

**Is It Really Disadvantaged to Have a Mixed Ethnic Background?
Comparing Educational Attainment of Mixed Ethnic, Ethnic
Minority and White British Children in the UK**

RAYA MUTTARAK

Department of Political and Social Sciences
European University Institute
raya.muttarak@eui.eu

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Abstract

Extant studies commonly claim that mixed ethnic children face difficulties in affiliating with either of the parental ethnic group, which consequently negatively affects their identity development. However, the majority of the existing literature is based on clinical evidence of small highly self-selected samples of those seeking psychological assistance. This paper aims to investigate the well-being of mixed ethnic children using a Longitudinal Study data (N=30,445) which is a nationally representative one percent sample of the UK Census. We hypothesise that an interethnic union between one immigrant parent and one parent from a majority population could promote integration of an offspring. Here educational attainment is used as an indicator of socioeconomic integration. Multinomial logistic regression is employed to estimate educational attainment of mixed ethnic individuals compared with that of ethnic minorities and the White British population. Generally, a key problem in the study of mixed ethnic individuals is how to identify who has mixed ethnic background. We overcome this issue by using ethnicities of the two parents. Controlling for parental demographic and socioeconomic characteristics and geographical characteristics, ethnic minorities, especially Indians and Chinese, have better educational achievement than average White British persons. Mixed ethnic individuals on the other hand have relatively poorer educational outcomes than their ethnic minority peers, but their educational attainment pattern is very similar to that of the White British. This converging pattern suggests that having one White British parent bring children of immigrants closer to the characteristics of the majority population. Results can be interpreted in two main directions, signalling either integration (i.e. mixed children's outcomes are similar to that of the majority) or

disadvantage (i.e. mixed children perform worse than minority ethnic children). We discuss these interpretations extensively in the last section of the paper.

Keywords: mixed ethnic, intermarriage, integration, education, ethnic minority

Introduction

While interethnic marriage is widely regarded as a key indicator of immigrants' integration into the host society, offspring of interethnic unions are often associated with negative outcomes. A large number of literature, especially in the discipline of psychology or psychiatry, expresses concern about the psychological and social integration of mixed ethnic individuals because having multiple ethnic backgrounds is regarded as problematic in identity development (e.g. Lyles et al. 1985, Brandell 1988, Gibbs 1987 and 1998, Tizard and Phoenix 1995, Kerwin et al. 1993 and 1995.). Nevertheless, it is found that mixed ethnic individuals have the highest rate of intermarriage with the majority population across all minority ethnic groups (Muttarak and Heath, forthcoming). This implies that mixed ethnic individuals might be considerably well-integrated in the host society.

Recent studies show that intermarried ethnic minorities have better labour market outcomes than their non-intermarried counterparts (Meng and Gregory 2005; Muttarak 2007). If having a native spouse could promote the socioeconomic achievement of minority ethnic members, this raises a question whether having one native parent benefits mixed ethnic children in a similar manner with their intermarried ethnic parents. Alternatively, on the opposite, is it true that having multiple ethnic identities discourages socioeconomic integration of mixed ethnic

children? A study of the well-being of mixed ethnic individuals can provide an answer to these questions¹.

We chose to study socioeconomic attainment of mixed ethnic individuals in the UK for a number of reasons. First, a mixed ethnic population has become more visible over the past two decades and they account for 15 percent of non-White population in the UK (Office for National Statistics, 2005). The increasing number of mixed ethnic individuals enables us to perform statistical comparison of their socioeconomic outcomes with that of the majority and ethnic minority population. Second, ethnic minority groups in the UK are highly diverse and research on their socioeconomic performances shows that each ethnic group has different pattern of socioeconomic integration (). This provides a rich arena for a comparison of integration pattern not only between minority ethnic and mixed ethnic groups but also between ethnic communities. Third, debates on mixed ethnic population in the UK have gained enormous attention from the public and policy makers but empirical evidence to show how mixed ethnic individuals fare in the society is scarce. This study would help fill in the gap in knowledge about socioeconomic well-being of mixed ethnic individuals based on empirical findings.

In this paper, we investigate the educational attainment of mixed ethnic individuals as compared to White British and ethnic minority population. The empirical analysis is based on the ONS Longitudinal Study which links successive UK Censuses between 1971 and 2001. We select children aged 12 -18 who were present with at least one parent in a household in 1991 and observe their academic achievement in 2001. Educational outcome is measured as the level of the highest

¹ In this paper, ‘mixed ethnic’ refers to an individual whose parents are from different ethnic groups. ‘Ethnic minority’ refers to an individual whose parents are from the same ethnic groups.

qualification attained. Ethnicity of children is identified according to that of their parents.

Controlling for parental educational and social class background, we find that the educational outcomes of mixed ethnic children vary with their parents' ethnic origin. The educational attainment of Mixed White-Black Caribbean, mixed White-Chinese and to a lesser extent mixed White-Indian converges to the pattern of Whites. Mixed Pakistani & Bangladeshi-White, on the other hand, exhibit the level of educational attainment closer to that of their ethnic minority peers while Mixed White-Black African & Black Other exhibit the poorest academic outcomes across all groups. We conclude that having one white parent brings mixed ethnic children closer to the characteristics of the majority whites but for some children whose minority parents' ethnic background is distinctive, they acquire characteristics closer to those of the ethnic minority peers instead.

The structure of the paper is as follows. The next section reviews the literature on the educational outcomes of mixed ethnic individuals. Then theoretical concepts which explain the determinants of ethnic minorities' educational achievement are discussed. The hypotheses to be investigated are developed from the theoretical accounts. This is followed by a data section and an empirical section. The empirical analysis includes descriptive findings and multivariate analysis. The concluding section attempts to answer the question whether having multiple ethnic identities results in poorer socioeconomic well-being of mixed ethnic individuals.

Review of Literature on Educational Outcomes of Mixed Ethnic Individuals

There are not many empirical studies which directly investigate the socioeconomic outcomes of mixed ethnic individuals. The recent research on mixed ethnic children in the United States suggests that being multiracial need not always be

problematic as claimed by most psychological and clinical literature. The study of pupils in the eighth grade by Kao (1999) draws a direct comparison of academic achievement between Whites, non-Whites and mixed ethnic children. She found no statistical evidence of lower-esteem among mixed ethnic children nor that they are marginalised in school. Using mathematics test scores and grade point averages (GPA) as indicators of academic achievement, Kao (1999) reports that mixed White-Asian children resemble non-mixed Whites in their academic performance while mixed White-Black children achieve similar educational outcomes as non-mixed Blacks.

Although Kao's paper provides new empirical evidence on the educational attainment of mixed ethnic individuals, the drawback of the study lies in the measurement of ethnic categories. Since there is no direct indicator of mixed ethnic identity in her data, mixed ethnic individuals are located if the self-identified ethnicity of the children is not consistent with that of their parents. This speculative measurement of mixed ethnic identity could lead to bias in the findings.

A more recent study by Harris and Thomas (2002) on the educational outcomes of mixed ethnic adolescents employed a better measurement of ethnic identity. Respondents are identified as being mixed ethnic if they select: 1) more than one single-ethnicity in the school or home survey; and 2) different ethnic category in the school and home surveys. This study yields a different conclusion from that of Kao. It is reported that ethnic diversity in academic achievement depends considerably on the educational outcome measured. For example, mixed White-Asians appear to have lower GPA than non-mixed Whites and non-mixed Asians while mixed White-Blacks achieve similar GPA with non-mixed Black youths. Yet, in terms of vocabulary test scores, White-Asian fare similarly to Whites youth.

Harris and Thomas remarked that their findings might be subject to how ethnicity is reported because self-ethnic identification could be influenced by stereotypes about ethnicity and educational performance. It is argued that mixed ethnic youth will choose to identify themselves closely to an ethnic parent or a White parent depending on their academic achievement. If this is the case, the causal direction is reverse and ethnic self-identification becomes an invalid measurement of mixed ethnic identity.

In the UK, empirical research on educational achievement of mixed ethnic children is in its infancy. The first quantitative study is a research report for the Department for Education and Skills which aims to investigate the educational needs of mixed heritage pupils (Tikly et al. 2004). This report compares English and mathematics test results and GCSE/GNVQ examinations of mixed heritage pupils with that of non-mixed pupils and the national average. It is documented that White-Black Caribbean pupils, especially boys, have lower attainment than the average in both primary schools and secondary schools. Meanwhile, White-Black African pupils perform slightly better than the national average in primary school and slightly lower in secondary school. White-Asian pupils, on the other hand, have higher attainment than the national average in both primary and secondary school. Even after taking account of the level of deprivation, the gaps in educational attainment among mixed ethnic and minority ethnic children persist. Tikly et al. (2004) argue that teachers' low expectations and a stereotypical view of 'confused' identities of White-Black Caribbean pupils are the key barriers to achievement of White-Black Caribbean pupils.

Another study on mixed ethnic individuals in the UK is the descriptive analysis of the 2001 Census of England and Wales and National Curriculum Assessment data by Bradford (2006). He obtains a similar result with that of Tikly et

al. (2004). Comparing the percentage distribution of the mixed ethnic groups with higher qualifications, no qualifications, and five or more GCSE grades A* to C/GNVQs, it is documented that individuals with White-Asian ethnic origin achieve the best educational outcomes while individuals with White-Black Caribbean origins have the poorest educational attainment among all mixed ethnic groups. Since Bradford (2006) focuses only on the academic achievement of individuals from mixed ethnic groups, the paper does not provide any comparison with that of whites and ethnic minorities.

The two studies provide a descriptive overview of the educational achievement of mixed ethnic children in the UK but the diversity between the socioeconomic characteristics of coethnic married and intermarried White British and ethnic parents was not taken into account. Since parental human, social and ethnic capitals are proven to play a key role in determining children's educational attainment, omitting these factors could result in a bias in the estimation of the effect of ethnic origin on educational outcomes.

In this paper, we extend the previous research on the educational attainment of mixed ethnic children in the US and the UK in two important ways. First, we employ a direct measure of ethnic origin by assigning an ethnicity to the children sample according to the ethnicity of their parents². This way we can identify mixed ethnic individuals straightforwardly. Second, since the empirical analysis of this study is based on longitudinal data, we can measure parental socioeconomic background and neighbourhood characteristics during the period when the respondents were growing

² Although the study by Harris and Thomas (2002) has already improved the indicator of ethnic identity, they still used some speculation to identify mixed ethnic individuals. In their study, children who selected an ethnic category at school differently from the one at home were classified as 'mixed ethnic'. The British studies are based on informative datasets which allow individuals to select a mixed ethnic option. Yet, the given choice of mixed White/Asian is rather crude and neglects the diversity among ethnic Asian population.

up not the current ones after they became an adult. This serves as a reliable control for family background.

Theoretical Concepts

There are four main theoretical concepts which can be applied to explain the mechanisms underlying ethnic differential in educational attainment.

Human capital and social capital theories³

Parents' human and social capitals are documented to be a key determinant of one's academic success. Parental human capital measured in terms of education affects children's educational attainment substantially (Sewell and Hauser, 1975; Belzil and Hansen, 2003). Children whose parents are better-educated are reported to obtain longer years of schooling and are less likely to have grade retention (Blau and Duncan 1967, Chevalier 2004, Oreopoulos et al. 2006). Apart from an explanation that educated parents are wealthier and hence can afford better schools and better neighbourhoods, Magnuson (2003) also suggests that highly educated parents may have 'better' parenting and teaching styles which benefit children's academic achievement accordingly.

Although there is evidence that parents' academic background has a significant effect on children's educational outcomes, little is discussed about the intergenerational transmission of human capital amongst the immigrant population. Foreign-born parents with overseas qualifications might not be able to transfer their skills to their offspring as straightforwardly as those who obtained an educational qualification in the host country. Yet, they might be able to transfer their human capital to children through some other means such as through social networks or group norms. This type of capital transfer is coined 'social capital' (Coleman 1988).

³ Although human and social capitals are different kinds of capitals, we discuss them together in this chapter. This is because it is rather difficult to distinguish the effects of parental human and social capitals on children's educational outcomes due to the limitation of the data.

Coleman (1988) introduces a theoretical concept of social capital as an additional family resource which can affect an individual's academic outcome. The social capital within the family, i.e., the positive interaction between parents and children, is one key mechanism that facilitates the transfer of parents' human and financial capital to children. Likewise, a community-level social capital, i.e. the interpersonal relationships among parents in different families and among parents and institutions in the community is also argued to be crucial to a child's educational achievement.

As the level of human capital in a family is found to vary with parents' education, this raises a question whether social capital accumulation and transmission also depend on parental academic background. In the UK, social-class inequalities in education remain significant for all level of education: from primary school, GCSEs, to higher educational levels; and across cohorts (e.g. Fogelman and Goldstein, 1976; Halsey et al.,1980; Bynner and Joshi, 2002; Blanden and Machin 2004; Galindo-Rueda et al., 2004; Breen, 2005; Raffe et al.,2006). Social capital driven research explain that inequality in educational attainment is due to differentials in material, social and cultural resources that parents from different social classes exercise on children's schooling (Murray, 1974; Fogelman 1975; McNeal, 1999; Horvat et al., 2003). For example, middle-class parents are reported to be more active in initiating contacts with school or criticise and complain about teachers (Lareau, 1996). Since the networks of middle-class parents are more likely to encompass professionals of various sorts, this enables them to easily access the information, expertise or authority when they want a school to conform to their preferred course of action (Horvat et al., 2003). These studies imply that parental social resources play a key role in one's academic achievement.

As a matter of fact, the positive effect of social capital on individuals' socioeconomic well-being depends on which group is being referred to. Portes (1998) notes that close-knit relations do not always bring desirable consequences. Dense social networks can bring benefits only to in-group members but restricting others from gaining access to the social resources. For example, several ethnic groups in the United States take a monopoly over some business and occupations e.g. European white ethnics taking control over construction trades and the fire and police unions or New York or Cubans taking control of the Miami economy (Waldinger 1995). This suggests that the benefit of social capital may be group-specific.

The literature discussed above implies that parents' social capital exerts influences on children's educational outcomes in two ways. The first one is a universal one which assumes that *all* middle-class parents input more time and energy in children's education resulting in better educational outcomes of their offspring. This implies that the gap in educational attainment between ethnic groups is due to differentials in parental socioeconomic resources. The second one maintains that the operation of social capital varies between ethnic groups. It is found that, after controlling for parents' social class background, there remain inequalities in educational attainment between different ethnic groups (Gillborn and Mirza, 2000; Rothon, 2006, 2007). This suggests that beyond parental human and social capital, ethnic origin is one key factor that determines one's educational success.

Ethnic capital

Ethnicity is regarded as a form or source of social capital because belonging to a specific ethnic group means a person is embedded in a system of social relations (Bankston and Zhou, 2002). The concept of ethnic capital was introduced by Borjas (1992, 1995) in his study of intergenerational mobility of immigrants in the US. He

argued that apart from parental investment in a child's education, the skills of subsequent generations depend on 'the average skills and labour market experiences of the ethnic group in the parents' generation' (Borjas 1992: 148).

Ethnic solidarity, in fact, could yield both advantages and disadvantages for schooling outcomes of immigrants' children. Zhou and Bankston (1994, 1997) document that cultural values that are conducive to achievement and a successful ethnic economy reinforce the social support and enhance academic success of children in the Vietnamese community in New Orleans despite residing in deprived neighbourhoods. On the contrary, Mexican communities in California, characterised as a weak ethnic economy with concentration of adults in low-skilled or seasonal jobs, lack the means to support and direct their children towards educational achievement and upward mobility (Matute-Bianchi, 1986). This empirical evidence indicates that an individual's educational attainment is partly determined by the characteristics of the ethnic community one belongs to.

It is found that social capital and ethnic capital are correlated. Parental involvement varies between ethnic groups and immigrant parents might have difficulty transferring their social capital acquired in the country of origin to their children in a host country (Coleman, 1987; Heath and McMahon, 1999). Hao and Bonstead-Bruns (1998) compared educational attainment of children from several ethnic groups in the United States and found that lower levels of parent-child interactions among immigrant Mexicans lead to lower expectations and lower educational achievement of children accordingly. Asian children such as Chinese and Koreans, on the other hand, exhibit much better educational attainment and this is in line with a high level of parental involvement in children's education. If social capital investment varies between ethnic groups, this raises a question about how

intermarried parents exercise their social resources on their offspring's education. It is therefore important to consider the interplay between parents' ethnicity and their use of network resources.

Marginal Man Thesis

Early sociological studies of mixed ethnic populations were dominated by those of the Chicago School sociologists, especially Robert E. Park and Everitt V. Stonequist, a student of Park. Park (1928, 1950) introduced the concept of 'marginal man' which refers to individuals with an unstable personality because he is subjected to emotional and cultural conflicts from being on the periphery of two diverse groups. Stonequist (1942:297) added that a 'marginal man' suffers with the possible rejection and lacks of the sense of belonging to a particular culture or race. The 'marginal man' thesis implies a negative identity development and this perception has dominated studies on multiracial/mixed ethnic individuals until present.

It is commonly presented in academic writings that people of mixed parentage are likely to develop emotional, health and behavioural problems because their mixed identities adversely affect their social interactions and integration into a mainstream monoethnic society (e.g. Lyles et al., 1985; Brandell, 1988; Gibbs, 1987, 1998; Tizard and Phoenix, 1995; Kerwin et al. 1993, 1995). Minority ethnic youth in general are assumed to experience greater difficulties in identity formation (Dornbusch 1988; Phinney et al., 1992) but children of mixed parentage would experience even more hardship due to their multiethnic background. Facing difficulty in gaining acceptance into neither ethnic group, mixed ethnic individuals could become isolated and develop low self-esteem (Taylor-Gibbs and Huang, 1989; Rosenberg, et al., 1995). The problems of identity formation and lack of social acceptance, consequently, can pose a negative impact on their educational performance.

There are two main methodological and theoretical problems in the research on mixed ethnic individuals mentioned above. First, the literature that provides evidence of psychological and developmental setbacks of mixed ethnic children is subjected to the problem of sample selection bias. The sample used in these studies was drawn exclusively from clinical populations which predominate with individuals who need counselling service or clinical treatment (e.g. Lyles et al., 1985; Gibbs and Moskowitz-Sweert, 1991). Selecting only the sample of mixed ethnic individuals who came to seek counselling in the studies would naturally lead to a conclusion that these people tend to experience psychological problems.

Second, the mechanism which explains how self-esteem affects academic performance is not clear. Kao (1999) notes that although it is evident that there is an association between self-esteem and educational outcomes, it remains debatable whether high self-esteem leads to academic success or whether academic achievement increases an individual's self-esteem. Besides, Rosenberg et al. (1995) found that it is academic self-esteem that exerts greatest influence on schooling outcomes not identity self-esteem in terms of an ethnic identity formation. This implies that having multiple ethnic identities need not be problematic.

Hypotheses

The theoretical accounts discussed above suggest the following hypotheses:

Hypothesis 1:

As intermarried individuals are more likely to come from better socioeconomic background and parental human and social capitals are a key determinant of one's educational outcomes, mixed ethnic children are expected to achieve better educational attainment than monoethnic children.

Hypothesis 2:

Educational attainment of mixed ethnic children is determined by the ethnic background of their parents. There are three possible outcomes:

1. Mixed ethnic children who were socialised in the social networks of a white parent will have similar educational outcomes as the white group;
2. Mixed ethnic children who were socialised in the social networks of an ethnic parent will have similar educational outcomes as ethnic minorities;
and
3. Mixed ethnic children who were socialised in the social networks of both a white parent and an ethnic parent will have the educational outcomes 'in between' the white and ethnic minority groups.

Hypothesis 3:

Mixed ethnic children have the worst educational outcomes of all ethnic groups because they are marginalised and suffer from a multi-identity problem which causes a negative effect on their schooling success.

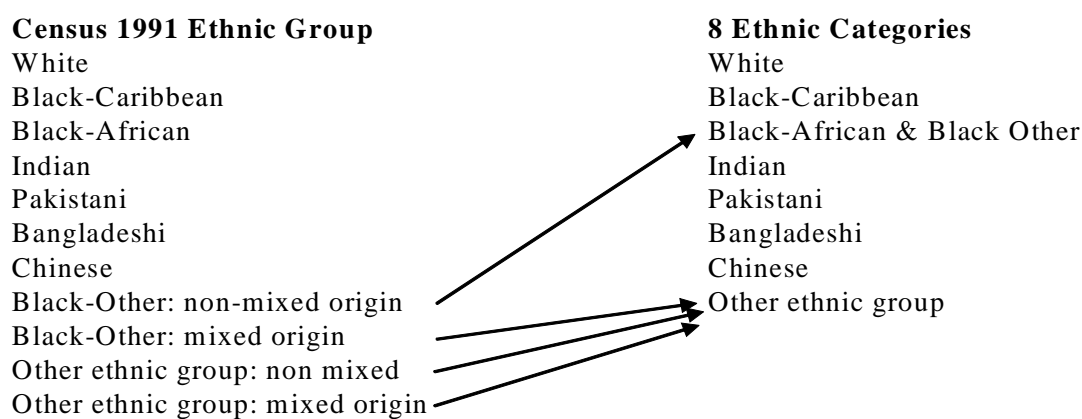
Data

The empirical analysis of this study is based on the ONS Longitudinal Study (LS). This data is appropriate for our research question which aims to investigate the educational achievement of offspring of interethnic unions. Since the data covers a one percent sample of the population of England and Wales, it contains a relatively large number of members from minority ethnic groups to perform statistical analyses. The Census information is also included for all people enumerated in the same household as an LS member. This allows us to match father, mother and children and identify their demographic, socioeconomic background and household economic resources when the studied members were living with their parents.

Another key advantage of using the LS data in this study is that it solves the problem of a possible sample selection bias of children aged over 20 who remain in a household. In cross-sectional data, the household-level and parental information is available only when the individuals remain in a household. Since this study aims to investigate the educational attainment of individuals aged 22 – 28 years old in 2001, this could result in a selection bias of individuals who still live with their parents after the average age of leaving parental home, which is early 20s in the UK (Kerckhoff and Macrae, 1992). The LS data allows us to select the sample of children who were in a household in 1991 and link them with their parents' information in 1991. We can then observe the children's educational outcomes in 2001 based on parental information in 1991.

The sample selected for the analysis consists of children who 1) were present both in 1991 and 2001; 2) were born in Britain; 3) were not full-time students in 2001; 4) aged between 12 - 18 in 1991; and 5) lived with at least one parent in 1991. We finally obtain a sample of 30,445 children whereby 222 of them were offspring of a union between a White person and a minority ethnic member.

In this study, the ethnicity of an individual is classified according to his/her parent(s)' ethnic origins in 1991. The census questionnaire of 1991 asked the respondents to tick or write in their 'descent' or 'ancestry'. There are no options for 'Mixed' ethnic category but a space is provided for a respondent to describe one's ancestry. Ethnicity of parents in 1991 is recoded into 8 categories as follows:



The outcome of interest is the educational attainment of children in 2001. The highest educational qualification is measured based on responses to the qualifications question and the professional qualification question⁴. Educational qualification is categorised into three groups: no or low qualification, intermediate qualification and higher educational qualification. The no/low qualification category includes individuals with no academic or professional qualifications, Level 1 and other qualifications. The intermediate qualification category includes Levels 2 and 3. The higher educational qualification category includes Levels 4 and 5⁵.

Descriptive Results

Tables 1 – 3 display the distribution of educational attainment of individuals aged 22 – 28 in 2001 according to their father’s and mother’s ethnic origins. The diagonal cells present fathers and mothers who are coethnic married, i.e., both parents

⁴ The variable highest qualification 2001 (HLQP0) is derived from the variables QUP0 and PQUPO. See 2001 Census Appendices 27 and 28, available from <<http://www.celsius.lshtm.ac.uk/dataDict/appendices/01app27.html>>and<<http://www.celsius.lshtm.ac.uk/dataDict/appendices/01app28.html>>.

⁵ The definition of each educational level given by the ONS is as follows:
Other qualifications/ level unknown: Other qualifications (eg City and Guilds etc), Other Professional qualifications
Level 1: CSEs (grades 2-5), GCSEs (grades D-G), 1-4 CSEs (grade 1), 1-4 GCSEs (grades A-C), 1-4 O levels, NVQ level 1, Foundation GNVQ
Level 2: 5+O levels, 5+CSEs (grade1), 5+GCSEs (grades A-C) etc, 1 A level, 1-3 AS levels, NVQ level 2, Intermediate GNVQ
Level 3: 2+ A levels, 4+ AS levels, Higher School Certificate, NVQ level 3, Advanced GNVQ
Level 4/5: First degree, Higher degree, NVQ levels 4-5, HNC, HND. Qualified Teacher status, Qualified Medical Doctor, Qualified Dentist, Qualified Nurse, Midwife, Health Visitor

are from the same ethnic group. The off-diagonal cells present intermarried fathers and mothers. The off-diagonal cells in the first row present the union between a white father and an ethnic mother and the off-diagonal cells in the first column present the union between a white mother and an ethnic father. The crosstabulation of father's and mother's ethnicity allows us to assess whether educational attainment varies between the gender of a parent and between each type of unions: coethnic married, intermarried and single parent.

Table 1 displays the proportion of individuals who have no/low level qualification in 2001. Just under one-third of individuals who have White parents have no/low-level qualifications. The diagonal cells indicate that individuals who have ethnic minority parents, except for those from Pakistani & Bangladeshi families, have a lower proportion of those with no/low-level qualifications than their White counterparts. Only one-tenth of individuals whose mother and father are Chinese have no/low-level qualifications.

With respect to the offspring of interethnic unions, their educational attainment varies with the ethnicity of ethnic parents. The union between White mother-Indian or Pakistani & Bangladeshi father brings down the proportion of individuals with no/low-level qualification to be lower than that of Whites, Indians and Pakistanis & Bangladeshis. On the other hand, the offspring of White-Black unions displays much higher proportion of those with no/low qualifications than both non-mixed whites and blacks.

Table 1: Percentage Attaining No/Low Qualifications in 2001 by Parents' Ethnicity (N=9,740)

Father's Ethnicity	Mother's Ethnicity							No Mother
	White	Black Caribbean	Black African & Other	Indian	Pakistani & Bangladeshi	Chinese	Other ethnic	
White	30.2	-	45.5	25.0	-	-	22.9	46.1
Black Caribbean	37.5	18.8	-	-	-	-	-	40.0
Black African & Other	-	-	17.1	-	-	-	-	-
Indian	15.4	-	-	20.3	42.9	-	-	-
Pakistani & Bangladeshi	22.2	-	-	-	34.0	-	-	57.1
Chinese	-	-	-	-	-	9.7	-	-
Other ethnic	28.0	-	-	-	-	-	15.5	-
No Father	41.2	31.8	40.0	17.1	32.3	-	40.0	-

Source: ONS Longitudinal Study

Note: Cell counts less than 3 are suppressed for disclosure purpose.

Table 2: Percentage Attaining Intermediate Qualifications in 2001 by Parents' Ethnicity (N=12,089)

Father's Ethnicity	Mother's Ethnicity							No Mother
	White	Black Caribbean	Black African & Other	Indian	Pakistani & Bangladeshi	Chinese	Other ethnic	
White	40.4	50.0	54.5	25.0	-	50.0	37.1	36.6
Black Caribbean	40.6	39.6	-	-	-	-	-	45.0
Black African & Other	44.4	-	34.3	-	-	-	-	-
Indian	26.9	-	-	28.4	-	-	-	-
Pakistani & Bangladeshi	22.2	-	-	-	32.3	-	-	42.9
Chinese	-	-	-	-	-	21.0	-	-
Other ethnic	36.0	-	-	-	-	-	32.1	100.0
No Father	39.0	45.5	33.3	48.8	38.7	-	26.7	-

Source: ONS Longitudinal Study

Note: Cell counts less than 3 are suppressed for disclosure purpose.

Table 3: Percentage Attaining High Qualifications in 2001 by Parents' Ethnicity (N=8,646)

Father's Ethnicity	Mother's Ethnicity							No Mother
	White	Black Caribbean	Black African & Other	Indian	Pakistani & Bangladeshi	Chinese	Other ethnic	
White	29.5	50.0	-	50.0	-	50.0	40.0	17.3
Black Caribbean	21.9	41.7	-	-	-	-	-	15.0
Black African & Other	55.6	-	48.6	-	-	-	-	-
Indian	57.7	-	-	51.3	57.1	-	-	100.0
Pakistani & Bangladeshi	55.6	-	-	-	33.7	-	-	-
Chinese	-	-	-	-	-	69.4	-	-
Other ethnic	36.0	-	-	-	-	-	52.4	-
No Father	19.8	22.7	26.7	34.1	29.0	100.0	33.3	-

Source: ONS Longitudinal Study

Note: Cell counts less than 3 are suppressed for disclosure purpose.

Individuals who grew up with a single parent, especially a single father have a much higher proportion of those with no/low-level qualification than their peers who come from intact family. However, children who come from a single-mother family where mothers are from Indian ethnic origins do not necessarily have a higher proportion of no/low-level qualification individuals.

Table 3 displays the proportion of individuals who have a higher educational qualification in 2001. Individuals whose parents are White do not necessarily have a higher proportion with higher qualifications than their minority ethnic peers. Only around one-third of the former achieve a higher qualification compared to over a half of individuals whose parents are Indians or Chinese. Individuals who have Black parents also have a higher proportion with a high qualification than do their White counterparts.

Considering mixed ethnic individuals, the distribution of the proportion attaining a higher qualification looks more similar to that of their ethnic minority peers whereby the proportion of those attaining a higher qualification almost doubles that of their white peers. The exception is for mixed ethnic individuals with a White mother- Black Caribbean father whose share of those with a higher qualification is exceptionally low, at only 22 percent.

Except for individuals who grew up with a single Chinese mother, those whose mother or father is a single parent have lower proportions of individuals with a higher qualification. Among single parents, the proportion achieving a higher qualification varies with ethnic group but the distribution is rather similar between single father and single mother.

Roughly speaking, mixed ethnic individuals with one parent from South Asian ethnic origins have more similar educational outcomes to their ethnic minority peers

than to the white peers. Mixed Black-White individuals, on the other hand, exhibit diversified educational outcomes whereby the educational attainment varies with the gender and ethnicity of their ethnic parents. There seems to be no clear pattern to which category (whites, ethnic minorities, or in-between) the educational attainment of mixed ethnic individuals resembles.

Although the descriptive results provide a useful overview of the distribution of educational attainment according to parents' ethnic origins, parental demographic, human capital and socioeconomic characteristics are not taken into account. It is important to consider parental characteristics other than ethnicity because a previous study has found that those who are intermarried are selected individuals (Muttarak and Heath, forthcoming). For South Asians, the likelihood of intermarriage is the highest among those with a high qualification while for Blacks, those with no/low qualifications are more likely to intermarry. The socioeconomic characteristics of the intermarried parents therefore might explain why mixed White-Indian have more favourable educational outcomes while mixed White-Black Caribbeans have poorer educational outcomes than their ethnic minority counterparts.

In the next section, multinomial logistic regression is employed to assess the effect of parents' ethnicity on children's educational outcomes controlling for demographic and socioeconomic characteristics of the parents.

Model specification

Multinomial logistic regression is suitable for our research purpose because it is a technique commonly used when the dependent variable is categorical. The models assume that the response counts for the categories of a dependent variable have a multinomial distribution. In this study, educational qualification is a response variable

with $J=3$ categories. The equation of educational attainment for an individual i obtaining qualification j can be written as:

$$Y_{ij} = \beta' X_{ij} + \varepsilon_{ij}$$

where X_i represents a vector of covariates, such as demographic characteristics and parental socioeconomic background, which determine an individual's educational outcome. When there are J educational categories, the probability of attaining k educational qualification is

$$Prob(j = k) = Prob(Y_k > Y_j \text{ for all } j \neq k).$$

Multinomial logit models simultaneously refer to all pairs of categories and describe the probabilities of attaining one category instead of another. The dependent variable in our analysis is the level of educational qualification which is defined as follows:

- No or low qualification ($j = 1$)
- Intermediate qualification ($j = 2$)
- Higher qualification ($j = 3$)

In multinomial logit models, we assume that all ε_{ij} of the J categories are independent and identically distributed with the Weibull distribution (McFadden, 1973). Y is the probability of attaining a particular educational qualification relative to a base category. The models are estimated by maximum likelihood methods. Intermediate qualification is chosen as the reference category.

Explanatory Variables

The key interest is to assess the influence of parents' marriage patterns on children's educational attainment controlling for demographic and parental socioeconomic background. The covariates to be added in the multinomial logistic regression models are described below:

Parents' marriage pattern is a combination of fathers' and mothers' ethnicity in 1991. Ethnicity is divided into seven categories: White, Black-Caribbean, Black African & Black Other, Indian, Pakistani & Bangladeshi, Chinese and Other ethnic. Mother and father are paired up and identified whether the union is coethnic married, intermarried or a single parent. Ethnicity of children is identified by parents' unions. Children belong to monoethnic groups when the union is coethnic and mixed groups when the union is interethnic⁶.

Parental socioeconomic status is measured by parents' education, occupational status and housing tenure in 1991. Parents' education refers to parents' highest educational qualification which are divided into three categories: degree, subdegree and no/other qualification⁷. Parents' occupational status is based on National Statistics Socio-economic Classification (NS-SEC) which is classified into four hierarchical categories: professional & managerial occupation, intermediate occupation, routine & manual occupations and never worked & long-term unemployed. Housing tenure is grouped into four categories: owner occupation, council housing, private rented and other type of housing.

Parent's highest educational qualification and occupational status are allocated using the 'dominance approach' (Goldthorpe, 1987). Where two parents were present and held different educational qualifications, the higher of the two is allocated as the parental highest educational qualification. Similarly, this dominance approach is also applied when allocating parental occupational status.

⁶ We have also run a model where mixed ethnic children are identified according to parental ethnicity and gender to test whether there is any additional difference in educational outcomes due to the genders of the parent. This model does not fit the data better and has problem of low number of observations in some groups. We therefore decided to focus only on ethnicity of the parents regardless of the gender.

⁷ It should be noted that the 1991 Census records limited details of educational qualifications. Only the information about higher qualifications obtained after the age of eighteen was collected. Therefore, information about qualifications such as GCSE, 'A' level or vocational qualification is not available. We could only distinguish between 'degree' and 'subdegree' qualification while the rest includes all individuals with other/ no qualification or missing information on qualification.

Immigrant status refers to parents' generation. Parents who were born abroad are classified as 'first generation'. Parents who were born in the UK are classified as 'second generation'. The dummy variables for generation are created separately for a mother and a father.

Demographic characteristics include age and gender. Age in 2001 and its quadratic term are treated as continuous variables. A dummy variable of being a woman is also included.

Geographic characteristics are measured by region of residence and ward ethnic composition. Region of residence is divided into five categories: North, Midlands, London, South and Wales. Ward ethnic composition refers to the percentages of each major ethnic group in a ward of residence in 1991. Its quadratic term is also included.

Empirical results

Tables 4 and 5 present the estimated parameters for the log odds of attaining no/low qualifications and higher qualifications rather than intermediate qualifications respectively.

In Table 4, Model 1 shows the net effects of parents' ethnicity on the likelihood of attaining no/low qualification controlling for demographic characteristics. Women are significantly less likely to have no/low qualification than men. All ethnic groups, both mixed ethnic and non-mixed ethnic alike, appear to have similar chances of attaining no/low qualifications to whites. For most groups, the sign of the coefficients for mixed ethnic groups corresponds with that of non-mixed ethnic groups. For example, although not statistically significant, non-mixed Chinese seem to have lower propensity to attain no/low qualification than whites and so do mixed White-Chinese.

Table 4: Multinomial Logistic Regression Predicting Educational Attainment of Individuals Aged 22- 28 Years Old (Log Odds of Attaining No/Low Qualifications)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	s.e		s.e		s.e		s.e		s.e	
<i>Ethnicity (base White)</i>										
Black Caribbean	-0.46	0.29	<i>-0.49</i>	0.29	-0.61	0.29	-0.80	0.30	-0.53	0.32
Black African/ Black Other	-0.44	0.52	-0.39	0.52	-0.53	0.52	-0.55	0.48	-0.26	0.50
Indian	-0.05	0.13	-0.13	0.13	-0.30	0.13	-0.23	0.15	0.09	0.18
Pakistani/ Bangladeshi	0.41	0.15	0.32	0.15	-0.02	0.15	-0.12	0.17	0.19	0.20
Chinese	-0.45	0.50	-0.52	0.50	-0.52	0.51	-0.56	0.53	-0.23	0.54
Other Ethnic	-0.50	0.34	-0.55	0.34	<i>-0.63</i>	0.34	-0.70	0.35	-0.42	0.37
Mixed Ethnic-Ethnic	0.35	0.53	0.36	0.53	0.41	0.53	0.33	0.54	0.63	0.56
Mixed White-Black Caribbean	-0.08	0.36	-0.11	0.35	-0.18	0.34	-0.31	0.36	-0.20	0.37
Mixed White Black African	0.04	0.50	0.22	0.52	0.08	0.53	0.03	0.53	0.04	0.58
Mixed White-Indian	-0.06	0.51	0.08	0.51	0.11	0.47	0.06	0.50	0.22	0.51
Mixed White-Pakistani & Bangladeshi	0.53	0.68	0.58	0.69	0.54	0.65	0.53	0.67	0.69	0.66
Mixed White-Chinese	-0.73	0.87	-0.70	0.86	-0.62	0.83	-0.54	0.86	-0.39	0.84
Mixed White-Other ethnic	-0.02	0.28	0.11	0.28	0.14	0.28	0.16	0.28	0.21	0.29
White single father	0.51	0.07	0.47	0.07	0.32	0.07	0.26	0.07	0.50	0.11
Non-white single father	0.10	0.34	0.04	0.35	-0.31	0.35	-0.33	0.37	0.03	0.38
White single mother	0.37	0.04	0.31	0.04	-0.002	0.04	-0.10	0.04	0.02	0.10
Non-white single mother	0.05	0.15	-0.02	0.15	-0.43	0.16	-0.63	0.17	-0.46	0.20
Woman	-0.29	0.03	-0.30	0.03	-0.32	0.03	-0.33	0.03	-0.33	0.03
Age	0.28	0.20	0.28	0.20	0.24	0.20	0.22	0.20	0.23	0.20
Age squared	-0.003	0.004	-0.003	0.004	-0.002	0.004	-0.002	0.004	-0.002	0.004
<i>Parent's education (base Degree qualification)</i>										
No/Other qualification			1.27	0.09	0.88	0.09	0.80	0.09	0.80	0.09
Subdegree qualification			0.54	0.10	0.49	0.10	0.46	0.10	0.46	0.10
<i>Parent's occupation (base Professional/Managerial)</i>										
Unemployed/ Economically inactive					1.24	0.07	0.90	0.07	0.91	0.07
Routine					0.68	0.04	0.53	0.04	0.53	0.04
Intermediate					0.29	0.04	0.27	0.04	0.28	0.04
<i>Housing Tenure 1991 (base Own house)</i>										
Private rent							0.11	0.09	0.11	0.09
Council house							0.64	0.04	0.63	0.04
Other housing tenure							0.37	0.07	0.36	0.07
<i>Ethnic composition in ward</i>										
Percent White							-0.13	0.22	-0.11	0.22
Percent White squared							0.01	0.01	0.01	0.01
Percent Black							0.50	0.15	0.51	0.15
Percent Black squared							-0.10	0.05	-0.10	0.05
Percent Indian							0.15	0.11	0.16	0.11
Percent Indian squared							-0.03	0.02	-0.03	0.02
Percent Pakistani							0.20	0.13	0.20	0.13
Percent Pakistani squared							-0.02	0.03	-0.02	0.03
Percent Bangladeshi							0.21	0.19	0.22	0.19
Percent Bangladeshi squared							-0.05	0.04	-0.05	0.04
Percent Chinese							-0.73	0.40	-0.66	0.40
Percent Chinese squared							0.41	0.42	0.39	0.41
White father born in UK									0.12	0.09
Ethnic father born in UK									-0.20	0.33
White mother born in UK									0.24	0.09
Ethnic mother born in UK									0.67	0.25
Constant	-5.16	2.48	-6.32	2.49	-5.90	2.51	-4.32	2.92	-4.85	2.92
N					30,445					
Log-likelihood (df)	-32640.209 (40)		-30569.914 (44)		-29958.154 (50)		-29473.551 (88)		-29445.167 (96)	

Source: ONS Longitudinal Study

Note: Statistically significant results at at least the .05 level and .10 level are highlighted in bold and italicized respectively.

Table 5: Multinomial Logistic Regression Predicting Educational Attainment of Individuals Aged 22- 28 Years Old (Log Odds of Attaining High Qualifications)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	s.e		s.e		s.e		s.e		s.e	
<i>Ethnicity (base White)</i>										
Black Caribbean	0.37	0.23	0.54	0.24	0.64	0.24	0.65	0.25	0.25	0.27
Black African/ Black Other	0.61	0.38	0.44	0.43	0.45	0.45	0.43	0.46	0.06	0.47
Indian	0.90	0.10	1.19	0.11	1.34	0.11	1.46	0.13	1.05	0.16
Pakistani/ Bangladeshi	0.40	0.14	0.73	0.15	0.97	0.15	1.01	0.17	0.60	0.19
Chinese	1.54	0.32	1.86	0.33	1.88	0.33	1.90	0.33	1.49	0.35
Other Ethnic	0.78	0.25	0.95	0.26	1.02	0.27	1.00	0.28	0.63	0.30
Mixed Ethnic-Ethnic	1.37	0.43	1.33	0.46	1.28	0.48	1.44	0.49	1.03	0.50
Mixed White-Black Caribbean	0.03	0.35	0.07	0.38	0.10	0.38	0.17	0.39	-0.04	0.39
Mixed White Black African	-0.27	0.53	-0.78	0.54	-0.77	0.55	-0.78	0.53	-0.98	0.56
Mixed White-Indian	1.06	0.39	<i>0.68</i>	0.40	0.64	0.40	<i>0.69</i>	0.40	0.47	0.40
Mixed White-Pakistani & Bangladeshi	1.30	0.60	1.12	0.71	1.15	0.72	1.18	0.74	0.88	0.74
Mixed White-Chinese	0.24	0.65	0.03	0.80	0.05	0.76	0.00	0.74	-0.24	0.72
Mixed White-Other ethnic	0.37	0.25	0.02	0.29	0.02	0.29	0.02	0.29	-0.19	0.30
White single father	-0.43	0.09	-0.23	0.10	-0.14	0.10	-0.10	0.10	-0.31	0.12
Non-white single father	0.02	0.34	0.29	0.35	0.46	0.36	<i>0.62</i>	0.36	0.26	0.37
White single mother	-0.36	0.05	-0.13	0.05	0.02	0.05	<i>0.09</i>	0.05	-0.14	0.10
Non-white single mother	-0.03	0.16	0.26	0.16	0.44	0.17	0.60	0.17	0.13	0.21
Woman	-0.01	0.03	0.03	0.03	0.04	0.03	0.04	0.03	0.04	0.03
Age	1.83	0.21	1.78	0.22	1.78	0.22	1.79	0.22	1.79	0.22
Age squared	-0.03	0.004	-0.03	0.004	-0.03	0.004	-0.03	0.004	-0.03	0.004
<i>Parent's education (base Degree qualification)</i>										
No/Other qualification			-1.93	0.05	-1.63	0.05	-1.57	0.05	-1.57	0.05
Subdegree qualification			-0.87	0.06	-0.83	0.06	-0.80	0.06	-0.81	0.06
<i>Parent's occupation (base Professional/Managerial)</i>										
Unemployed/ Economically inactive					-0.69	0.09	-0.44	0.09	-0.45	0.09
Routine					-0.68	0.04	-0.57	0.04	-0.57	0.04
Intermediate					-0.25	0.04	-0.24	0.04	-0.24	0.04
<i>Housing Tenure 1991 (base Own house)</i>										
Private rent							-0.38	0.11	-0.38	0.11
Council house							-0.63	0.06	-0.63	0.06
Other housing tenure							-0.48	0.09	-0.48	0.09
<i>Ethnic composition in ward</i>										
Percent White							-0.27	0.22	-0.30	0.22
Percent White squared							0.01	0.01	0.01	0.01
Percent Black							-0.53	0.15	-0.54	0.15
Percent Black squared							0.11	0.05	0.12	0.05
Percent Indian							-0.34	0.11	-0.34	0.11
Percent Indian squared							0.01	0.02	0.01	0.02
Percent Pakistani							-0.52	0.14	-0.52	0.14
Percent Pakistani squared							0.06	0.03	0.06	0.03
Percent Bangladeshi							0.14	0.21	0.15	0.21
Percent Bangladeshi squared							-0.08	0.04	-0.08	0.04
Percent Chinese							0.94	0.38	0.87	0.38
Percent Chinese squared							-0.16	0.39	-0.15	0.39
White father born in UK									-0.24	0.09
Ethnic father born in UK									-0.54	0.37
White mother born in UK									-0.22	0.08
Ethnic mother born in UK									0.32	0.28
Constant	-24.27	2.57	-22.19	2.71	-22.20	2.73	-20.03	3.08	-19.44	3.08
N						30,445				
Log-likelihood (df)	-32640.209 (40)		-30569.914 (44)		-29958.154 (50)		-29473.551 (88)		-29445.167 (96)	

Source: ONS Longitudinal Study

Note: Statistically significant results at at least the .05 level and .10 level are highlighted in bold and italicized respectively.

Model 2 tests the hypothesis that ethnic disparity in the chance of having no/low qualification is due to differences in parents' human capital measured by parent's education. Parental education evidently has significant effects on individuals' educational achievement in the expected direction, i.e. the lower the educational qualification of the parents, the more likely that the individuals will have no/low qualification. The likelihood of having no/low qualification for children from mixed ethnic background seems to be equal to whites. The ethnic disadvantage persists in the case of Pakistani & Bangladeshi children.

Model 3 controls for parents' occupational status which proximate a family's socioeconomic resources. Here we find that adjusting for parental socioeconomic status, Black Caribbean and Indian children are significantly less likely to have no/low qualification compared to whites. Pakistanis & Bangladeshis no longer have a higher chance of having no/low qualification than whites implying that the ethnic disadvantage found in the previous models is due to differentials in parental economic background. Mixed ethnic groups exhibit no significant difference in the chance of attaining no/low qualification from whites but compared to their ethnic minority peers, they seem to be more likely to have no/low qualification.

Model 4 adjusts for geographical characteristics and housing tenure. Those who lived in a council house or other housing arrangements are more likely to have no/low qualification compared to their peers who lived in own house. Living in a ward with a high percentage of Blacks significantly increases the probability of having no/low qualification whereas living in a ward with a high proportion of Chinese reduces the likelihood of having no/low qualification at .10 level of significance.

Model 5 considers whether parental generation explains the remaining ethnic differences in educational attainment. We find that individuals whose mothers were born in the UK are significantly more likely to have no/low qualification. Controlling for parental generation, it appears that all ethnic groups, mixed ethnic and ethnic minority alike, have a similar chance of attaining no/low qualification to white children. Since our sample includes only children born in the UK, this implies that the likelihood of attaining no/low qualification of UK-born children, especially those whose mothers were also born in the UK, converges to the pattern of whites.

After controlling for parental socioeconomic and demographic characteristics, it seems there is not much ethnic differential in the likelihood of attaining no/low qualifications. Having one white parent or not does not make any difference for ethnic minority children. Parental socioeconomic characteristics, generation and geographical location explain most of the ethnic differentials in the chances of attaining no/low qualification.

Table 5 presents parameter estimates of the log odds of attaining a high qualification rather than an intermediate qualification. Model 1 indicates that men and women have similar likelihood of attaining a high qualification. Age has a significant positive curvilinear effect on the probability of attaining a high qualification. Models 2 and 3 which takes into account parental socioeconomic background, shows that parental education and occupational status have significant effects on the likelihood of attaining a higher qualification in the expected direction.

Ward ethnic composition added in model 4 has a significant influence on higher qualification attainment. The higher the proportion of Blacks, Indians and Pakistanis in the ward of residence, the lower the chance of attaining a high

qualification. In contrast, the rising number of Chinese in the ward of residence significantly increases the probability of attaining a high qualification.

Model 5 assesses the effect of parental generation. It appears that children with a white father or a white mother born in the UK are significantly less likely to achieve a higher educational qualification. There is no significant difference in the likelihood of attaining a high qualification between having an ethnic father or mother born inside or outside the UK.

We find significant ethnic differentials in the chance of attaining a high qualification even after controlling for parental socioeconomic and demographic background and geographical characteristics. Most non-mixed groups especially Indian, Pakistani & Bangladeshi and Chinese are significantly more likely than whites to attain a high qualification. Black Caribbean and Black African & Black other seem to have a similar chance of attaining a high qualification to whites especially when generation is controlled for. The educational attainment of blacks shows a converging trend towards a white pattern while South Asians and Chinese maintain their distinctive identity.

With respect to children with mixed ethnic origins, most mixed groups have a similar chance of achieving a high educational qualification to whites. Model 1 presents that mixed White-Indian or Pakistani & Bangladeshi have higher chance of achieving higher educational qualification than both whites and ethnic minority peers. But after adjusting for parents' education and occupational status in models 2 and 3, this effect disappears. We assume that the high chance of attaining a high qualification observed in the case of mixed White-Indian or Pakistani & Bangladeshi is due to the fact that most intermarried South Asians are highly educated. This human capital is then transmitted directly to their offspring.

Broadly speaking, mixed ethnic children of all ethnic groups have a fairly similar chance of attaining a high qualification to whites. This also means that they have a lower chance of attaining a high qualification compared to their ethnic minority peers. Meanwhile, children whose parents are non-white and are from different ethnic groups (mixed ethnic-ethnic) exhibit much higher chance of achieving a high qualification than whites. This implies that the educational attainment of ethnic minority children gets closer to that of whites when a white parent is present. On the other hand, the educational attainment of children who grew up in a family where both ethnic parents are present departs from that of whites substantially.

In order to make the results easier to interpret, we plot graphs of predicted values of the probability of attaining no/low, intermediate and high qualifications for each ethnic group based on the parameter estimates in model 5 in Tables 4 and 5⁸. The predicted probability is calculated for an individual aged 25 years old in 2001, living in his/her own house in 1991, living in London in 2001, parent having a degree qualification, parent being in an intermediate occupation and both mother and father being born in the UK (second generation)⁹. Whites are treated as the reference group. Figure 1 presents a gap that each ethnic group differs from whites in the probability of attaining a particular qualification¹⁰.

⁸ Predicted probabilities based on multinomial logistic regression are computed with the formula:

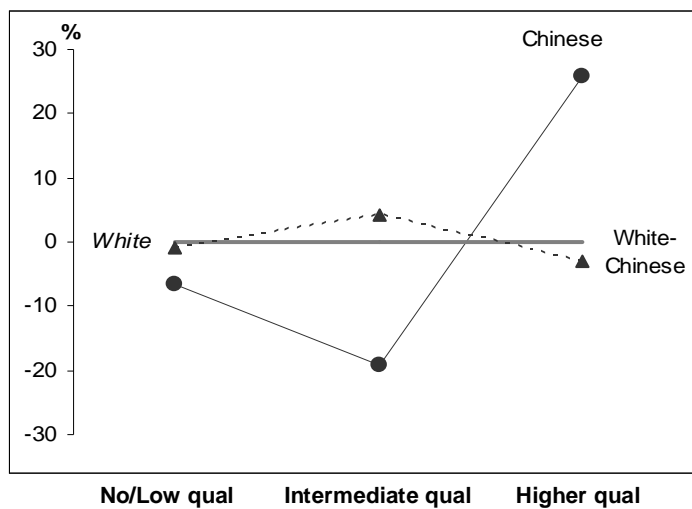
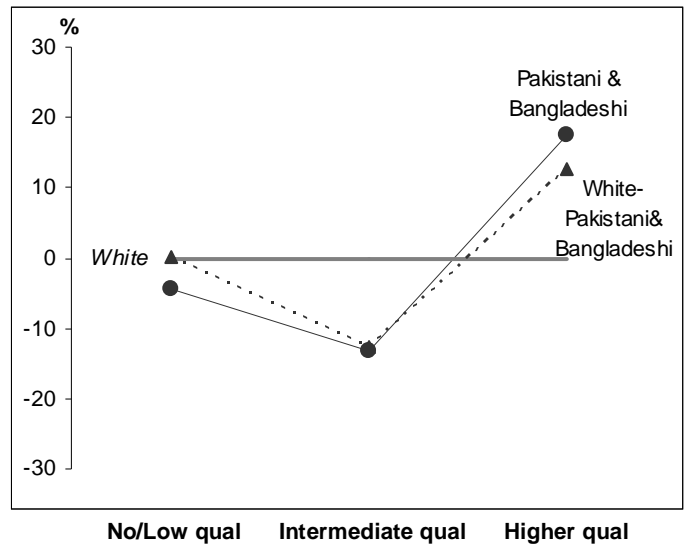
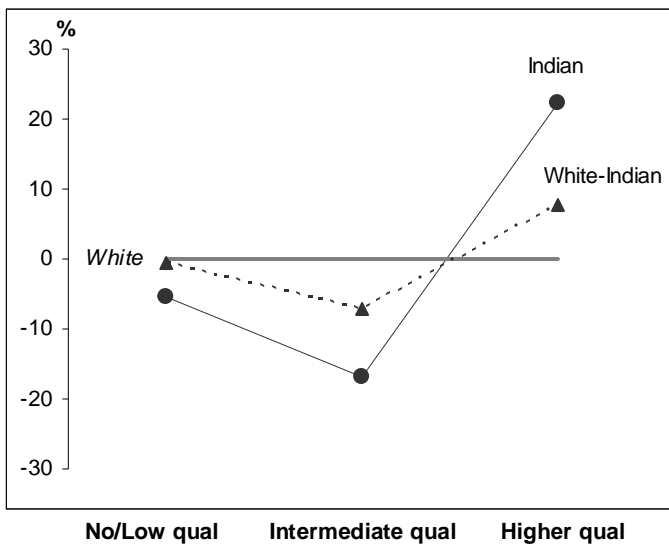
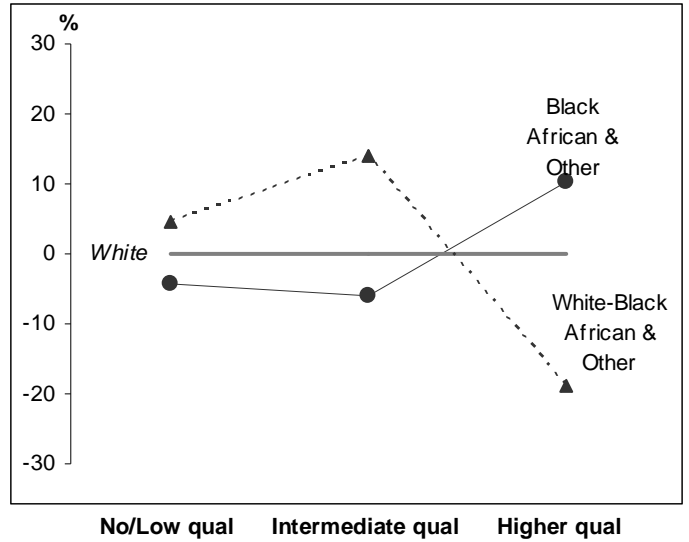
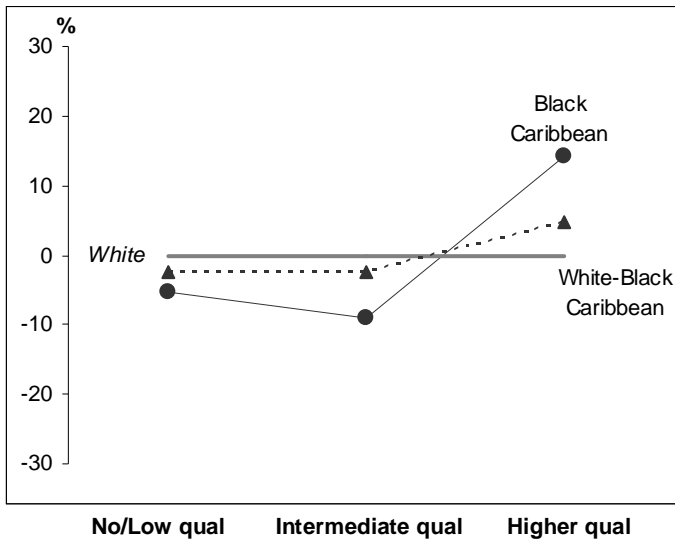
$$\pi(y = m | x) = \frac{\exp(x\beta_{mb})}{\sum_{j=1}^J \exp(x\beta_{jb})}$$

where b is a base category and m is a given category chosen to compare with b (Long and Freese, 2003:175).

⁹ The values for the variables ethnic composition in ward and the squared terms are set at the average. The predicted probabilities are computed using the postestimation command 'prvalue' in STATA 9.

¹⁰ The predicted probabilities of obtaining a particular qualification for each ethnic group are reported in Appendix A.

Figure 1: Predicted Probability of Attaining No/Low, Intermediate and Higher Qualifications for Ethnic Minority and Mixed Ethnic Children Compared to Whites



Source: ONS Longitudinal Study

Figure 1 shows that controlling for parental socioeconomic and demographic characteristics and geographical location, the distribution of the educational attainment of ethnic minorities is quite similar across ethnic groups. Compared to whites, third generation ethnic minorities are less likely to have no/low and intermediate qualifications and more likely to have high qualifications. The likelihood of achieving a high qualification is exceptionally high for South Asians and Chinese.

For all ethnic groups, mixed ethnic children appear to have poorer educational outcomes than their ethnic minority peers, i.e. higher probability of having no/low qualification and lower probability of achieving a high qualification. At the same time, this also means that they have a similar educational attainment to whites. Mixed White-Black Caribbean and mixed White-Chinese in particular exhibit almost identical pattern of educational attainment to whites. Meanwhile, the distribution of educational attainment of mixed White-Indians comes in-between that of Indians and Whites. However, the educational outcomes of mixed White-Pakistani & Bangladeshi are identical to that of Pakistanis and Bangladeshis. Mixed White-Black African & Black other appear to have the worst educational outcomes across all groups. They have poorer educational attainment than both whites and their ethnic minority counterparts.

These results can be interpreted in two dimensions. Firstly, we find that generally the educational outcomes of mixed ethnic children are poorer than that of their ethnic minority counterparts. This could mean that having multiple ethnic identities lead to disadvantages in schooling success. The educational outcomes of mixed White-Black African & Black other support this argument. However, if this is true, we should have observed much poorer educational outcomes of mixed White-Pakistanis & Bangladeshis as well but we did not.

An alternative interpretation is that the educational outcomes of mixed ethnic children tend to converge to the pattern of Whites. This is the pattern than fits most group. In Britain, it is commonly found that most minority ethnic groups have better performance than whites in school and are more likely to have a higher qualification (Craft and Craft, 1983; Modood and Acland, 1998; Modood, 2005). This could be because ethnic minority families especially South Asians and Chinese place a high value on education and they hold high aspirations for social mobility. This distinctive ethnic value is less emphasised in an interethnic family resulting in mixed ethnic children having similar educational outcomes to Whites and poorer educational attainment than ethnic minorities.

Conclusion

The empirical analysis provides answers to our hypotheses as the following:

Hypothesis 1

The human capital and social capital theories suggest that children with educated parents from middle-class background achieve better educational attainment. Our analysis of children's educational attainment supports this hypothesis. We find that mixed White-Indian and mixed White-Pakistani & Bangladeshi children have better chance of attaining high qualifications than their white and ethnic minority peers. However, this is not the case for mixed White-Black nor mixed White-Chinese children. As previously found that intermarried South Asians are predominantly those with a degree qualification, correspondingly their offspring benefit academically from the human and social capitals of the highly educated intermarried parents. After controlling for parental socioeconomic background, mixed White-South Asians no longer have a better chance of attaining high qualifications than their minority ethnic

counterparts. This implies that parental human and social capitals explain the better educational achievement of mixed White-South Asians.

Hypothesis 2

According to the ethnic capital thesis, the academic outcomes of mixed ethnic children could be either similar to whites or to minority ethnic groups or 'in-between' the two groups. Our empirical analyses show that the educational attainment of mixed ethnic individuals from most ethnic groups converges to the pattern of whites. This is the case for mixed ethnic individuals with White-Black Caribbean, White-Chinese and to a lesser extent White-Indian parents. Since ethnic minorities especially Indians and Chinese have much better educational outcomes than whites, the convergence pattern of educational attainment of mixed ethnic children means that they have poorer educational outcomes than their ethnic minority counterparts. But the converging trend also implies that mixed ethnic children are better integrated than the ethnic minorities. It is widely documented that South Asian and Chinese parents put a lot of emphasis on children's education (Taylor, 1987; Bhachu, 1985, 1991; Basit, 1997; Anwar, 1998; Pang, 1999; Ahmad, 2001; Woodrow and Sham, 2001; Francis and Archer, 2005). The presence of a white parent in the interethnic family seems to change the cultural value placed on children's education as evident in the educational attainment pattern of mixed ethnic White-Indian and White-Chinese.

The only mixed ethnic group that achieves a similar level of educational attainment to their ethnic minority peers *not to* whites like other groups is mixed White-Pakistani & Bangladeshi children. Given that the vast majority of Pakistanis & Bangladeshis are Muslim, it is possible that their White spouses are required to adopt their religious practices and social norms including the upbringing of children. Since the offspring of this union are integrated into the Muslim community, they therefore

achieve a similar pattern of educational attainment to their Pakistani & Bangladeshi peers rather than converges into the White pattern.

Hypothesis 3

Our findings do not support the ‘marginal man’ hypothesis. Although it is true that mixed ethnic children in general have poorer educational outcomes than ethnic minority children, the former do not necessarily have worse educational outcomes than white children. The argument of the marginal man thesis would be more valid if we had observed that mixed ethnic children have the worst educational outcomes across all ethnic groups. We rather see the poorer educational qualification attained as a process of integrating into the pattern of the white majority.

Meanwhile, the fact that mixed White-Black African & Black Other children have exceptionally worse educational outcomes than other groups is not negligible. It is not possible to identify from our data whether these children suffer from maladaptation due to their multiple ethnic identities which then leads to poor educational performance as claimed by psychological studies. In fact, the poorer educational outcomes of mixed White-Black African & Black Other children could be a result of the adoption of a white working class culture. It is important to delineate ‘white cultural capital’ in order to explain the educational outcomes of ethnic minorities. Modood (2004) divides white into working class and middle-class cultures. Accordingly, the educational success of members of minority ethnic groups depends on which white culture they are exposed to. White working class culture is similar to American popular culture characterised by youth culture, Hollywood, pubs, binge-drinking and those behaviours that do not emphasise the value of education. It is thus possible that the relatively poor educational outcomes of mixed White-Black African

& Black Other observed are the result of the integration into white working class culture of these children.

In addition, we find that the composition of ethnic minorities in a residential area where one grew up has a significant effect on an individual's educational attainment. Individuals who grew up in an area with a higher proportion of Chinese are likely to have better educational outcomes than those who grew up in an area with a higher proportion of Blacks. Those who lived in a residential area with a high proportion of Indians and Pakistanis are also less likely to attain a high qualification. However, it is not so clear how ethnic composition in a residential area could affect one's educational outcomes.

There is not much research done in Britain regarding the effect of ethnic composition in a residential area on children's educational success. The most similar study to ours is that of Boliver (2007) which found that the proportion of coethnic students in a school are negatively related to educational attainment for Blacks but positively related to educational achievement for Chinese. Our finding implies that neighbourhood and ethnic community can affect one's schooling success. If an interethnic family is more likely to live in a certain area (e.g. ethnically mixed residential area or white area), this can influence their children's educational outcomes possibly because of the quality of schooling or ethnic spill over effects in educational achievement. But it is beyond the scope of this study to further investigate this point.

The empirical results suggest that we cannot treat mixed ethnic individuals as a single homogenous ethnic group. There is evidence that the pattern of educational attainment of mixed ethnic individuals such as mixed White-Black Caribbean, mixed White-Chinese and mixed White-Indian converges to that of whites. However, for

some groups wherein ethnic boundary is strong such as Pakistanis & Bangladeshis, the distinctive ethnic culture remains even when the children have one white parent. This results in the difference in educational achievement from the White model.

Our study of the educational outcomes of mixed ethnic individuals does not show that those with multiple ethnic identities have the worst educational outcomes across all groups. Our findings rather suggest that mixed ethnic individuals of most ethnic groups are relatively well-integrated into the white pattern. It is beyond the scope of this study to directly assess the psychological problems or social disadvantages that may arise from having multiple ethnic identities. We need data that contains information on psychological measures, attitudes and various well-being indicators as well as has reliable measures of ethnicity. The future studies on other aspects of socioeconomic well-being would give us a further insight on the popular scholarly claim that having multiple ethnic background is problematic.

Appendix A: Predicted Probability (percent) of Attaining a Particular Qualification

Ethnic Group	Predicted Values			Whites treated as base		
	Low	Intermediate	Higher	Low	Intermediate	Higher
White	7.3	24.3	68.4	0	0	0
Black Caribbean	2.1	15.3	82.6	-5.3	-9.0	14.2
Black African & Other	3.2	18.2	78.7	-4.2	-6.1	10.3
Indian	1.8	7.5	90.7	-5.5	-16.8	22.3
Pakistani & Bangladeshi	3.0	11.1	85.9	-4.4	-13.2	17.5
Chinese	0.9	5.0	94.1	-6.5	-19.3	25.7
Mixed White-Black Caribbean	4.9	22.0	73.2	-2.5	-2.3	4.8
Mixed White Black African	12.0	38.4	49.7	4.6	14.1	-18.7
Mixed White-Indian	6.6	17.2	76.2	-0.7	-7.1	7.8
Mixed White-Pakistani & Bangladeshi	7.4	11.7	81.0	0.0	-12.6	12.6
Mixed White-Chinese	6.3	28.5	65.3	-1.0	4.2	-3.1

Source: ONS Longitudinal Study.

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