pi_{(x)}$ is the probability of living away from home (outcome 2). A forward stepwise approach to modelling was used where one set of dummy variables was added at a time. They are presented as Exp. β coefficients or odds ratios. They represent the multiplicative change in odds of living at home (outcome 1) versus not living at home (outcome 2). A value above 1 indicates a greater likelihood of living at home and a value below 1 shows a lesser likelihood of living at home. Figures presented in brackets are associated Z statistics for the hypothesis test that the odds ratio is equal to 1.0. Results that are statistically significant at the 1% or 5% level are presented in bold.

Results from the binary logistic regression analyses are discussed in the remainder of this section. Odds ratios for the newly generated Parental/Guardian home variable are presented first, followed by results for the second new variable Same Region. In each case, the 1998 data set is discussed first. Results are then be compared with those from the more recent 2005 data set.

3.5.2 Parental/Guardian home

3.5.2.1 1998 Data Set

The response variable was a newly generated Parental/Guardian home variable. The original term-time accommodation variable was recoded and a new binary variable was created where Parental/Guardian home was one category, and the remaining categories were collapsed into a second category. This was because it was the decision to stay in the parental/guardian home or to move out that was most important, and not what other types of accommodation a student might be living in. students whose term-time accommodation was not known in the regression analysis.

The 1998 results are presented in Table B.9 and are discussed first. The first model included only ethnicity dummy variables where the reference category was White. As the results for this first model show the effect of ethnicity without controlling for any other variables they do not add to the results of the cross-tabulation presented earlier in the data section (Table B.3). Students from the Asian groups are all more likely than the White group to live at home.

Model 2 also includes dummy variables for Region of Domicile where London is excluded as the reference category. Ethnic minority groups are distributed disproportionately throughout England as shown in Table B.4. Ethnicity may just proxy region if the latter variable is not controlled for. It is evident that students from most regions have a decrease in odds of staying at home when compared to those from London. It is only students from the North East and the West Midlands that are more likely than students from London to remain living in the parental/guardian home. The result for the latter region is not statistically significant. Students from the former region have an increase in odds of 67%.

It is not surprising that students from London are more likely to live at home given the high number of universities and other HE providers in the capital that would make commuting an easy option. In addition, the living costs of

leaving the parental home and moving out are greater in London due to higher rent and travel costs. For example, UNITE are a private company offering student accommodation, mainly in private halls of residence. At the time of writing, prices for a room in one of their London properties started at £155/week. This is much higher than a room in one of their Birmingham properties where prices start from £98/week, for example (UNITE 2009).

Adding Region to the model had the impact of reducing the increase in odds for each ethnic group, although all the Asian groups are still much more likely than Whites to live at home. The result for the Indian group is affected the least. It is clear though that including Region in the model has had a large impact on reducing the Pakistani result, and an even larger impact on reducing the Bangladeshi result. Controlling for Region of Domicile has changed the result for the latter group from a 1006% increase in odds to 805% increase in odds. These students are still much more likely to live at home than White students, but taking into account Region has explained some of this difference. This could be attributed to the fact that the Bangladeshi group have a higher concentration of students that come from London than any of the other ethnic groups, for example. This disproportionate spread of ethnic minorities across domicile region was evident in the results presented in Table B.4.

Dummy variables for IMD were included in Model 3. As this variable is being included as a proxy for SEG, it is my expectation that students from more deprived SOAs will be more likely to stay at home whilst attending university as they will be more deterred by the costs of moving. The continuous variable was split into quintile groups. The bottom quintile was the reference category and included students with the lowest IMD scores, i.e. those that were least deprived. Adding this variable to the model only has the impact of reducing the increase in odds of living at home for Indian, Bangladeshi and Pakistani students by a very small degree. The IMD results indicate that students from less affluent areas are all more likely to live at home compared to those in the least deprived quintile. It is clear that IMDs 4 and 5 have the greatest difference to IMD 1. There is little difference between IMDs 1, 2 and 3 and the results for the latter two groups are not statistically significant. The increase

in odds of staying in the parental/guardian home is lowest for the 2nd quintile group (4%) and greatest for the 5th quintile group which is the most deprived (24%).

The impact of A-level Tariff score can be seen in Model 4. As mentioned earlier this was standardised and transformed into z-scores. The results show that every standard deviation increase above the mean score substantially decreases the odds of remaining in the parental home by 47%. Controlling for A-level score has the impact of reducing the increase in odds of staying at home for all three ethnic groups. A reduction can be seen for the Bangladeshi group where the result changes from an 804% increase in odds to a 656% increase in odds. There is also a reduction for the Indian group, where the result changes from a 120% increase in odds to an 81% increase in odds.

The final stage of the regression analysis involved adding interaction terms[13] for Ethnicity and A-level score to the model. The results from Model 4 demonstrated that there is a strong relationship between academic ability and term-time accommodation. A-level Tariff score has had a considerable impact on changing the ethnicity results. Including interaction terms will allow us to see how this relationship varies across ethnic group. In other words it will become apparent whether or not higher achieving students from the four ethnic groups behave in the same way or whether students from the Asian groups are more resistant to the effects of an increase in Tariff score than White students.

The main effect for Tariff score gives the effect for the White group, and in order to show the effect for the other ethnic groups it is necessary to multiply this main effect with the interaction term. The odds ratios for the interaction terms for the ethnic minority groups are all positive and significantly greater than one. It is therefore possible to reject the hypothesis that the effect of an

[13] The multiplicative interaction effect can be calculated by multiplying together the various terms for each of the explanatory variables and related interaction. It is illustrated by the following formula:

$$\frac{p}{1-p} = e^{\beta_0}.e^{\beta_1 x_1}.e^{\beta_2 x_2}.e^{\beta_3 (x_1.x_2)}$$

increase in Tariff score is the same for Indian, Pakistani and Bangladeshi female students as it is for White students. The odds ratios for the Pakistani and Bangladeshi group interaction terms are identical and this reflects the similarity between these groups. The result for the White group, i.e. the main effect, is less than one. The effect of increasing Tariff score is greater for White students than Asian students and higher achieving White students are less likely to live in the parental home than higher achieving Asian students.

The effect for Indian students can be calculated by multiplying the main effect for Tariff Z-Score (0.51) and the interaction between Indian and Tariff score (1.23). The result is 0.63 indicating a 37% decrease in odds of living at home. The impact of a one standard deviation increase in Tariff score has less effect in lowering the odds of living in the parental home for the Indian group than it does for the White group. Similarly, the effect for the Pakistani group is calculated by multiplying 0.51 by 1.46 with a result of 0.74 indicating a 26% decrease in odds. The Pakistani and Bangladeshi groups have the same interaction result of 0.74. It is evident then that an improvement in A-level-score has the impact of decreasing the odds of staying at home for both the Indian and White groups. It has the same effect for the other Asian groups but to a far lesser extent. Higher achieving Bangladeshi and Pakistani students are more resistant to moving out of the parental home than Indian and White students despite having higher grades.

It is also possible to examine these interaction effects by using the parameters estimated to compute predicted probabilities for fixed categories of Ethnicity as A-Level Tariff score changes. Probabilities were calculated for students that had the same characteristics as the reference person (i.e. were from the London Region and were in the least deprived IMD quintile) but were from different Ethnic groups[14]. These probabilities were graphed in order to conceptualise with greater clarity how the relationship between A-Level Tariff

[14] The formula used to calculate predicted probabilities is as follows:

$$\hat{\pi}(x) = \frac{\exp(\hat{\alpha} + \hat{\beta}x)}{1 + \exp(\hat{\alpha} + \hat{\beta}x)}$$

(Agresti 1996, 110).

score and Term-Time accommodation varies across ethnic group (See Figure B.1).

It is evident that as students' Tariff scores increase towards and above the mean, their probability of staying in the parental home reduces, and this is true for each ethnic group. The lines for the Bangladeshi and Pakistani groups are closest together. The similarity between these two groups can be seen in the way that the lines for each follow the same trend as A-Level score increases. Of all the Asian groups, the Indian group is closest to the White group. The lines for the Indian and White students are distant from the lines for the other two groups. The slopes are also steeper indicating that an increase in A-level Tariff score has a greater impact on decreasing the probability of a student staying in their parental/guardian home for these two groups than for the Bangladeshi and Pakistani groups.

3.5.2.2 2005 Data Set

On the basis that the student population has altered over time, my expectation was that there would be a change in the results between 1998 and 2005. As participation has increased over time, there is a greater likelihood of students knowing someone in their network that has attended university. It is possible that students in this more recent data set will be more familiar with the HE system, and where to find information that will suitably inform their choices. Consequently, they will be more in tune with the costs and benefits of going to university either at home or away as mentioned earlier in this paper. I would expect these new students to be aware that the graduate market is increasingly flooded, and that they need to exercise as much choice as their A-level scores will give them and choose a course/institution that will maximise their marketability in the job market upon graduation.

It is possible that the impact of A-level Tariff score will have become more important in 2005 than in 1998 in whether or not a student moves away as

students become increasingly conscious about the costs of participating in HE. They will try to attend the university that offers the course that maximises the return on their investment as much as possible, even if that involves moving out of the family home. As such, students with higher grades will be more willing to exercise their greater choice than higher achieving students in previous years. Similarly, students that do not believe there to be a great difference between a course offered in their local HEI and those offered at universities further away will be more reluctant to move in 2005 than in 1998. This could be a potential explanation for the increase in students living in the Parental/Guardian home in the latter year as seen in Table B.3.

The results in Table B.3 showed that more students from all ethnic groups are living at home in 2005 than in 1998. The 2005 results presented in Table B.11 show Indian, Pakistani and Bangladeshi students relative to Whites. The same approach to the modelling that was used with the 1998 sample was used again. What is apparent when studying the first model is that the odds ratios are somewhat smaller for the Indian and Bangladeshi groups than they were in 1998. They suggest a lesser increase in odds of staying at home for the Asian groups compared to White students. It is however slightly larger for the Pakistani group. Again, including the Region of Domicile variable in the model has the impact of reducing the increase in odds for each ethnic group. In Model 2, students from the North East are more likely than those from London to live at home during their studies, with a 96% increase in odds. In 1998 the result for the West Midlands indicated a greater likelihood of students from that region staying in the parental home. The result was not significant in the earlier data set but is significant in 2005. Furthermore, in 2005 students from the North West are also more likely to stay in the parental home compared to students from London, and this was not the case in 1998.

In studying the results for Model 3, it is apparent that students from the lower two IMD quintiles are more likely not to move away from home compared to those from the upper quintile. The results for the third quintile also indicate a greater likelihood of living in the parental home, but the result

is not statistically significant. Students in the 4th quintile had a 10% increase in odds of staying at home compared to the least deprived students. Students in the 5th quintile had a 18% increase in odds. The result for students from the most deprived quintile shows a lesser increase in odds than it did in 1998. This suggests that the gap between the most and least deprived has narrowed over time.

The impact of adding the A-level Tariff variable to the model has been consistent in significantly reducing the odds of remaining in the parental/guardian home for each ethnic group (Model 4). There is a change in odds ratio for Tariff Z- score over the two years. In 1998 every standard deviation increase above the mean score decreased the odds of remaining in the parental home by 47%. However, in 2005 the decrease in odds is even greater (62%). This change in result shows that although overall more students chose not to move out of the parental home in 2005 than in 1998, students with higher A-level scores were still more likely to move away.

The fifth model estimated with 2005 data also included interaction terms for ethnicity and A-level score. The interaction result for Indian was 0.45, a 55% decrease in odds. The result is 0.51 (49% decrease in odds) for the Pakistani group, and 0.54 (46% decrease in odds) for the Bangladeshi group. Asian students are still less likely than White students to take advantage of an increase in Tariff score. The Indian group is still closest to the White group compared to the other two Asian groups.

What did change however is that higher achieving Asian students were more likely to move away and take advantage of a greater choice of institution beyond local universities in 2005 than in 1998. The biggest change is for the Pakistani group where there has been a further 23% decrease in odds of staying at home in 2005. The change in the result for the Bangladeshi and Indian groups is more subtle with a further 20% and 18% decrease in odds of staying at home. These changes over time are clearer to see when comparing the plotted predicted probabilities (see Figure B.2). Figures B.3, B.4 and B.5

show changes over time for each ethnic minority group compared to the White group separately.

Probabilities were computed for fixed categories of Ethnicity as A-Level Tariff score changed, in the same manner as they were for the 1998 data set. They were generated for students that came from different Ethnic groups but otherwise had the same characteristics as the reference person (i.e. were from the London Region and were in the least deprived IMD quintile). The Bangladeshi and Pakistani groups follow a more similar trend in 2005 than in 1998, where in the latter year the lines are closer together. They overlap at first and then diverge where the line for the Pakistani group is closer to 0 indicating that the highest achieving students from this group are more likely to move out of the parental home than Bangladeshi students with the same high A-level scores. It is quite clear that in 1998 the gap between students from these groups and Indian students is quite wide, and this is still true in 2005. Indeed, the White and Indian groups have come closer together, particularly in terms of students with z-scores above 0. At this point, the lines for both of these groups converge.

An additional model was estimated with the 2005 data (Model 6). Dummy variables for SEG were also added as explanatory variables. The results suggest that students from lower socio-economic backgrounds are all more likely to remain living in the parental/guardian home, in comparison to those from a Higher Managerial and Professional group (the reference category). The percentage increase in odds is lowest for the Lower Managerial group (28%) and highest for the Routine group (130%). These findings echo the IMD results which suggest students in more deprived LSOAs are more likely to stay at home during their studies university.

3.5.3 Same Region

As well as exploring the Parental/Guardian home variable with a number of binary logistic regression models, a series of models were estimated with the newly created Same Region variable as the response. Earlier in this section an

expectation of a difference between the 1998 and 2005 results for the variable Parental/Guardian home was discussed. Similarly, with regards to the variable Same Region, one expectation is that the results for the two years will not be consistent. The increase in financial concerns about the costs of attending university will not only impact on the decision to stay living in the family home, but also how far to move away. Staying within the Region of Domicile could in a number of cases prove less expensive than moving further out into a new region. For example, students may have commitments at home that they want to keep. This may involve extensive travelling between their university residence and their family home. Staying within their region will cut down travelling time and cost. Furthermore, students may have had a part-time weekend/evening job they have at home. Students may wish to keep this job when they start university in order to help finance their studies. Attending a university in the same region could make keeping their job, and the regular income it brings, more realistic. This would be particularly true of students from lower socio-economic backgrounds.

It could be argued that finding a new part-time job in a large university city would not be difficult. However, a student that regards this income not just as a small supplement to their income but a major component that they rely on for survival might be less willing to take the risk of going without a job for a few months while they settle into their new home, enrol on and start their new course and indeed find and secure their new employment. Furthermore, this employment may only be viable during term-time. Finally, in smaller university towns and cities, the number of part-time jobs available may be limited and there may be greater competition for these jobs amongst students.

For these reasons it would be expected that in 2005 not only will more students stay living in the family home, but if they do move out, they will be more likely to stay in their region. Students that will both move out of the family home and their domicile region will only do so if the course at a further HEI has an added feature/s that will benefit their employment prospects or meet their study interests is not offered at a more local HEI. As such, I would argue that the impact of A-level score will increase over time as

higher achieving students will have more university and hence course choice and they will do their best to capitalise on any advantage that it can give them.

It is evident that Asian students are less likely to move region, conditional on leaving home. What is being examined here is whether this is still the case when other factors are controlled for. Only students not living in the parental/guardian home are included in this part of the analysis. It is the probability of a student moving out of their region of domicile conditional on their decision to move out of the parental/guardian home that is being studied. The same explanatory variables used in the previous set of models will be used here.

3.5.3.1 1998 Data Set

The first model only includes ethnicity as an explanatory variable (see Table B.13). The results from Model 1 reflect the figures presented in Table B.6 that students from all of the Asian groups are more likely to stay in their Domicile Region when compared to their White counterparts. Indian students have the lowest increase in odds of 24% followed by the Pakistani group with a 95% increase in odds. Bangladeshi students have the greatest increase in odds with a 159% increase. Domicile Region was also included as an explanatory variable in Model 2. Students from the West Midlands and East regions are less likely to stay in their home region than students from London. Those from the East Midlands and South West are also less likely to stay in their own region, but the results are not statistically significant. Students from all other regions are more likely to stay in their region with those from the North West having the greatest increase in odds of 75%.

The results for the Indian and Bangladeshi groups suggest an even greater likelihood of staying in their own region. The former group now have a 32% increase in odds, and the latter group have a 162% increase in odds. There is an opposite effect with the Pakistani group where the results show a lesser increase in odds of 79% compared to 95%. Controlling for Region has

explained some of the variation by Ethnicity for this group. This could be an indication that Pakistani students do not move further away due to the concentration/quality of HEIs that exist in their Region. In contrast, Indians and Bangladeshis may have a lower number of HEIs that offer what they want in their home Regions, so they may argue that there is a greater choice or benefit that can be had from moving out of their region to attend university.

Model 3 also includes IMD as an explanatory variable. Students from IMDs 4 and 5 have a negligible increase in odds (1%) of remaining in their region compared to those in the least deprived quintile. These results are not statistically significant. It is clear then that IMD score is important when deciding to move out of the parental/guardian home, but of little consequence when deciding how far away to move.

The additional explanatory variable added in Model 4 is a z-score transformation of A-level Tariff score. Results show that every standard deviation increase above the mean score decreases the odds of remaining in the domicile region by 27% suggesting that higher achieving students move further away than lower achieving students. Interaction terms for ethnicity and A-level score were included in the final model that was estimated. Results from this model would show how the impact of A-level score varied across ethnic group. The result for the Indian group is 0.88 indicating a 12% decrease in odds of remaining in the same region. The Pakistani group sees a 5% decrease in odds. The result for the Bangladeshi group is not statistically significant. A one standard deviation increase in Tariff score has less effect in lowering the odds of staying in the domicile region for the Indian and Pakistani groups than it does for the White group. There appears to be a smaller change in odds with a standard deviation increase in Tariff score for the probability of staying in the same region than there was for the probability of remaining in the parental/guardian home whilst attending university.

Probabilities for students that had the same characteristics as the reference person but were from different ethnic groups were computed and graphed in the manner described earlier (see Figure B.6). An increase in A-level score

decreases the probability for students' of all ethnic groups of staying in the domicile region. The line for the Bangladeshi group is grey as, although the main effect is statistically significant, the interaction is not. The lines for the other two Asian groups are fairly parallel and appear to follow a similar trend, yet there is a clear distinction between the groups. It is clear that the White group has the steepest slope. This suggests that an increase in Tariff score has the greatest impact on decreasing the probability of staying in the same region for students from this ethnic group. The gap between the Indian and Pakistani groups is greater than it is between the White and Indian groups. As was the case with the parental/guardian home results, the Indian group is the closest in its behaviour to the White group when compared to the other two Asian groups.

3.5.3.2 2005 Data Set

The results for the binary logistic regression models estimated with the use of the 2005 data set can be found in Table B.15. Comparing the Model 1 results from both years, it is evident that the increase in odds of Indian students staying in the same region compared to White students is lower in 2005 (12%) than in 1998 (24%). This is not the case with the Bangladeshi and Pakistani students where they are even more likely to stay in their region in 2005 than in 1998. Controlling for their region of domicile in Model 2 further decreases the likelihood of staying in the same region for all three groups. All students from regions other than London are more likely to stay in their region, with the exception of students from the East of England. This was not the case in 1998. The increase is greatest for students from the North West (198%) and lowest for students from the East Midlands (16%). For students from the West Midlands the increase in odds is even less at 2% but the result is not statistically significant.

Relating these results back to those presented for the variable Parental/Guardian, it is evident that students from the North East, North West and West Midlands are all less likely to move out of the family home and also, conditional on having moved out, are less likely to move out of their region

than students from London. All of these regions have a high concentration of female students from at least one of the Asian groups.

Model 3 further includes IMD and the results again show that students not in the least deprived quintile are all more likely to stay in their region. It is those in the most deprived quintiles 4 and 5 that have the greatest increase in odds of 6% and 9% respectively. IMD 2 and IMD 3 both have increases in odds of 2%, however the results are not statistically significant. Comparing the results from 1998 and 2005, it is evident that the impact of IMD in increasing the odds of staying in the same region increases over time.

Model 4 also includes a z-score transformation of A-level Tariff score. The result suggests that an increase in score of one standard deviation above the mean decreases the odds of staying in the same region by 34%. There is a small difference between the data sets where in 1998 there was a 27% decrease. Model 5 was estimated with interaction terms for ethnicity and A-level score. The result for the Indian group is 0.98 indicating a 2% decrease in odds of moving out of the parental/guardian home and staying in the same region. The Bangladeshi group have a 34% (0.66) decrease in odds and the Pakistani group have a 43% (0.57) decrease in odds. The interaction results for the last two groups are not statistically significant. The impact of a one standard deviation increase in Tariff score has less effect in lowering the odds of staying in the domicile region for the Indian group than it does for the White group.

Predicted probabilities were computed and plotted as seen in Figure B.7. Figures B.8, B.9 and B.10 show changes over time for each ethnic minority group compared to the White group separately. For the two groups that had an insignificant interaction result, results are shown in black and grey. There is more of a distinction between the lines for each of the groups and they are not parallel as they were in 1998. What is noticeable, is that the Indian slope is far less steep in 2005 than in 1998. An increase in Tariff score is having a lesser effect in decreasing the probability of staying in the region of Domicile in the more recent year than in the earlier year. This change between the

years was not apparent in the results for the probability of staying in the parental/home.

The SEG findings reflect the IMD results and indicate that, in comparison to students from a Higher Managerial Background, all students are more likely to stay in their home region (see Model 6). Those from a Lower Managerial background have the lowest increase in odds of 13% compared to students from a Routine background that have the greatest increase in odds (85%). The result for the Never Worked category is not statistically significant.

3.6 Discussion

1) How does type of term-time accommodation vary for female students across White, Indian, Bangladeshi and Pakistani ethnic groups?

It is clear that Asian female students are more likely than White students to stay residing in the parental/guardian home during their first year at university. This is still the case after controlling for Domicile Region, IMD score, A-level score and SEG. That the Asian groups all had a greater likelihood of living independently indicates broadly similar attitudes towards the issue of living alone during university attendance. Moving toward a more independent lifestyle at age 18 when the majority of students begin their HE studies is likely to be more associated with notions of adulthood and gaining independence for the White students, as discussed by Heath (2008). This may be why fewer students from this ethnic group remain living in the family home in comparison to Asian students.

Bangladeshi students are the most likely to stay at home followed by Pakistani and Indian students. Why is there such a difference between Bangladeshi and Pakistani students compared to Indian students? Abbas (2003) explored the impact of religio-cultural norms and values on the education of Asian women. Interviews were conducted on college students and parents. Indians are predominantly Hindu or Sikh. Bangladeshis and Pakistanis tend to identify themselves as Muslim. He commented on the way

in which the spiritual dimension of Sikhism and Hinduism does not tend to impact on the day-to-day lives of young women in the same way that Islam does. Issues related to clothing practices, freedom of movement, ability to socialise with young men as well as proximity and consumption of alcohol impact more strongly upon Muslims. These are a few reasons that might explain why there are differences between the groups, and why moving out of the parental/guardian home does not seem to be as critical a decision for Indian female students.

2) Is there a relationship between academic ability and term-time accommodation? Does this relationship vary across ethnic group?

There is a clear association between these two variables. Higher ability students that achieve higher A-level scores are much more likely to move out of the parental home whilst attending university than students that achieved lower scores. A possible explanation for this is that improved grades give students wider choice in the universities that they can apply to.

The interaction results suggested that an improvement in A-level score decreases the likelihood of staying at home for all students, regardless of Ethnic group. Of the ethnic minority groups, an increase in A-level score had the biggest impact of decreasing the likelihood of staying at home on the Indian group, and had the least impact on the Bangladeshi group. This was the case for both 1998 and 2005. The decrease is less for all three Asian groups in comparison to the White group illustrating that the decision to move away may be bound up with cultural attitudes, as Asian students are less likely than White students to take advantage of the increase in HEI choice that improved grades can give.

3) Is there a relationship between socio-economic group and term-time accommodation?

Two socio-economic group explanatory variables were used in this analysis. The first was IMD score linked to LSOA and is a geographical indicator of socio-economic group. In 2005, there was an additional variable where

socio-economic status was classified in accordance with parental occupation. Results for both variables were consistent in their indication of a relationship between SEG and term-time accommodation where the least affluent students are more likely to stay living in the parental/guardian home whilst attending university. The increase in odds of staying at home decreases as you go from the lowest socio-economic group (Routine) to the second highest socio-economic group (Lower Managerial and Professional).

Relocation expenses and an increase in living costs are potential reasons that could explain this trend. As discussed earlier, Papageorgiou (2008) found that university applicants from the Higher Managerial and Professional group had the lowest rate of local applications and students from the Routine occupation group had the highest rate of local applicants. The findings from the analyses presented here not only reflect Papageorgiou's (2008) results, but also illustrate that they hold true when holding other variables constant.

4) Are female students from some ethnic groups more or less likely to move out of their region to attend university, conditioning on the fact they are not residing in the parental/guardian home?

The issue of being close to parents and the rest of the family is not only a factor when deciding whether or not to move out of the parental home but also how far to move away. This is reflected in the fact that the Asian female students that did move away had a lower tendency of moving out of their region than White female students. This is true when controlling for Domicile Region, IMD score, A-level Tariff score and SEG. Bangladeshi students had the greatest increase in odds of staying in their region compared to White students, followed by the Pakistani group. The Indian group had the lowest increase in odds of staying in their region.

In the same manner that a higher A-level score increased the likelihood of moving out of the parental home, higher achieving students not resident in their parental home were more likely to move out beyond their home region. This variable had this effect for students of all ethnic groups, but more so for the White group than the three Asian groups. Parents concerns about

wellbeing, safety and loneliness as discussed by Bannerman (2001) in explaining the low uptake of language degrees amongst Asian students with regards to the year abroad element may help explain these trends.

5) How does the picture change between 1998 and 2005? Do changes in funding and an increase in widening participation initiatives coincide with changes in term-time accommodation?

There were a number of key trends found in 1998 that were also consistent in 2005. Female students from all Asian groups are all more likely to stay living in the parental/guardian home than White students whilst studying at university. Asian students that do move out are less likely to move out of their domicile region than White students. Students from lower SEGs are more likely to stay in the parental/guardian home and stay in their Domicile Region than those in higher Socio-economic groups. An increase in A-level score decreases the likelihood of both living in the parental/guardian home and, among those students not living in the parental home, staying in the domicile region.

There have also been a number of important changes between the years. More students were recorded as living in their parental/guardian home in 2005 than in 1998. Similarly, more students that did move out decided to stay in their region in 2005 than they had done in the previous year. One explanation for this is that the widening of participation in HE has changed the types of students that are going to university. There has been a well-documented increase in the number of students from non-traditional backgrounds entering university. These students may be exercising more caution in terms of the financial commitments (e.g. rent) they are willing to make in order to attend university. Furthermore, students more generally may well be exercising more caution in the lead up to the introduction of higher tuition fees.

Another key change that has occurred is the effect of an improvement in A-level Tariff score. It has a greater effect on reducing the odds of staying at home in 2005 than in 1998. Furthermore, the gap between the Bangladeshi

and Pakistani students compared to those from the Indian and White groups reduces over the seven year period. Higher achieving students from the latter two groups are taking more advantage of the greater choice in HEI that an increase in A-level score can give in 2005 than they were in 1998.

3.7 Limitations to this research

There are essentially three key factors that were not included in this analysis that deserve mention. First of all, moving out of the parental home does not necessarily mean that a student will be away from family. If a student and their parents visit relatives that reside in a different city or cities on a regular basis then this place is no longer "unknown" to them. Each time they visit they become more familiar and aware of the place and its facilities and amenities. The way in which these cities are perceived would be different to the way other university cities that have not been visited are. This could explain why students decide to study in one area over another.

Asian communities tend to have extended families and more close-knit communities. For example, a student from Bristol could move to Portsmouth where she rents a room from an aunty or uncle. Alternatively, if a student does move out and live alone or with other students, having family close by will be reassuring for both the student and parents. It is possible that parents/guardians will only be supportive about moving out if they know there are relatives living nearby to provide extra support and guidance for their daughter. In addition for students with especially large families, it may be difficult to move to many places where there are not at least some relatives living nearby.

Secondly, it is important to bear in mind that this study focuses solely on first year students. Reasons for doing so were explained at the beginning of the chapter. Although students may be recorded as living in the parental/guardian home in their first year, this may not be the case in the second and/or third years that they are at university. There could be a gradual moving out for some students. This could also work the opposite way

where students decide to move after the first year. Suggestions for future work that are beyond the scope of this study include analysing data for 2nd/3rd year undergraduates and comparing these results with those found for first year students.

Finally, with regards to findings for the variable Same Region, it would be interesting to know how often students travel back to their family home and their reasons for doing so. Asian students may have a tendency to go home more, and different reasons for doing so when compared to White students. More knowledge on this would add depth to the explanations given for Same Region variation by ethnicity, and qualitative research methods could be used to investigate this.

These are all aspects that were not measured or included in the data sets that were used. Despite not including them in explaining my findings, I am aware that they are potentially very important and can effect where students live whilst attending university, and how far from their home region they are willing to move.

3.8 Conclusion

In this chapter I set out to investigate the ways in which the housing choices of Asian female students compare with those of White students. The decision to move out of the parental/guardian home was explored with the use of a binary regression model as was the decision to stay in the region of domicile. It was found that female students from Indian, Pakistani and Bangladeshi ethnic groups are all more likely to stay at home relative to Whites. This was true in both 1998 and 2005.

This was explained by cultural differences in familial attitudes towards living alone and gaining independence. Bagguley and Hussain (2007) found in their qualitative study that the critical decision to move out is a family based one, and moving away is more of an option for Indian students. This is reflected in

the results presented in this analysis where Indian and White students are more likely to move out of the parental/guardian home than Pakistani and Bangladeshi students. Bagguley and Hussain (2007) also discussed how career advisors explained that many Asian students and their parents would not look much further than local HEIs when considering their options. This is reflected in the high numbers of Asian students that decided to stay within their region even when they moved out of the family home. The results in this chapter illustrate that the findings presented in related qualitative work apply to the wider population of Asian female students.

Appendix B

Table B.1: Student Frequencies by Ethnic group

Ethnic Group	1998		2005	
	N	%	N	%
Indian	3,331	5.4	5,761	6.0
Pakistani	1,267	2.0	2,929	3.1
Bangladeshi	391	0.6	1,194	1.2
White	57,083	92.0	85,829	89.7
n	62,072	100.0	95,713	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures presented as column percentages and rounded to 1 decimal point.

Table B.2: Ethnic Group by A-Level Tariff Z-score

Ethnic Group	1998	2005
	Mean z-score	Mean Z-score
Indian	-0.29	-0.31
Pakistani	-0.33	-0.38
Bangladeshi	-0.36	-0.38
White	0.04	0.03
All	0.00	0.00

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures rounded to 2 decimal points.

Table B.3: Ethnic Group by Term-time Accommodation (%)

Term-time Accommodation	Indian	Pakistani	Bangladeshi	White	Total
1998					
Institution Maintained	48.9	26.4	20.7	71.1	68.7
Parental/Guardian home	32.5	56.5	66.2	14.5	16.6
Own Home	14.3	13.7	9.2	11.5	11.7
Other	4.3	3.3	3.8	2.9	3.0
Total	100.0	100.0	100.0	100.0	100.0
2005					
Institution Maintained	42.0	14.7	11.1	58.0	55.1
Parental/Guardian home	38.9	66.3	70.5	19.8	23.0
Own Home	15.9	15.7	14.8	18.9	18.5
Other	3.2	3.2	3.5	3.4	3.4
Total	100.0	100.0	100.0	100.0	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures presented as column percentages and rounded to 1 decimal point.

Table B.4: Ethnic Group by Region of Domicile (%)

	Indian	Pakistani	Bangladeshi	White	All
1998					
North East	1.0	2.1	2.6	5.4	5.1
North West	6.1	18.3	9.0	15.2	14.7
York. & Humberside	4.6	15.4	4.3	9.6	9.4
East Midlands	12.8	4.9	2.6	9.0	9.1
West Midlands	20.2	17.8	12.8	10.6	11.3
East	5.4	5.2	4.3	11.3	10.8
London	40.0	28.6	54.5	9.1	11.5
South East	7.7	6.1	6.9	17.9	17.0
South West	1.1	0.6	1.0	10.8	10.0
Unknown	1.0	1.0	2.0	1.1	1.1
Total	100.0	100.0	100.0	100.0	100.0
2005					
North East	1.0	2.2	1.6	5.2	4.8
North West	5.6	17.5	14.1	15.4	14.9
York. & Humberside	4.0	18.0	3.0	9.8	9.6
East Midlands	13.3	5.2	4.4	8.6	8.7
West Midlands	18.8	17.3	10.9	10.2	10.9
East	5.0	5.9	6.7	11.2	10.6
London	42.2	23.1	52.3	9.5	12.4
South East	8.7	9.9	5.3	18.7	17.7
South West	1.2	0.7	1.4	11.0	10.0
Unknown	0.1	0.3	0.3	0.4	0.4
Total	100.0	100.0	100.0	100.0	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures presented as column percentages and rounded to 1 decimal point.

Table B.5: Ethnic Group by Institution Region (%)

	Indian	Pakistani	Bangladeshi	White	All
1998					
North East	1.9	2.7	3.3	7.4	6.9
North West	7.5	13.5	8.2	14.4	14.0
York. & Humberside	7.3	16.2	4.1	14.5	14.1
East Midlands	13.7	8.2	5.6	10.8	10.9
West Midlands	18.6	16.6	12.0	11.1	11.7
East	6.4	4.2	4.6	5.0	5.1
London	35.0	33.1	58.3	10.1	12.2
South East	6.3	3.9	2.6	12.8	12.2
South West	0.7	0.5	0.5	6.1	5.7
Scotland	1.9	0.4	0.5	5.1	4.8
Wales	0.8	0.7	0.3	2.5	2.4
Northern Ireland	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
2005					
North East	1.3	2.0	1.5	6.8	6.3
North West	7.3	14.7	16.8	16.2	15.6
York. & Humberside	6.5	20.7	3.7	14.7	14.3
East Midlands	17.1	7.5	4.7	10.0	10.3
West Midlands	18.1	16.3	9.5	8.9	9.7
East	6.0	4.2	3.7	4.6	4.6
London	34.9	28.2	53.9	8.8	11.5
South East	6.0	5.2	4.5	14.2	13.3
South West	1.7	0.8	1.4	9.9	9.1
Scotland	0.9	0.2	0.2	3.8	3.5
Wales	0.4	0.1	0.0	2.1	1.9
Northern Ireland	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures presented as column percentages and rounded to 1 decimal point.

Table B.6: Ethnic Group by Same Region for students not living in the Parental/Guardian home

	Not Same Region	Same Region	Total	Not Same Region	Same Region	Total
Ethnic Group	**1998**			**2005**		
Indian	73.3	26.7	100.0	68.2	31.8	100.0
Pakistani	63.5	36.5	100.0	53.0	47.0	100.0
Bangladeshi	56.8	43.2	100.0	38.5	61.5	100.0
White	77.3	22.7	100.0	70.6	29.4	100.0
Total	76.9	23.1	100.0	70.0	30.0	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. (Not including students resident in the parental/guardian home.) Figures presented as row percentages and rounded to 1 decimal point.

Table B.7: Index of Multiple Deprivation score by Ethnic group

Ethnic group	1998	2005
	Mean IMD Score	Mean IMD Score
Indian	24.6	24.4
Pakistani	24.9	24.8
Bangladeshi	29.4	32.0
White	20.3	20.6
Total	20.8	21.1

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. IMD 2007 score is obtained from the Dept. of Communities and Local Government and is recorded at the Lower Super Output Area level. Figures rounded to 1 decimal point.

Table B.8: Ethnic Group by Socio-economic group (2005)

Socio-economic group	Indian	Pakistani	Bangladeshi	White	Total
Higher Managerial & Professional	1.8	3.0	4.6	2.5	2.5
Lower Managerial & Professional	12.7	7.4	2.8	21.3	20.2
Intermediate	16.8	12.3	8.8	27.4	26.1
Small Employers & Account Workers	10.2	4.8	2.3	11.5	11.1
Lower Supervisory	7.4	13.0	8.8	5.5	5.9
Semi-Routine	3.7	2.5	0.8	4.4	4.3
Routine	13.4	9.6	18.3	8.0	8.5
Never Worked/Long term unemployed	8.3	8.6	7.1	3.6	4.0
Not Classified	0.1	0.1	0.1	0.0	0.0
Unknown	25.6	38.9	46.4	15.7	17.4
Total	100.0	100.0	100.0	100.0	100.0

Sample includes first year English Domiciled HE female students aged 20 or under with GCE A-level as highest qualification on entry studying on a full-time basis with non-missing Term-Time Accommodation information. Figures presented as column percentages and rounded to 1 decimal point.

Table B.9: Logistic Regression results as odds ratios for probability of staying in the Parental/Guardian home (1998)

	M1	M2	M3	M4	M5
Ethnicity					
Indian	**2.85 (26.8)**	**2.26 (19.8)**	**2.20 (19.1)**	**1.81 (13.8)**	**2.15 (14.9)**
Pakistani	**7.67 (35.1)**	**6.29 (31.0)**	**6.18 (30.5)**	**5.32 (26.9)**	**6.68 (26.5)**
Bangladeshi	**11.06 (22.7)**	**9.05 (19.9)**	**9.04 (19.6)**	**7.56 (17.3)**	**9.29 (16.4)**
Region					
North East		**1.67 (10.6)**	**1.69 (10.7)**	**1.50 (8.0)**	**1.50 (8.0)**
North West		**0.85 (4.2)**	**0.86 (3.9)**	**0.79 (5.8)**	**0.78 (5.9)**
York & Humb.		**0.62 (10.1)**	**0.62 (10.1)**	**0.57 (11.6)**	**0.57 (11.5)**
East Midlands		**0.59 (11.3)**	**0.61 (10.4)**	**0.53 (12.8)**	**0.54 (12.7)**
West Midlands		1.04 (1.0)	**1.13 (3.0)**	1.00 (0.1)	1.01 (1.1)
East		**0.38 (19.2)**	**0.40 (17.9)**	**0.37 (19.0)**	**0.37 (19.0)**
South East		**0.29 (26.5)**	**0.31 (24.0)**	**0.29 (25.1)**	**0.29 (25.1)**
South West		**0.27 (22.3)**	**0.30 (20.0)**	**0.27 (21.3)**	**0.27 (21.4)**
Eng Region Unknown		**0.41 (7.1)**	**0.46 (6.0)**	**0.34 (8.3)**	**0.33 (8.3)**
IMD Score					
IMD2			1.04 (1.0)	1.03 (0.7)	1.03 (0.7)
IMD3			1.07 (1.8)	1.06 (1.6)	1.06 (1.6)
IMD4			**1.10 (2.6)**	**1.11 (2.7)**	**1.12 (2.8)**
IMD5			**1.24 (5.6)**	**1.23 (5.3)**	**1.23 (5.8)**
A-Level Score[#]				**0.53 (48.4)**	**0.51 (47.3)**
Tariff not known				**3.36 (19.9)**	**3.81 (20.4)**
Ethnicity & Tariff					
Indian*Tariff					**1.23 (4.8)**
Pakistani*Tariff					**1.46 (5.9)**
Bangladeshi*Tariff					**1.46 (3.1)**
Indian*Tariff unknown					**0.40 (4.5)**
Pak*Tariff unknown					**0.51 (2.4)**
Bang*Tariff unknown					**0.65 (0.8)**
n	62,072	62,072	59,989	59,989	59,989

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. [#] This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Table B.10: Logistic Regression results as raw betas for probability of staying in the Parental/Guardian home (1998)

	M1	M2	M3	M4	M5
Ethnicity					
Indian	**1.05 (26.8)**	**0.81 (19.8)**	**0.79 (19.1)**	**0.59 (13.8)**	**0.79 (14.9)**
Pakistani	**2.04 (35.1)**	**1.84 (31.0)**	**1.82 (30.5)**	**1.67 (26.9)**	**1.86 (26.5)**
Bangladeshi	**2.45 (22.7)**	**2.20 (19.9)**	**2.20 (19.6)**	**2.02 (17.3)**	**2.18 (16.4)**
Region					
North East		**0.51 (10.6)**	**0.52 (10.7)**	**0.41 (8.0)**	**-1.14 (8.0)**
North West		**-0.17 (4.2)**	**-0.16 (3.9)**	**-0.24 (5.8)**	**0.37 (5.9)**
York & Humb.		**-0.47 (10.1)**	**-0.47 (10.1)**	**-0.56 (11.6)**	**-0.15 (11.5)**
East Midlands		**-0.53 (11.3)**	**-0.50 (10.4)**	**3.97 (12.8)**	**-0.47 (12.7)**
West Midlands		0.4 (1.0)	**0.12 (3.0)**	0 (0.1)	-0.56 (1.1)
East		**-0.97 (19.2)**	**-0.92 (17.9)**	**-0.99 (19.0)**	**0.06 (19.0)**
South East		**-1.25 (26.5)**	**-1.16 (24.0)**	**-1.24 (25.1)**	**-0.96 (25.1)**
South West		**-1.30 (22.3)**	**-1.20 (20.0)**	**-1.31 (21.3)**	**-1.15 (21.4)**
Eng Region Unknown		**-0.89 (7.1)**	**-0.78 (6.0)**	**-1.08 (8.3)**	**-1.33 (8.3)**
IMD Score					
IMD2			0.04 (1.0)	0.03 (0.7)	0.07 (0.7)
IMD3			0.07 (1.8)	0.06 (1.6)	0.08 (1.6)
IMD4			**0.09 (2.6)**	**0.10 (2.7)**	**0.14 (2.8)**
IMD5			**0.22 (5.6)**	**0.21 (5.3)**	**0.22 (5.8)**
A-Level Score[#]				**-0.63 (48.4)**	**-0.66 (47.3)**
Tariff not known				**1.21 (19.9)**	**2.05 (20.4)**
Ethnicity & Tariff					
Indian*Tariff					**0.22 (4.8)**
Pakistani*Tariff					**0.42 (5.9)**
Bangladeshi*Tariff					**0.42 (3.1)**
Indian*Tariff unknown					**-0.80 (4.5)**
Pak*Tariff unknown					**-1.32 (2.4)**
Bang*Tariff unknown					**-0.82 (0.8)**
Constant	-1.78(22291)	-1.31(1925)	-1.39(1223)	-1.57(1440)	-1.76(1473)
Log-Likelihood	53666.953	51392.15	50175.948	47474.297	47396.65
n	62,072	62,072	59,989	59,989	59,989

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. [#] This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Table B.11: Logistic Regression results as odds ratios for probability of staying in the Parental/Guardian home (2005)

	M1	M2	M3	M4	M5	M6
Ethnicity						
Indian	**2.58 (33.9)**	**2.33 (28.2)**	**2.28 (27.5)**	**2.03 (22.2)**	**2.29 (20.2)**	**2.10 (18.0)**
Pakistani	**8.00 (52.0)**	**7.08 (47.7)**	**6.98 (47.4)**	**5.79 (40.8)**	**7.28 (35.4)**	**6.39 (33.1)**
Bangladeshi	**9.71 (35.5)**	**8.62 (32.7)**	**8.42 (32.3)**	**6.56 (27.3)**	**8.83 (22.9)**	**7.21 (20.6)**
Region						
North East		**1.96 (17.7)**	**1.99 (18.1)**	**1.86 (15.5)**	**1.86 (15.5)**	**1.80 (14.3)**
North West		**1.39 (11.2)**	**1.41 (11.8)**	**1.41 (11.6)**	**1.41 (11.5)**	**1.36 (9.8)**
York & Humb.		0.97 (0.9)	0.97 (0.9)	0.96 (1.1)	0.96 (1.1)	**0.93 (2.1)**
East Midlands		**0.80 (6.2)**	**0.83 (5.2)**	**0.78 (6.8)**	**0.78 (6.8)**	**0.76 (7.6)**
West Midlands		**1.15 (4.4)**	**1.24 (6.9)**	**1.17 (4.9)**	**1.18 (4.9)**	**1.14 (3.7)**
East		**0.52 (18.1)**	**0.55 (16.3)**	**0.50 (18.3)**	**0.50 (18.3)**	**0.50 (18.3)**
South East		**0.52 (21.0)**	**0.56 (18.2)**	**0.55 (17.5)**	**0.55 (17.5)**	**0.55 (17.4)**
South West		**0.30 (27.7)**	**0.31 (25.2)**	**0.27 (27.7)**	**0.27(27.9)**	**0.26 (28.5)**
Unknown		**0.25 (6.8)**	**0.27 (6.39)**	**0.13 (10.1)**	**0.13(10.2)**	**0.15 (9.2)**
IMD Score						
IMD2			0.97 (1.0)	0.96 (1.4)	0.96 (1.5)	0.95 (1.7)
IMD3			1.03 (1.0)	1.04 (1.2)	1.03 (1.2)	1.03 (1.1)
IMD4			**1.10 (3.4)**	**1.08 (2.6)**	**1.07 (2.6)**	**1.07 (2.3)**
IMD5			**1.18 (6.2)**	**1.18 (5.8)**	**1.17 (5.7)**	**1.17 (5.5)**
A-Level Tariff#				**0.38 (68.9)**	**0.37 (62.6)**	**0.39 (58.1)**
Tariff not known				**4.59 (52.5)**	**4.95 (53.3)**	**3.83 (38.4)**
Ethnicity & Tariff						
Indian*Tariff					**1.21 (3.9)**	**1.23 (4.2)**
Pakistani*Tariff					**1.38 (4.9)**	**1.36 (4.6)**
Bangladeshi*Tariff					**1.46 (3.4)**	**1.44 (3.3)**
Indian*Tariff unknown					**0.58 (3.9)**	**0.61 (3.6)**
Pak*Tariff unknown					**0.31 (7.3)**	**0.34 (6.6)**
Bang*Tariff unknown					**0.28 (5.4)**	**0.31 (4.9)**
SEG						
Lower Managerial						**1.28 (8.3)**
Intermediate						**1.59 (13.2)**
Small employers						**1.75 (13.7)**
Lower supervisory						**2.22 (18.1)**
Semi-Routine						**2.15 (21.2)**
Routine						**2.30 (18.9)**
Never Worked						1.44 (0.9)
Not Classified						**1.99 (22.2)**
Unknown						**2.44 (16.2)**
n	95,713	95,713	95,713	92,705	92,705	92,705

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. #This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Table B.12: Logistic Regression results as raw betas for probability of staying in the Parental/Guardian home (2005)

	M1	M2	M3	M4	M5	M6
Ethnicity						
Indian	**0.95 (33.9)**	**0.85 (28.2)**	**0.83 (27.5)**	**0.71 (22.2)**	**0.83 (20.2)**	**0.74 (18.0)**
Pakistani	**2.08 (52.0)**	**1.96 (47.7)**	**1.94 (47.4)**	**1.76 (40.8)**	**1.99 (35.4)**	**1.86 (33.1)**
Bangladeshi	**2.27 (35.5)**	**2.16 (32.7)**	**2.13 (32.3)**	**1.88 (27.3)**	**2.18 (22.9)**	**1.98 (20.6)**
Region						
North East		**-1.38(17)**	**0.69 (18.1)**	**0.62 (15.5)**	**0.62 (15.5)**	**0.59 (14.3)**
North West		**0.33 (11.2)**	**0.34 (11.8)**	**0.35 (11.6)**	**0.35 (11.5)**	**0.30 (9.8)**
York & Humb.		-0.03 (0.9)	-0.03 (0.9)	-0.04 (1.1)	-0.04 (1.1)	**-0.07 (2.1)**
East Midlands		**-0.22 (6.2)**	**-0.18 (5.2)**	**-0.25 (6.8)**	**-0.24 (6.8)**	**-0.28 (7.6)**
West Midlands		**0.14 (4.4)**	**0.22 (6.9)**	**-0.16 (4.9)**	**0.16 (4.9)**	**0.13 (3.7)**
East		**-0.65(18.1)**	**-0.60(16.3)**	**-0.70(18.3)**	**-0.70(18.3)**	**-0.69(18.3)**
South East		**-0.65 (21)**	**-0.58(18.2)**	**-0.59 (17.5)**	**-0.60(17.5)**	**-0.59 (17.4)**
South West		**-1.22(27.7)**	**-1.16(25.2)**	**-1.30 (27.7)**	**-1.31(27.9)**	**-1.34 (28.5)**
Unknown		**-1.23 (6.8)**	**-1.30(6.39)**	**-2.07 (10.1)**	**-2.07(10.2)**	**-1.89 (9.2)**
IMD Score						
IMD2			-0.03 (1.0)	-0.04 (1.4)	-0.04 (1.5)	-0.05 (1.7)
IMD3			0.03 (1.0)	0.03 (1.2)	0.03 (1.2)	0.03 (1.1)
IMD4			**0.09 (3.4)**	**0.07 (2.6)**	**0.07 (2.6)**	**0.06 (2.3)**
IMD5			**0.17 (6.2)**	**0.16 (5.8)**	**0.16 (5.7)**	**0.16 (5.5)**
A-Level Tariff#				**-0.96 (68.9)**	**-1.00 (62.6)**	**-0.93 (58.1)**
Tariff not known				**1.52 (52.5)**	**1.60 (53.3)**	**1.34 (38.4)**
Ethnicity & Tariff						
Indian*Tariff					**0.19 (3.9)**	**0.21 (4.2)**
Pakistani*Tariff					**0.32 (4.9)**	**0.31 (4.6)**
Bangladeshi*Tariff					**0.38 (3.4)**	**0.36 (3.3)**
Indian*Tariffunknown					**-0.54 (3.9)**	**-0.50 (3.6)**
Pak*Tariff unknown					**-1.18 (7.3)**	**-1.09 (6.6)**
Bang*Tariff unknown					**-1.28 (5.4)**	**-1.16 (4.9)**
SEG						
Lower Managerial						**0.25 (8.3)**
Intermediate						**0.46 (13.2)**
Small employers						**0.56 (13.7)**
Lower supervisory						**0.80 (18.1)**
Semi-Routine						**0.76 (21.2)**
Routine						**0.83 (18.9)**
Never Worked						0.36 (0.9)
Not Classified						**0.69 (22.2)**
Unknown						**0.89 (16.2)**
Constant	-1.40(26708)	-1.23(2867)	-1.30(1801)	-1.669(2618)	-1.691(2665)	-2.07(2820)
Likelihood	98240.75	94678.025	92425.55	85571.33	85463.186	84453.53
n	95,713	95,713	95,713	92,705	92,705	92,705

Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. #This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable. Likelihood

Table B.13: Logistic Regression results as odds ratios for probability of staying in the Region of Domicile (1998)

	M1	M2	M3	M4	M5
Ethnicity					
Indian	**1.24 (4.3)**	**1.32 (5.4)**	**1.31 (5.3)**	**1.19 (3.3)**	**1.33 (5.1)**
Pakistani	**1.95 (7.4)**	**1.79 (6.4)**	**1.78 (6.3)**	**1.59 (5.0)**	**1.84 (5.9)**
Bangladeshi	**2.59 (5.3)**	**2.62 (5.3)**	**2.63 (5.2)**	**2.33 (4.4)**	**2.25 (3.7)**
Region					
North East		**1.23 (3.5)**	**1.23 (3.4)**	**1.16 (2.5)**	**1.16 (2.4)**
North West		**1.75 (13.1)**	**1.74 (13.1)**	**1.70 (12.3)**	**1.69 (12.2)**
York & Humb.		**1.39 (7.1)**	**1.39 (7.1)**	**1.34 (6.2)**	**1.34 (6.3)**
East Midlands		0.95 (1.1)	0.95 (1.1)	0.89 (2.4)	0.89 (2.4)
West Midlands		**0.89 (2.5)**	**0.90 (2.2)**	**0.86 (3.1)**	**0.86 (3.0)**
East		**0.37 (17.8)**	**0.37 (17.6)**	**0.35 (18.4)**	**0.35 (18.4)**
South East		**1.19 (4.3)**	**1.20 (4.2)**	**1.16 (3.5)**	**1.16 (3.4)**
South West		0.91 (1.9)	0.93 (1.4)	**0.89 (2.3)**	**0.89 (2.4)**
IMD Score					
IMD2			1.00 (0.1)	1.00 (0.1)	1.00 (0.0)
IMD3			0.99 (0.3)	1.00 (0.1)	1.01 (0.1)
IMD4			1.01 (0.2)	1.01 (0.2)	1.01 (0.2)
IMD5			1.01 (0.3)	1.01 (0.3)	1.01 (0.3)
A-Level Score[#]				**0.73 (25.4)**	**0.72 (25.5)**
Tariff not known				**1.72 (7.7)**	**1.88 (8.6)**
Ethnicity & Tariff					
Indian*Tariff					**1.21 (3.7)**
Pakistani*Tariff					**1.30 (2.8)**
Bangladeshi*Tariff					0.89 (0.6)
Indian*Tariff unknown					**0.37 (3.4)**
Pak*Tariff unknown					**0.55 (1.3)**
Bang*Tariff unknown					**0.52 (0.7)**
n	51,138	51,138	49,231	49,231	49,231

Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. [#]This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Table B.14: Logistic Regression results as raw betas for probability of staying in the Region of Domicile (1998)

	M1	M2	M3	M4	M5
Ethnicity					
Indian	**0.21 (4.3)**	**0.28 (5.4)**	**0.27 (5.3)**	**0.17 (3.3)**	**0.29 (5.1)**
Pakistani	**0.67 (7.4)**	**1.79 (6.4)**	**0.58 (6.3)**	**0.47 (5.0)**	**0.61 (5.9)**
Bangladeshi	**0.95 (5.3)**	**2.62 (5.3)**	**0.97 (5.2)**	**0.85 (4.4)**	**0.81 (3.7)**
Region					
North East		**0.21 (3.5)**	**0.21 (3.4)**	**0.15 (2.5)**	**0.15 (2.4)**
North West		**0.56 (13.1)**	**0.56 (13.1)**	**0.53 (12.3)**	**0.52 (12.2)**
York & Humb.		**033 (7.1)**	**0.33 (7.1)**	**0.30 (6.2)**	**0.30 (6.3)**
East Midlands		−0.06(1.1)	−0.06 (1.1)	−0.12 (2.4)	−0.19 (2.4)
West Midlands		**−0.12 (2.5)**	**−0.11 (2.2)**	**−0.15 (3.1)**	**−0.15 (3.0)**
East		**−0.99 (17.8)**	**−0.99 (17.6)**	**−1.04 (18.4)**	**−1.04(18.4)**
South East		**0.18 (4.3)**	**0.18 (4.2)**	**0.15 (3.5)**	**0.15 (3.4)**
South West		−0.09 (1.9)	−0.07 (1.4)	**−0.11 (2.3)**	**−0.12 (2.4)**
IMD Score					
IMD2			0.00 (0.1)	0.00 (0.1)	0.00 (0.0)
IMD3			−0.01 (0.3)	−0.00 (0.1)	−0.00 (0.1)
IMD4			0.01 (0.2)	0.01 (0.2)	0.01 (0.2)
IMD5			0.01 (0.3)	0.01 (0.3)	0.01 (0.3)
A-Level Score[#]				**−0.31 (25.4)**	**−0.32 (25.5)**
Tariff not known				**0.54 (7.7)**	**0.63 (8.6)**
Ethnicity & Tariff					
Indian*Tariff					**0.19 (3.7)**
Pakistani*Tariff					**0.26 (2.8)**
Bangladeshi*Tariff					−0.12 (0.6)
Indian*Tariff unknown					**−0.99 (3.4)**
Pak*Tariff unknown					**−0.61 (1.3)**
Bang*Tariff unknown					**−0.65 (0.7)**
Constant	−1.22(12695)	−1.31(1367)	−1.28(925)	−1.31(945)	−1.31(950)
Log-Likelihood	55171.05	53876.51	52012.45	51320.11	51286.04
n	51,138	51,138	49,231	49,231	49,231

Table B.15: Logistic Regression results as odds ratios for probability of staying in the Region of Domicile (2005)

	M1	M2	M3	M4	M5	M6
Ethnicity						
Indian	**1.12 (3.0)**	**1.45 (9.6)**	**1.45 (9.5)**	**1.37 (7.9)**	**1.58 (10.7)**	**1.49 (9.3)**
Pakistani	**2.12 (11.6)**	**2.30 (12.4)**	**2.30 (12.4)**	**2.03 (10.4)**	**1.98 (8.3)**	**1.83 (7.3)**
Bangladeshi	**3.83 (12.2)**	**5.03 (14.2)**	**4.95 (13.9)**	**4.27 (12.5)**	**4.39 (10.5)**	**3.93 (9.7)**
Region						
North East		**1.88 (13.2)**	**1.90 (13.4)**	**1.85 (12.6)**	**1.84 (12.5)**	**1.79 (11.9)**
North West		**2.98 (32.1)**	**3.00 (32.3)**	**3.13 (32.6)**	**3.13 (32.6)**	**3.06 (32.0)**
York & Humb.		**2.06 (19.5)**	**2.06 (19.6)**	**2.11 (19.7)**	**2.11 (19.6)**	**2.05 (18.9)**
East Midlands		**1.16 (3.8)**	**1.18 (4.2)**	**1.15 (3.5)**	**1.15 (3.5)**	**1.12 (2.8)**
West Midlands		1.02 (0.6)	1.06 (1.4)	1.05 (1.2)	1.05 (1.2)	1.02 (0.5)
East		**0.53 (15.3)**	**0.54 (14.7)**	**0.52 (15.3)**	**0.52 (15.4)**	**0.51 (15.8)**
South East		**1.56 (13.4)**	**1.58 (13.4)**	**1.60 (13.8)**	**1.59 (13.7)**	**1.59 (13.6)**
South West		**2.06 (20.6)**	**2.20 (21.9)**	**2.10 (20.0)**	**2.09 (19.9)**	**2.02 (19.1)**
IMD Score						
IMD2			1.02 (0.8)	1.02 (0.7)	1.02 (0.7)	1.02 (0.6)
IMD3			1.02 (0.9)	1.03 (1.1)	1.03 (1.1)	1.03 (1.1)
IMD4			**1.06 (2.2)**	**1.05 (1.9)**	**1.05 (1.8)**	1.05 (1.7)
IMD5			**1.09 (3.0)**	**1.09 (3.0)**	**1.09 (3.0)**	**1.09 (2.9)**
A-Level Score#				**0.66 (31.5)**	**0.65 (33.2)**	**0.67 (28.2)**
Tariff unknown				**2.65 (27.1)**	**2.73 (27.1)**	**2.68 (24.1)**
Ethnicity & Tariff						
Indian*Tariff					**1.50 (7.7)**	**1.54 (8.2)**
Pakistani*Tariff					0.88 (1.3)	0.88 (1.3)
Bangladeshi*Tariff					1.02 (0.1)	1.02 (0.1)
Indian*Tariff unknown					**0.59 (2.6)**	**0.60 (2.4)**
Pak*Tariff unknown					0.65 (1.6)	0.67 (1.5)
Bang*Tariff unknown					0.70 (0.8)	0.77 (0.6)
SEG						
Lower Managerial						**1.13 (4.9)**
Intermediate						**1.28 (7.7)**
Small employers						**1.28 (6.2)**
Lower supervisory						**1.56 (9.9)**
Semi-Routine						**1.47 (10.8)**
Routine						**1.85 (12.8)**
Never Worked						1.42 (0.8)
Not Classified						**1.45 (12.8)**
Unknown						**1.01 (0.2)**
n	73,398	73,398	73,398	70,746	70,746	70,746

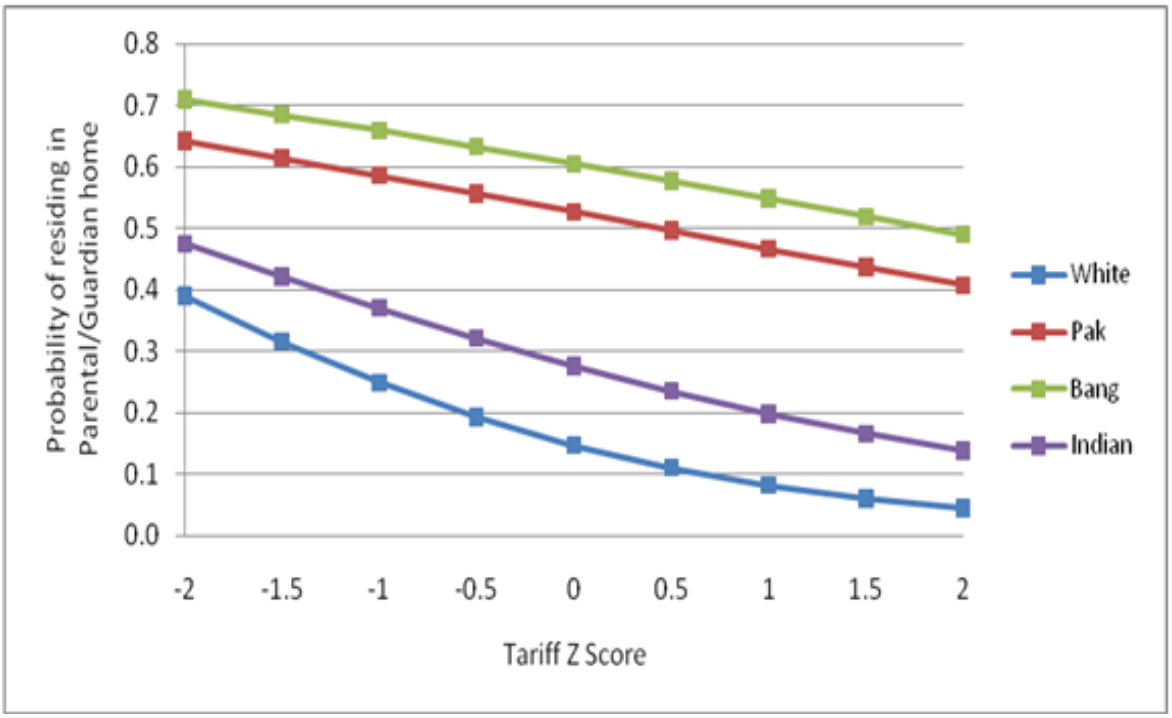
Exp (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold. #This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Table B.16: Logistic Regression results as raw betas for probability of staying in the Region of Domicile (2005)

	M1	M2	M3	M4	M5	M6
Ethnicity						
Indian	**0.11 (3.0)**	**0.37 (9.6)**	**0.37 (9.5)**	**0.31 (7.9)**	**0.46(10.7)**	**0.40 (9.3)**
Pakistani	**0.75 (11.6)**	**0.83 (12.4)**	**0.83 (12.4)**	**0.71 (10.4)**	0.68 (8.3)	**0.60 (7.3)**
Bangladeshi	**1.34 (12.2)**	**1.62 (14.2)**	**1.60 (13.9)**	**1.45 (12.5)**	**1.48 (10.5)**	**1.37 (9.7)**
Region						
North East		**0.63 (13.2)**	**0.64 (13.4)**	**0.62 (12.6)**	0.61(12.5)	**0.58 (11.9)**
North West		**1.09 (32.1)**	**1.10 (32.3)**	**1.14 (32.6)**	**1.14 (32.6)**	**1.12 (32.0)**
York & Humb.		**0.72 (19.5)**	**0.72 (19.6)**	**0.75 (19.7)**	**0.75 (19.6)**	**0.72 (18.9)**
East Midlands		**0.15 (3.8)**	**0.17 (4.2)**	**0.14 (3.5)**	**0.14 (3.5)**	**0.11 (2.8)**
West Midlands		1.02 (0.6)	0.06 (1.4)	0.05 (1.2)	0.05 (1.2)	0.02 (0.5)
East		**-0.63(15.3)**	**-0.62(14.7)**	**-0.65(15.3)**	**-0.65(15.4)**	**-0.67(15.8)**
South East		**0.44(13.4)**	**0.46 (13.4)**	**0.47 (13.8)**	**0.46 (13.7)**	**0.46 (13.6)**
South West		**0.72 (20.6)**	**0.79 (21.9)**	**0.71 (20.0)**	**0.74 (19.9)**	**0.70 (19.1)**
IMD Score						
IMD2			0.02 (0.8)	0.02 (0.7)	0.02 (0.7)	0.02 (0.6)
IMD3			0.02 (0.9)	0.03 (1.1)	0.03 (1.1)	0.03 (1.1)
IMD4			**0.06 (2.2)**	**0.05 (1.9)**	**0.05 (1.8)**	0.05 (1.7)
IMD5			**0.09 (3.0)**	**0.09 (3.0)**	**0.09 (3.0)**	**0.09 (2.9)**
A-Level Score#				-	-	-
				0.42(31.5)	**0.43(33.2)**	**0.40(28.2)**
Tariff unknown				**0.97 (27.1)**	**1.00 (27.1)**	**0.99 (24.1)**
Ethnicity & Tariff						
Indian*Tariff					**0.41 (7.7)**	**0.43 (8.2)**
Pakistani*Tariff					-0.13 (1.3)	-0.13 (1.3)
Bangladeshi*Tariff					0.02 (0.1)	0.02 (0.1)
Indian*Tariff unknown					**-0.53 (2.6)**	**-0.51 (2.4)**
Pak*Tariff unknown					-0.43 (1.6)	-0.40 (1.5)
Bang*Tariff unknown					-0.36 (0.8)	-0.26 (0.6)
SEG						
Lower Managerial						**0.12 (4.9)**
Intermediate						**0.25 (7.7)**
Small employers						**0.25 (6.2)**
Lower supervisory						**0.44 (9.9)**
Semi-Routine						**0.39 (10.8)**
Routine						**0.63 (12.8)**
Never Worked						0.35 (0.8)
Not Classified						**0.37 (12.8)**
Unknown						**0.01 (0.2)**
Constant	-0.87	-1.29	-1.34	-1.44	-1.45	-1.62
Likelihood	93103.084	89664.66	86454.66	79919.32	79812.73	79726.09
n	73,398	73,398	73,398	70,746	70,746	70,746

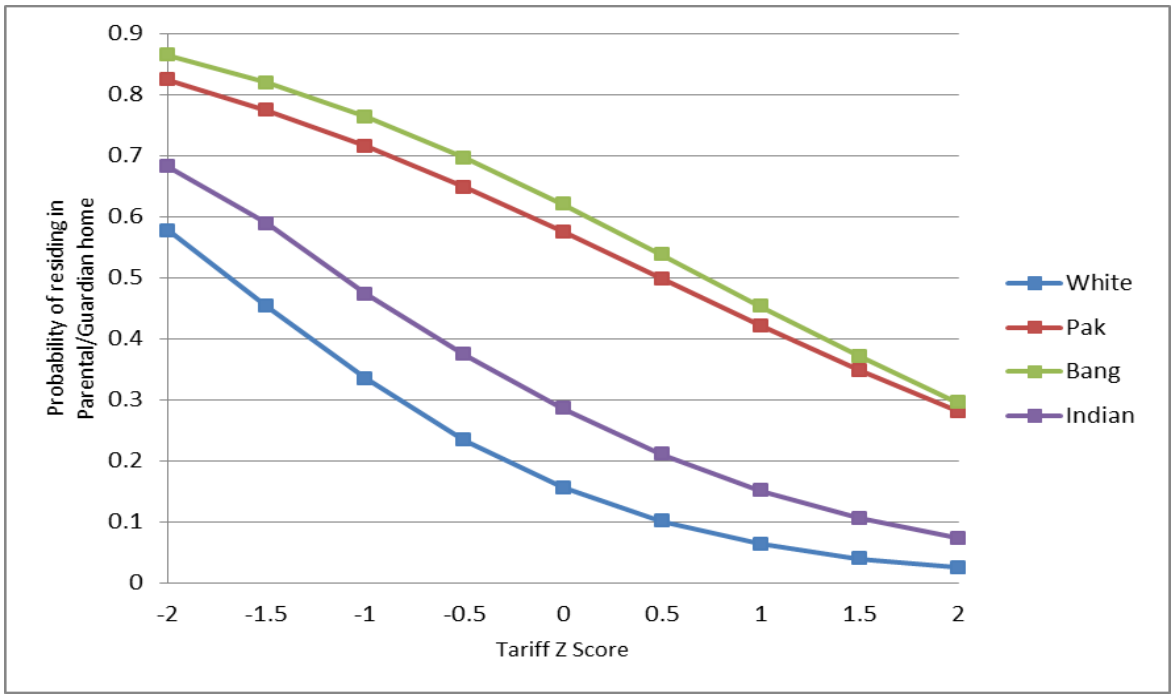
Raw (β) rounded to 2 decimal points and corresponding Z statistics of the test that the ratio is equal to 1.0 in brackets rounded to 1 decimal point. Results significant at the 5 or 1% level are presented in bold.#This was included in the model as a Z-score transformation of the original A-Level Tariff Score variable.

Figure B.1: Predicted probabilities of living in the Parental/Guardian home for each ethnic group as A-Level Tariff score changes (1998)



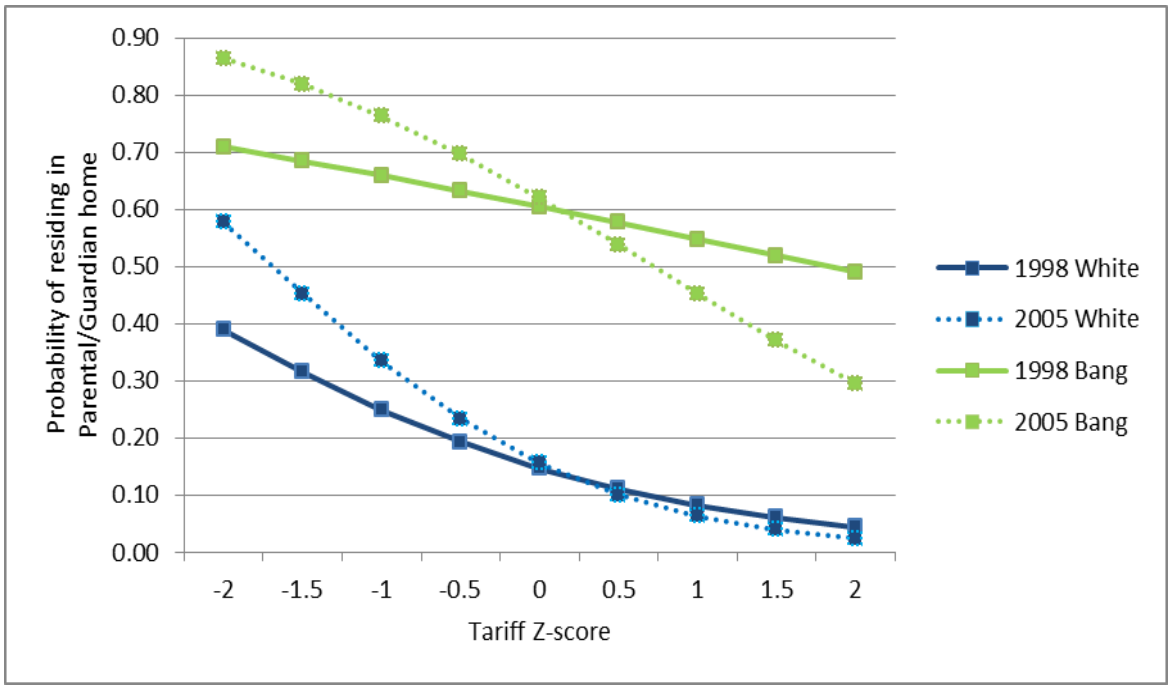
Probabilities calculated using results from Table B.10 Model 5 for students from the London Region that are in the least deprived IMD quintile.

Figure B.2: Predicted probabilities of living in the Parental/Guardian home for each ethnic group as A-Level Tariff score changes (2005)



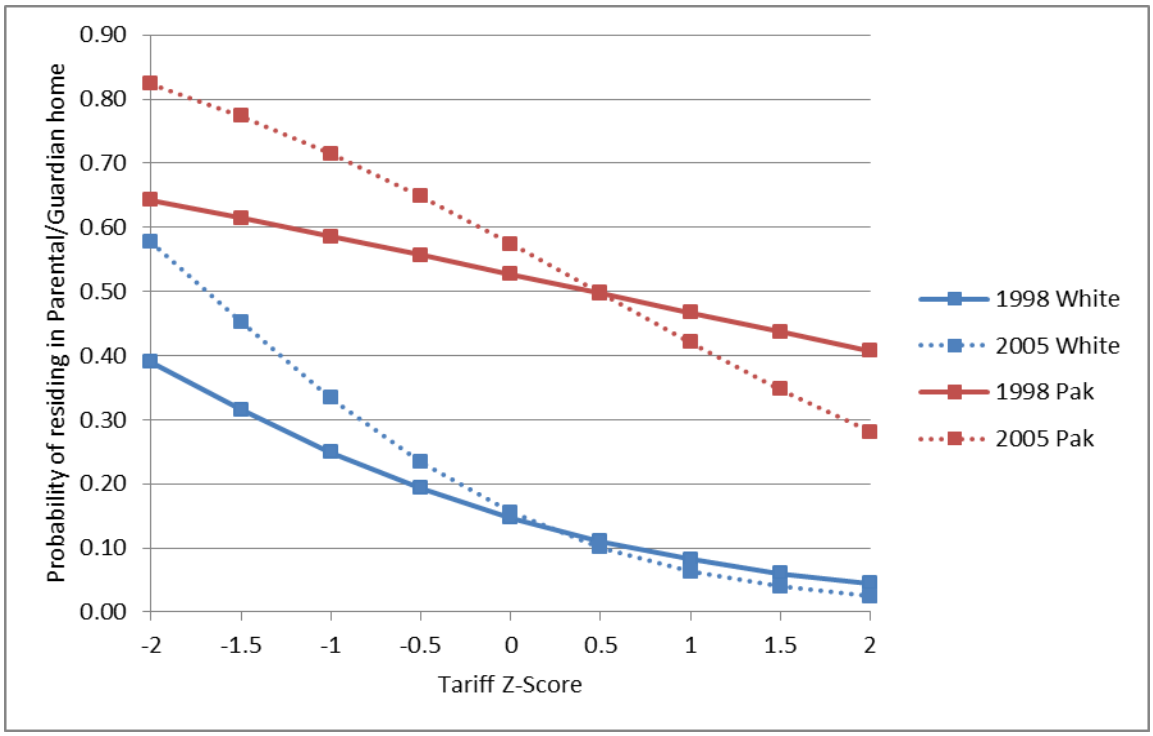
Probabilities calculated using results from Table B.11 Model 5 for students from the London Region that are in the least deprived IMD quintile.

Figure B.3: Predicted probabilities of staying in the Parental/Guardian home for the White and Bangladeshi ethnic groups as A-Level Tariff score changes (1998 and 2005)



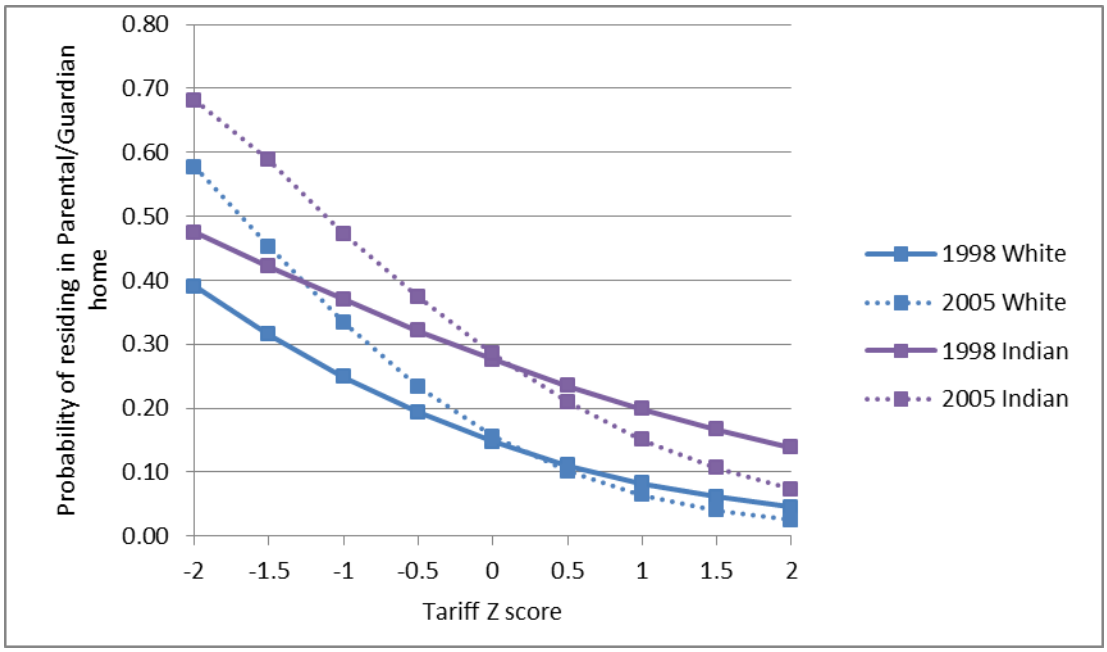
Probabilities calculated using results from Tables B.10 and B.11 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

Figure B.4: Predicted probabilities of staying in the Parental/Guardian home for the White and Pakistani ethnic groups as A-Level Tariff score changes (1998 and 2005)



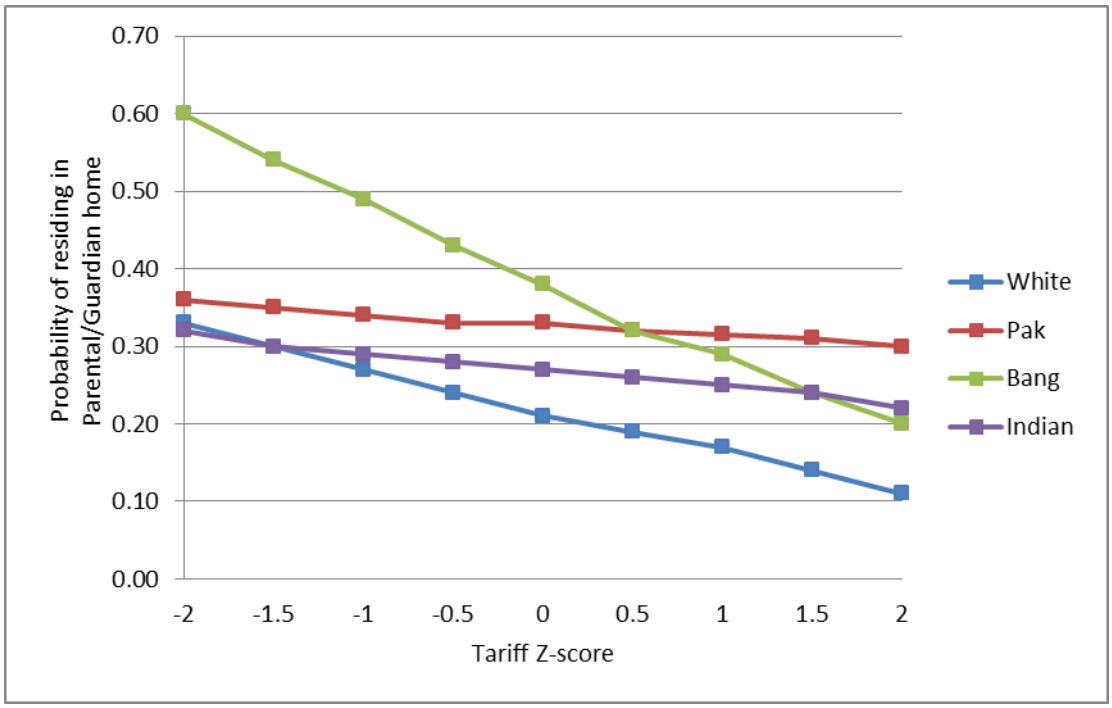
Probabilities calculated using results from Tables B.10 and B.11 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

Figure B.5: Predicted probabilities of staying in the Parental/Guardian home for the White and Indian ethnic groups as A-Level Tariff score changes (1998 and 2005)



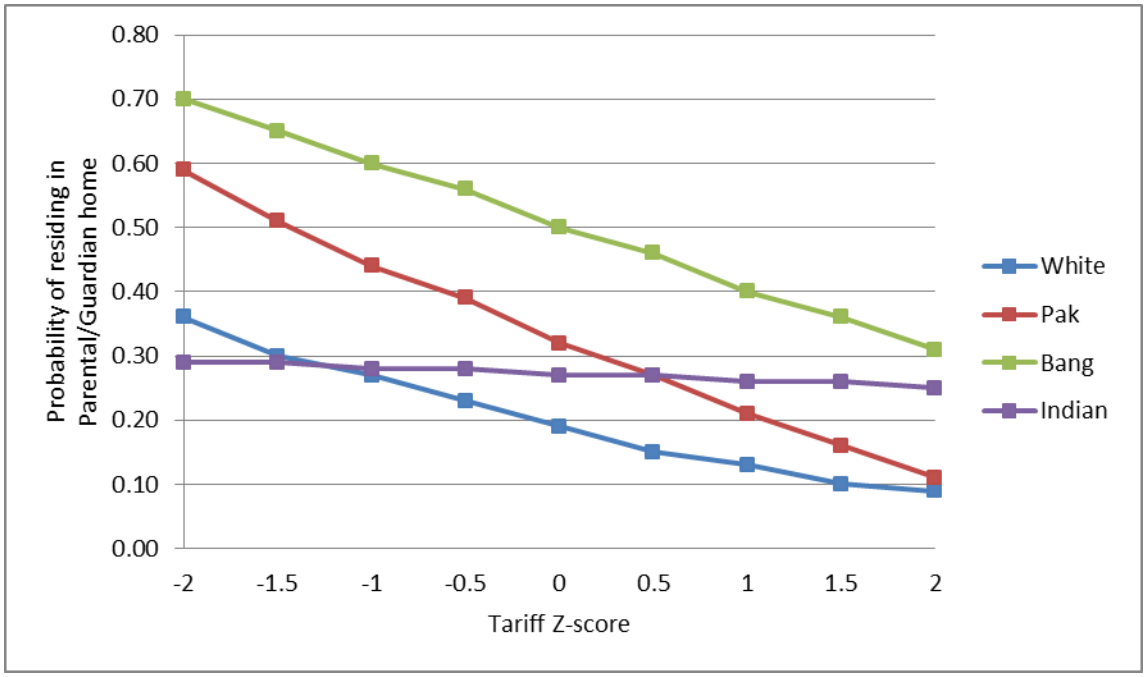
Probabilities calculated using results from Tables B.10 and B.11 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

Figure B.6: Predicted probabilities of staying in the Region of Domicile for each ethnic group as A-Level Tariff score changes (1998)



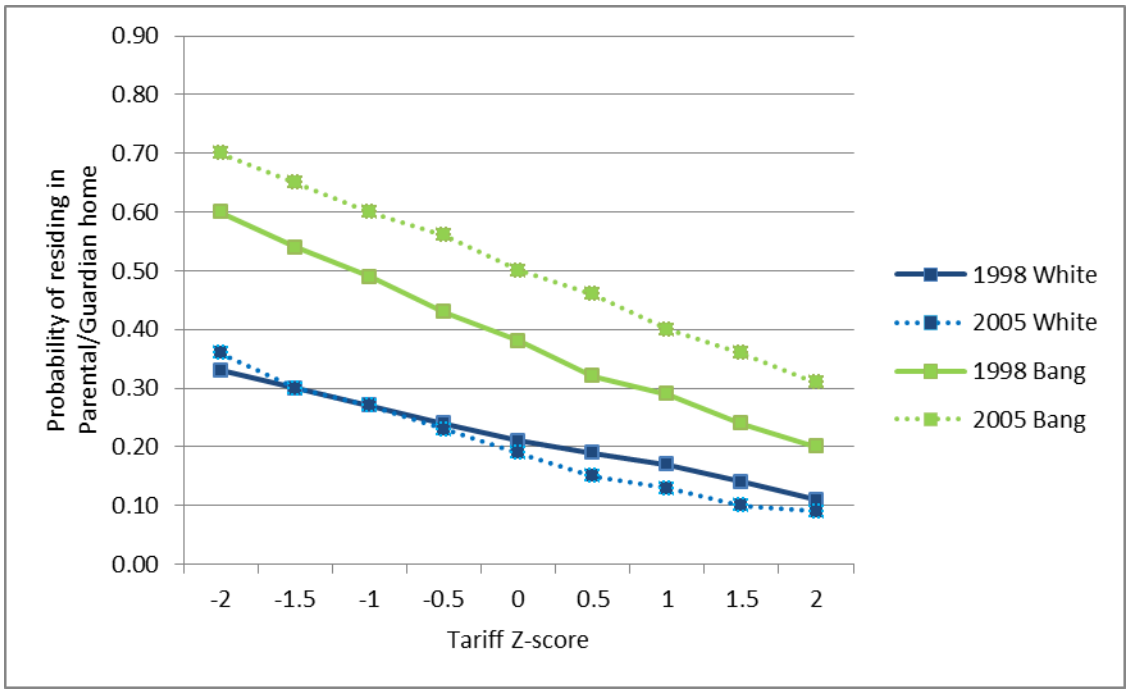
Probabilities calculated using results from Table B.14 Model 5 for students from the London Region that are in the least deprived IMD quintile.

Figure B.7: Predicted probabilities of staying in the Region of Domicile for each ethnic group as A-Level Tariff score changes (2005)



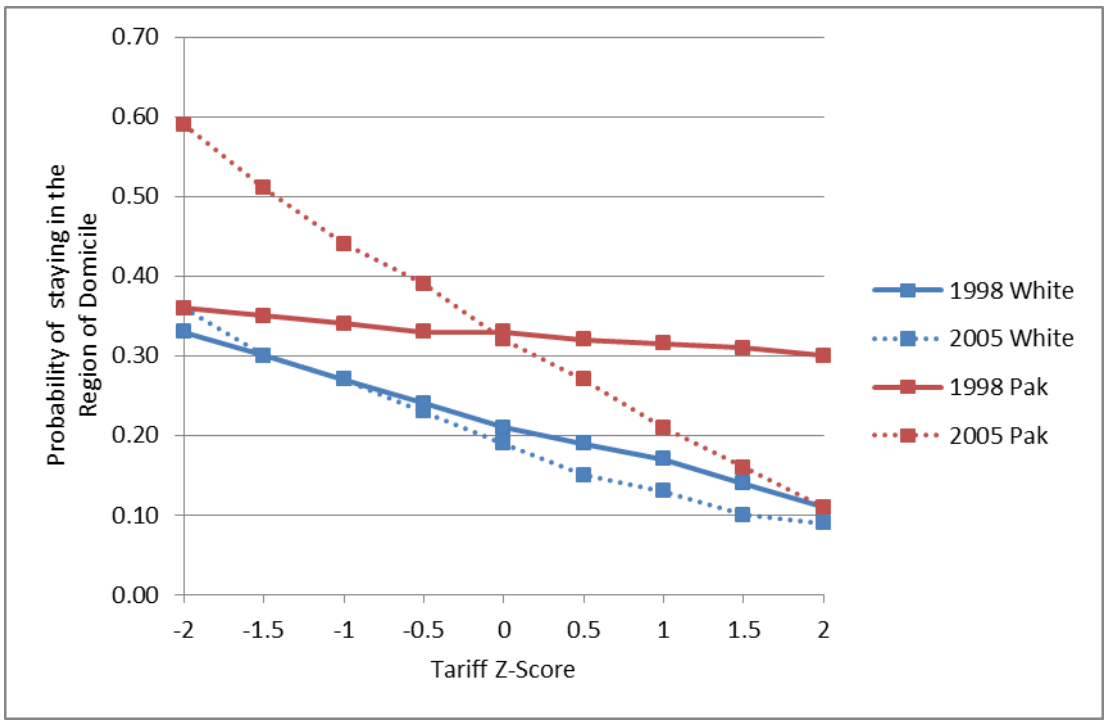
Probabilities calculated using results from Table B.16 Model 5 for students from the London Region that are in the least deprived IMD quintile.

Figure B.8: Predicted probabilities of staying in the Region of Domicile for the Bangladeshi and White ethnic groups as A-Level Tariff score changes (1998 and 2005)



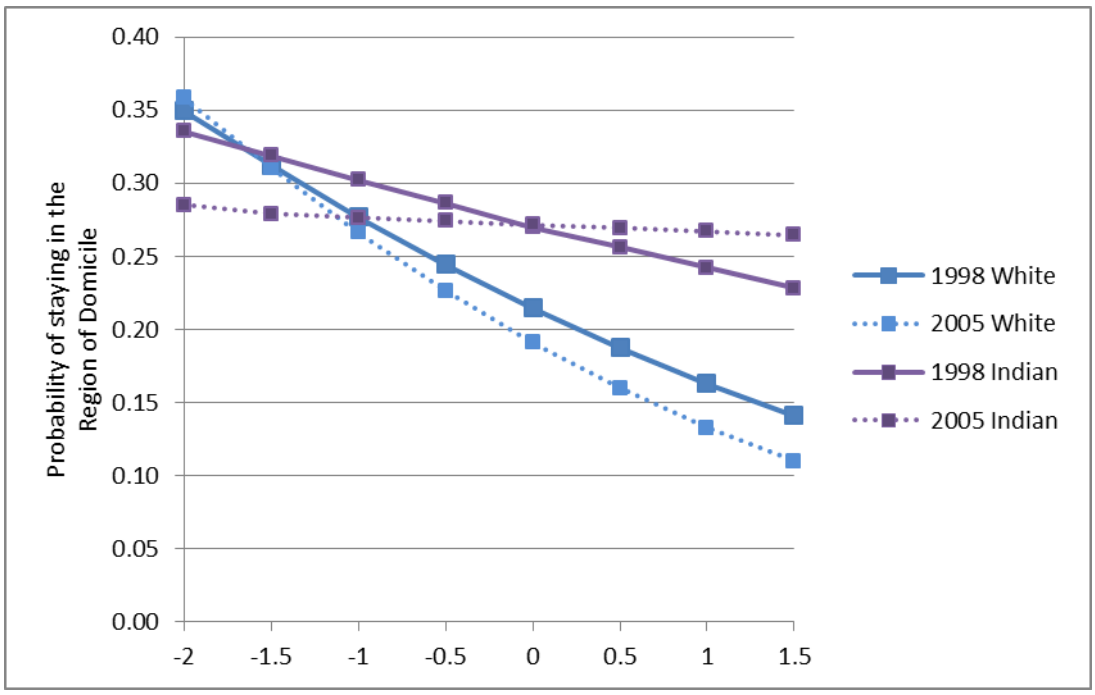
Probabilities calculated using results from Tables B.14 and B.16 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

Figure B.9: Predicted probabilities of staying in the Region of Domicile for the Pakistani and White ethnic group as A-Level Tariff score changes (1998 and 2005)



Probabilities calculated using results from Tables B.11 and B.12 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

Figure B.10: Predicted probabilities of staying in the Region of Domicile for the Indian and White ethnic group as A-Level Tariff score changes (1998 and 2005)



Probabilities calculated using results from Tables B.11 and B.12 (Models 5) for students from the London Region that are in the least deprived IMD quintile.

4. "Indian girls don't play football!"[15] Mothers' perceptions of their roles in their daughters' university subject choices.

4.1 Introduction

As they make their subject and career choices, young people may consult with their parents and consider the impact their career choice may have on their families. Some authors such as Siann et al. (1990) have found that for many young South Asians in Britain the choice of subject and career is likely to be made within the framework of reference of family aspirations and interests. The research presented in this chapter is an investigation of Indian mothers' attitudes towards the subject and career choices made by their daughters. It is their thoughts concerning university subject choice(s) that is of primary interest. What role do these women play in their daughters' decisions to study specific subjects and pursue particular careers?

Davis and Pampaka (2008) found disparities between the articulation of White and Asian students with regard to university subject choice. Asian students often articulated familial, cultural and social rules in relation to their educational decisions where as White British students in contrast tended to present themselves as autonomous and independent individuals with regard to their decisions. Bagguley and Hussain (2007) discuss how many of the Asian women currently entering Higher Education (HE) are 'pioneers'. That is they are the first females within their families or even local communities to go on to participate in HE. These authors have discussed how there is great encouragement from parents, as well as a certain level of expectation for their daughters to enter HE.

The course one chooses can be strongly associated to potential career paths. The quantitative work presented in Chapter 2 shows a preference for courses

[15] Chadha (2002)

that lead to professional occupations (e.g. Medicine, Engineering) amongst the Asian community. In-depth discussions with Indian mothers could help explain what attitudes, thoughts and experiences these preferences are based upon. There is little existing research on Indian or Asian mothers more generally in terms of the roles they play in their children's educational choices.

Section 4.2 sets out the key research questions being addressed in this chapter and the key motivators behind each question. This is followed in Section 4.3 by a review of existing literature on Asian migration in Britain, Asian family patterns, Asian attitudes to education as well as parental influence on educational choice more generally. Section 4.4 sets out in more detail the reasons for studying Indian mothers and highlights how this study makes a contribution to existing literature.

Section 4.5 includes a description of and justification for the use of semi-structured qualitative interviews. Qualitative research was used to generate in-depth findings that would enhance and consolidate the understanding of ethnicity and subject choice that has already been established in this thesis through quantitative analysis. Issues that arose as a result of conducting some of the interviews in *Gujarati* are also highlighted in Section 4.5. An explanation of the procedures that were followed in order to obtain the sample of nine mothers that were interviewed is presented in Section 4.6.

Section 4.7 is a discussion of the ethical implications of the study whilst a description of the key themes that emerge from the interview data is given in Section 4.8. These themes are analysed in section 4.9 in relation to findings from previous research and the research questions are revisited in light of the results. The aims and main findings of the research are summarised in section 4.10.

4.2 Research Questions

4.2.1 Questions

Four main research questions are addressed in this chapter. Each of these is split further into sub-research questions.

1) Do Indian mothers have a strong expectation that their daughters will attend HE?

1a) Does their own labour market experience (employment status, industry, occupation, salary) inform the way in which they view HE and the benefits that may come from participation?

1b) Does their own labour market experience inform the way in which they regard subject and career choice?

2) Does educational background have a bearing on the educational and career aspirations that Indian mothers have for their daughters?

3) Do Indian mothers have a strong preference for certain degree subjects and careers?

3a) Do mothers with a strong educational background go through a different process to those with a weaker background when deciding on appropriate subject choices?

3b) What are any such preferences based on? E.g. financial rewards? status?

4) Do Indian mothers believe they play an important role in their daughters' subject choices?

4a) Was there collaboration between the mother and the daughter when the subject choices were being made?
4b) Was there collaboration between the daughter and her father?

4c) Are the perceived disadvantages and benefits of daughter's subject/career choices viewed from an individualistic (based mainly around the daughter) or collectivist (based mainly around the family) perspective?

4.2.2 Motivation

The research questions in this chapter were motivated by two factors in particular. The first is research that was conducted in Chapter 2. The findings from that analysis are evidence of the strong inclination that young Indian students have to apply to study undergraduate degrees that lead to careers in the professions. These results highlighted some of the current key patterns, but it was difficult to infer from them what the reasons behind these trends might be. It is hoped that the data collected in this study can shed light on some of the thoughts and possibly even traditions upon which these preferences might be based. One clear example of this is research question 3b where ideas about status and financial rewards are investigated. Both these factors are often linked strongly to the pursuit of professional careers.

That there is an explicit link between the results in chapter 2 and the research questions in this chapter. However, Chapter 3 is also of some importance. There were a number of questions included in the interview schedule that had particular scope for respondents to discuss issues around university location, the decision to move out of the parental/guardian home and how it might be linked with subject choice decision making. For example, respondents were asked how the decision to attend university was made and what they thought their daughters might gain from a university degree. Some respondents could perceive that these questions are inviting mention of the broader experience of attending university. This wider experience can be understood to include not only academic learning but also the development of inter-personal and social skills associated with new learning environments and surroundings.

The second factor that motivated research in this chapter is existing literature. It will become evident after reading the next section that research on Indian parental attitudes towards their children's subject and career choice is sparse, especially in terms of studies that use methods which give parents space to speak for themselves and not through their children. Previous research has been conducted with Pakistani and Bangladeshi students and

focused mainly on the perceptions of the students themselves. Where there has been discussion of parental views, these were again based on the voice of the students themselves.

There has in recent years been more interest in the wider environment in which students make their choices, whether it be the influence of parents or the peer group. Therefore, addressing these research questions would add to an understanding of the educational choices of Indian students, especially when bearing in mind the close-knit and extended nature of the Indian family in the UK today.

In summary the research questions set out in this section were motivated by:
(i) a desire to understand where these attitudes and preferences for professional subjects come from and how they relate to the mothers' own thoughts and expressions as well as the thoughts of their daughters, families and wider communities ;
(ii) an understanding that, based on the literature discussed in the next section, these questions had never been asked in relation to Indian mothers before.

4.3 Existing Research

4.3.1 Mothers' involvement in educational decision making

This section is an exploration of evidence concerning the role of both White and Asian mothers in educational decision-making. A number of studies have shown how active mothers are in their children's education. This involvement is not restricted to choices about HE, but decision making throughout the different stages of their children's educational careers.

Vincent and Ball (2001) investigated a sample of predominantly White middle-class working mothers and their perceptions and understanding of childcare markets in two areas of London. The authors were interested in how the mothers made decisions concerning the right care for their children. Mothers made a heavier investment in the process of choosing pre-school

childcare than fathers even in cases where both parents worked. The authors suggest that this increased involvement is strongly in line with a construction of motherhood that places primary responsibility for the child with their mother. Fathers played minor roles compared to the mothers and the children, with whom the decisions really lay.

This greater investment from mothers continues when children are older. Both David et al. (1994) and Reay and Ball (1998) focus on the process of secondary school choice. Across a sample of both middle-and working-class families, there was evidence of a strong perception that the process of secondary school choice is mainly a mother's job. Mothers are responsible for talking to children, collecting essential information and organizing and making visits to prospective schools.

Reay (1998, 2003) highlights further differences between middle and working class mothers with regards to their involvement in their children's' schooling. Reay's interview data suggested that working-class mothers can find it more difficult than their middle-class counterparts to generate similar levels of academic confidence and enthusiasm among their children. It is particularly difficult to generate confidence and enthusiasm for those with a personal history of academic failure. Working-class women also found it more difficult than middle-class mothers to give their children emotional support. This is because of other problems that they were having to cope with such as poverty, insufficient educational knowledge and lack of confidence.

With regards to parental involvement in HE choice, David et al.'s (2003) qualitative investigation incorporated both students and parents. The sample included male and female students from different ethnic backgrounds including White, Bengali and Black African. The study focused on particular facets of parental involvement including influence, support, investment and intrusion. The authors were interested in general decision-making as opposed to a particular HE choice such as that of subject or institution. Mothers' involvement was found to be close and engaged in comparison to the loosely connected involvement from fathers. Mothers collected information on universities and accompanied their children when visiting HE

institutions. In contrast, fathers' roles appeared to be more related to confirming decisions and giving their approval to choices that had already been made.

4.3.2 Asian parental involvement

Tyrer and Ahmed (2006) conducted a study on Muslim women's HE experiences using both questionnaires and qualitative interviews. The sample for the qualitative research included 105 women that were either recent undergraduates or post-graduates entrants to the labour market. Interviewees were of Indian, Pakistani, Bangladeshi, Arab, African and African-Caribbean ethnicities. Obstacles to careers services and issues around employability were explored. Some women discussed the role their parents had played in their paths into and beyond HE. In the main the interviewees felt that their parents shared their educational and career aspirations.

There were however instances of disagreement where parents did not support their daughters' university subject choices. Mothers and fathers both had preferences for subjects that lead to prestigious professions and offered greater opportunities for self-employment. There were also instances when parents were not supportive of their daughters' institution choices either because they did not think they were prestigious enough or they were not happy with the location.

One of the most recent studies on Asian parents and their attitudes towards education was conducted by Ijaz and Abbas (2010). They used ethnographic and in-depth interview research methods to explore inter-generational change in parental attitudes towards the education of British Muslim women. The sample included 11 men and women from communities that originated from the Mirpur district of Kashmir and were now resident in Oldbury, West Midlands. Research results showed that both generations understood the importance of education for their daughters. However there were differences between the two.

First-generation parents were concerned about their daughters attending a Western European school and being "corrupted by Western values" (p.319). They were worried about their daughters mixing with boys at school and being exposed to activities that were against their religious and cultural beliefs. However, these parents were not concerned about their sons' attendance at schools and male children were given unlimited freedom.

In contrast, second-generation parents did not make this gender distinction and resented the double standards held by their parents' generation. They were equally worried about their sons becoming "morally corrupted" (p.320). As a result there was an overwhelming demand for single-sex schools in the local area. All parents in the sample regardless of age, sex and educational background stated that they would be happy to let their daughters study as much as they wanted if they were attending a Muslim school. No particular differentiation between the attitudes of mothers and fathers were reported in this study.

Bannerman's (2001) study involved qualitative interviews with undergraduates and graduates to study Asian girls' educational expectations and professional ambitions with a specific emphasis on their attitudes towards language learning. Findings suggested that a strong tradition of studying sciences and maths was a significant obstacle for many students. Parental concerns were cited as a major barrier. One reason why parents were not supportive towards their daughters studying language subjects was that they were apprehensive about their moving abroad. This is an element incorporated into most language degree courses and is often compulsory. In some cases this led to students deliberately avoiding mention of this part of the course to their families until the first two years of their course had been completed.

Bagguley and Hussain (2007) set out to study continuing barriers faced by Asian women in getting to university and into the labour market upon graduation. Research methods included qualitative interviews carried out with young Indian, Pakistani and Bangladeshi female students in sixth forms and

universities as well as with recent graduates. They incorporated subject and career choice into their analysis, and found that there were five subject areas to which South Asian female applicants disproportionately applied and gained acceptance to. These included medicine and dentistry, subjects allied to medicine, mathematical and computer sciences, law, and business and administrative studies. These subjects accounted for around half of the South Asian women's applications, compared with about a quarter of White women's applications.

Siann et al. (1990) investigated the influences of career choice for Muslim women by way of qualitative interview methods[16]. The sample was drawn from the Bradford and Glasgow areas. These authors were especially interested in pupils' perceptions of their parents' views about themselves in relation to their careers. Issues addressed included whether or not the degree subject they aimed to study was an area of conflict within the home. Perceived differences between mothers and fathers were also explored. Findings suggested that there was little disparity between Muslim parents and pupils with regards to issues relevant to their careers.

4.3.3 Overview

It is evident from the discussion of the literature that parents can have a strong influence on decisions related to their childrens' educational careers. It is also apparent that mothers tend to play a more prominent and influential role than fathers. Involvement in school selection is in some cases seen as entwined within the broader range of childcare duties that are part and parcel of motherhood. Involvement includes searching for possible schools or universities, requesting appropriate information and arranging and attending visits.

It is unclear however from the literature specifically on Asian parental involvement what mothers' roles are. The great value placed on education

[16] No indication was given about the ethnic origin of the pupils in terms of which Asian countries their families may have originated from.

and the high aspirations parents have for their children, especially daughters, is evident. However the specific type of involvement that mothers have in decision making and how it compares to that of fathers, or even the individual students, is not clear. It has not been possible to paint as vivid a picture of the role of Asian, or specifically Indian, mothers as it has been with the role of mothers more generally. It is this gap in knowledge that is addressed in this study with a particular focus on subject and career choice.

4.4 Contribution to the Literature

It is clear that some authors have incorporated parents and the family into their investigation of the decision-making processes that students go through to make their HE choices and there have been studies where parents have been interviewed in order to understand their views in the general process of decision making about HE. There is also evidence that researchers have incorporated parents into the exploration of Asian Muslim females and subject and career choices, without them being included directly as research subjects. However, Indian parents have not yet been included in existing studies as research participants in order to explore the subject choices of their children. It is this gap in the research that is being addressed here.

4.4.1 Indian mothers and Indian daughters

The literature on Asian families has highlighted an emphasis on patriarchy in the Asian family. Authors such as Ghuman (1999) and Warrier (1994) have highlighted the importance that fathers have in terms of how Asian families operate. Ghuman (1999) notes how the extent to which the father dominates the Asian household depends on a number of factors. These include religion, socio-economic group and migration story. Despite there being evidence to suggest fathers are more central to decision making in an Asian family, this does not imply that gaining an understanding of mothers' attitudes would not be insightful.

More second and third generation Asian mothers are economically active and gaining independence and personal autonomy through paid work. Authors such as Bhachu (1991) have discussed how the high proportion of Sikh women in the labour market has had a great impact on the educational and career aspirations they have for their daughters. It is possible that this is also true for other Indian women. The role of Asian women within the family has undergone a change and this is partly attributable to increased labour market activity. This has affected the way that they perceive their daughter's education (Bhachu 1991). Indian women are playing an increasingly involved role in terms of the way in which a family operates. It is clear then that it is not only fathers that might be having an input into how their daughters make their decisions about university subject choice.

In terms of Indian female students, they have been marginalised in the debate on Asian women and education. There has been more focus on the education of Bangladeshi and Pakistani women. The reasons for this include lower attainment and lower levels of participation in HE amongst Bangladeshis and Pakistanis. The work done on the education of Indian women is relatively little in comparison and as such it is these women that are the focus of this analysis.

It is true that there are not the same concerns about Indian women compared to Bangladeshis and Pakistanis given their generally good educational performance and high levels of economic activity. However, this does not imply that these women should be excluded from the Asian debate. There are a number of ways in which this group could come up against barriers in education. It is possible that constraints are placed on subject choice as well as what could be considered as a suitable length of time in the education system.

An alternative approach to this study could have been to add a comparative element that involved additional interviews with the female students. This would have provided an opportunity to investigate whether there was a difference between mothers and daughters in how they understand the mothers' roles and where these differences in perception might lie. Interviews

with students might also have provided an opportunity for a richer understanding of how the students experienced making their subject choice decisions. However, there are two main reasons why the students were not interviewed in this study. Firstly, time constraints did not permit interviews to be conducted with a sample of nineteen respondents. Secondly, there is a greater gap that needs to be addressed in the research on mothers than there is on students and their experiences. Carrying out interviews with mothers has made a greater contribution to the research area.

Furthermore, had fathers been the focus of this study, the data generated from the interviews would be very different to that generated from interviewing mothers. It is true that I am from the same ethnic background as the fathers. However my other characteristics (i.e. that I am young in age, am female and potentially have a stronger educational background) could make it difficult to generate a sample of fathers. It could also make my presence as an interviewer appear especially intrusive and uncomfortable. Any fathers that might be open to being recruited and interviewed would give very limited, general answers to questions because of a lack of common ground.

4.5 Methods

Gaining initial entry to research sites is an aspect of qualitative research that is referred to a great deal in the methodology literature. Indeed, gaining access is regarded as a critical aspect of the research progress and can present itself as a major fieldwork task. Difficult: same community but not the same age, social and leisure activities. In schools research, it is not always obvious to know who to approach or who is the decision maker within the approached school. Due to difficulties in recruiting schools for the study, emphasis was placed on personal networks. In line with the experiences of Lahmar (2009) and the search for Muslim schools, reliance on personal and occupational networks in this study were not as fruitful as hoped and only one two schools were accessed using this route. Lahmar faced severe time delays as a result, and this is a problem that appeared in this study too. This issue related to schools in the study and how appropriate they were for

generating interviewees for this particular research is discussed at length in the sample section of this chapter. Nevertheless, it was important to highlight access issues at the outset of the methodology section as it was an important aspect of the research process.

In setting out a methodological strategy for this chapter, it was also important to consider from the outset about potential role conflict of the Indian female (participant)-Indian female (researcher) dynamic. It was imperative to comprehend issues around reflexivity in action, and this was achieved by gaining a clear awareness of the experiences of other South Asian women researchers studying their own communities or sub-communities such as Bhopal (2001) and Basit (1997). These are referred to in greater detail further on in the ethics section of this chapter. Researchers have argued that it can be useful throughout the interview and research process to continue to keep a purposely restricted persona in front of interviewees. However, a constructed research persona can be perceived as false by not only participants but also the researcher) and may not help the research process or prevent the subjectivity that is always a danger in shared identity research. The issue of role conflict is clearly a complex issue with many facets and researchers have clearly put forward a number of coping strategies (Colbourne and Sque 2004). These issues are revisited throughout this chapter, however they have been stated upfront before the detailed discussion on methodology and ethics because they cannot be taken lightly. Furthermore, it is important for a researcher to be clear that they have considered these issues right at the early stages of research design and they are continuously revisited throughout the research process.

4.5.1 Data Collection – the case for interviews vs. case studies and focus groups

The primary data collection method used in this study was the semi-structured interview. These are essentially first-hand accounts that give respondents a voice (Mason 2002). They produce rich insights into people's experiences, opinions, values, aspirations, attitudes and feelings (May 2001).

This is the most common research method employed in qualitative research, and is used when emphasis is being placed on depth, nuance, complexity and roundedness in data.

An interview can be defined as an interactional exchange of dialogue that is relatively informal in style. A researcher will have a number of themes or issues that they wish to address, or a set of starting points for discussion. This can be identified as an interview schedule (Mason 2002). Semi-structured interviews allow people to answer more on their own terms than the structured interview permits, but still provide enough structure to facilitate comparability.

This type of interview allows the researcher the flexibility to probe respondents for elaboration and clarification of their answers (May 2001). The format is more of a conversation than that of a formal question and answer session. Interviews allow respondents to explore concepts in their own terms (Mason 2002). This is important in this study as it is not young people's accounts that are used to understand parental involvement as has been the case in many previous studies. Mothers have been given an arena in which to produce their own accounts. Interviews were conducted face-to-face on an individual basis. Participants were asked if they objected to interviews being recorded and if there was no objection, they would be recorded and interviews would be transcribed. Recording the interview has the advantage of having a record that can be referred to later which can allow the researcher to focus on making notes of non-verbal communication.

The case study approach has long been used in social science research (George and Bennett 2004). Case studies encompass the gathering of detailed knowledge about either a single case or of a small number of cases of a situation, individual or group/s of interest. They involve the investigation of a case in its' context. This approach to research can involve multiple methods of data collection. These can include interviews, observation and documentary analysis (Robson 2002). A key reason that they were not used in this instance is that practical difficulties can arise when undertaking case

studies as a rigorous research method. Meticulous planning and judicious use of both the researcher's and participant's time is required if data collection for case study research is to be as effective as it can be. It can be time-consuming to collect case study data from case participants (Cavaye 1996 in Darke, Shanks and Broadbent 1998). Researchers are required to prepare themselves with complete background information about a case study site before they embark on the data collection process (Darke, Shanks and Broadbent 1998). This research was only one third of a three paper thesis and as such there was not enough time here to allow for the multiple discussions with mothers and repeat visits to family homes that would have been required for case study research. Furthermore, my aim was to collect accounts of a variety of experiences and speak to mothers from varying socio-economic backgrounds, different labour market experiences and educational histories. It would not have been possible to do this with case study research. The nine interviews that were conducted would have been replaced with perhaps only two case studies. This would have left no scope for developing an understanding of a variety of experiences.

Group interviews, or focus groups, would not have been suitable in this study. Encouraging Indian women to speak about this topic within a group context would have been difficult for a few reasons. First of all, discussing how active they were or are in their daughter's educational decision making is linked closely to the role they perceive they have in the family as wives and mothers. Issues related to respondents' own educational histories and opportunities that were available during their youths are also likely to be discussed in the interview. They may not find it comfortable to discuss these issues in a group context.

Furthermore, data generated through a focus group discussion may not reflect true opinions and attitudes. One reason for this is that members of the Asian community can be highly status orientated. In discussing Sikh settlement in the UK, Ballard (1994) highlights how Sikh communities, irrespective of where they are settled, face severe factional conflicts. One salient source of conflict is personal rivalry whereby members of a community are constantly seeking to outshine each other.

It is likely that the educational achievement of their offspring is another area where individuals, families or communities can out-achieve each other. Indians, and other South Asians, can go to great pains to behave in a way that will reflect high status (Ballard 1994). They may only voice opinions that they think are appropriate and will try not to appear too controversial before other members of their own community. Using a method such as a focus group discussion would not be appropriate as it is not the ideas that emerge through group participation that are of most interest here. This data would lack the depth of information that would enable a narrative to emerge for each of the participants. This problem would not apply with one-to-one interview data and for these reasons, the interviews will be conducted individually.

The interview schedule included broad questions that participants would be asked (see Appendix). Semi-structured interviews allow an interviewer to cover the major interview topics, but also give enough flexibility to probe for more information where required. It allows for differences in the level of comprehension and articulacy of respondents (Fielding and Thomas 2001). This was important as some of the mothers had varying fluency in their English language skills. The interviews were conducted face-to-face and were mostly 45 minutes in duration, although some were over an hour and a half.

The questions on the interview schedule were linked as closely as possible to the four main research questions. As the interview was semi-structured, there were times where the questions asked were not entirely consistent with those presented in the schedule. Some questions were overlooked because an interviewee had already discussed the topic in answer to a previous question, or further ad hoc questions were asked in order to probe for clarification of an answer. When interviews were first being conducted, the schedule was edited slightly and a few questions were added where previous ones were deleted. This is because new unanticipated topics of interest that helped address the research questions came to the fore. As a result it was desirable to bring these topics up in discussions with remaining interviewees, and new questions on these topics were added to the interview schedule.

In addition to conducting interviews, research participants were also asked to complete a brief questionnaire at the end of the interview (see Appendix). The purpose of this was to obtain key demographic information on the interviewees that would help contextualise the interview data. The questionnaire included questions regarding age, educational background, occupation, country of birth and religious background.

4.5.2 Triangulation

Triangulation is characterised by a multi-method approach to a research problem. This is known as methodological triangulation. This can either be "within methods" or "between methods". The former involves a check on reliability and theory confirmation through the replication of a study. The latter, which is what is relevant in this thesis, encompasses the use of two or more methods in the pursuit of given research objectives. The between methods approach can provide a validity check because it embraces the concept of convergence between independent measures of a sole objective. In this thesis qualitative research methods (semi-structured interviews) are used to illuminate findings from quantitative analyses presented in chapters 2 and 3 (Cohen et al. 2007). This methodological approach does not conceptualise quantitative and qualitative research as opposing and polar, but instead regards them as complementary of each other (Jick 1979).

In-depth discussions with Indian mothers in this chapter were used to elucidate the findings from the Chapter 2 data analysis. It was thought that this qualitative research could help in the unearthing of the underpinning attitudes, thoughts and experiences that might be driving the wider quantitative results. These discussions with mothers would also help shed some light on concerns about university term-time accommodation and how these might be bound up in subject choice decision making. These interview data could potentially be linked back to the large-scale results presented in Chapter 3. An example might be that a student may wish to study a distinct subject. However they might be limiting their institution choices to local

universities and have to adapt their subject preferences accordingly as they can only opt for courses offered in their local institutions. It is hoped that the qualitative data analysis presented in this chapter illuminates in some small way the intricacies of tensions between university and subject choice.

4.5.3 Language & Translation

There was a strong expectation all the mothers in the sample would be fluent English speakers, even if English was not their first language. This was mainly because they were found through a network of personal contacts, all of whom have a high proficiency in spoken English. Furthermore, the majority of Gujaratis that reside in the UK have done so since the early 1970s as a result of hostility from nationalist movements gaining momentum in the East African countries they lived in previously (Warrier 1994). It was presumed that after approximately 40 years of living in a country where English is the national language these women would have developed their language skills. However, this was an unrealistic expectation as two of the mothers in the sample, Keya and Meera spoke only basic English, and certainly not at the level required to discuss the interview topics in detail[17]. They both asked if it was possible for the interview to be conducted in Gujarati. I myself am able to converse in Gujarati at an advanced level so I was able to deal with this situation when it came up. Also, because it was obvious to all of the mothers that I could speak Gujarati, even though they were fluent in English, they did sometimes use the odd word or phrase in Gujarati during the interviews.

Furthermore, where interviews were conducted primarily in English, the semi-structured nature of the interviews was very helpful as the flexibility of this method was required. Some of the interviewees had less advanced English skills and were less articulate than others. In a number of instances it was necessary to reword questions several times in order that interviewees understood as fully as possible what they were being asked. Where they were particularly confused, questions were asked in Gujarati. In hindsight, the way in which the questions for the interview schedule were worded was

[17] Pseudonyms are used for interviewees throughout this chapter.

presumptuous of how articulate the interviewees would be and how competent their English was. Where the interviews were conducted in Gujarati, the tape recordings of those interviews were transcribed in English. The recordings had to be listened to many of times whilst deciding how best to translate what was being discussed.

That some of the interview data were collected in a language other than which they are presented has important implications. In this scenario, researchers are required to take translation-related decisions. These can have a direct impact on the validity of the research as well as the way it is reported. The quality of translation in social research is dependent on a number of factors, for example the translator's linguistic competence and their knowledge of the culture of the group being studied (Birbili 2000).

There are a number of problems that can arise from translation. Many of these occur when interpreters are being used. In this case, researchers are reliant on them for both their linguistic services and their perspective. Interpreters have an effect on research subjects and the communication process. These issues can all have a bearing on the data that emerge and the meanings that derive from them (Birbili 2000). Fortunately, these issues are not predominant here as no interpreter was used.

What was unavoidable though is the problem that arises from the comparability of grammatical forms. Gujarati sentences involve grammatical and syntactical structures that do not exist in English. In most cases direct translation would not have made sense. However, sentences that are resistant to translation due to incompatibility between languages can be adequately translated into English by applying the rules of English structure. This is the procedure that was followed in this study. The negative implication of this can be a loss of information (Birbili 2000).

One way of combating this issue is by piloting research instruments in the local culture and asking participants to not only provide their answer to a question, but also to give their interpretation of its meaning. In hindsight, this would have been a useful exercise to do before carrying out the nine

interviews. However, other obstacles would have presented themselves related to recruiting a participant solely for the purpose of piloting, for example. Finding time for conducting pilot interview/s would have put further strain on time resources. Nevertheless, if this study was repeated and conducted on a larger scale with more time available, piloting would definitely be advocated as a very useful exercise to carry out.

When interviewing in a different language, it is not only translating literally that is a problem. Gaining conceptual equivalence can also prove challenging. Even when direct translation is possible, certain expressions or terms may carry emotional connotations in one language that do not hold in another language. Due to the fact that I can speak Gujarati and have done so from a young age, it was hoped that these problems were not unmanageable. However, there might have been a small variation where I myself am bilingual and am able to express a view in both languages, but the interviewee had only one primary language to express their thoughts in. This may have an effect on the emotional connotations that the words they are using carry. This is an issue that is difficult to overcome other than by listening intently to what the interviewee is discussing and making the best possible judgement about what they are expressing and what deeper meanings they might be attaching to these expressions (Birbili 2000).

4.6 Sample

4.6.1 Recruiting participants

The aim was to achieve a sample made up of a minimum of twelve Indian mothers. It was felt that a sufficient amount of data required to answer the research questions could be generated with a sample of this size and it would not be overly time-consuming to recruit and interview this many participants. There were a number of sampling methods that could have been used. The sampling method that was deemed most appropriate involved the use of sixth form students and is described below. A second method involving university students was kept in mind in the case that the first was not

successful. In practice however, a snowballing method was adopted, predominantly due to time restraints. All three methods are discussed below.

Sixth forms in secondary schools were contacted in order to reach female students that could bridge links with potential interviewees. It was only mothers of students that were planning to apply to study at university, or had recently done so, that were targeted. They would have the process of decision making fresh in their minds and would not have had the opportunity to view their involvement in hindsight. Women with daughters that had been through the application process a long time ago will have had time to reflect on their involvement. This would have no doubt introduced bias in the interview data, and so these mothers were not targeted for inclusion in the sample.

In order to obtain a diverse sample, different types of institutions were identified such as comprehensive and grammar schools. Independent schools were not included in the search as it was thought that mothers that send their children to these education providers do so with the anticipation that they will prepare them specifically for entry into the professions. As a result, data generated from these mothers would have had a heavy bias on this basis.

The study was initially limited to the author's local areas. These included the London Boroughs of Croydon and Sutton and also Surrey County border areas. Basic background research was conducted to make a decision on which schools to approach in terms of how many Indian pupils might be attending these schools. This included researching the Council/Borough websites, having discussions with personal contacts that had children attending local schools or were themselves teachers at these schools. Four schools were selected and contacted via letters sent to head teachers. In each letter the nature and purpose of the study was described and key contact details were given. Further to this, calls were made to head teachers in order to arrange school visits.

Only one school responded and the head teachers at the remaining three schools proved to be uncontactable. An additional school was identified via a personal contact who worked there as a History teacher. The focus for

generating the sample shifted solely to these two schools which are referred to in the rest of the chapter as schools A and B. They were both sixth form centres attached to secondary schools, were state funded and educated both male and female students. School A was voluntary aided and had a strong Christian ethos. Voluntary aided schools are mainly religious or 'faith' schools, although anyone is free to apply for a place. Their governing bodies employ staff and set admissions criteria (Directgov 2009). In School A, entry to the main secondary school was limited to practising Christian families. In the sixth form centre however, it was open to students of all backgrounds. School B was a voluntary aided specialist science college. These types of schools follow the National Curriculum but have specialist focus on a particular subject area (Directgov 2009).

Head teachers at both schools were asked to speak with students they thought were of Indian origin and were in Year 13, the final year of their post-16 studies. This was later extended to Year 12 as there were not enough Indian students to generate a sample. Students were asked to get involved with the study only if they regarded themselves as being of Indian origin and were happy with the brief description their teacher gave them of the study. All students were happy to participate and one-off meetings with students were arranged at both schools.

Meetings with students at each school were around 20 minutes in length. Of this, around 5 minutes at the beginning of each session was spent on introductions and rationale behind the study. The final 5 minutes of each session was dedicated to explaining how the students could help in generating a sample of interviewees, distributing information on the next steps of the study and answering any questions students had about what participation in the study might involve. There was only a maximum of ten minutes dedicated to listening to the students' stories and their thoughts on subject choice. Therefore, it was important to communicate concisely the purpose of the study and engage with the students in a way that would interest them so they would recruit their mothers for the study. The presentation took the format of an informal focus group. At School A, five students were identified and four were identified at School B. A description of

the research was given and the gap in previous research was highlighted. In order to engage the students and introduce some interaction they were asked to introduce themselves, discuss the courses they were studying and what they hoped to study at university.

Another attempt to relate to the students was made by referring to the representation of Asian girls in popular British media. “Hollyoaks” is a television soap-opera targeted at young adults. There is a young Indian female character named Leila. She is enrolled at university for an Art degree, however her parents think she is studying Law. She is apprehensive to tell her parents the truth about her degree choice for fear of disapproval. Students were asked if they watched “Hollyoaks” and knew of Leila’s character. Every student was aware of the show, Leila’s character and that storyline. Students were asked what their views were and how common a scenario they thought it was amongst the Indian community. This generated some interesting discussion and a brief description is given in section 4.8.

Students were given the opportunity to ask questions about the study. They were then given two letters and one of these was addressed to the students themselves. It included an overview of the study and highlighted that if their mothers were to take part, they would be talking about the students aspirations. The letters to students stated that they should only pass them on if they were happy to give consent to their mothers discussing issues personal to the students. Letters for mothers included in them explanations of the study.

Letters and return stamped addressed envelopes were distributed. Students that might know of other Indian mothers that could participate in the research were given further copies of letters in an attempt to boost sample size. Mothers wishing to participate in the study would send their contact details in the envelope and would then be contacted so interviews could be arranged. Students were asked to pass these letters on to their mothers only if they were happy for their mothers to take part in the research and discuss at length their daughters’ aspirations. This sampling method had clear ethical implications. These are discussed further on in this chapter.

The meetings with the students appeared to be well received. There seemed to be a clear understanding of the importance of this research. However, unfortunately only two responses were received from students, both stating that their mothers were unwilling to participate in the study. A frustrating period of six weeks passed by with no further response from other students and so a new sampling method was used.

Prior to contacting the schools and holding the meetings with students, a contingency plan had been developed. The plan was to approach first year university students, however this sampling method was abandoned. Although a 100% response from the sixth form students was not envisaged, to not have any positive response was highly disappointing. It was expected that at least a few students would have recruited their mothers. The second sampling method would then have been supplementary. The indirect way of approaching mothers via their daughters was unsuccessful. There was no reason to suggest that meeting with university students would be more successful than it was with sixth form students.

4.6.2 Achieved Sample

A snowball sample was finally achieved through personal contacts. It was expected that being a member of the Indian community myself would mean that accessing participants in a time-efficient manner via family members and friends would not be too difficult. However, this process was not as successful and timely as hoped, although a sample of nine mothers was eventually attained. Although the target sample size was initially twelve mothers, it took almost six months to achieve the smaller sample. At this point, the search for new participants went cold and there were no more leads left. A decision was taken to stop searching for new participants as this process had already taken much longer than initially anticipated. It was felt that a sample of nine had generated enough data to at least give some insight into some of the key themes and issues.

This sampling method that was eventually was snowball sampling. Initial participants were reached through personal contacts, and they in turn provided contact details of other prospective participants that had the key characteristics required to take part in the study. Snowball sampling is often used in research where hidden populations are the focus, and participants are particularly hard to reach. It is useful for recruiting participants that are members of more excluded groups.

Snowball sampling method takes advantage of the social networks of identified respondents in a way that it provides a researcher with an ever-expanding set of potential participants. The method is regarded as a highly valuable method for obtaining respondents where they are few in number or where a certain degree of trust is required to initiate contact (Atkinson and Flint 2001). Being a female member of the Indian community was important in how successful this method was going to be in recruiting participants. Even with this advantage the original target sample size was not attained.

Table 4.1: Characteristics of Mothers Interviewed

Interviewee Name	*Number of children*	*Daughter's position (youngest, eldest)*	*Area*	*Age*	*Highest Educational Qualification*	*Occupation*	*Country of Birth*	*Religious Affiliation*
Seema	2	Eldest	London Borough of Sutton	44	GCSE	Admin. Assistant	Kenya	Hindu
Meera	2	Eldest	London Borough of Croydon	53	Primary School completion	Housewife	Tanzania	Hindu
Maya	1	N/A	Milton Keynes	45	GCSE	Credit Manager	Tanzania	Hindu
Naina	1	N/A	London Borough of Harrow	52	CSE	Admin. Clerk	Uganda	Hindu
Deepa	2	Youngest	London Borough of Harrow	53	'O' Level	Admin. Clerk	Tanzania	Hindu
Keya	2	Eldest	Leicester City	47	'O' Level equivalent	Housewife	India	Hindu
Simran	3	Middle	London Borough of Havering	45	B.Sc. (Honours) Pharmacy	Pharmacist	England	Hindu
Malveen	1	N/A	London Borough of Redbridge	45	B.A. Soc. Science/ Banking degree	Commercial Director	Kenya	Hindu
Tina	3	Middle	Leicester City	44	CSE	Retail Assistant	Kenya	Hindu

The key background information on interviewees obtained from questionnaires that they were asked to complete are presented above in Table 4.1. The names provided are not the interviewees' real names but pseudonyms to protect their anonymity.

4.6.3 Sample bias

The search for participants was originally restricted to two London Boroughs. However, using the snowball sampling method meant that interviewees were not from the same area. This was a key reason why this approach was not preferred in the first instance. This was not ideal and meant that extra considerations had to be made when analysing the interview data. If mothers had children that all attended the same school, then their daughters will have had the same 'A' level options to choose from and the careers counselling services offered will also have been similar. It was a key aim to try and keep these types of variation to a minimum so differences in mothers' narratives could be attributed to the fact that they were individuals that did not share the same opinions and thoughts and not because their daughters' schools operated in different ways under different Local Education Authorities. Furthermore, local labour markets vary and this could also have had an impact on mothers' opinions with regards to the best education and career paths for their daughters.

It was inevitable that interviewees would have some different characteristics, such as migration stories and faith groups. As it happened this was not the case and all the mothers identified themselves as being Hindu and all originated from the Indian state of Gujarat and so spoke the main dialect of that state. There were some differences between educational background and occupation status, something that can be used as a proxy measure for socio-economic group, but these were sought after specifically to address research questions that focus on these differences. In any case, it was important to explain briefly why the search for participants had initially been restricted to particular areas, to acknowledge that the final sampling method used did not accommodate this preference and to show that I as a researcher was aware of

this and was ready to take extra care when making claims about variation across the sample in terms of their thoughts and views.

The fact that seven of the nine mothers share the characteristics of being East-African born Gujarati Hindus is not coincidental. Even of the two mothers that were not East-African born, both had husbands that were and had strong family links to East Africa. The main reason that these mothers share these characteristics is that they were found through my own personal contacts. My family are Gujarati Hindus that originate from Kenya, Uganda and Tanzania. Interviewees were acquaintances of my friends and family but I knew none of them personally and had not met them prior to the interviews. Despite this, the fact that the sample was found through my contacts is reflected in their sharing characteristics with my family.

It is important to state these features of the sample as Indian mothers born in East Africa may differ in their attitudes to their daughters' HE compared to those born in India. This could be due to a number of reasons such as differences in education systems growing up as well as changes in attitudes and aspirations as a result of migration. There might also have been socio-economic differences between those Indians that migrated to East Africa and those that stayed in India. It is fair to comment then that this sample was specific and unique and what could be inferred from the data was likely to relate more to Indian mothers with these characteristics than Indian mothers more generally. Even with this in mind only loose links could be made between sample and population, not least because the sample was so small. It was important to highlight this potential source of bias and keep it in mind when analysing the interview data.

There were other potential sources of bias related to the specific nature of the sample. Firstly, as well as sharing key demographic characteristics with me and my family, they may have also had a similar degree of commitment to HE that is different from what is usually found in the larger population of British Indian mothers. Secondly, although the interviewees were not relatives or acquaintances of mine, in most cases the mutual contact that put me in touch with the interviewees was a close acquaintance of mine. Knowing that I

had a close relationship to the mutual contact might have had an impact on the discussion that arose during the interview. Interviewees may have been more reluctant to share their true thoughts in great detail with me, especially if they were related to any particularly sensitive topics.

4.6.4 Data Analysis

All interviews were recorded and transcribed. Any additional observations about the participant and the family were noted prior to, during and after the interview. In order to create familiarity with the data, interview recordings were listened to more than once and transcripts were read many times. This was the earliest stage when connections were being made between interviewees in terms of their thoughts and views. Key differences between mothers with particular characteristics such as strong educational background and labour market activity began to emerge.

The next stage of data analysis involved identifying key themes would emerge that would help address the research questions. Mason (2002) identifies three approaches to sorting and analysing data: literal, interpretive and reflexive. The literal approach lays focus on literal form, content, structure and style. When studying interview transcripts, attention is paid to the words and language used as well as the form and structure of dialogue. An interpretive reading involves constructing and documenting a version of the meaning of the data and what they represent, or what might be inferred from them. Finally, a reflexive approach locates a researcher as part of the data and seeks to explore their role and perspective in the process of generating and interpreting the data. These three approaches are not mutually exclusive and it is common practice to draw on all of them simultaneously. This was the approach used in this study and so the data were read on all three levels.

The technique of categorical indexing was adopted with the use of qualitative data analysis software package NVIVO. This involved applying a uniform set of index categories in a systematic and consistent fashion. Categories were

created in accordance with all three types of readings. They give a descriptive sense to what each section of text was about. It was important to think carefully about the types of categories or codes that needed to be produced. They can represent different types of phenomena such as behaviours, actions, attitudes, understandings and practices referred to in the text. It is important that the cross-sectionally indexed extracts of data have to make some kind of analytical sense so that they are used for the intended purpose of addressing the key research questions.

It is possible to organise data around themes and issues which do not appear across the entire sample due to their specific or idiosyncratic nature. This is known as non-cross-sectional data organisation. It involves inspecting closely discrete elements, cases or contexts within the data set, and documenting those parts specifically (Mason 2002). It was important to read the data in both ways in this study because although the participants shared some key background characteristics, they also had features that made them highly distinctive. For example, one of the participants discussed rare health issues specific to her family that had a bearing on her preference for a particular career path for her daughter. Therefore, the interview data collected here were studied cross-sectionally and non-cross-sectionally.

4.7 Ethics

There were a number of ethical issues that had to be considered during this study. Qualitative data are invariably based on analyses and presentations of what may be personal, identifiable and idiosyncratic material. It is for these reasons that questions of confidentiality and anonymity are raised when using qualitative research methods. The process of interviewing in particular promotes a high degree of trust among research subjects, which in turn gives a special responsibility to ensure that researchers do not abuse that trust by not keeping to their commitments, acting deceitfully, or producing explanations that may not be in the interests of their research subjects (Mason 2002).

The interviewer-interviewee dynamic deserves much attention when thinking about the ethical implications of the research being conducted. Researchers aim to build a rapport with their interviewees. During the interaction, participants can place a great deal of trust in researchers as they discuss their stories. It was important to be aware of how much information the interviewees were giving. There is a possibility that interviewees will share thoughts that are perhaps too private to be shared. This may have been more of an issue in this study in particular because I was of the same ethnic group as the interviewees. Participants may have presumed that this similarity could help me to understand their views. When researching ethnic minority groups, interviewers with the same characteristics are often used to put the interviewee at ease and create a less intrusive environment. Research subjects are more likely to express more radical opinions due to a feeling of shared identity (Bhopal 2001). Where interviewees did express thoughts that appeared to be too private to share, my interviewer skills had to be used to divert the conversation towards another issue in order to avoid an abuse of trust.

Basit (1997) discussed how sharing the same culture and ethnicity as your interviewees has both advantages and disadvantages. She discusses how intrinsic knowledge of a subject can bring great insights into the religion and culture of the interviewees being studied. Furthermore, in her research on mothers, she felt that she could reach these participants and draw from them more candid responses than a researcher that was male or of a different ethnic background might have. However, whilst interviewing women that shared many of her personal characteristics, Basit consistently tried to make a conscious effort to distance herself from her sample and analyse the data from the perspective of a researcher. This was so that the portrayal of cultural characteristics was rich and multi-faceted rather than monotone and one dimensional.

There is no reason to suggest that the mothers interviewed were especially vulnerable in any way. However, it was important to consider beforehand if some of the topics that arose in the interview discussions would cause some form of distress. For example, thinking about how active they were or are in

their daughter's educational decision making is linked very closely to the role participants perceive they have in the family as wives and mothers. In addition, questions about how the participant may have collaborated with other family members in relation to their daughter's educational decisions could bring feelings of distress if conflict arose with their daughters, partners/husbands and/or other family members.

It was important to take care and be as sensitive as possible when asking questions in order to avoid interviewees experiencing any distress. Judgements had to be made during the interview process in terms of being aware of when it was appropriate to probe for more details. This was particularly relevant when the topic of family dispute arose. Ultimately if a participant had become distressed for any reason, the interview would have been suspended. If it was a participant's wish, or I as the researcher thought it to be necessary and their distress was clear to me, then the interview would have been terminated. If this situation had materialised then it would have been appropriate to provide avenues for support. An information sheet was compiled including details on where to find advice regarding careers as well as details of agencies that provide more general support to South Asian women (see Appendix). This would have been provided to any participants that did become especially upset or distressed during the interview. Fortunately, none of the interviews were terminated as a result of participant distress or for any other reason.

It is common practice for researchers to give interviewees some form of guarantee in terms of confidentiality and anonymity. The interviews were all tape recorded and it was anticipated that excerpts would be used in the discussion of results. Pseudonyms are often used instead of participants' actual names in order to protect their identities, and this is the procedure that was followed here. It is important however to consider to what extent they can be guaranteed anonymity (Mason 2002). For example, even when using a pseudonym for participants whose daughters attend a certain school, it may be possible to easily identify Indian girls. This could be due to the fact that they will be in a minority in most schools. In addition, a student may

have very distinct characteristics that could make them even easier to identify.

In light of these ethical issues, schools were also not named and pseudonyms were used for both mothers and daughters. Other details were also amended such as the names of universities that the students were interested in or hoping to attend. Names of siblings and other family members were also omitted. When presenting results, extra care was taken not to describe any particularly distinct or unusual aspects about the participants or their daughter that made them easier to identify. This was difficult to achieve without simultaneously compromising on the detail required to explain and analyse the data in a way that the research questions could be answered with sufficient depth.

Gaining informed consent is also common practice for qualitative researchers. It is important that interviewees understand on some basis the nature and purpose of the study. Researchers need to ensure that the consent being given is genuinely informed. They need to consider what they think people are giving their consent to. There are limits to how adequately interviewees can be informed. A study cannot be presented in a complex manner with too much detail. It is however important to communicate the key aims of the study. How the data will be presented and used also need to be made clear. However, this is not always known at the beginning of data collection (Mason 2002).

Whose consent needs to be sought is also a key issue for consideration. It is necessary that interviewees be asked for informed consent, but it is not clear whether it is appropriate for a third party to give consent on someone else's behalf. Interviewees often disclose what appears to be private information concerning third parties whose consent a researcher may have not gained (Mason 2002). In this study, the mothers' were being asked to give information on their daughters' choices. They were also discussing what they perceived their daughters aspirations to be. In light of this, it was also appropriate to gain the daughters' consent. The daughters were given letters explaining the research and asked to verbally agree that they were happy with

the interviews taking place. A copy of the letter can be found in the Appendix. All of the students were happy with the interview taking place and paid little attention to the letters.

Full informed consent was sought from the mothers via the information sheets and consent forms provided (see Appendix). It was also stressed to participants that they were under no obligation to be included in the study and did so only at their will. Their right to withdraw from the study at any time was emphasised. Participants were also assured that data would be kept as confidential as possible and that only I had access to them.

Finally, ethical considerations also extend to the handling of data and how securely they are stored. Data that were recorded on paper, primarily interview transcripts and signed consent forms, are secured in a locked filing cabinet to which only the researcher had access. Data recorded on a portable disc in an electronic format are password protected.

4.8 Results

This section is a summary of the main themes that emerged from the interviews with the mothers in the sample. There are three main topic headings under which these themes are discussed. They are not exclusive and there is much overlap, even when themes are not categorised under the same topic headings. Nevertheless discussing them in this manner was deemed useful for gaining clarity on the different issues that emerged. This method of organising the results was also useful for communicating the main connections across the data set.

The first topic includes themes related to the education and employment experiences of the mothers and overall attitudes to education. An understanding of mothers' attitudes and experiences formed an important foundation for their aspirations for their daughters. Therefore these themes are presented first. The themes under the second topic heading are focused specifically on the process of decision making and the roles that mothers, fathers and the extended family play. The mother-daughter dynamic is

discussed both generally and more specifically in relation to how decisions about subjects and careers are made. It was important to establish the types of interaction and support daughters sought from their mothers whilst making their decisions before discussing in more depth mothers' more longer term ambitions for their daughters and how the two might compare. This is why these themes were presented second. The third topic then included themes more specifically related to mothers' subject and career preferences for their daughters and how they compare to their daughters' educational and career goals. The types of factors used to distinguish favourable career choices from others that are less desirable are also discussed.

A number of interesting points were highlighted during the meetings that were held with the students. The discussions held with sixth-form students at the two schools prior to turning to a snowball sampling method alluded to many of the same issues raised by the mothers. The students have no connection to the achieved snowball sample of mothers, yet the informal focus groups gave a useful background to many issues that the mothers discussed, but from the viewpoint of students. The data from these focus groups and the knowledge gained from the literature review formed the basis of the interview schedule. Themes around a preference for professional subjects that lead to well-paid careers emerged in both the focus groups with students and the interviews with mothers.

At School A, the main point that the students were keen to make was that parent's approval of subject choice depended on whether a degree paved a clear path to a vocation. The perceived uncertainty and lack of job security that comes with studying other subjects that have no clear path is now mentioned. Business studies was given as an example of a subject that Indian parents in general would approve of. In contrast, students thought parents would not view Art and Design courses or Media studies favourably. Hence, it was not surprising that they thought Hollyoaks Laila's character's predicament was one that might be found in many Indian households.

At School B, many of the same views were shared amongst the students. Vocational degree subjects were likely to be favoured by parents concerned about the prospect of job insecurity and unemployment. Specific examples of favourable courses that were given by the students were Pharmacy, Medicine & Dentistry. Courses that lead to careers which promised job stability and good rates of pay were favourable. Other reasons why these degrees were popular were because parents thought the jobs that they led to would command respect from family and community members, and that following other paths would hurt family pride. When discussing Hollyoaks character Laila, all students with the exception of one thought that this was a common scenario. The one student that disagreed did not think that there were many students studying a course they disliked as a result of parental pressure. What she did think however was that parents were more concerned that their children participated in HE and studied at a reputable institution than they were about subject choice.

4.8.1 Mothers' education and labour market experiences

4.8.1.1 Barriers to Higher Education

Two of the mothers in the sample had been to university and achieved degree-level qualifications, and a third worked towards professional qualifications up to degree-level. All of the other mothers had GCSEs or equivalent as their highest qualification with the exception of one who had only completed primary school. Only one of the mothers stated that she would not have gone to university had the opportunity been there. This stemmed from a lack of confidence regarding her academic ability.

A number of explanations were given for not attending university. There was a clear lack of access to Level 3 qualifications that could then lead onto Level 4 education. Advancing one's educational career was not in the realm of possibility for many of the mothers and there was little active encouragement from family members. This was something discussed by many of the mothers including Meera, Maya, Deepa, Keya and Tina. Of the two mothers that went

on to study at university, only one of them was actively encouraged by family to attend. The women did not envisage studying and developing their education as part of their future roles in life. Rather, they regarded their futures to be domestically orientated:

Did you ever think "I want to go to university"?

Me, myself? No.

No? Why not?

Because I'm so lazy! [Interviewee laughs, we both laugh] Because our background, brothers, they never, they don't push us that you study. They let you down.

Ok.

Because if you study, at the end of the day you're only going to cook aren't you?

Hmm..

So they never..In our minds, it was only that..yeah.

(Keya, Leicester, Housewife, Age 47)

The interviewee went on to say that when she was younger she never contemplated studying and going to university. However in hindsight she regards a university education as being useful and envisages leading a different life had she advanced her educational career.

Ok, but did you want to go? Did you ever think that..?

Not at that time but right now I thought that if I had studied then it would be better.

Yeah, why?

Because, because at the moment as everything is, I am looking, and I am very behind.

Ok.

So I thought if someone had put pressure that you study..

Hmmm

Then it's better.

Ok. So you think it would have helped?

Yeah.

This lack of encouragement can be associated with the idea that continuing education was a path that very few people could take and was not an opportunity that was open to all. Participating in either Further and/or Higher Education had the highest status and was regarded as being something exclusive, and this was true for all the mothers regardless of whether they were educated mainly in the UK or not.

Did you ever think about going to university at all, or did you ever want to go to university?

University was a big thing, even going to college was a big thing in them days.

Ok..

Yeah..but I would have wanted to if I had the opportunity..

Yeah..

And if I would have turned the clocks back, I would have.

(Tina, 44, Retail Assistant, Leicester)

Financial constraints were also cited as barriers to Further and Higher Education. For one mother in particular, the reason that she had moved to the UK was to continue studying up towards degree level. This was not the case however as family funds did not allow for it.

Did you go to university? Do you have any qualifications over and above A-Level?

No I didn't because I studied in India and then I came over and that was it.

Did you at any point have any ambitions to go to university?

Yes, that was the main purpose of my sister and I coming over to London, but when we got here it was just difficult, the families we were living with and then finances etc, so we never had the opportunity.

(Seema, 44, Administration Assistant, Sutton)

This issue of finance can also be more complex than simply a lack of funds. This issue extends to priorities with regards to how money is best invested by parents into their childrens' futures. Naina is one possible example of this:

So do you think the fact that you yourself left school at sixteen do you think that's affected what your ambitions for your daughter are at all?

I don't think so because umm I don't think so because I had to leave school because of the financial situation I mean I could have studied further with bit of a hardship and everything but my brother was already in Uni so if I had studied then he would have had to leave and do something so I would rather that he finished his studies and then I did in the evening go to typing classes and things like that to better my kind of life..

(Naina, 52, Administrative clerk, Harrow)

It has been discussed earlier on in this Chapter in section 4.4 that Asian families are patrilineal. In particular, Warrier (1994) highlighted a strongly patrilateral emphasis on kinship within the Gujarati community specifically. Naina placed her brother's education before her own, and was willing to make a strong sacrifice for his success. An explanation for this view might be that she thought there was more benefit to be had for her family by her

brother attending university than her going. Furthermore, when planning financially whether or not any of the children could go to university and making a decision about which child that might be, it is possible that Naina's brother received more support and consequently financial backing to go to university. One reason could be that he is a son and is expected to always be attached to the family and contribute to living costs even upon marriage. This might not have been the case with Naina as she might have been expected to marry and then contribute to her new family's resources. This is of course not the only interpretation and it is very possible her brother was more successful academically, for example, and this was why he received encouragement to attend university. However, this view that investment in education varies greatly between male and female children is further supported by Tina, one of the other mothers in the sample:

> *Ok. D'you think there's anything he (Tina's husband) would have preferred her to study? Or d'you think he's quite happy with her choosing Business and Marketing..?*
>
> I think he just wanted her to leave, do college and then just get a job. That's..because the way things are, it's better to get a daughter married off blah, blah, blah. Thinking is different to mine.
>
> *Ok* [Interviewee laughs]. *Yeah, so, all right. Ok, umm so he didn't think of a particular subject that he quite likes..*
>
> No, not education side. It's like girls..it's not important for girls to study as much as boys. It's like why? Why? You know.
>
> (Tina, 44, Leicester, Retail Assistant)

Where as Naina was discussing her own story, Tina is talking about her husband's view of her daughter. Tina lives with her husband and three children as well as her mother-in-law. Tina's story resonates with Aston et al.'s (2007) qualitative findings. The study was funded by the Department for Work and Pensions, and explored Pakistani and Bangladeshi women's attitudes towards education and employment as well as views on how family,

marriage and children fit with and shape these attitudes. The findings of this study illustrated that most of the women interviewed valued education very highly, irrespective of their age, education, migrational background or generation. Those women with weak qualification backgrounds often highlighted hopes that their daughters would have a good education. However, some women felt that some men in their communities did not share their educational aspirations for women as it could give them too much independence and power.

Tina continues on to discuss that her mother-in-law shares the same view and agrees with her husband's view point that educating daughters might not be the best option:

> Because it's not just my husband, it's my mother-in-law as well. Both of them are against girls going for further education than boys.
>
> *Ok. Right..*
>
> Where as me, I feel as if everybody should be given equal right.

This appears to be an exception and Tina was the only mother that talked about this issue regarding her daughter. Furthermore, although her husband did not see the need for his daughter to participate in HE, he did not actively prevent her from applying to university. He accepted that going to university was a goal of hers.

4.8.1.2 Mothers' frustration as employees

A certain element of frustration was apparent where the women could see that their lack of formal qualifications was a significant barrier to progressing in the labour market. When asked if her aspirations for her daughter are related to anything that she has experienced at work, Tina talks about this issue in relation to her job as a part-time retail assistant:

Yeah, but has, have you seen that (lack of education as a barrier to progression) at work? Is that something that you've seen..?

At work?

Yeah..

Yeah because when I see other people do something that I could be able to do it thinking only if I have the education.

Yeah..

I would have been able to do that job as well.

Oh, right ok..

So..So you've seen how it might have limited you and you've seen how that's created a barrier for you.

(Tina, 44, Leicester, Retail Assistant)

Maya is one of the three mothers that hold degree-level qualifications. Whilst Tina highlights frustration at her own lack of qualifications, Maya discusses how she can see others at work with those frustrations. She uses these co-workers as examples to let her daughter know what barriers she might be presented with if she does not pursue HE.

But is there anything that you saw in the workplace like around you that made you think about your daughter's education- going off to university, seeing anything differently?

No, the only thing I could say, or I would say to her is look so and so didn't do, just dropped out of school at 16 and they're doing a receptionist job, they're not going to progress from going on to receptionist to maybe being a PA now yeah..that's as far as they can go where as if you have education then you can you know in fact that would probably step you or put you in that slot straight away you don't even

have to work your way up when you've got certain level of qualifications so sort of I always talk to her but not nothing specific.

4.8.1.3 Mothers' high respect for education

Every mother in the sample described the high value they placed on educational success. This is a value that is often linked back to the way in which they were brought up and is something that was instilled in them by their parents and grandparents. Naina elaborates on how doing well in education was actively encouraged in her family.

Did you always want your daughter to go to university?

Oh yes, always, umm because my parents had always put a lot of emphasis on us studying you know even as children, all the homework and everything was, always made sure in the evening that was completed, I mean neither of them have a great education but my Dad didn't have (his) Mum and Dad from the age of two onwards. Both his parents had died and he sort of um was raised by his grandmother and then he came to Africa and then he always put a lot of emphasis on all of us six children to be sort of umm had good education umm you know to sort of to grow up confident and taking things in our stride kind of thing. And so, so yes, no, both of them put a lot of emphasis on us studying.

I mean I wouldn't force anything on her because at the end of the day you know she has to be happy with her life as well. But as parents you know you have to make sure because I've just have the one daughter so as parents you want to make sure that later on when you know my husband and I are no more that she's not going to be stranded. With no education, not getting good jobs and things like that so and education has always helped people anyway.

(Naina, 52, Administrative clerk, Harrow)

Maya also talks about a strong educational background as being a dependable asset that can open doors to new horizons and opportunities.

> *Did you always want your daughter to go to university, what's your ideas of that?*
>
> I have always kind of had a thing where education can take you anywhere wherever you go. That's something nobody will take away from you so you know you've got to aim for the highest.
>
> (Maya, 45, Credit Manager, Milton Keynes)

It is apparent that education and qualifications have a high value placed on them. This is true for mothers that did not go to university themselves as well as those that did. They discussed how they grew up with this attitude around them even if they did not get a chance to capitalise on it. They have passed this value on to their daughters and they have been able to use the wider opportunities that were not there for their mothers.

That all the women in the sample hold success in education overall, and progression to HE more specifically, in such high regard irrespective of social class and educational background, is a feature that other authors have commented on. In his study of British South Asians and selective schooling Abbas (2007) highlighted that many of the working-class parents that were interviewed had strong middle-class attitudes towards many aspects of education. The concepts of capital are important in understanding Abbas's findings.

There are three main types of capital: financial, cultural and social. Financial capital consists of access to money or assets. Availability of financial capital is moderate amounts of money at an early age can have major impacts on later life outcomes. Cultural capital is the possession of values, attitudes, hopes and aspirations that are conducive to success in education, for

example parental interest in their child's education. Social capital can be understood as the values and social networks that can be passed down from parents to their children. Access to wider, more diverse networks can be useful for success in the education and the labour markets. There is evidence that demonstrates how the social capital gap has an important impact on educational outcomes. For example, students with limited social networks are far less likely to stay in school after the age of 16 than are those with more-developed social networks. Young people from lower socio-economic backgrounds are less likely to establish social networks that extend beyond their immediate group and this restricts both the wider support and opportunities that are available to them (Panel on Fair Access to the Professions 2009).

Abbas found that the middle-class attitudes towards education that were apparent in his sample of working-class British Asian parents were evident irrespective of parents' abilities to facilitate selective schooling as a function of their financial, cultural or social capital. The main goal for middle-class South Asian parents was to secure high social class positions for their children, as they regarded it important that their children be the highest achievers every time. However, again many of the working-class mothers echoed these goals in their interviews but were not as well versed in developing a plan for attaining them as their middle-class peers.

Similarly, this situation of having certain positive attitudes to education but not being able to capitalise on them and use them in the way they would like was frustrating for many of the mothers in this sample. Tina was one of the mothers who found herself in this situation. Her anxiety is illustrated and discussed in more detail further on in this section.

4.8.1.4 Mothers positive about daughters' participation in Higher Education

If the mothers held a strong educational background in high regard, then they also had an overwhelmingly positive view regarding their daughters'

decisions to attend HE. All of them envisaged their daughters going on to university. When asked how their daughters decided they would apply to universities, the overwhelming sentiment was that there was very little discussion about it. Instead it was assumed by both parents and children that this was the path they would take. This is surprising when keeping in mind that only two interviewees in the sample went to university themselves. One interpretation of this is that the respect for education, in particular HE, has been passed down through the generations. The difference is that their children are in a better position to go forward and participate in HE with the help of widening participation initiatives and financial support that were not available to them when they were younger.

Participation in HE was associated with a number of benefits. Indeed some argued that not going to university would severely limit the career options that they had.

> *Did you always want your daughter to go to university?*
> Yeah...
> *You did? Can I ask you why?*
> Ummm.. because right now if she studies and goes on to university then afterwards she can become whatever she wants to and do whatever she wants to do..And if she doesn't go then you know its end. She's only working in like Sainsbury or like a supermarket, you know like that.
>
> (Meera, 53, Housewife, Croydon)

The interviewees did not only discuss the benefits of HE qualifications in general, they also highlighted the importance of a university education for women in particular. Simran went to university and studied for a Pharmacy degree. Here she elaborates on why she thinks a university education is important for women:

> *D'you think that your ambitions for your daughter have been shaped by your experience of education...at all?*

> Yes. Definitely. [Interviewee laughs] In the way that it opens up doors if you've got a university degree which you might not otherwise have especially for a woman who would otherwise be restricted to menial jobs and not move forwards without qualifications. They would have a ceiling on where they would get to.
>
> (Simran, 45, Pharmacist, Havering)

4.8.1.5 Mothers' caution about participation in HE

Although the mothers in the sample had overall a very positive outlook on HE and the opportunities it has to offer, there was one reservation in particular that came out in discussion. This is to do with the current unstable economic environment. Tina argues that it is important not to regard a strong educational background as a guarantee for success in the labour market, but rather as an added advantage:

> *Did you always want your daughter to go to university?*
>
> The way things are at the moment, I think I've changed my mind for the past year or so, 'cause the way I've seen other students getting a degree and not getting the appropriate job in some cases. It's happening more that..you know, studying for a degree in a certain course and not getting a job in that field.
>
> (Tina, 44, Leicester, Retail Assistant)

The recession and increasing uncertainty in the job market is not just a factor that impacted on whether the mothers regarded participation in HE in a different light, but also what they thought were suitable degree subjects and career paths to follow that might withstand economic instability in the future. This is something that will be elaborated on further into this section of the Chapter.

4.8.2 Family relationships and the decision making process

4.8.2.1 Mother-daughter relationship

Before analysing the decision making processes that the girls went through and what their mothers' roles were at that time, it is important to highlight the ways in which the interviewees viewed their relationships with their daughters more generally. Many of the mothers regarded their relationships to be very healthy and regarded their daughters as good friends. Tina mentioned that she was going to miss her daughter's company greatly when she went to university and that she is very fond of her as a friend.

Malveen also talks about her closeness to her daughter and how they enjoy spending their time together:

> *And d'you think your daughter..knows that yeah Mum's quite, quite happy with me doing..she knows about your opinion?*
>
> Yeah, yeah, she's, we're quite close, we've got a close relationship I guess because she's the only child we're umm we do a lot of girly things that are not just mother and daughter but sisterly things you know shopping, and that..
>
> (Malveen, 45, Commercial Director, Redbridge)

It is with regard to this mother-daughter relationship that my own role in the research process was most prominent. It was discussed earlier how researchers often seek interviewers that share key characteristics with their research subjects. The main characteristics I thought would be important in this study were my Indian ethnicity and gender. What was not expected was that the mothers would constantly refer to me as a daughter who probably shares a similar relationship with her mother:

We chatted about loads, everything we chatted about. We have a little discussion. What do you think? Should I wear this? No, that doesn't look nice you know..you must do it with, with your mum?

Yeah, yeah definitely yes...

(Maya, 45, Credit Manager, Milton Keynes)

The interviewees allude to me being able to relate to daughters asking their mothers for help and support. It reiterates the fact that in interview research, it does help to have an interviewer that has certain characteristics they can associate with. There was an underlying assumption that I understood the mother-daughter dynamic in terms of sharing thoughts and opinions with each other. I offered information on myself as well and agreed with the interviewee or elaborated on my own relationship with my mother. At the time this was not a conscious decision, but one that may have had an indirect impact on the information the mothers were sharing with me.

4.8.2.2 Mothers' roles in the decision making process

All of the interviewees that did not go to university said that they did not feel especially qualified to give advice regarding what universities to attend and what courses to apply for. This was alluded to earlier on in relation to the similarity between Asian working- and middle-class mothers' general attitudes to education, especially university education. Tina talks here about how her daughter did not think that there was much help that she could give and how this was a frustrating experience:

Did she ever say Mum I'm not sure what to do? Can you give me a hand? What d'you think? Did you ever have discussions like that?

She did say Mum I'm not sure but she didn't say Mum I need a hand 'cause she made it clear, you've not gone to Uni so you wouldn't help me! So [Interviewee laughs]..

Yeah..

But that's my daughter.

Oh ok. So she just didn't think that it would be useful for her to come and speak to you about it?

Hmmm. But I have quite often said to her if you get stuck or anything there's always your Mum or other kids with experiences or whatever and ask them for help and advice..which she has done.

Ok, so did that sort of make you feel like you weren't really qualified to help?

I felt as if I was like just you know put down thinking you know oh God! And you want to help her obviously but you sort of think how do you help her? If you don't know then how do you help her? Like an example, what they study at school..

Yeah..

Like my son, sometimes he gets stuck and I'm thinking well I don't know, but why don't I know? Because the way they're taught today and the way we were taught is completely different.

(Tina, 44, Leicester, Retail Assistant)

In this instance, Tina's daughter communicates a lack of confidence in her mother that further exaggerates Tina's feelings of incompetence. Tina's story echoes some of Reay's (1998, 2003) findings that due to their personal histories of academic failure, working-class mothers can find it especially difficult to generate academic confidence among their children if they themselves have weak educational backgrounds.

This lack of confidence was a common sentiment amongst the mothers that did not attend university. Deepa was another one of the mothers that thought she could not offer much to her daughter by way of guidance. She knew very little about her daughter's education. She only had a very vague idea of what courses her daughter was on and what she was intending to study at

university. This highlights another assumption I had before conducting the interviews in relation to how knowledgeable mothers would be about their daughters' educational paths. Clarification had to be sought from her daughter after the interview to check which courses she had applied to study at university. Here Deepa points out that both she and her husband have little confidence in giving advice and talking to their daughter about her work:

> *But it sounds like if he's (Deepa's husband) asking you certain things then probably he doesn't know..*
>
> Hmmm..
>
> *He probably won't have that much discussion with your daughter yeah?* Because he didn't study here and you know he doesn't, he's not like a..I might not be a very confident about it but he has even worse confidence about it.
>
> *Even less confidence?*
>
> Even less confidence about it yeah.
>
> (Deepa, 53, Administrative Clerk, Harrow)

Better educated mothers were far more confident in the support they gave their daughters. They displayed awareness of some particular issues that are considered when deciding what makes a university or course reputable that the others did not. One example of this is when the parents visited open days at the universities. The majority of parents accompanied their daughters to open days and thought that this was an important display of support. Malveen was one of the mothers that had been to university and she held a degree in Social Science. Malveen appeared to pay a lot of attention to teaching staff and existing students. This was something that was missing from the discussions with the other mothers.

> We'd been to a couple of open days at one university, one open day at another university, we went to three open days at this other university, and I think it had endorsed the fact that at that university, on each, each open day, and each seminar they did you could see the experience. You could see how interested they were in their students and how it was important to them in their reputation that their students performed, and when you looked at the equipment and even the students themselves, because the last, the last umm visit we did to that university umm we were impressed by the knowledge of the students. They were absolutely fantastic. Two Indian girls, and we'd been to the other university and they were ok, you know, when we asked them questions it was this, and this was the equipment. These two girls at this university umm, one was first year, one was second year, but their knowledge was absolutely fantastic, it was..and you got to play around with things, you know, they showed you the equipment they use and how you could use it, they let you use it, the way they talked about the entire curriculum, the courses, the support, the after, what I call the after sales, but the after care and these girls I think sold that university, absolutely fantastically.
>
> (Malveen, 45, Commercial Director, Redbridge)

This quote shows the detail with which Malveen observed characteristics about all aspects of the department including staff, facilities, course structure and students amongst other things. She was the only mother that spoke about visiting a university more than once and this is a very thorough and active display of support. All of the details she took note of were relayed back to her daughter when she was deciding which university to place as her first choice.

The mothers' roles were of a supportive nature where they were present throughout the decision making, and had many opinions about what might be a suitable degree subject. On the whole however they did not have many discussions with their children where they shared these opinions with them or encouraged and dictated to them which subjects to choose. The decision making process was a long and frustrating one for many of the interviewees'

daughters. The mothers would seek avenues for their daughters to use in order to get the guidance that they thought would be most useful.

One of the main ways they showed their support was by making time to listen to their daughters talk about their frustration. Naina's daughter appeared to have the hardest time in finalising what subject she was going to apply to study at university. Her preferred subject went from medicine, then to dentistry, and then finally law. Here Naina discusses how she tried to reassure her daughter:

> Well to begin with she wanted to do dentistry but having said that she was not so enthusiastic about it... and then when she applied and all that I knew something that she was to, because it wasn't something that she chose.. had chose to do, at random kind of a thing but I knew that her heart wasn't really in it so once we applied and didn't hear any, all of the, three of them rejected her application anyway and we hadn't heard from this university and then, within that time, she came to me, I mean she'd come to me before when I'm cooking in the kitchen and say Mum I'm not sure I want to do dentistry that was even before we applied and then.. and then I'm thinking well it's ok you can always make up your mind later on, you can always you know do something else..
>
> (Naina, 52, Administrative clerk, Harrow)

Another way in which Naina provided support was by inquiring about work experience. When her daughter was considering medicine as a career option she was aware of how her job in the medical field might provide her resources that could help her daughter. Work experience would give her daughter the opportunity to gain first-hand experience of her prospective field and understand the inner workings of the industry. These are important insights to gain. Work experience can strengthen a student's application, especially for a competitive course like medicine. That Naina wished to pass her social networks down to her daughter and use them to her daughter's advantage in this way is a demonstration of social capital. Students without

access to these types of networks might be at a disadvantage and face inequalities in the application process.

> *Has anything that you have seen in the workplace or any experiences that you've had at work affected the ambitions you have for your daughter at all?*
>
> Umm..I don't think so. I think I've always been focused where my daughter is concerned and I don't think anything's put me off. I mean she did umm to begin with you know when she did her GCSEs she wanted to be a doctor, and I work for (name of employer) so I'm in constant touch with all the doctors, consultants and things like that so I'm thinking well you know if that is the case then you know she can come and do work experience, and I can speak to the consultants and get some ideas. So if anything I think it's helped me you know.

Only one of the mothers in the sample was active and forthright with her daughter in terms of finding ways to change her preference of subject. She was also the only interviewee that appeared to play the role of the dominant parent. Seema's daughter originally wanted to work as a make-up artist. However, with much discussion with her parents she eventually applied to study bio-medical sciences. Seema went to great lengths to influence her daughter's choice. Even though the interviewee's husband shared this sentiment, it appears that Seema was the parent that made the greatest effort to show Bio-medical Sciences as an appealing subject to study:

> *It sounds like you have had quite a lot of discussion with her?*
>
> Yes, we have discussed it at length, I mean as much as we gave her space to make-up her mind and not really sort of said, no you're not doing make-up artistry you're doing this, because we didn't want to go down that route as much as we let her make up her own mind we did – I used to keep sending her links on bio-medics and various things and research and articles and things to influence her.

What reasons do you think your daughter would put forward for applying to study this subject?

I think she would say because I naturally enjoy the subjects and this is what I want to do but she would also say it's because my mum wanted me to! (Interviewee laughs)

You think she would?

I think she would because she knows we did have a great influence on her changing her path in becoming a make-up artist into this.

It was clearly very important for Seema that her daughter study this subject. The main reason for this was that many members of her family had suffered from one particular illness, and she was hoping that her daughter would eventually pursue a career in research and contribute to advancement in knowledge of this illness and its treatment. Seema also truly believes that her daughter is naturally gifted at studying Biology and thinks it is an area in which she will easily excel.

4.8.2.3 Fathers' roles in the decision making process

There were very few cases where each parent played highly distinct roles to each other when it came to their daughters' decision making. They were either both confident or both not confident about the guidance they could give to their children. This could be related to the fact that there was no case of mixed educational background: either both parents had been to university or they did not have a degree level qualification. The only mother who could be categorised as an exception to this was Maya, but she studied for her qualifications through work and did not attend university at a young age like Malveen and Simran.

Where parents had not been to university, there was a clear lack of confidence regarding how the application process worked and what would be

the best guidance to give in terms of choice of subject. This is something that Deepa alludes to in the excerpt discussed earlier where both she and her husband do not feel qualified to discuss education with their children. So, similar to the role that mothers played, fathers only provided general support and offered little by way of guidance and advice about what the best path to take might be. They would give up their time to listen to their daughters talking about the frustration of decision-making. They would also read university prospectuses and attend open days with their daughters and wives.

Here Naina discusses how her daughter thinks it is very important that her father is up to date on her progress and is very comfortable in communicating her news with him:

> *Ok. Does your daughter speak to her Dad, or does her Dad come and speak to her first?*
>
> I think she's always been of that kind of a mind that she would run up to her Dad even if it's smallest of the things or she would constantly over the phone on the mobile "Dad I've decided to do this, Dad I've decided to do that" kind of thing and umm she talks to her Dad most of the time to say you know if there's something bothering her or if some things happened, she would run to him and tell him.
>
> (Naina, 52, Administrative clerk, Harrow)

Of the nine interviewees, six of them spoke about how both they and their husbands provided support and did not suggest in any way that either one was especially dominant. Daughters made their decisions on the basis of consultations with both parents.

There were three interviewees where this did not appear to be the case. As mentioned earlier, Seema's case appeared to be the only one where the mother was more dominant. Although her husband shared her views, it was Seema that sent her daughter information and encouraged her to talk with people that were in the Bio-Medical science field in order that she change her

mind. However, in Meera and Keya's case it was their fathers that were dominant.

Both these women shared some key characteristics. They spoke very little English and neither was active in the labour market. They displayed a very vague awareness of what their daughters were studying, why they chose those subjects, which universities they hoped to go to and what their larger goals were. Before, during and after the interviews they both discussed how they did not know why anyone would be interested in talking with them and that it would be more insightful to interview their husbands. Here Meera describes the input her husband had in her daughter's choice. There is a clear lack of reference to herself and where it is made, it is only in the plural sense with her husband ("we thought"):

> *How did your daughter decide that she is going to study Business Studies?*
>
> Her Dad told her.
>
> *Did you go on any open days with her? Did you speak to any teachers?* Yeah, I didn't go but her Dad went.
>
> *To open days?* Yeah.. *and spoke to teachers?* Yes. *And careers advisor*? That..no she spoke to them on her own.
>
> *Did it take a long time to come to the decision to study Business Studies or was it fairly quick between the three of you?* It took a while..*Why was that?*
>
> You mean why didn't we come to this decision earlier? I think because Art and Textiles was what she preferred, so her Dad let her do that, but in the end her Dad thought, no, because other people talk and say that if she goes into Art then she won't be able to do much, you know? And then we thought that do Art later and first do Business Studies.

So it was not only the opinion of you and your husband but what other's opinions were as well? Yes. *Is that friends or family?* All. *All?* Yeah..

So you think it was more your husband that helped with the decision? Yeah. I think you should have spoken to him. *No, I am only interested in Mums for this study.* Mums only? All right, Ok.. [Interviewee laughs]

(Meera, 53, Housewife, Croydon)

This extract shows how limited a role Meera had in the decision making process. Her husband is self-employed and has run his own business for some time. This is part of the reason that she gave for his preference of this subject. Her husband was imposing with his views about what would be best for his daughter. This clearly indicates the type of authoritarian head of the family in line with patriarchal relations within the home discussed by Ghuman (1999). Meera's husband also gave little thought to his daughter's preferences and Meera did not offer any opinion of her own in support of her daughter. Instead she agreed with her husband's suggestions. One reason for this might be because she felt she had no knowledge to draw on other than his and since he ran his own business, his opinion of this subject would be more valid than hers could be.

This quote also demonstrates a point highlighted by other authors of Asian women – that parents are deeply concerned about other's opinions of their children's educational choices. Meera's husband was worried about what community members might think of a Textiles course and so deterred his daughter from studying it. Authors such as Shah et al. (2010) have shown how both Pakistani parents and children can expect high status from their community members if their children do well in higher education and gain professional qualifications. It is possible that Meera's husband shares this concern and hopes to gain respect from the community through his daughters' choice of an appropriate degree subject.

Both Meera and Keya found sharing their opinions difficult. This could be because it was the first time they had been asked what their views were and up until then they had not spent much time thinking about them. When asked about them, they often referred to those of their husbands and daughters. Here is a clear example of this:

> *Ok. Is there one subject that you think that your daughter would have been, that you would have liked your daughter to do? Anything at all?*
>
> Yeah, what did he force her to do? That, what's it called? Nurses...not nurses but.. the people that give anaesthetics?
>
> *Anaesthetist? Yeah?*
>
> Yeah.
>
> (Keya, 47, Housewife, Leicester)

There was clearly some variation between families where some fathers played a far more direct, authoritative role in the formulation of their children's preferences when compared to mothers, and both Keya and Meera are examples of this. These apparently patriarchal family situations echo those highlighted by Ghuman (1999) where fathers can have overlying importance in terms of how an Asian family operates. Ghuman does state however that this may not always be the case, and could vary according to a number of factors such as social class. In the case of this sample of interviewees, the father-centric family seems to be more resonant with the experiences of poorly educated mothers with no labour market experience such as Keya and Meera than university-level educated mothers such as Simran and Malveen.

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4.8.2.4 Support and influence from other family members

Extended family members, in particular nieces and nephews, were referred to on many occasions. Mothers described their families as close-knit and discussed how their daughters were close to their cousins and enjoyed spending time with them. Older cousins that were on undergraduate courses, or already had finished university acted as role models for the students. Naina is the one mother that elaborated the most on the role that they played. This may be because her daughter found deciding upon a degree subject especially stressful, and she looked to her cousins for guidance and empathy. Even before that when making a decision to go to university, there was a great deal of influence from the paths that her cousins took before her:

> *So how did the decision that your daughter's going to go to university come about?*
>
> Actually, there was no mind making or anything she just always wanted to go to Uni like I said that our, all our sisters, brothers and sisters, our children, have always studied and gone far and you know my daughter being the youngest on my husband's side of the family, because my husband is the youngest out of his siblings, and so she is the youngest out of, the other children have all studied, have all got jobs and everything [Interviewee laughs] and she is just going to start at the Uni, so she's always had this influence of her cousins that you know that is

the normal thing to do. There wasn't kind of mind making up or anything like that.

(Naina, 52, Administrative clerk, Harrow)

Naina's daughter eventually applied to study for a Law degree. When she did, a male cousin already studying the subject spoke at length with her about what to expect and courses she might enjoy. Even prior to this, another older female cousin was present to show support and assist in making the decision easier:

I meant to, I forgot to mention to you that one of my daughter's cousins, my husband's brother's daughter, she has a Masters in chartered accountancy, and she came over three weeks ago when my daughter was in this kind of a turmoil, and she came over, they live in Leicester but she works towards here in London, so she came over and spent some time with her because she was afraid that she is just changing from Dentistry to Law is just something that she at random chosen, but she had to make sure that she wants to do that for sure.

Ok..

So she had put a lot of input both of them had a real heart to heart and everything..

So she had someone else to turn to for advice?

Yeah, yeah.

Malveen was another mother that mentioned her nieces and nephews as members of her daughter's support network. Her niece works in a field that her daughter was considering as one that she might be suited to, and she help set up a work experience placement. Furthermore, Malveen's nephew was at a university that her daughter was considering attending and he was

encouraging her to opt for that university. He was ready to make her start there a smooth transition:

> So it was one of those things, but my nephew bless him uh, my brother's son is at this university and he was like oh you've got to come to my university! He's been doing his little...he made a few friends in the Optometry department and my daughter said, yeah but that's..I still like the other university.
>
> (Malveen, 45, Commercial Director, Redbridge)

Malveen's daughter was planning on going to Africa on a charity project where she would be able to assist on a charity eye camp. A friend of the family was a registered Optometrist active in the running of the camp. The fact that Malveen's daughter was able to access the knowledge and experience of a seasoned professional related to her chosen course and career through her parents is a clear example of social capital. The fact that the student was planning to go on this trip is something that would potentially add strength to her application. This is in terms of showing commitment to the course as well as gaining essential background knowledge on the profession.

Both mother and daughter were involved in the student using a member of their social network as a resource to further their educational career. This is an example of middle-class South Asian parents acquiring important knowledge to become more informed of educational opportunities through their contacts. Abbas (2007) found similar examples in his study on selective schooling where parents used their social networks as key resources for important information rather than relying on resources provided by the schools.

Malveen's daughter had access to financial resources that made it feasible to go on a work-experience related trip abroad before starting university, and this may have strengthened her university applications. Gap year opportunities such as this may not have been available to students to families with more limited financial resources. This notion of taking time out to

increase work experience, especially abroad, is an attractive option for students wanting to improve their employability. A gap-year can be used to take part in un/paid work experience that improves soft skills like communication and generally increase confidence. However, this opportunity is not open to all students and as such the increasing popularity of gap years can "serve to widen the gap between different groups of students as part of an ongoing process of positional competition" in the graduate labour market as those that have the opportunity to take time out may be more attractive to employers (Heath 2007, 101).

4.8.3 Key deciding factors for subject and career choice

4.8.3.1 Opting for subjects and careers their daughters will enjoy

When it came to discussing opinions about their children's choices, what key themes arose? Pursuing a subject that their children enjoyed and found interesting was a recurrent one. The mothers all spoke about this in some capacity or another. Meera's daughter is an example of this. Her daughter wanted to study Art but was pushed by her Dad to pursue Business Studies. Business Studies is a subject her husband thought their daughter enjoyed, but not to the same extent as Art. In Seema's case, her daughter is due to start a degree in a subject other than her first preference, but she still thinks her daughter will be doing something she likes, just not her first choice.

Here Maya elaborates on why she would prefer her daughter to study a subject that she enjoys and relates this back to the choices that she herself has made in the workplace:

> *So you're quite happy with her choice of subjects?*
>
> Absolutely. I want her to be happy because you spend more than half your life at work and there is no point doing something that you're not going to enjoy. I know I enjoy my work and if I didn't I'd be like watching the clock thinking what time is it, what time is it, so I absolutely wanted her to do what she wants to do.

So you think that is one of the more important things when choosing a subject which will lead to her career, like how much she enjoys it?

> Absolutely, because if you don't enjoy something you're not going to give a hundred percent. You're just not. That's the last thing that you want to be is miserable at work. If I'm miserable I'd think God I'm going to leave this job because I can't stand it here.

(Maya, 45, Credit Manager, Milton Keynes)

Maya also hints at the idea that doing something that her daughter enjoys will also increase the chances of her achieving highly in her field. This can be linked back to the emphasis that is placed on education and the respect for high achievers. This was part of Seema's reasoning for encouraging her daughter to apply for Bio-Medical Sciences. Seema discussed that of the academic subjects her daughter was studying, she took to Biology very well and learning this subject played to her natural strengths.

> Yes we did talk her out of it and we had a great influence in her changing her mind in becoming a make-up artist and science has always been her strong subject so we encouraged her to do something in the science field and then she chose Bio-medics and now she understands the importance of that choice – she is happy with that choice and she's applied to university for that.

(Seema, 44, Administration Assistant, Sutton)

Malveen's daughter originally wanted a career as a climatologist. However, although Malveen was not necessarily very enthusiastic about the choice, she was sympathetic to her daughter's wishes. When they were researching the courses that were available it became apparent that the most reputed courses in this area were predominantly only available to study abroad. Malveen and her husband's support for their daughter to study a course that she enjoyed

and was enthusiastic about was so great that they were willing to move country in order for her to pursue this:

> We'd started looking at all the different universities and a lot of them were in the States and India and everywhere and so we'd started looking at places and areas that we would be, have to move to if we had to. 'cause (my husband's) got a business so we have to think of all of that as well. And I had to be able to be transferred within my organisation to wherever she decided to go to university.
>
> *So you were willing to do all of that?*
>
> Yeah.
>
> *If that's what she wanted to do?*
>
> Yeah if that's what she wanted to do, yeah, we were willing to do that, yeah, 'cause I'd made inquiries at my work and said look this is the case, where do I stand? They said yeah we could transfer you. It was just my husband and the business. But we could have arranged that if it had come to that.

This quote illustrates a few important points. First of all, Malveen and her husband are willing to go to great lengths to facilitate their daughter's degree subject and career preferences. Secondly, they are able to act and display this support in a way that other parents with similar commitments are not able to. Massey (1995) points out that the middle-classes are more spatially mobile than the working-classes and therefore have more spatial power. Moving to the same place that has the courses their daughter would like to study is not something that some parents would regard as essential. However, Malveen is able and willing to move so that her daughter is able to attend the best universities for her course.

Malveen shares similarities with the middle-class skilled parent choosers that Gewirtz et al. (1995) describe. These parents think in the long-term where by

choice of primary school is the first of numerous strategic decisions involved in the careful construction of their children's school careers. This strategic decision-making can be seen here with Malveen and her husband in the HE context as they believe moving abroad to study on these courses will benefit her future career.

4.8.3.2 Desire to pursue a career that can benefit others

There was a strong sense that students were looking for a career where they could help others and impact on their lives in a positive way. Five of the nine students have chosen to study subjects where they have the potential to reach out to people. These are Bio-medical sciences, Optometry, Law, Social Work and Early Childhood Studies with qualified teaching status. It is difficult to identify exactly where these attitudes come from, and why making a positive contribution to society is especially important for these students. One reason might be that they wish to extend the support they give and receive from their extended family members to the wider community. In other words, not only do they thrive off close-knit families, they also appreciate close-knit communities as well. The most preferable avenue for serving the community appears to be one's job.

Here Malveen talks about the charity work her daughter hopes to do with the Optometry degree she will be working towards and how this is an important motivation behind her wanting to pursue this career:

> I mean she explained to us that she wants to go into the eye camps, she wants to actually be able to assist not just for the charitable side of things but for the right reasons in that, so Mum you know ok you break an arm, you break a leg you've got prosthesis, you can't do that with an eye and she says for her to be able to do something valuable where research can allow people their eye sight back. For her it's, it's an immense achievement I think for her so when she told us and explained that's what she wanted to do we thought fine.
>
> (Malveen, 45, Commercial Director, Redbridge)

Even when their daughters did not make a connection between their prospective careers and potential social work, mothers like Seema expressed her wishes for her daughter to pursue such work:

> I am hoping the Bio-medics course is going to open her to voluntary work. We run a charity ourselves so we encourage them to do a lot of voluntary work because of that but I'm hoping the course itself is going to encourage her to do research in drugs but research in diseases which is another big thing at the moment, and I'm hoping that will open up voluntary work like in Africa, India or somewhere abroad to give her that rounded experience and learn from it.
>
> (Seema, 44, Administration Assistant, Sutton)

4.8.3.3 A career with high monetary rewards

Another recurring theme was a preference for careers that can offer high pay rewards. It was a key factor that parents focused on when considering how appropriate a career path was for their children. When Seema was asked what careers her husband favoured, monetary rewards came into the discussion:

> He has worked in the pharmaceutical business and his work experiences have taught him that that field is good with job opportunities and money, income and so on.
>
> (Seema, 44, Administration Assistant, Sutton)

This factor also featured heavily for Malveen. Her daughter was strongly considering studying climatology as the subject she would like to study at university. Malveen's brother-in-law came and spoke at great length with his niece about this subject. He did not hold this subject in high regard and one of the ways in which he tried to steer his niece away from this path was by pointing out what he thought were negative aspects such as potentially poor pay:

> I think my, my brother-in-law, my husband's sister's husband, probably had a lot of influence because he kept saying it's, you have to get to PhD or higher standard to actually maintain a job. And what kind of income, what kind of security have you got, what kind of role is it, what is it that you're gonna achieve from it in life? And she kind of thought back and thought yeah actually what am I going to achieve in life?
>
> (Malveen, 45, Commercial Director, Redbridge)

Although daughters might be facing pressure from parents and other family elders, it is also possible that parents themselves are facing pressure from relatives they are finding difficult to resist.

It became apparent that this was a factor that was more important to parents and other elder relatives within the family than the students themselves. Not one of the parents that were interviewed cited pay potential as a key motivation for their daughters. Here Malveen discusses how for her daughter it is more the opportunity to make a contribution to society that is important and not necessarily a generous income:

> For her it's not about the money it's more she wants to go onto these eye camps and, and be able to help people umm who cannot afford to pay for their operations and whatever they need to have done and to be able to help people get their eye sight back, and for her, that's more important to her than actually earning...

When the mothers were elaborating on why they wanted their daughters to pursue careers that offered financial stability, they often referred to their not wanting their daughters to be reliant on anybody. It is difficult to know exactly where this attitude might stem from. One suggestion is the lack of welfare provision in their countries of origin. Only one of the mothers in the sample was born in the UK. All of the others were born in either an East African country or in India. Perhaps these women, along with their parents and grandparents, have seen the hardships that can entail when there is little social security to fall back on. Lack of financial security when growing up was

a problem for quite a few of the mothers in the sample. The only support network they could fall back on might be the extended family, a factor that might explain why they are so close-knit and the popularity of family-run businesses amongst the Asian communities. In contrast all the female students were born and raised in the UK. Of course they may have heard their families' stories about extreme deprivation on a mass scale. However they might not feel the need to have a financial safety cushion as much as their parents because they have not experienced it first-hand.

4.8.3.4 Motherhood-proof careers

Some of the mothers were thinking ahead in terms of what would be a good career that would fit around being a mother. They based these thoughts on the assumption that their daughters will eventually get married and start a family. Most of the mothers favoured subjects that lead to occupations that make career breaks and having a family a fairly smooth transition.

Maya's daughter is hoping to study Media at university. However when asked if there were any subjects Maya would have liked her to pursue, Finance and Pharmacy were two examples that she gave. Reasons for these include the perceived flexibility that they can offer working mothers:

> *What made you suggest Finance and Pharmacy?*
>
> Finance was more from a point... if you wanted to work from home, do an accountancy firm or do private accounts or something you can..*OK*..umm if you are a pharmacist there is more pharmacists open outside hours so if you're a working mum sort of thinking years ahead then that could fit in nicely around family...
>
> (Maya, 45, Credit Manager, Milton Keynes)

Only the mothers that were in either full or part-time employment highlighted this factor as being of importance when considering career

options. Those that were full-time mothers did not raise this issue. It could be suggested then that the reason why working mothers wanted a career for their daughters where home and work life balance could be achieved is because they found having this balance difficult themselves. Therefore they would like a better balance for their daughters if and when they are in the same position.

4.9 Discussion

In this section the main links that can be made between the study findings and key themes in the existing literature are briefly discussed. This is followed by a presentation of the results as answers to the research questions that were set out at the beginning of the chapter.

4.9.1 Key discussion points

Lesser-educated working class mothers did not have access to a wide range of advice and information through their social networks. This finding echoes results found by other authors in relation to both White and Indian working-class mothers. Both experience inequality of access to resources and differences in social and cultural capital. Furthermore, this does not appear to be simply a class issue but an education issue where mothers that have no experience of HE struggle to access these resources.

It is evident that both working and middle class Indian mothers turn to their extended family members, including younger generations, and use them as sources for the knowledge that they think will help their daughters to advance. This has not been found in studies on White mothers which, based on the existing literature reviewed here, tend to focus on the exchange of knowledge from adults to the younger generation. This may be due to the differences in family structure between the two groups. However, it is something that could be explored further as there is an indication here that lesser educated Indian mothers could be making up some of their

disadvantage from resources available to them from their wider family networks.

More generally there appears to be another commonality between White and Indian mothers. Previous studies of White parents suggest that mothers play a more active role than fathers in the education of their children. The evidence presented in this study echoes this. However, even here a distinction can be made. For example, in Reay and Ball's (1998) study, the women interviewed perceived their involvement in their childrens' education to be within their wider roles of being mothers. This is not something that came up in these interviews. Where it did it was more in relation to being a parent rather than a mother specifically.

4.9.2 Addressing Initial Research Questions

1) Do Indian mothers have a strong expectation that their daughters will attend HE?

There was a strong aspiration and expectation from all the mothers in the sample that their daughters would participate in HE, regardless of their social class background or experience of HE. In this sense, their attitudes to HE reflected what are often regarded as predominantly middle-class attitudes towards education, regardless of whether they could capitalise on them. This was a finding that echoed the work of other researchers in the area such as Abbas (2007) who studied South Asian parents' attitudes to selective schooling. The working-class mothers in this sample often had the same aspirations of going to university as their middle-class counterparts but were unable to fulfil them due to barriers such as lack of funding. One of the key reasons the interviewees gave for wanting their daughters to study further was because they did not have the opportunity to do so themselves.

> 1a) Does their own labour market experience (i.e. employment status, industry, occupation, salary) inform the way in which they view HE and the benefits that may come from participation?

Interviewees drew on their labour market experiences in a number of ways. There was a clear frustration amongst the employed non-graduate mothers. Most of them believed that their lack of formal qualifications prevented them from fulfilling their true potential in the job market. Consequently they placed great value on HE qualifications and the benefits that can come from them. Graduate mothers highlighted examples of colleagues who faced barriers due to weak educational backgrounds to demonstrate the value of higher qualifications and thus encourage their daughters to attend university.

1b) Do their own labour market experiences have a bearing on the way they regard subject and career choice?

There was little reference made to their experiences at work when it came to thinking about subjects and careers for their daughters. The mothers that had not been to university showed little enthusiasm for their work and were instead frustrated at their lack of opportunities. This gave the impression that they were not in their specific fields of work by choice, but instead had been constrained by their weak educational backgrounds and lack of self-confidence. There was an underlying hope that their daughters would achieve more than they had done academically and vocationally. This may be a reason why they did not associate their children's future with the fields they worked in. The only apparent connection between mother's work experiences and daughters prospective occupations was when the mothers showed a preference for "motherhood-proof" careers. None of the interviewees outwardly spoke of problems they had with work-life balance, but they did elaborate on their hopes for their daughters to pursue careers that accommodated family commitments possibly because of problems they had experienced themselves in relation to work-life balance.

2) Does educational background have a bearing on the educational and career aspirations that Indian mothers have for their daughters?

All of the mothers had very high aspirations for their daughters when it came to doing well in education and working towards a HE qualification by

attending university. These aspirations stemmed from values passed down from their elders, and were evident across the sample, regardless of mother's education. There was a mixture in this case where daughters of these mothers were hoping to study Media, English Literature and Optometry respectively. Similarly, Naina was a mother that had no experience of going to university, yet her daughter was aiming for a professional career in Law. It appears then that educational background has not created a barrier for the mothers in this sample with regards to how high their aspirations are for their daughters.

3) Do Indian mothers have a strong preference for certain degree subjects and careers?

Amongst the mothers in the sample there was not so much a clear preference for particular subjects than an inclination towards careers that had certain positive aspects to them. When asked whether they had any subjects in particular that they would have liked their daughters to study, the overwhelming responses were either that they did not have one or that there would be little point in having one if they did as their children will pursue what they enjoy studying and find engaging. In the majority of cases they were happy for them to do so and were highly supportive. Indeed, Malveen was a mother that was willing to go to great lengths, including moving abroad, to accommodate her daughter's preferences.

3a) Do mothers with a strong educational background go through a different process when deciding on appropriate subject choices when compared to those with a weaker background?

Mothers rarely took it upon themselves to make a decision about the best subject for their daughter, and even more rarely was this decision imposed on their child. The interviewees went along with whatever processes their daughters were working through in order to make the final decisions on what their daughters' subject choice/s will be. This was true regardless of mothers' educational background. The one possible distinguishing factor of graduate

mothers was their greater enthusiasm and attention to detail. For example, Malveen was the only mother that attended multiple open days at the same university and observed every detail regarding students and lecturers in the department. This extra level of involvement was missing from the narratives of the lesser-educated mothers. This could be linked back to previous studies where this was explained by a lack of confidence due to their own poor academic performances. In Tina's case this was exacerbated by her daughter relaying to Tina that there was little help she could give based on her scant knowledge.

3b) What are any such preferences based on? E.g. financial rewards? status?

When it came to mothers' preferred careers, there were four main factors that emerged. Firstly, interviewees favoured jobs that their daughters would enjoy. They hoped that they would not eventually have an occupation that they did not find rewarding. They also thought that their daughters would be most likely to achieve highly and fulfil their potential in a job that they found engaging. Secondly, both parents and daughters had an appreciation for careers that they thought gave scope for them to make a positive contribution to the wider community. Examples of these included Social work and Optometry. Thirdly, there was an inclination towards careers that offered potentially high rates of pay. Mothers hoped that these types of job would give their daughters financial stability and independence. Finally, mothers that were active in the labour market stated a preference for occupations that lent themselves to good work-life balance e.g. Pharmacy. A number of professional occupations, and some examples were given by the interviewees, have at least some if not all of these four features. For example, a doctor can be well-paid and have a direct positive impact on the community in their work. These findings consolidate those presented in the quantitative UCAS study presented in Chapter two of this thesis where students from a South Asian background were more likely to apply to subjects that led to professional careers.

4) Do Indian mothers believe that they play a great role in their daughter's subject choices?

With one exception, the mothers in the sample did not think that they had any great influence on their daughters' choices. They did however play a supportive role that they thought was part of their duty as a good parent, but not specifically a good mother. This support appeared to be highly appreciated by their daughters who found the decision making processes at times very frustrating and distressing. Mothers spent a lot of time studying course materials, attending open days and most importantly listening to their daughters vent their anger and frustration at the difficulty of choosing a degree subject. It was very important to them that they made themselves available to their daughters when they needed to talk to someone about their problems.

The interviewees were reluctant to play a more pivotal role and give direct advice about what path to follow. This was especially true amongst the mothers that had not been to university. They had low self-confidence and did not feel qualified to help their daughters in this way. One of the mothers even mentioned how her daughter told her directly that her assistance in this manner would be futile and this contributed to her feeling even less confident in giving advice to her children.

4a) Was there collaboration between the mother and the daughter when the subject choices were being made?

There was a great deal of collaboration between mothers and daughters. There was plenty of discussion about different factors that needed to be considered, and this discussion was predominantly navigated by the students. Interviewees spoke about a high comfort level they shared with their daughters that did not just apply to sharing with each other educational matters but also other aspects such as fashion for example. There appeared to be good relationships where mothers viewed their daughters not only as their offspring that they cared for, but also their friends. One interviewee went as far as saying the relationship was more similar to that shared by

sisters than one between mother and daughter. Therefore, in the main there appeared to be a great deal of communication between mothers and daughters.

4b) Was there collaboration between mother and father?

There was little collaboration between mothers and fathers. In line with the findings of authors such as Reay (1998, 2003) in relation to White mothers, mothers were more engaged than fathers when it came to helping make decisions and providing support. Interviewees made efforts to keep up to date with the various stages of the decision making process, and often spoke about having discussions with teachers and careers advisors. In contrast, the interviewees discussed how in some cases fathers' involvement was loose and distant. There was one case where a father knew very little about what his daughter's intentions were about studying, and this was mainly due to a lack of confidence on his part. He had never attended school in the UK and held no formal qualifications. These were two factors that made him question how useful his advice might be. In this sense, there was a similarity between the mothers and fathers that had not been to university.

Some of the fathers would attend university open days and parents' evenings along with their daughters and wives. Two fathers in the sample were especially involved and figured more prominently in the decision making than their partners. Fathers would try to be as up to date as possible on what their daughters were studying and how their thoughts were developing about potential courses. However, daughters ultimately depended more on their mothers for support. There was some three-way discussion including both parents and daughter. However, there was more mother-daughter discussion during decision-making than father-daughter discussion and discussion between only the parents was rare.

4c) Are the perceived disadvantages and benefits of daughter's subject and career choices viewed from an individualistic (based mainly around the daughter) or collectivist (based mainly around the family) perspective?

Daughters spoke at great length not only with their parents about what they wished to study, but also to other family members e.g. cousins, aunties and uncles. In this sense, the decision-making was collectivist; however, the perceived advantages and disadvantages were mainly seen from an individualistic perspective. Where mothers elaborated on the perceived benefits of particular careers, they did so with reference to their daughters and not the whole family. This contradicts Siann et al.'s (1990) point that most young Asians make their choice of subject and career within the framework of reference of family interests. The only time a reference to the family unit was made was when mothers elaborated on their preferences for careers that enabled good work-life balance. However this was regarding their daughters' future families and not their current family units.

4.10 Conclusion

This chapter is an important step forward in addressing various gaps in the relevant research areas. Firstly, it is one of the few studies focused on the Indian group. Most previous studies that have looked at the Asian groups have been confined to Bangladeshi and Pakistani students and beyond this most studies have focused on the White group. Secondly, it has involved understanding parents' views, not through their children as is the case in other studies, but directly from the parents themselves. Thirdly, it is one of the few studies where mothers' views are investigated in such great detail.

This study has also made an important contribution by giving a rich understanding of the education and labour market experiences of Indian women and how they relate these to their daughters. Interviewees elaborated on their unfulfilled ambitions and the lack of support they received from family to pursue their own educational careers. There were also financial barriers to HE. Despite this the women grew up around family members that had great respect for educational achievement, and this was a value they instilled in their daughters. It was important to all the mothers that their

daughters attend university. This aspiration was prevalent across the sample and not just mothers with strong educational backgrounds.

Interviewees rarely offered specific subjects and careers that they preferred for their daughters. Instead they had an inclination for a wide number of careers that shared specific features that appeared to be favourable. These included careers their daughters would find enjoyable, offered high pay potential and good work-life balance. They did not seek careers for their daughters that they thought might benefit them and their husbands in any way. In the main, the mothers wanted their children to be content with what they were studying.

This research highlights some important similarities and differences between White and Indian mothers. In terms of similarities, it is not only in the White ethnic group where mothers generally play a more active role than fathers in the education of their children. The evidence in this chapter suggests this is also true of Indian mothers. This research also shows that the inequality of access to resources and differences in social and cultural capital applies to both White and Indian mothers with no previous experience of HE. With regards to differences, both working and middle class Indian mothers turn to their extended family members, including younger generations, and use them as sources for knowledge that will assist their daughters. This has not been found in studies on White mothers where the emphasis instead has been on the exchange of knowledge from adults to the younger generation.

The themes that have emerged from the discussions with interviewees have extended the research presented in both chapters one and two. In chapter one the subject choices of a cohort of applicants were investigated. Discussions with mothers have alluded to possible reasons for a preference for professional occupations amongst Indian students. They may even be reasons that explain a greater preference for professional subjects amongst other ethnic minority groups. Malveen's daughter had a cousin that encouraged her to attend their university. In the end her daughter did not choose to apply to that university, but this is an example of influences in institution choice. This has consolidated the Chapter 3 findings that although

a student may be recorded as not living at home, this does not mean that they have rejected living close to family as an Asian students' strong family ties go beyond the household in which they live.

Appendix C

C.1 Letters inviting mothers to participate

UNIVERSITY OF Southampton

I am a PhD student from the Division of Social Statistics at the University of Southampton. This research is an investigation of Higher Education participation of British South Asian women in the UK. In particular I am interested in:

- The routes Indian girls follow in getting to university
- The role that mothers play in their daughters educational decisions
- The role that mothers play in their daughters decisions to study certain subjects and aspire to certain careers
- The relationship between mother's education and work experiences and daughter's education experiences

My aim is to conduct interviews with Indian mothers of young female students that are about to (or have done so recently) apply to university and would like to invite you to partake in my study. Research participants will also be asked to complete a short questionnaire. The names of all individuals and Schools/Colleges involved in the study will be anonymous. Participants' names and contact details will be kept confidential.

If you agree to participate in this study I would like, with your permission, to tape record the interview. If you would prefer that the interview is not recorded, please let me know. You will be asked to sign a consent form in order to show that you have understood the aims of the study and that you agree to being a participant.

It is important that you understand that you are under no obligation to take part in this study and you may withdraw without needing to give me a reason. If you have any questions about the study or what your participation will involve, please do not hesitate to ask.

Your time is greatly appreciated.

Priya Khambhaita

C.2 Questionnaire

Name ……...

Age ……

Highest Educational Qualification

……...

Occupation……..

Country of
Birth……

Religious
Affiliation……

C.3 Informed consent form

Please read the below and if you agree, tick against each statement and write the date, your name and the signature below.

I have read and understood the information sheet provided	☐
I understand that I am under no obligation to take part in this research and my participation is voluntary. I am also aware that I can withdraw at any time, without giving reason, and without consequence.	☐
I understand that my name and contact details are confidential and the name of all individuals and Schools/Colleges will be anonymised	☐
I have been given the opportunity to ask questions and they have been answered to my satisfaction	☐
I agree to take part in this research	☐
[illegible]	☐

Date ……..

Name ……

Signature……

For any complaints or concerns regarding the conduct of this research, please contact:

Dr. Martina Prude

Research Governance Manager
University of Southampton
Room 4009,
Legal Services,
Building 37,
Highfield,
Southampton,
SO17 1BJ

C.4 Interview Schedule

Educational history and mothers' career/occupation

- May I ask what your Highest Qualification is? How long did you stay in school for?
- And your husband/partner? May I ask what their occupation is? What is their highest educational qualification?
- If participant has experience of HE – Did you always harbour ambitions to go to university?
- If participant has no experience of HE – Did you at any point harbour any ambitions to go to university?

The decision to attend university

- Did you harbour ambitions for your daughter to attend university?
- Do you think your ambitions have been shaped by your educational experiences at all?
- If yes, in what way?
- Do you think your ambitions have been shaped by your work experiences at all?
- If yes, in what way?
- Do you have the same ambitions for (daughter's name)'s brothers or sisters?
- If not, why are your ambitions different? What encouraged you to think about their education and careers differently to (daughter's name)?
- How did the decision about your daughter applying to university come about?
- Did you use this approach with any of (daughter's name)'s brothers or sisters?
- How was the decision made?

- Who was involved in making this decision?

Formulating a decision on subject choice

- What subject/s does your daughter currently study?
- Are there any subject/s that your daughter particularly enjoys studying?
- What subject/s has your daughter applied to study at university?
- What is your opinion of this/these subject/s?
- Is your opinion of dis/approval of subject choice clear to your daughter?
- If there is one subject area you think she should particularly study, what is it?
- What is it about this subject that makes it preferable to you?
- Do you think your preferences of subject choice have been shaped by your educational experiences at all?
- If yes, in what way?
- Do you think your preferences of subject choice have been shaped by your work experiences at all?
- If yes, in what way?

Mother's perception of their own involvement and their partner's involvement

- How did your daughter make this decision?
- Do you know why your daughter chose to study these subjects?
- Did you discuss with her the choices she was making?
- Did you initiate any such discussion or did she?
- Did your partner/husband play any role in this discussion?
- Are there any subjects that your partner/husband particularly has a preference for?
- What are they and why?
- Did your partner discuss with your daughter her subject choices? Who initiated this discussion?

- Did your partner discuss with you your daughter's subject choices? Who initiated this discussion?

Education and Career Forecast

- What do you think your daughter can gain from a university degree?
- More specifically, what do you think she can gain from a university degree in (chosen/preferred subject/s)?
- What career and industry do you think your daughter will enter upon graduation? What do you think will be her experience of it (challenging? rewarding? enjoyable?)

C.5 Further Information and Advice Sheet

General Advice

Asian Women Resource Centre

This is a specialist women's organisation that provides support to Black Minority Ethnic and Refugee women and children throughout London. Free, confidential and professional services are provided to women and children through provisions of advice and information, counselling, outreach and support groups and services. They are delivered in six community languages including Arabic, Bengali, Gujarati, Hindi, Punjabi and Urdu. Specifically they run a multi-lingual advice line providing telephone advice on Education, Employment, Welfare Benefit, Immigration, Family Matters and Domestic Violence. The number for this advice line is: 020 8838 3462. The website address for the resource Centre is: http://asianwomencentre.org.uk.

Careers Advice

Connexions

Connexions is a public service offering general information and advice to young people aged 13-19, as well as those up to the age of 25 with learning difficulties or disabilities. Not only do they provide information on Learning, Careers and Work, but also on other areas such as Health and Housing. The web site includes references for careers resources as well as career profiles. Information is available in a number of languages including Gujarati, Bengali, Punjabi and Urdu. The web site can be found at: http://www.connexions-direct.com. You can also call Connexions Direct on the telephone: 080 800 13 2 19.

Prospects

Prospects is the UK's official graduate careers web site. It provides information on general careers advice, Jobs and Work as well as Postgraduate study. With regards to subject choice, there are hints and tips on what options are open to those studying towards particular degrees. Information can also be found on the job destinations of recent graduates. The web site can be found at the following address: http://www.prospects.ac.uk/

5. Conclusion

5.1 Introduction

This is the fifth and final chapter in this thesis. The purpose of this chapter is to revisit the research aims that were set out in the Introduction and demonstrate how these aims have been met and what results have been found. The key findings from Chapters 2, 3 and 4 will be summarised. The contributions that have been made to the relevant research areas will also be emphasised. As each chapter is summarised, suggestions for how the research can be taken forward and developed by other researchers will also be discussed. The overall contribution all three chapters in this thesis have made to an understanding of inter-sectionality is discussed. Finally, the chapter will end with some final thoughts on the thesis as a whole.

5.2 Chapter 2

In Chapter 2, Universities and Colleges Admissions Service (UCAS) frequency-level applicant data for academic year 2006 entry were used to analyse variation in university subject choice by ethnic group. There are a number of ways that the research in this chapter has made a contribution to this research area. With regards to methodological innovation, a segregation index was used as a research method for studying subject choice. This index has rarely been used before in this way.

The analysis was conducted using applicant data and related to what students aspired to study. This was in contrast to the work of previous authors such as Bratti (2006) who had analysed enrolment data. Other ways in which this work went beyond that of Bratti, include the investigation of the relationship between ethnicity and subject investigated whilst also controlling for age and socio-economic group (SEG). Socio-economic group (SEG) has never before been used in a study of the relationship between ethnicity and preferred subject choice. Interaction terms between ethnic origin and SEG were used to

allow for the association of ethnicity with subject to vary across different SEGs.

The findings showed that there were clear differences between ethnic groups in their subject preferences. The Pakistani, Indian and Black African groups were most distinct from the White group. The Black Caribbean group was the most similar to the White group as they had a preference for Science (males) and Social Science (females) subjects. Students from certain ethnic groups (Indian and Chinese in particular) from lower SEGs were, contrary to what the main effect ethnicity results suggested, more likely to apply to subjects other than Professional. The evidence shows, therefore, that there are important class differences in ethnic groups with regards to the subject pathways students aspire to take through HE, and that students from ethnic groups cannot be treated as homogeneous.

This research not only validates the study conducted by Lightbody and Nicholson (1997), but also extends it by including a number of explanatory variables in the interrogation of large-scale data. Lightbody and Nicholson's (1997) findings that Asian students prefer subjects such as medicine, dentistry and accountancy are also true for the large-scale cohort of applicants investigated here. What these UCAS results also show is that the preference for professional subjects amongst Asian and other ethnic minority students is still true after controlling for the effects of age, socio-economic group and ethnic variation in subject group.

In terms of developing this research in the future, it could be conducted again to have additional socio-economic indicators in the data set. They could be used to check the robustness of the SEG findings. It would be possible to investigate whether subject choice varied by students from the state educational sector versus the independent sector, for example. As well as controlling for more than one socio-economic indicator in the regressions, it would also be useful to do this analysis again but with a measure of applicant attainment. If ethnic minority students are keen to apply for Professional subjects, then they will need to be aware that the majority of

these courses have high A-level entry requirements. For example, at the time of writing an applicant to a Medical degree at Southampton University is required to achieve two “A” grades and a “B” grade to gain entry to the course (Southampton University 2010). Therefore, it would be useful to add more research questions to further enhance the understanding of the relationship between ethnicity and subject choice. Possible research questions include: (i) How might differences in subject choices be associated with ethnicity when controlling for A-level tariff score? (ii) Does the association between ethnicity and subject choice vary by A-level tariff score?

5.3 Chapter 3

From studying a number of ethnic minority groups in Chapter 2, the analysis presented in Chapter 3 was focused on female students from the Indian, Pakistani and Bangladeshi (South Asian) groups along with the White group for comparison. Firstly, it was an investigation of differences in the accommodation choices made by undergraduate students from these groups. Secondly, the decision to move out of one’s home region conditional on the fact a student is not living in the parental home was explored.

Few authors have explored the decisions that come after the initial choice is made to leave the parental home, yet this is investigated in Chapter 3. This research has made an important contribution to the research area as there is little current knowledge on which students stay local and indeed what their characteristics are. This is an aspect of HE choice that has received little attention from other researchers and has rarely been analysed in the level of detail it is analysed here. This research is unique because it includes a study of changes over time, a period during which there have been changes in the student population. In Chapter 2, ethnicity was broken down by SEG to allow for the investigation of within-group SEG differences. Similarly, in chapter 3, interaction terms between ethnic origin and A-level score were included to allow for the association of ethnicity with accommodation to vary by A-level attainment.

Findings showed that there was an increase in students recorded as living in their parental/guardian home. More students that did move out decided to stay in their region in 2005 than they had done in the earlier year. Indian, Pakistani and Bangladeshi female students were all more likely to live in the parental/guardian home than White students. Students from all three Asian groups that did move out were less likely to attend a university outside their home region even after controlling for other factors e.g. A-level attainment. These patterns were persistent in both 1998 and 2005.

With regards to future recommendations, there may be interesting gender differences in the educational decision making of students from the Asian groups, and the term-time accommodation patterns of Asian male students could be studied and compared to that of female students. HESA enrolment data for academic years 2003/04 to 2006/07 were analysed in a recent Higher Education Funding Council for England (HEFCE) report (2009) to identify broad student patterns in living at home. Potential factors associated with living at home such as ethnicity were investigated. The proportions of students living at home by ethnicity for male and female students were calculated for the four-year period. Results indicated that the proportion of Indian and Bangladeshi male entrants living at home fell over time. The Pakistani group however had a slight increase in students living at home. One way in which the Chapter 3 research could be taken forward is by interrogating the male student data in the manner they were for female students to study whether or not these patterns still hold after controlling for variables such as SEG and A-level attainment.

Comparing domicile and institution region helped paint a broad picture of student migration patterns. Another way in which this research could be taken further might be by using a smaller geographical area than region. Better still, measuring the exact distance from a student's parental home to their term-time home with postcode information, could be the most accurate method of understanding with better detail differences in term-time accommodation patterns between ethnic groups. It would then be possible to uncover more subtle differences between students with different characteristics and go beyond headline trends. Finally, conducting the

Chapter 3 analysis with 2006 data when the funding arrangements were renewed, and comparing these results to 1998 would be another important way to develop this research. It would enable us to see if changes in students' term-time accommodation choices coincide with the main overhaul of student funding in recent years.

5.4 Chapter 4

Large-scale quantitative data were analysed in the research presented in Chapters 2 and 3. Chapter 4 was a qualitative study of the roles that mothers play in their daughters' degree subject choices. Interviews were conducted with Indian mothers of daughters that were either in the process of applying to study HE courses or had already made their applications recently. Qualitative research was used to supplement the Quantitative research conducted in earlier chapters. This use of mixed methods is understood as triangulation. It was thought that qualitative research could help in the discovery of the underpinning attitudes, thoughts and experiences that might be driving the wider quantitative results. The interview data was linked back to the large-scale results.

The findings presented in Chapter 4 are important for a number of reasons. The research was on parents' own narrative accounts of their views and concerns about their children's education. It added to the limited research on Asian mothers in terms of the roles they play in their children's educational choices. The research was focused on Indian students, a group that is often excluded on the debate of South Asians in education. In-depth discussions were conducted with Indian mothers to help explain the wider university subject choice trends observed in the results of the Chapter 2 data analysis. They also helped shed some light on concerns about university term-time accommodation (Chapter 3) and how they are bound up in subject choice decision making (Chapter 2). Malveen's is one interviewee that is a good example of the overlap in concerns to do with subject choice and accommodation. At one point in time, Malveen's daughter wanted to study

courses in a subject area that was mainly available in America. This is a clear example of how qualitative data analysis in Chapter 4 indeed illuminates in a modest way the intricacies of these tensions between university and subject choice.

Findings from this research showed a strong respect for education amongst all interviewees regardless of educational background. They all held aspirations for their daughters to accomplish a university accommodation and always envisaged them attending. However, the mothers did not offer specific subject and career choices that they had preferences for. Instead, the interviewees had an inclination for a wide number of careers and favourable careers had high pay potential and good work-life balance. Overall, mothers hoped that their children would be happy with what they were studying and would achieve at the highest level.

It was not always possible for the mothers and their daughters to make the most of these high educational aspirations they had. This is because they did not possess the knowledge about the education market they needed to turn these into realities. The middle-class interviewees that had stronger educational backgrounds, established positions in the labour market and access to wide and diverse social networks through their social capital were the ones that were more likely to make their daughters' dreams a reality. On the contrary, the interviewees that had weaker experience of the education system and labour market in the UK and no further or higher education qualifications did not feel like they could assist their daughters through the decision-making process. They did not understand the application process or the careers their daughters hoped to enter. In this manner, there was a lack of cultural capital from these participants.

It is not only the chapter 2 findings presented in this thesis that validate Lightbody and Nicholson's (1997) results. The chapter four qualitative study included interviewee mothers that had strong views on what they wanted their daughters to study. Seema for example knew that, if asked, her daughter would state that she chose her subjects "because my mum forced me! ". Similarly, students in Lightbody and Nicholson's sample related a

preference for professional subjects to a desire for respect for parents and from peers.

In terms of recommendations for developing this research, it would be useful to look at the work of Heath, Fuller & Paton (2009). These authors used a network-based approach to explore the decision making approaches of non-participants in HE. They spoke to close relatives and friends in the networks of the non-participants. The aim was to try and gain a better understanding of the behaviours, attitudes and dispositions that hold influence within an individual's social-network. This model of interviewing members of a network would be a useful one to use here as the Chapter 4 results showed that in some cases cousins, aunties and uncles all had important roles in the students' decision making processes. Furthermore, Asian communities have been shown to have strong family networks and so expanding the Chapter 4 research to include interviews with the students themselves, their fathers, grand-parents, siblings, aunties, uncles and cousins for example might be useful for gaining a more comprehensive understanding of their roles and influence on a student's decisions. Furthermore, conducting this type of study with families from the Pakistani, Bangladeshi and White groups would make for an interesting project where similarities and differences between the groups in accessing resources and capitalising on networks could be better understood.

5.5 Inter-sectionality

Throughout this thesis, ethnicity has not been studied in isolation. Rather, the homogeneity of ethnic groups has been rejected. Through the statistical controlling of socio-economic measures in Chapters 2 and 3, the interactions between ethnicity and socio-economic group (Chapter 2) as well as the qualitative exploration of various socio-economic indicators (qualification background, labour market position, social and cultural capital), the research in this thesis has consolidated the importance of identifying and understanding different axes of identity. Clear within-group class differences in educational routes and experiences were found and analysed.

An overlying theme in the results for the three research chapters is that students from high socio-economic backgrounds are following paths that will advantage them in the future. More students from a number of ethnic groups applying for professional subjects already came from professional backgrounds as seen in Chapter 2. Professional careers can provide great opportunities for job security, high status and high pay. In Chapter 3, the children of professional White, Indian, Pakistani and Bangladeshi parents were more likely to afford the costs of going further than their region to attend university (Chapter 3). Faggian et al. (2006) showed that mobile students are more likely to become mobile employees. This leads to greater lifetime earnings. In chapter 4, we came across a middle-class, university educated parent that was willing and able to move abroad in order to facilitate their daughter's distinctive university subject choice. Researchers cannot afford to ignore socio-economic group in their understanding of ethnicity.

5.6 Conclusion

The research in this thesis is focused on the education of British Asian female students. Previous authors such as Faggian et al. (2006) have studied all three Asian groups but analysed them under a broad "Asian" heading either because detailed differences between ethnic groups were not a priority in their research or due to the fact their data sets were too small to allow for robust quantitative analysis. It was important to treat all the Asian groups, including Indian, as separate as this had been an area of research that had been clearly lacking. Furthermore, including the Indian group alongside the Bangladeshi and Pakistani group made for a better understanding of the Asian communities as a whole.

The initial research aims of increasing an understanding of Indian women in Higher Education and exploring them in relation to the other Asian groups were met. This was done predominantly through large-scale data analysis where wide-spread characteristics of the Asian groups could be shown. In terms of the Indian group, the result from the three research papers presented here showed that there were some clear similarities with the other

groups in terms of an inclination towards applying for Professional degree subjects and a greater propensity to live in the parental home during the first year of undergraduate study. However, it was possible to see some subtle differences because all three Asian groups were investigated together and discussed at length, which is an important distinguishing feature of this thesis. In terms of subject choice, overall the Indian group was furthest away from the White group as they had the greatest inclination towards Professional subjects compared to the other Asian groups, for example.

The research presented in this thesis has demonstrated that educational decision-making is multifaceted and ethnicity is complex and studying it in isolation as some previous authors have done does not allow for a full understanding of it as a factor that steers educational routes. Socio-economic group along with A-level attainment were integral to understanding the overall patterns that were observed in relation to degree subject choice and term-time accommodation. For all three of the Asian groups, socio-economic group was important, albeit to a varying extent for each, in explaining some of the ethnicity patterns. Therefore, studying Ethnicity as a factor on its own would have severely limited the potential of this research.

This thesis has made important contributions to the relevant research areas and it will encourage more research, particularly quantitative, on Indian and also Pakistani and Bangladeshi women in HE. It is also hoped that the research presented here has shed more light on the inter-sectionality between socio-economic group, attainment and ethnicity. Finally, this research shows that although it is not the case that if SEG is not accounted for then the ethnicity picture is distorted, it is nevertheless important because ethnic groups cannot be treated as homogenous and SEG is able to explain at least some of the variation that can be seen by ethnic group. There are clearly still class inequalities in higher education that need to be addressed and it is evident that they affect students and families from different ethnic groups in different ways.

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