THE RESEARCH INSTITUTE OF INDUSTRIAL ECONOMICS

Working Paper No. 603, 2003

Do Oppositional Identities Reduce Employment for Ethnic Minorities?

by Harminder Battu, McDonald Mwale and Yves Zenou

IUI, The Research Institute of Industrial Economics
P.O. Box 5501
SE-114 85 Stockholm
Sweden

Do Oppositional Identities Reduce Employment for Ethnic Minorities?*

Harminder Battu[†]
University of Aberdeen

McDonald Mwale[‡]
University of Aberdeen

Yves Zenou[§]
IUI, University of Southampton and CEPR

November 27, 2003

Abstract

We develop a model in which non-white individuals are defined with respect to their social environment (family, friends, neighbors) and their attachments to their culture of origin (religion, language), and in which jobs are mainly found through social networks. We find that, depending on how strong are peer pressures, non-whites choose to adopt "oppositional" identities since some individuals may identify with the dominant culture (status seekers) and others may reject that culture (conformists), even if it implies adverse labor market outcomes. We then test this model using a unique data set that contains extensive information on various issues surrounding ethnic identity and preferences in Britain. We find that the social environment of individuals has a strong influence on their identity choice. We also find that those non-whites who have preferences that accord with being a conformist do experience an employment penalty.

Key words: Ethnic minorities, identity, social networks, white's norm.

JEL Classification: J15

*We would like to thank the seminar participants at the University of Bristol, the 18th Congress of the EEA, Stockholm, and the Tinbergen Institute, Amsterdam, for helpful comments, in particular Paul Grout, Gerard van den Berg and Thibaud Vergé. Yves Zenou thanks the Marianne and Marcus Wallenberg Foundation for financial support.

†Department of Economics, University of Aberdeen, Edward Wright Building, Dunbar Street, Old Aberdeen AB24 3QY, UK. E-mail: h.battu@abdn.ac.uk

‡Health Economics Research Unit (HERU), University of Aberdeen, Medical School, Polwarth Building, Aberdeen AB25 2ZD, UK. E-mail: m.mwale@abdn.ac.uk

§Corresponding author. Address: IUI, The Research Institute of Industrial Economics, Box 5501, 114 85 Stockholm, Sweden. E-mail: yvesz@iui.se

1 Introduction

During the spring and early summer of 2001 there were a series of violent disturbances in various cities and towns in England. As a consequence, a number of local and national enquiries were formed to investigate the causes. Though a range of potential explanations were proposed, two received considerable attention both in political circles and in the media. First, the lack of a shared civic identity to bring together diverse communities. Second, increasing segregation of communities on economic, geographic, racial and cultural lines even where this reflected individual preferences.[1]

The interest paid to these two factors is relatively novel in the UK and does represent a departure from the long-standing debate in the UK which has tended to emphasize racial discrimination as the key force in driving ethnic disadvantage (CRE, 2002). The debate in the US, at both a policy and academic level, on these types of issues is of longer standing. One theme that has emerged from the academic literature is that some individuals in ethnic groups may "choose" to adopt what are termed "oppositional" identities. Where a community or group is socially excluded from a dominant group, some individuals of that group may identify with the dominant culture and others may reject that culture.[2] This may occur even if the latter groups preferences involve a lower economic return. From the standpoint of those who choose not to take a rejectionist stance the rejectionists are making poor economic decisions; they are engaging in what might be termed self-destructive behavior. Such preferences may stem from a lack of economic opportunity, discrimination or it may stem from a desire to display greater racial or religious solidarity.

There are some indications of oppositional preferences within the United States. For African Americans, Ihlanfeldt and Scafidi (2002) evoke a wish to share culture, prejudice against whites, or expectations of unfavorable treatment by whites against non-whites in white neighborhoods. One could also think of the advantages which members of a minority group can derive from locating close to one another, thereby improving their access to 'ethnic goods' such as food, education or religious service, not to mention the ability to socially interact in their own language (Akerlof and Kranton, 2000). Other studies for the US have found that African American students in poor areas may be ambivalent about learning standard English, where this may be regarded as "acting white" and adopting mainstream identities (Wilson, 1987, Delpit, 1995, Ogbu, 1997, Austen-Smith and Fryer, 2003). Interestingly, a key result of the sociological literature is that members of the same minority group may exhibit different levels of ethnic preferences. This is confirmed by a 1992 study of non-whites in the Detroit Metropolitan Area (Bledsoe et al., 1995) which shows that non-whites

[1] For further details on these reports see Building Cohesive Communities (2001).

[2] An alternative explanation revolves around qualifications: skilled minorities could benefit more from integration than unskilled minorities (Cutler and Glaeser, 1997).

who live in predominantly non-white neighborhoods display greater solidarity than those who live in mixed neighborhoods.

In the economics literature there is no direct evidence on what drives such behavior and on the implications of such behavior for labor market outcomes. Blackaby et al. (1997) for the UK have argued that the labor market disadvantage of ethnic groups may stem from what they describe as "the cultural outlook of the minority group itself". They go further and argue that some groups may have "a taste for isolation" which limits their economic opportunities and raises their unemployment rates. The authors do not, however, conduct any formal empirical analysis to gauge the importance of these effects. Similarly Berthoud (2000) acknowledges the importance of identity related factors in his discussion of the alienation of certain groups, which he argues is a consequence and a reinforcing cause of their exclusion from employment. Again, there is no attempt to get to grips with these issues at an empirical level. Brown (2000) makes a similar argument when he argues that quantitative work has been constrained by a general failure to collect "cultural" information. There is a tendency then to use ethnic group variables as a catch-all measure for cultural differences.

In this paper, we first develop a model in which non-white individuals are defined with respect to their social environment (family, friends, neighbors) and their attachments to their culture of origin (religion, language), and in which jobs are mainly found through social networks. Non-whites must decide to totally or partially adopt the white's culture or to reject it by anticipating the implications of this choice on their labor market outcomes. Interacting with whites is beneficial because non-white workers may then benefit from the high quality of whites' social networks since the latter are not discriminated against. We found that, totally identical individuals can end up with totally different choices. Indeed, depending on how strong the peer pressure are, non-whites choose to adopt "oppositional" identities since some of them may identify with the dominant culture and others may reject that culture. We found in particular that some non-whites will totally reject the white's culture even though they know that it will sharply decrease their chance of being employed.[3]

[3] Few theoretical models have investigated the link between ethnic preferences and labor market outcomes. Akerlof (1997) discusses informally a model that has these features whereas Selod and Zenou (2002) essentially focus on the urban consequences (i.e. ghettos) of ethnic preferences. There are also some recent papers that have focussed on the links between identity and education. Akerlof and Kranton (2002) propose a theory in which a student's primary motivation is his or her identity and the quality of a school depends on how students fit in a school's social setting. In a very innovative paper, Austen-Smith and Fryer (2003) model peer pressures in education by putting forward the tension faced by individuals between signalling their type to the outside labor market and signalling their type to their peers: signals that induce high wages can be signals that induce peer rejection. One of their main results is to show that the more individuals discount the future, the more acute peer pressure becomes and the more homogemous groups are (in terms of education).

We then undertake a direct empirical investigation of the relationship between an oppositional identity and employment in the labor market. We have at our disposal a unique data set for Britain, which deliberately over-samples ethnic groups and contains extensive information on various issues surrounding ethnic identity and preferences. We examine the two main issues of the theoretical model. First, what factors might lead some to adopt or possess such an oppositional identity? Second, what are the consequences for employment and is there an employment penalty for those who possess an oppositional identity? Our results indicate that the social environment of individuals has an influence on their identity choice and that those non-whites who have preferences that accord with being oppositional are likely to experience an employment penalty.

The remainder of the paper has the following structure. In the next section, we develop the theoretical model. In section 3, our data set is described and we give some descriptive statistics. Section 4 deals with the measurement of ethnic preferences. Section 5 presents the empirical results. The final section offers a summary and suggests some further avenues of research.

2 The theoretical model

In this section, we would like to derive a simple model showing that ethnic preferences (the desire or reluctance to interact with individuals of other ethnic groups) can have strong implications in the labor market. There are two stages. In the first one, non-white individuals decide to adopt the white's norm or not anticipating the implications of this choice on their labor market outcomes. This is the second stage. Before describing each stage, we will first set out the utilities of the workers and how workers obtain a job.

2.1 Ethnic preferences and utilities

There is a finite number of non-white and white individuals which are respectively given by N_{NW} and N_W, with $N_{NW}+N_W = N$. We assume that $N_W > N_{NW}$, which is the case in most areas (cities, regions, etc.) in developed countries (especially the US and the UK). Whites and nonwhites are totally identical; they just differ by an observable trait, which is the color of their skin. We locate these individuals on a line (the social space) of length is 1. For simplicity, the white's norm is normalized to zero and all other workers (non-whites) define themselves with respect to this norm.

As we will see below, non-white workers optimally choose their "location" $0 \leq x \leq 1$ in the social space. In this line, there are two extreme locations: $x = 0$ means to totally adopt the white's norm and thus to totally reject the norm of the ethnic group the worker belongs to whereas $x = 1$ implies the contrary (to totally reject the white's norm and thus to totally adopt the norm of the ethnic group the worker belongs to). Any location's choice of $0 < x < 1$ leads to a behavior which is in between these two extremes. Thus, the larger x the more distant the worker is from the white's norm and the closer he/she is from his/her own community because the more time one spends with the white community, the less time he/she spends with his/her own community. For example, as we will see in the empirical part of this paper (see Tables 2 and 4), some ethnic minority groups living in Britain do not think themselves as British and do not want a close relative to marry a white person. These individuals have clearly chosen to be close to 1 in social space. Those who answer the opposite have chosen to be close to 0 in social space. There are also indirect ways to distance oneself from the white culture. Some ethnic minority persons think that ethnicity is important in choosing a school (Table 5) and that there should be more than half pupils of the same ethnic group in the school (Table 6). This is an indirect way to distant oneself to the white's norm since it makes the interaction with whites more difficult.

Let us now describe the preferences of whites and non-whites, who are all assumed to be risk neutral. Since whites are located at $x = 0$, the instantaneous (indirect) utility function of a white worker of employment status $j = U, E$ is given by:

$$V_{Wj} = y_j \tag{1}$$

where y_j is the exogenous income of a worker with employment status j (y_E and y_U are respectively the wage of the employed and the unemployment benefit, with $y_E > y_U > 0$).

All nonwhites are totally identical ex ante. Thus, the instantaneous (indirect) utility function for a non-white worker $i = 1, ..., N_{NW}$ of employment status $j = U, E$, and "location" $0 \leq x_i \leq 1$, is given by:

$$V_{NWj}(x_i) = y_j + e\, x_i\, \overline{x}_j \tag{2}$$

where

$$\overline{x}_j = \frac{1}{N_W - 1} \sum_{j \neq i} x_j \tag{3}$$

is the average location choice of all nonwhite workers but i. In this formulation, non-whites define themselves with respect to whites (x_i) and to their peers ($\overline{x}_j$). First, because there are cultural and sometimes language and religious differences between whites and non-whites, there is a cost for non-whites in interacting with whites. In (2), for a given $\overline{x}_j$, this cost is captured indirectly through the distance x_i in the social space. It is easy to see that when the distance to the white community increases, utility increases, reflecting the disutility of interracial contacts with white "neighbors". This is the case because some non-white workers may not "trust" people from other communities, especially whites, especially when they have been historically discriminated against (see Alesina and La Ferrara, 2002, for an interesting study on trust and racial mixing). Second, because peer pressures do matter, the utility of nonwhites positively depends on $\overline{x}_j$ the (average) choice of the other nonwhites. Indeed, for a given x_i, the more your peers choose to distant themselves from whites, the higher is your utility.[4] Take two extreme cases. If all your peers choose to totally reject whites' values, i.e. $\overline{x}_j = 1$, then your instantaneous utility is $y_j + e\,x_i$, so that only your location choice is affecting you. If, on the contrary, all your peers choose to totally adopt the white's norm, i.e. $\overline{x}_j = 0$, then your choice does not matter since your utility is just your income y_j. As a result, $0 \leq \overline{x}_j \leq 1$ and thus the choice of your peers always reduces the impact of your own choice on your utility. Of course, the magnitude of this reduction depends on e, which can thus be interpreted as the importance of peer effects and social environment: if e is very high (it could be greater than one), then peers have a strong effect on the choice of x_i. In other words, depending on its value, e can amplify or reduce the effects of the peers. There is thus a group externality that is captured by $\overline{x}_j$ since when a worker choose x_i, he/she influences the choice of his/her peers.

2.2 Social networks and the job acquisition rate

Let us now describe the way the labor market operates. Here we focus on jobs that are available to both whites and non-whites, i.e. jobs for which whites and non-whites compete for. This means that we are *not* interested in self-employment and in jobs that are only available to non-whites (because for example it implies knowing the language of the community).

At any moment of time, workers can either be employed or unemployed. We assume that changes in employment status (employment versus unemployment) are governed by a continuous-time Markov process. Firms are assumed to use "local" or informal methods so that jobs can mainly be obtained through word-of-mouth communications (for example firms do not advertize their vacancies but transmit the information about them only to their employed workers, who, in turn, give this information to their "friends"). In our framework, there is a two-stage procedure to obtain a job. First, workers must have a job contact with a firm (through their social network) and then a job match with this firm (as for example in Pissarides, 2000, ch.6). The first stage requires that unemployed workers acquire information about jobs (this process will be detailed below) in order to establish a contact. In the second stage, the match is automatically realized for whites, whereas it is realized

[4] In his study about religious groups, Berman (2000) has a similar externality. In his model, the more your peers do the same activity as you, the higher is your utility (for example, praying is much more satisfying the more participants there are). Here, what matters is the average choice of your peers rather that the number of your peers who make the same choice.

with probability $m < 1$ for any non-white worker. This is because we assume that there are two types of firms in the economy: non-discriminating firms (in proportion m) and discriminating firms (in proportion $1-m$). So when a non-white worker has a contact with a firm, this job contact is transformed into a job match only if the firm does not discriminate against non-whites. The probability $1-m$ can represent the prejudices of employers who dislike associating with non-white workers (Becker, 1957). Observe that m does not depend on x_i. This means that labor market discrimination is not affected by the norm that a non-white adopts. In other words, if a non-white chooses to totally adopt the white's culture ($x_i = 0$), he/she will be seen by a discriminatory employer exactly as any other non-white that has chosen to totally reject the white's culture ($x_i = 1$).[5]

We assume that job contacts randomly occur at an endogenous rate θ_W for whites and $\theta_i(x_i)$ for a non-white worker located at a "distance" x_i from the white's norm while the exogenous job separation rate is δ. In this context, the *job acquisition rate* (that is *the transition rate from unemployment to employment*) is the product of the *job contact rate* and the probability of a *job match*. Since whites always transform a job contact into a job match, their job acquisition rate is equal to their job contact rate θ_W. For non-whites, the job contact rate must be multiplied by m (the probability that the contacted firm is not discriminating).

Let us now determine the job contact rate for all workers. For a white worker, we have

$$\theta_W = \mu + \lambda\, s_W \tag{4}$$

whereas, for a non-white worker located at a "distance" x_i from the white's norm, it is given by:

$$\theta_{NW}(x_i) = \mu + \lambda\, s_{NW}(x_i) \tag{5}$$

where $\mu > 0$ is the common information about jobs available to anyone (independently of race or space), s_W and $s_{NW}(x_i)$ denote the local social network of respectively whites and non-white workers located at x_i, and λ is a positive parameter that measures the impact of social network on the job contact rate.

In the specification we have chosen, the job contact rate only depends on *the amount of information workers can gather about job opportunities*. Formulas (4) and (5) assume that a given level of information is available to anyone and that this level of information may be altered through social networks. In other words, besides the common knowledge factor, there is another way of learning about jobs: employed workers hear about the job on the workplace and transmit this information to their "friends".

[5] It is easy to generalize the model by having $m(x_i)$, with $0 < m(x_i) < 1$ and $m'(x_i) < 0$, so that employers discriminate more against non-whites that have chosen to distance themselves from the white's norm. However, this will complicate the analysis without changing the qualitative results of our main Proposition (Proposition 2 below) because the effects will be even stronger.

Let us now define what we mean by friends and social networks. The local connections that whites and non-whites can use to find a job are respectively measured by s_W and $s_{NW}(x_i)$, which we assume to be a positive function of that group's employment rate, i.e. respectively $1 - u_W$ and $1 - u_{NW}$. In other words, when the unemployment rate is high among a particular group, individuals of that group have few connections that can refer them to jobs and their social network is poor (Calvo-Armengol, 2003, Calvo-Armengol and Zenou, 2001, Montgomery, 1991, Mortensen and Vishwanath, 1994, Topa, 2001). This is because, in our model, only the employed can transmit information about jobs. In this respect, the employment rate measures the quality of a group's social network.

For a worker of type $k = NW, W$, the social network is given by (remember that the total population is normalized to 1):

$$s_k(x_i) = \alpha(x_i)(1 - u_W)N_W + (1 - \alpha(x_i))(1 - u_{NW})N_{NW}$$

with $\alpha(x_i) \in [0, 1]$, $\forall x_i$, and $\alpha'(x_i) < 0$. Thus, depending on his/her position x_i in the social space, each individual benefits more or less of the social networks of all the other workers.

For whites, since $x = 0$, we have:

$$s_W = \alpha(0)\,(1 - u_W)\,N_W + (1 - \alpha(0))(1 - u_{NW})N_{NW}$$

For simplicity and without loss of generality, we assume that

$$\alpha(x_i) = 1 - x_i \tag{6}$$

which implies that $\alpha(0) = 1$ and $\alpha(1) = 0$. As a result, the white's social network is given by:

$$s_W = (1 - u_W)\,N_W \tag{7}$$

which means that their social network only depends on their own employment rate.

For non-whites, the social network will partly depend on their location in the social space. Indeed, non-whites benefit from their own connections to jobs (i.e. their own employment rate) and also from part of the social network of whites. We have:

$$s_{NW}(x_i) = (1 - x_i)(1 - u_W)N_W + x_i(1 - u_{NW})N_{NW} \tag{8}$$

The following comments on (8) are in order. First, $s_{NW}(x_i)$ explicitly takes into account the underlying population shares of whites and nonwhites and thus gives a weighted average measure of social distance. Second, two different social networks affect the social network of non-white workers: the white's social network, $1 - u_W$, and the non-white's one, $1 - u_{NW}$. The relative weight of each of them strongly depends on the choice of x_i in the social space.

The general idea here is that, the more time one spends with the white community, the less time he/she spends with his/her own community. In a geographical context, this will be even more true since non-whites living in predominately non-white (white) neighborhoods will (not) interact very much with other non-whites because of the physical separation between communities. What is crucial here is that there is an externality of being "close" to whites. This externality causes the employment rate of non-whites to be positively affected by the employment rate of whites. However, depending on the value of x_i (the willingness to interact with whites or to adopt the white's culture), non-whites can benefit more or less from whites' connections to jobs.

If, as we will see below, whites have the best connections to jobs (because there are less discriminated against since most of the employers, both in the US and the UK, are whites), then equations (7) and (8) capture the fact that there is a cost (in terms of labor market outcomes) to live in a predominantly white society and not willing to adopt the white's norm.

2.3 The two-stage equilibrium

As stated above, there are two stages. In the first stage, non-white workers choose their location x in the social space (we have imposed the location $x = 0$ for whites). In the second stage, the labor market outcomes (i.e. the unemployment rate and the probability to find a job) of each white and each non-white are determined. Because of backward induction, we solve the second stage first.

We have seen that changes in the employment status of white and non-white workers are governed by a time continuous Markov process in which θ_W and $m\theta_{NW}(x)$[6] are respectively the group-specific transition rate (defined by (4) and (5)) and δ is the job destruction rate. As a result, plugging (7) in (4), the probability to find a job for whites is equal to

$$\theta_W = \mu + \lambda(1 - u_W)N_W \tag{9}$$

whereas, for non-whites, by plugging (8) in (5) and using (6), it is given by:

$$m\theta_{NW}(x) = \mu m + \lambda m \left[(1 - x)(1 - u_W)N_W + x(1 - u_{NW})N_{NW}\right] \tag{10}$$

Since each job is destroyed according to a Markov process with arrival rate δ, then the number of workers of type $k = NW, W$ who enter unemployment is $\delta(1 - u_k)N_k$ and the number who leave unemployment is $m_k\theta_k u_k N_k$, with $m_W = 1$ and $m_{NW} = m < 1$. The evolution of unemployment is thus given by the difference between these two flows,

$$\dot{(u_k N_k)} = \delta(1 - u_k)N_k - m_k\theta_k\, u_k N_k \quad , \quad k = NW, W \tag{11}$$

[6] When there is no possible confusion, we will not put the index i for x.

where $(\overset{\bullet}{u_k N_k})$ is the variation of unemployment with respect to time for workers of type k. In steady state, the level of unemployment is constant and therefore these two flows are equal (flows out of unemployment equal flows into unemployment). We thus have:

$$u_k = \frac{\delta}{\delta + m_k \theta_k} \qquad , \qquad k = NW, W \tag{12}$$

Thus, for whites, we have:

$$u_W = \frac{\delta}{\delta + \theta_W} \tag{13}$$

whereas, for non-whites with location x, we obtain:

$$u_{NW}(x) = \frac{\delta}{\delta + m\theta_{NW}(x)} \tag{14}$$

where $u_{NW}(x)$ denotes the unemployment rate of non-white workers as a function of x the location in the social space.

Lemma 1 in the Appendix shows that we have $u_W < u_{NW}$ whatever the location chosen in the first stage by non-whites. Lemma 2 in the Appendix shows that when $\mu > \lambda$, the solutions of (13) and (14) are unique, strictly positive, strictly between 0 and 1, and respectively given by (17), (18) and (19).

Let us now solve the first stage of the model. We can now calculate the expected utilities of each group. To do that, we assume perfect capital markets with a zero interest rate,[7] which enable workers to smooth their income over time as they enter and leave unemployment: workers save while employed and draw down on their savings when out of work. At any moment, the disposable income of a worker is thus equal to that worker's average income over the job cycle. Therefore, using (1), the expected utility of a white worker is equal to

$$\begin{aligned} EV_W &= (1 - u_W)V_{WE} + u_W V_{WU} \\ &= y_E - u_W(y_E - y_U) \end{aligned} \tag{15}$$

For a non-white worker i located in x_i, using (2), it is given by:

$$\begin{aligned} EV_{NW}(x_i) &= (1 - u_{NW}(x_i))V_{NWE}(x_i) + u_{NW}(x_i)V_{NWU}(x_i) \\ &= y_E + e\, x_i\, \overline{x}_j - u_{NW}(x_i)(y_E - y_U) \end{aligned} \tag{16}$$

[7] When there is a zero interest rate, workers have no intrinsic preference for the present so that they only care about the fraction of time they spend employed and unemployed. Therefore, the expected utilities are not state dependent. For example, since a white worker spends a fraction $\theta_W/(\theta_W + \delta)$ of his lifetime employed and a fraction $\delta/(\theta_W + \delta)$ unemployed, his average income is equal to $\frac{\theta_W}{\theta_W+\delta} y_E + \frac{\delta}{\theta_W+\delta} y_U$. The same analysis applies for non-whites.

where $u_{NW}(x_i)$ is determined by (14).

We focus on symmetric Nash equilibria with pure strategies. We have the following definition:

Definition 1 *A steady-state market equilibrium is a triple $(x^*_{NW}, u^*_W, u^*_{NW})$ such that, the choice of nonwhites of x in the social space is a pure strategy symmetric Nash equilibrium and such that the steady-state conditions (13) and (14) on unemployment are satisfied.*

We can now fully characterize the steady-state labor market equilibrium. We denote by $x^*_{NW} = \overline{x}^*_{NW}$ the equilibrium location choice (which is equal to the average equilibrium choice). We have a first straightforward result:

Proposition 1 *Assume $\mu > \lambda$. Then whatever the values of all other parameters, there always exists a steady-state equilibrium in which all nonwhite workers choose to totally adopt the white's norm, i.e. $x^*_{NW} = \overline{x}^*_{NW} = 0$ and are referred to as status-seekers. Their unemployment rate $u_{SS} \equiv u(0)$ is given by (18).*

Proof. The first order condition of (16) is given by:

$$\frac{\partial EV_{NW}(x_i)}{\partial x_i} = e\,\overline{x}_j - u'_{NW}(x^*_i)(y_E - y_U)$$

where $u'_{NW}(x^*_i) > 0$ (see Lemma 3 in the Appendix). Assume that $\overline{x}_j = 0$, then the best reply from i is $x^*_i = 0$ since $\frac{\partial EV_{NW}(x_i)}{\partial x_i} < 0$. Thus, all workers coordinate themselves on this equilibrium and no one has the incentive to deviate. ■

This result is very intuitive. When workers choose x_{NW} they trade off the gains (higher chance to get a job) with the costs of being close to x (depending on the choice of the others). Now, if all your peers decide to totally adopt the white's norm, it is clear that you will also make the same choice since there are only gains from it (higher chance to get a job and positive externality from the group). Let us now give our general result.

Proposition 2 *Assume $\mu > \lambda$. By using the value of $u'(0)$ and $u'(1)$ in (24) and (25), we have:*

(i) If $e/(y_E - y_U) < u'(0)$, there is a unique stable steady-state equilibrium in which all nonwhite workers choose to totally adopt the white's norm, i.e. $x^*_{NW} = 0$.

(ii) If $u'(0) < e/(y_E - y_U) < u'(1)$, there are three stable steady-state equilibria. In the first one, all nonwhite workers choose to totally adopt the white's norm, i.e. $x^*_{NW} = 0$. In the second one, all nonwhite workers choose to partially

adopt the white's norm, i.e. $0 < \underline{x}^*_{NW} < 1$ *but the value of* $\underline{x}^*_{NW}$ *is quite low. Their unemployment rate* $\underline{u}_{IN} \equiv u_{NW}(\underline{x}^*_{NW})$ *is given by (20). In the third one, all nonwhite workers choose to partially adopt the white's norm, i.e.* $0 < \overline{x}^*_{NW} < 1$ *but the value of* $\overline{x}^*_{NW}$ *is quite high:* $\underline{x}^*_{NW} < \overline{x}^*_{NW} < 1$*. Their unemployment rate* $\overline{u}_{IN} \equiv u_{NW}(\overline{x}^*_{NW})$ *is given by (20).*

(*iii*) *If* $e/(y_E - y_U) > u'(1)$*, there are three stable steady-state equilibria. In the first one, all nonwhite workers choose to totally adopt the white's norm, i.e.* $x^*_{NW} = 0$*. In the second one, all nonwhite workers choose to totally reject the white's norm, i.e.* $x^*_{NW} = 1$ *and are referred to as conformists. Their unemployment rate* $u_{CO} \equiv u(1)$ *is given by (19). In the third equilibrium, all nonwhite workers choose to partially adopt the white's norm, i.e.* $0 < \widehat{x}^*_{NW} < 1$*, with* $\underline{x}^*_{NW} < \widehat{x}^*_{NW} < \overline{x}^*_{NW}$*. Their unemployment rate* $\widehat{u}_{IN} \equiv u_{NW}(\widehat{x}^*_{NW})$ *is given by (20).*

The unemployment rate of whites u_W *is given by (17). We also have that:*

$$u_W < u_{SS} < \underline{u}_{IN} < \widehat{u}_{IN} < \overline{u}_{IN} < u_{CO}$$

Proof. See the Appendix.

This proposition shows that ex ante identical workers can end up choosing oppositional identities. However the results depend on the value of e (the intensity of peer pressure), the wage premium of being employed, $y_E - y_U$, and the marginal impact of x on the nonwhite unemployment rate $u'_{NW}(x)$. To be more precise, there are two forces that counteract each other. On the one hand, non-whites would like to reject the white's norm because it is costly to interact with whites, but, on the other, they are attracted to whites because of the positive consequences in the labor market. Now depending on the choices of the peers, one force can dominate the other.

Proposition 2, case (i), shows that if there are low peer pressures (low e) and the payoffs to interact with whites are very high (high $(y_E - y_U)u'(0)$), then all workers will choose to assimilate to the white culture $x^*_{NW} = 0$. It is clear in this case that no worker will deviate from this equilibrium because the gains are very high and there is basically no cost since the group provides very positive externalities.

At the other extreme, Proposition 2, case (iii), shows that if there are strong peer pressure and low rewards to interact with whites, then there are two other equilibria in which all workers will choose to either totally or partially reject the white's norm. This means that, even if it implies a penalty in terms of finding a job, because of strong peer pressures nonwhites reject the white's norm by choosing a x^*_{NW} different to zero. As in Akerlof (1997), we refer to the workers who choose $x^*_{NW} = 0$ as being *status-seekers* because they seek to increase their social status by interacting with whites and to the others who choose choose $x^*_{NW} = 1$ as being *conformists* because they want to conform to the norm of their own group.

Finally, in the intermediate case where peer pressures and payoffs to interact with whites have intermediate values (Proposition 2, case (*iii*)), other equilibria can emerge in which nonwhites either partially or totally adopt the white's norm. In this case, they will never totally reject the white's norm because the rewards are not too low.

An interesting result is that, even if all individuals in a community would like to reject the white's norm (i.e. $x^*_{NW} = 1$), it is *not* always an equilibrium. In fact, it has to be that peer pressures are sufficiently strong and that the rewards from interacting with whites sufficiently low (case (*iii*)). Otherwise, individuals can not coordinate themselves on this equilibrium in which everybody chooses $x^*_{NW} = 1$.

This model has some interesting implications in terms family and peer pressures as well as welfare policies in the choice of assimilating to the white's culture. In particular, there is an interesting externality generated by a non-white choosing to locate closer to the white norm. By doing so, he not only enjoys a higher probability of employment for himself, but he establishes a link between the white and non-white job networks. This has no effect on the rate of employment among whites, but will positively influence the probability of employment among non-whites. For the usual reasons, therefore, *adoption of white identities will be underprovided*. The model also suggests that, other things being equal, *government guaranteed jobs (or income) should generate higher variance in identity choices*. This is a particularly provocative result in light of the political debate concerning the possibility of "cultures" of aid dependence. Indeed, exogenous increases (decreases) in unemployment insurance should be associated with increases (decreases) in oppositional identity choices among minorities because there is less incentive to interact with whites. In particular, if the unemployment benefit y_U is very low, then there is no equilibrium in which all nonwhites totally reject the white's norm. If, on the contrary y_U is very large, then this possibility is much more likely to arise.

As stated above, language and religion are ones of the main attributes that define and differentiate status-seekers to conformists. As a result, Proposition 2 indicates that non-whites who have different language and religion than that of the majority group (whites) and are strongly attached to them (strong peer pressures) can totally reject the white's norm and are thus more likely to experience adverse labor outcomes. There is an important literature that shows that the lack of fluency in the English language has indeed adverse effects on both assimilation and labor market outcomes of non-white workers (especially immigrants). This literature begins with Chiswick (1978) and has been studied further by, among others, McManus, Gould and Welch (1983) and Borjas (1994) for the US, and Dustmann and Fabbri (2003) for the UK. Concerning religion, there is a small literature on the economic consequences of religion (see in particular Iannaccone, 1998) but, to our knowledge, not on the impact of religion on the degree of assimilation and labor market outcomes of immigrants. A notable exception is Lazear (1999) who focuses on cultural differences (religion is obviously part of the culture of people) between the minority and the majority group. He shows that individuals from minority groups are more likely to adopt the culture of the majority when the minority group accounts for a small proportion of the total population.

More generally, this model shows that, in equilibrium, whites and conformists are in general respectively the most and the least favored group in terms of labor market outcomes. Indeed, whites are not discriminated against and thus benefit from a good social network. To the contrary, conformists who all choose $x_{NW}^{*} = 1$ have a poor social network (in particular because they do not like to interact with whites) and are discriminated against. Therefore, non-white conformists have the worst labor market outcomes because unemployment is rampant and peer pressure (to conform to the community's norms and accept adverse racial preferences) has negative effects on those who are sensitive to it. These results are partly based on the fact that information about jobs can only be acquired through social networks (employed friends). In this respect, conformists are totally isolated from jobs and thus have little information on job opportunities. The situation is different for status-seekers since they are less isolated from jobs because they have contacts with whites.

Of course, we cannot rank (expected) utilities since, for example, conformists that experience high unemployment rates can be quite "happy" since they do not interact very much with whites (we cannot however compare the utilities of the different communities since individuals have different preferences). So the basic result here is that conformists that do not want to interact with whites "pay" in some sense the price of this behavior by experiencing high unemployment rates and a low probability to find a job compared to the other non-whites that are more willing to adopt the white's norm. Once again, this does not imply that they are worse off.

We would now like to test Proposition 2 using British data. Our empirical strategy is in two stages. First, by focusing on six non-white ethnic groups (Caribbean, Indian, Pakistani, African-Asian, Bangladeshi, and Chinese), we will try to decipher the factors that drive the "location" x in the social space of non-whites. In particular, we will see what factors drive non-whites to adopt oppositional identities. Second, we will test the impact of this "location" x (being a conformist or status-seeker) on the probability to be employed.

3 Data and Descriptive Statistics

The data we employ is derived from the Fourth National Survey of Ethnic Minorities (FNSEM) collected in 1993/94 by the Policy Studies Institute (PSI). This includes a standard set of variables capturing individual, demographic and job characteristics (see Modood et al. 1997 for details). It has the advantage that it over-samples ethnic minority groups and explicitly acknowledges the heterogeneity within the non-white population where the ethnic population is composed of six groups (Caribbean, Indian, Pakistani, African-Asian, Bangladeshi, and Chinese).[8]

At the heart of the data set is the 1991 Census. This was used to select the sample of ethnic minorities included in the survey. In particular, all electoral wards in England and Wales were divided into three bands (high, medium and low) according to the proportion of the population who were members of ethnic minorities.[9] Within each band a sample of wards was chosen and within each of these selected wards a sample of addresses was picked. Interviewers then visited 130,000 addresses to identify any members of the target minority groups living there who could then be interviewed.

At each household containing adults from ethnic groups, one or two were selected for interview. Where a household had more than two eligible adults, two were chosen at random. Two questionnaires were randomly assigned to the two adults selected. Though both questionnaires had the same core set of questions they did contain a different set of secondary questions. Importantly, a majority of selected individuals were interviewed by a member of their own ethnic group either in English or in their own language, thereby maximizing the response rate and reducing any potential source of bias. Interviews were successfully obtained in 3291 ethnic households with 5196 ethnic individuals. A comparison sample containing white households was also obtained generating 2867 white interviews.[10] Means and standard deviations for a range of variables are given in Table 1.

[*Insert Table* 1 *here*]

As far as we are aware there is little or no empirical work examining the effects of ethnic preferences and in particular oppositional identities on labor market outcomes. This may stem in part from a lack of data but it could also stem from a fear of treading on issues that are usually the preserve of sociologists. Nevertheless, the data set we utilize contains extensive information on various aspects

[8] For historical reasons Black Africans were not included. Furthermore, the survey only covers England and Wales.

[9] Electoral wards have been described as the geographic building blocks of the UK. There are 9,527 wards in England and Wales.

[10] The response rates were 61% for Caribbeans, 74% for Indians and African Asians, 73% for Pakistanis, 83% for Bangladeshis, 66% for Chinese and 71% for Whites.

of an individual's ethnic preferences.[11] A number of questions surrounding ethnic identity and preferences were asked of respondents including questions on identification with Britishness, identification with their own ethnic group, attitudes towards inter-marriage and preferences in terms of ethnic makeup of their own child's school. These variables are used to gauge the extent to which there exist oppositional identities amongst ethnic minorities in the UK or to put it another way an individuals location in social space (x) relative to the white majority. Other questions surrounding preferences for living in highly concentrated ethnic areas, the wearing of ethnic clothing and importance of religion were also asked but present practical (only half the ethnic sample were asked the question) and theoretical objections (the wearing of a turban by a Sikh does not necessarily represent opposition to mainstream values).

In addition gauging ethnic preferences and an individuals location in social space through subjective questions can be problematic. There is the usual issue of how reliable are individual responses and also how responses to different questions may place the same individual on quite a different position in social space relative to whites. It is also the case that individuals possess plural identities and do not just belong to just one group or community. Ethnic background then may just be one of many identities that individuals have where different identities may be invoked in particular contexts. Furthermore, identities can be chosen even when the choices are constrained and the constraints vary in strength depending on the circumstances (Sen, 2000).

In the FNSEM the importance of ethnic identification was captured by reading out two statements to interviewees:

1. In many ways, I think of myself as being British.
2. In many ways, I think of myself as [respondent's ethnic group].

Respondents were asked if they agreed or disagreed and if so, whether strongly or just a little. Table 2 and 3 summarize the responses across different ethnic groups. Both questions are essentially asking about identification with a country, with a place and its way of living and the responses do reveal the difficulty in clearly assigning our ethnic groups to different locations of the social space. Leaving aside the Chinese for a moment, it is clear that just over 55% of the remaining ethnic groups agreed that they thought of themselves as British. The group that agreed the most are the African-Asians (71%) and the group that agreed the least are the Bangladeshis (56%). The Caribbeans are the most likely to disagree (34%). Other evidence from this data set and not presented here reveals that around a quarter of British-born Caribbeans did not think of themselves as being British. This contrasts with the West Indian migrants of the 1940s and 1950s who by most accounts thought of themselves as British and often talked of coming to "the mother country" (Modood

[11] Other datasets such as the UK Labour Force Survey are seriously lacking in this respect.

et al. 1997). The Chinese in Table 1 stand out since roughly equal percentages agreed and disagreed with the notion of being British (44 and 41% respectively). At least in terms of this question the Chinese seem to sit at both extremes in terms of their location in social space.

[*Insert Tables* 2 *and* 3 *here*]

Table 3 confirms that there is a strong sense of ethnic identity amongst minority groups. Over 80% of each group either agreed strongly or agreed that they thought of themselves in terms of their own ethnic group. The figures for those who disagreed are quite small - the highest is for Caribbeans with around 10% of them not thinking of themselves as Caribbean. Therefore, whilst a significant minority disagree with the notion of being British, this is not the case when it comes to their own ethnic identity. Furthermore, the answers to the two questions reveal that there may not be a conflict in identities. For example, being British and being Bangladeshi does not compete in the minds of most respondents, suggesting that identities can indeed be multiple (Sen, 2000).

Table 4 provides some data on another dimension of identity, namely marriage and in particular attitudes to inter-marriage. Intermarriage is considered to be a measure of social assimilation and also a factor producing it (Pagnini and Morgan, 1990). On the other hand some ethnic and religious groups regard inter-ethnic marriage as a potential threat endangering and undermining ethnic identities. In the FNSEM individuals were asked "If a close relative were to marry a white person would you not mind, would you mind a little, would you mind very much?" Here significant percentages of the three South-Asian groups said they would mind very much with the greatest hostility being among the Pakistani population (37% of them say they would mind very much a mixed marriage). On this dimension significant numbers of South-Asians are conformists. A majority of the other groups said that they would not mind and amongst Caribbeans (8%), African Asians (13%) and the Chinese (7%) the percentages that would mind very much are quite small.

[*Insert Table* 4 *here*]

Tables 5 and 6 relate to an important area of controversy both in the UK and US; the role of schools in keeping different ethnic communities separate from each other. In one recently published UK report it was argued that schools dominated by one race or faith should offer at least a quarter of their places to pupils from other backgrounds (Building Cohesive Communities, 2001). At the same time the UK government is committed to the expansion of church and faith-sponsored schools. A number of questions were asked in the FNSEM to assess the relevance of ethnicity in influencing the kind of school that people wanted for their children. First, how important is ethnicity in choosing a school (Table 5)? Second, what proportion of one's ethnic group would you like in your children's school (Table 6)? In Table 5 the most common answer is that it would have no influence. In fact, it was deemed an important consideration for only a quarter of African-Asians and Indians and for around one third of Caribbean's and Bangladeshis. Only one in ten Chinese thought it important. Table 6 gives some data on the preferred proportion of one's ethnic group in a school. Of those who did have a preference 40% of Caribbeans and 38% of Pakistanis wanted a school with 50% or more from their own ethnic group. For the African Asians, Indian, Bangladeshi and Chinese groups the figures are much smaller (24%, 22%, 29% and 11% respectively).

[*Insert Tables* 5 *and* 6 *here*]

4 Measurement and Estimation

We would like now to test our theoretical model (section 2). For that, our empirical analysis focuses on whether ethnic preferences in terms of individual location in social space matters in terms of the probability of being in employment. We do not examine the effects on earnings, since the response rate for earnings in the FNSEM was poor especially for the South Asian groups. In any case, it could be argued that the most important dimension of economic disadvantage is employment and not earnings. According to Blackaby et al. (1997), "the lack of jobs is a major factor of the discriminatory process and may ultimately be more socially damaging".

To gauge the effects upon employment, we estimate a set of employment equations using probit estimation. Employment is coded unity and zero otherwise using the ILO definition. Location in social space enters our equation in two forms. First, a binary dependent variable for each of our identity related questions discussed in the previous section. In particular, the extreme values of each of the variables are coded one and are taken to encapsulate an oppositional identity (x is closer to 1) and all other responses are coded zero. For example, if an individual strongly disagrees with inter-marriage that is coded one and zero if not (Smind). Full details of the oppositional identity variables are given in Table 7. Second, we take the responses from the four variables in Table 7 (Nbrit, Oethnic, Smind and Schcon) and aggregate them. If an individual gives an extreme response for at least two of the four questions, then he/she is considered as extremely oppositional (i.e. he/she is very conformist) and the aggregate variable is coded one and zero otherwise (Opid).

[*Insert Table* 7 *here*]

In order to test the first stage of our theoretical model (what factors might lead some to adopt or possess such an oppositional identity?), we need variables that define the social environment of each individual. Language, or more exactly fluency in English captures some aspects of the family environment of each individual since individuals born in a family where both parents do not speak English are less likely to be fluent. Place of birth and years since arrival in the UK are also important indicators of the social environment of each individual, since being born and raised abroad obviously implies that individuals have had fewer contacts with the majority population. We thus include a dummy capturing language fluency (Fluent), a born in the UK dummy (UKborn), and a variable that indicate the number of years since arrival in the UK (Yrsmg). We have also two dummy variables concerning marriage: married to someone from own ethnic group (Marown) and married to someone from another ethnic group (Intmar). Being married to someone from another ethnic group may indicate greater assimilation and be seen as a step up the white social ladder. Finally, since neighbors do impact on identity choices, we introduce a dummy variable that indicates if the individual is residing in an area where more than 33% of people of the same ethnic group live (Oethcon). In particular, some minorities may choose to live within their communities in order to gain access to ethnic shops, places of worship, display greater racial or religious solidarity or in order to socially interact in ones own language. This obviously reduces contacts with whites.

A standard set of covariates are also included in the estimating equation. We have age and its square, gender, presence of children, UK and foreign qualification dummies, regional dummies, and dummy variables for local ward unemployment.

To capture the influence of spatial constraints we also included a dummy for whether the respondent has access to a private vehicle (Own car) and whether they are owner-occupiers (Owner-occupier). Having access to a private vehicle opens up the potential area of job search and improves the possibility of getting employment (Raphael and Stoll, 2001, Patacchini and Zenou, 2003). Other evidence reveals that ethnic groups in the UK are more likely to use public transport relative to whites with non-whites and the Bangladeshis having the lowest car ownership (Owen and Greene, 2000). The importance of household tenure in predicting unemployment is well established (Hughes and McCormick, 1987) and owner-occupier rates have been found to be higher for Indians relative to whites with non-white Caribbeans and Bangladeshis more likely to be renting from the social landlord sector than the private sector (DETR, 2000).[12]

The main problem here is that an individual's "location" in social space may in fact be endogenous. This we tested and found using the Smith-Blundell test of exogeneity (Smith and Blundell, 1986) that three of our identity terms were endogenous (Nbrit, Smind and Schcon). Thus, we undertake *a two-stage instrumental variable*

[12] Car ownership and housing tenure may of course be endogenous in the employment equation (Blackaby et al. 1997). Indeed, employment raises income making it easier to purchase a home and/or a private vehicle, and steady employment in a fixed location may encourage home-ownership relative to other forms of tenure.

estimation, where in the first stage we estimate a set of oppositional identity probit equations with appropriate instruments. In the second stage, we insert the predicted values into the employment probit. In particular, we estimate the following:

$$E_i = \beta' X_i + \gamma x_i + \varepsilon_i$$

$$x_i = \alpha_i Y_i + \theta Z_i + \eta_i$$

where i indexes individuals, E_i is a dummy variable capturing whether an individual works or not, X_i is a vector of demographic and human capital variables and x_i is a dummy variable indicating whether someone has an oppositional identity where this corresponds to our earlier x which captures location in social space. When $x = 1$, the individual has an extreme oppositional identity (he/she totally rejects white culture). Y_i is our vector of variables that define the social environment of each individual and the error terms ε and η are normally distributed.[13]

The preference's equation is identified with a set of appropriate instruments (Z_i). These capture the influence of prior experiences or preferences. The instruments include whether individuals have experienced racial harassment (Rharra), if they prefer a school of their own religion for their children (Schrelig), and if their parents made the decision in choosing their wife or husband (Arrmar).

To be suitable instruments, having experienced racial harassment, having had an arranged marriage and believing in single faith schools, must not affect the probability of being in employment other than through the effects of these variables on the probability of having an oppositional identity. That is the instruments must be correlated with x_i, and must be uncorrelated with ε_i. Using a likelihood ratio test, we were able to accept the null hypothesis that the instruments either individually or jointly do not have a direct impact on the probability of employment.

Throughout our estimations the sample utilized is the working age population of males (aged 16 to 64) and females (aged 16-59). Given their very small numbers in the dataset the Chinese are excluded from the analysis and the Bangladeshi and Pakistani group are combined on the basis that they are both overwhelmingly Muslim, they face similar levels of relative disadvantage in the labor market (Blackaby et al. 1999) and they emanate from rural areas in their origin country. All results reported are marginal effects.

[13] This Smith-Blundell test of exogeneity involves specifying that the exogeneity of the oppositional identity terms is under suspicion. Under the null hypothesis, all the explanatory variables are exogenous. Under the alternative hypothesis, the suspected endogenous variables are expressed as linear projections of the instruments, and the residuals from the first stage regressions are added to the model. Under the null hypothesis, these residuals should have no explanatory power. Aside from in one case (Oethnic), we can reject the exogeneity of the identity terms.

5 Empirical Results

5.1 What determines an oppositional identity?

Table 8 presents the results from our preferences' equations (first stage) that answers our first theoretical question: what factors might lead some to adopt or possess such an oppositional identity? Separate estimations are undertaken for each of the identity terms and the aggregate identity variable (Opid). All three instruments behave as expected and are jointly statistically significant at all conventional levels of significance (see likelihood ratio tests at bottom of Table 8). Interestingly, having experienced racial harassment (Rharra) leads individuals belonging to an ethnic group to strongly reject British culture and all that is associated with it (interracial marriage, school mixing, etc.), but does not strengthen their sense of belonging to their own ethnic group (Rharra has a significant effect on all identity variables but Oethnic). On the other hand, those who prefer a school of their own religion (Schrelig) are consistently more likely to be oppositional across all five regressions. Having experienced an arranged marriage (Arrmar) is positively related to an oppositional stance in three cases (Nbrit, Smind and Opid). The strongest effect is evident for Smind where those who have had an arranged marriage are more likely to strongly mind inter-marriages.

[*Insert Table* 8 *here*]

According to our theoretical model (see Proposition 2), social environment (family, friends, neighbors) and attachments to the culture of origin (religion, language) are the key variables explaining this choice. In Table 8, it is easy to see that language fluency does matter very much in choosing one's identity (i.e. x). We find that being fluent in English implies less of an oppositional identity (in four out of five identity regressions), confirming the fact that language fluency that is determined by the social environment of individuals helps individuals adopt mainstream values. The two other variables that are closely related to language fluency (UK born and years since arrival in the UK) are also significant and with the expected sign. Being UK born is associated with a less oppositional stance for three of the identity variables (Nbrit, Oethnic and Opid). As one would expect the longer an individual has been in the UK (Yrsmg), the less hostile they are to being British (Nbrit) and the less they emphasize their own ethnic group (Oethnic). The ethnic enclave's variable (Oethcon) is also significant and has the right sign. In particular, living in a high ethnic concentration area (over a third of the population in your area is from your own ethnic group) seems to reinforce any oppositional stance since this makes it more likely that individuals will strongly disagree with being British (Nbrit) and raises the probability that individuals strongly align themselves with their own ethnic group (Oethnic). Finally, being married to someone from another ethnic group (Intmar) leads individuals to choose to adopt the white's norm and, in particular, to strongly agree with being British.

The dummies for ethnic groups reveal that the African-Asians are the least oppositional (x is closer to zero) relative to the omitted category of Indians. They are less likely to strongly disagree with being British, are less likely to align themselves strongly with their own ethnic group and are less likely to strongly disagree with inter-marriages. They are closest to our conception of status seekers. The other groups are more difficult to characterize in this manner. The Bangladeshi/Pakistani ethnic group display oppositional identities on only one dimension (Schcon) and the Caribbean group displays oppositional identities on two dimensions (Nbrit and Schcon). Indeed, there is evidence from the estimates that Caribbeans are less likely to see themselves as British (the coefficient on Nbrit is positive and statistically significant). This is in contrast to the many Caribbeans who migrated to the UK in the 1940s and 1950s and who by many accounts did regard themselves as British and often spoke of coming to the "mother-country" (Modood et al. 1997). In terms of minding inter-marriages Caribbeans are less likely to be hostile. This is expected since half of the live in partners of British born Caribbean men were white females (Modood et al. 1997). Being married to a white female may then be an indicator of assimilation and could be seen as a step up the white social ladder and so be related to career aspirations (Berthoud, 2000 and Meng and Gregory, 2001). This is supported by our dummy for inter-marriage (Intmar), which is associated with less hostility to inter-marriages and the notion of being British.

5.2 What are the effects on employment?

The results from our instrumental variable employment probits are given in Table 9 (second stage). For comparison we also provide in Table 10 the non-instrumental variables estimates. As stated earlier, the identity terms capture to some extent the willingness of non-whites to interact with whites. The question then is whether there is a negative externality from not associating with the majority group in term of a loss in employment. This is indeed what is found but for only two out of four of the oppositional identity terms. *Non-whites who strongly disagree with the notion of being British are less likely to be employed (by around 7%).* This compares with a penalty of around 11% where we do not correct for the endogeneity of identity (Table 10). There is also a cost associated with being very hostile to inter-marriages; *those who strongly disagree with inter-marriages incur an employment probability penalty of around 6.5%.* Having an identity that is closely tied to ones ethnic group does not generate an employment penalty (Oethnic). Where we combine the four oppositional dummies, as in Opid, we find that having an oppositional identity does reduce the probability of being in employment by around 6%. This compares with 9% where we do not correct for the endogeneity of ethnic preferences.

[*Insert Tables* 9 *and* 10 *here*]

Let us now focus on the variables that affect the social environment of individuals. There is clearly a linguistic advantage for those who are fluent in English. This accords with other research that finds that ethnic group differences in communication styles have an important influence on the labor market success of low-income non-whites in the US (McManus, Gould and Welch, 1983; Lang, 1986; Cornell and Welch, 1996; Lazear, 1999). The positive relationship between language fluency and employment perhaps reflects improved job search strategies, an ability to convince potential employers of the value of their qualifications or the possibility that for certain jobs (e.g. in the service sector) fluency is an entry requirement (Dustmann and Fabbri, 2003).

It is also found that the longer have non-whites been in the UK, the more likely they are to work. Being resident in an ethnic enclave only matters in regression (1) where the identity term is Nbrit: living in an ethnically concentrated neighborhood is detrimental to the probability of being in employment. This is also consistent with other studies on ethnic enclaves (see in particular Edin, Fredriksson, Åslund, 2003). It could also be argued that individuals with high oppositional preferences may select into neighborhoods with higher same group concentrations. The variable Oethcon could then be considered an oppositional identity variable in itself.

A clear benefit arising from interethnic marriage is evident. In three of the regressions being married either within ones own group or outside is associated with a higher probability of being in employment relative to being single (the omitted category) and the effect is larger for those who marry out their own community (20% as opposed to 13-15%).

For the ethnic dummies we find that Bangladeshis and Pakistanis, who are both overwhelmingly Muslim, are less likely to be employed relative to Indians (the omitted category) across all regressions and this effect is strong at approximately 24%.

The coefficients on age, age-squared and children behave as expected. There is no discernible effect arising through gender. Thus separate estimates for males and females are not attempted. The presence of children reduces the probability of employment where this may stem from the disincentive effects arising through the benefit system that links benefits to family size. It has been suggested that one mechanism for overcoming disadvantage is to improve educational qualifications (Leslie and Drinkwater, 1999). Though little is happening with respect to foreign qualifications, possessing a UK degree does seem to matter. Having a UK degree raises the probability of being employed of ethnic groups in the UK by up to 25%. The lack of any effect for foreign qualifications (Fqual) may reflect some doubt amongst native employers about the quality and portability of foreign qualifications

(Friedberg, 2000).

Stronger spatial effects are apparent when examining home and vehicle ownership. Those individuals who are owner-occupiers and those who own their own car are more likely to be in employment. Car ownership for ethnic groups may be seen as ameliorating any spatial constraint thereby improving the chances of employment (Thomas, 1998). In both cases job search is less restricted raising the probability of being in work. Their local economic environment may also determine the employment position of minorities. This is captured via a set of ward level unemployment dummies. However, there is no evidence that higher local unemployment results in a lower probability of obtaining employment.[14]

6 Conclusion

This paper tries at a theoretical and empirical level to ascertain the effects of an oppositional identity amongst ethnic groups upon the probability of being employed in the labor market. In our theoretical model ethnic preferences are predicted to reduce labor market success where preferences are gauged in terms of remoteness or otherwise to white norms. Our empirical findings do indicate considerable heterogeneity in the non-white population in terms of preferences. Though the African-Asian ethnic group most clearly conforms to our theoretical notion of status seekers in the sense that they adopt less extreme oppositional preferences, the other groups are much more difficult to characterize in this manner since there are differences depending on how one measures ethnic preferences. Nevertheless, our empirical findings do suggest that extreme ethnic preferences for non-whites are related to whether they are married to someone out their own community, their fluency in the English language and whether they born in and how long they have been resident in the UK. In addition, we find clear evidence that a belief in single faith schools, an experience of racial harassment and having had an arranged marriage are associated with extreme preferences.

Though one needs to be cautious in this type of analysis, our results do reveal that there is an employment penalty associated with such extreme identities. Those with extreme preferences (the conformists) do experience a 6 to 7% lower probability of being in employment relative to those with less extreme views (the status seekers) depending on the measure we utilize. These effects are evident when we

[14] We also used the whole set of responses for each of the four identity variables to construct four ordered oppositional identity variables and one aggregate ordered oppositional variable and then ran a set of ordered probits. On the whole the results were slightly weaker but did still point to the importance of being UK born, years since migration, ethnic enclaves and intermarriage. The instruments were slightly weaker. Where we included in the employment model the ordered oppositional identity variables we found that a higher nbrit and smind reduces the probability of being in employment.

control for the endogeneity of ethnic preferences and a range of variables capturing assimilation effects. Sample size restrictions do not allow us to disentangle these effects at an individual ethnic group level but future research needs to disaggregate in this manner.

References

[1] Akerlof, G.A. (1997), "Social distance and social decisions", *Econometrica*, 65, 10005-1027.

[2] Akerlof, G.A. and R.E. Kranton (2000), "Economics and identity", *Quarterly Journal of Economics*, 115, 715-753.

[3] Akerlof, G.A. and R.E. Kranton (2002), "Identity and schooling: Some lessons for the economics of education", *Journal of Economic Literature*, 40, 1167-1201.

[4] Alesina, A. and E. La Ferrara (2001), "Who trusts others?", *Journal of Public Economics*, 85, 207-234.

[5] Austen-Smith, D. and R.J. Fryer, Jr. (2003), "The economics of acting white", Unpublished manuscript, University of Chicago.

[6] Becker, G.S. (1957), *The Economics of Discrimination*, Chicago: Chicago University Press.

[7] Berman, E. (2000), "Sect, subsidy, and sacrifice: An economist's view of ultra-orthodox jews", *Quarterly Journal of Economics*, 115, 905-953.

[8] Berthoud (2000), "Ethnic employment penalties in Britain", *Journal of Ethnic and Migration Studies*, 26, 389-416.

[9] Blackaby, D. Drinkwater, S. Leslie, D. and P. Murphy (1997), "A picture of male ad female unemployment among Britain's ethic minorities", *Scottish Journal of Political Economy*, 44, 182-197.

[10] Blackaby, D. Leslie, D. Murphy, P., N. O'Leary (1999), "Unemployment among Britain's ethnic minorities", *The Manchester School*, 67, 1-20.

[11] Bledsoe, T., Welch, S., Sigelman, L. and M. Combs (1995), "Residential context and racial solidarity among African Americans", *American Journal of Political Science*, 39, 434-458.

[12] Borjas, G.J. (1994), "The economics of immigration", *Journal of Economic Literature*, 32, 1667-1717.

[13] Brown, M.S. (2000), "Religion and economic activity in the South Asian population", *Journal of Ethnic and Migration Studies*, 23, 1035-1061.

[14] Building Cohesive Communities (2001), A Report of the Ministerial Group on Public Order and Community Cohesion.

[15] Calvo-Armengol, A. (2003), "Job contact networks", *Journal of Economic Theory*, forthcoming.

[16] Calvo-Armengol, A. and Y. Zenou (2001), "Job matching, social network and word-of-mouth communication", CEPR Discussion Paper Series 2797.

[17] Cantle Report (2001), Community Cohesion, Home Office.

[18] Chiswick, B. R. (1978), "The effect of Americanization on earnings of foreign born men", *Journal of Political Economy*, 86, 897-921.

[19] Cornell, B. and I. Welch (1996), "Culture, information, and screening discrimination", *Journal of Political Economy*, 104, 542-71.

[20] CRE (2002), Report on Racial Segregation in the North of England.

[21] Cutler, D. M. and E. L. Glaeser (1997), "Are ghettos good or bad?", *Quarterly Journal of Economics*, 112, 827-872.

[22] Delpit, L. (1995), *Other People's Children: Cultural Conflict in the Classroom*, New York: The Free Press.

[23] DETR (2000), Survey of English Housing, London: HMSO.

[24] Dustmann, C. and F. Fabbri (2003), "Language proficiency and labour market performance of immigrants in the UK", *Economic Journal*, 113, 695-717.

[25] Edin, P-A., Fredriksson, P. and O. Åslund (2003), "Ethnic enclaves and the economic success of immigrants. Evidence from a natural experiment", *Quarterly Journal of Economics*, 118, 329-357.

[26] Friedberg, R.M. (2000), "You can't take it with you? Immigrant assimilation and the portability of human capital", *Journal of Labor Economics*, 18, 221-251.

[27] Hughes, G.A. and B. McCormick (1987), "Housing markets, unemployment and labour market flexibility in the UK", *European Economic Review*, 31, 615-645.

[28] Iannaccone, L.R. (1998), "Introduction to the economics of religion", *Journal of Economic Literature*, 36, 1465-1496.

[29] Ihlanfeldt, K. and B. Scafidi (2002), "Black self-segregation as a cause of housing segregation. Evidence from the multi-city study of urban inequality", *Journal of Urban Economics*, 51, 366-390.

[30] Lang, K (1986), "A language theory of discrimination", *Quarterly Journal of Economics*, 101, 363-82.

[31] Lazear, E.P. (1999), "Culture and language", *Journal of Political Economy*, 107, S95-S126.

[32] Leslie, D. and S. Drinkwater (1999), "Staying on in full-time education: Reasons for higher participation among ethnic minority males and females", *Economica*, 66, 63-77.

[33] Loury, G.C. (1999), "Social exclusion and ethnic groups: The challenge to economics", Annual World Bank Conference on Development Economics, Washington, D.C.

[34] McManus, W.S., Gould, W. and F. Welch (1983), "Earnings of hispanic men: The role of English language proficiency", *Journal of Labor Economics*, 1, 101-130.

[35] Meng, Xin and R.G. Gregory (2001), "Intermarriage and the economic assimilation of immigrants", Unpublished manuscript, Australian National University.

[36] Modood, T. et al. (1997), *Ethnic Minorities in Britain: Diversity and Disadvantage*, London: Policy Studies Institute.

[37] Montgomery, J. (1991), "Social networks and labor-market outcomes: Toward an economic analysis", *American Economic Review*, 81, 1408-1418.

[38] Mortensen, D.T. and T. Vishwanath (1994), "Personal contacts and earnings. It is who you know!", *Labour Economics*, 1, 187-201.

[39] Ogbu, J.U. (1997), "Beyond language: ebonics, proper English and identity in a Black American speech community", Unpublished manuscript, University of California at Berkeley, Department of Anthropology.

[40] Owen, D and A. Green (2000), "Estimating commuting flows for minority groups in England and Wales", *Journal of Ethnic and Migration Studies*, 26, 581-608.

[41] Pagnini, D.L. and S.P. Morgan (1990), "Intermarriage and social distance among U.S. immigrants at the turn of the century", *American Journal of Sociology*, 96, 405-432.

[42] Patacchini, E. and Y. Zenou (2003), "Spatial mismatch, transport mode and search decisions in England", Unpublished manuscript, University of Southampton.

[43] Pissarides, C.A. (2000), *Equilibrium Unemployment Theory*, 2nd edition, Cambridge: MIT Press.

[44] Raphael, S. and M.A. Stoll (2001), "Can boosting minority car-ownership rates narrow inter-racial employment gaps?", in *The Brookings-Wharton Papers on Urban Economic Affairs*, W.G. Gale and J. Rothenberg Pack (eds.), Washington, DC: The Brookings Institution, vol. 2, 99-145.

[45] Selod, H. and Y. Zenou (2002), "Does city structure affect the labor market outcomes of black workers?", Unpublished manuscript, University of Southampton.

[46] Sen, A. (2000), *Other People*, British Academy Lecture.

[47] Smith R.J. and Blundell, RW. (1986), "An exogeneity test for a simultaneous equation tobit model with an application to labor supply", *Econometrica,* 54, 679–86.

[48] Thomas, J. (1998), "Ethnic variation in commuting propensity and unemployment spells: Some UK evidence", *Journal of Urban Economics*, 43, 385-400.

[49] Topa, G. (2001), "Social interactions, local spillovers and unemployment", *Review of Economic Studies*, 68, 261-295.

[50] Wilson, W.J. (1987), *The Truly Disadvantaged*, Chicago: Chicago University Press.

APPENDIX

Lemma 1 *Whatever the location* $0 \leq x \leq 1$ *chosen by non-whites, the unemployment rate of whites is always lower than that of non-whites, i.e.*

$$u_W < u_{NW}$$

Proof. This is obvious since all whites are located in $x = 0$ and they are not discriminated against. So even if non-whites choose the "best" location in terms of labor market outcomes, i.e. $x = 0$, they will still experience a higher unemployment rate because of labor discrimination. ■

Lemma 2 *Assume* $\mu > \lambda$*. Then*

(i) *The unemployment rate of whites is uniquely determined, strictly positive, strictly between* 0 *and* 1 *and is given by:*

$$u_W = \frac{\delta + \mu + \lambda N_W - \sqrt{(\delta + \mu + \lambda N_W)^2 - 4\lambda N_W \delta}}{2\lambda N_W} \tag{17}$$

(ii) *For non-whites, we have:*

(iia) *When* $x = 0$*, the unemployment rate of non-whites is uniquely determined, strictly positive, strictly between* 0 *and* 1 *and is given by:*

$$u(0) \equiv u_{NW}(0) = \frac{\delta}{\delta + \mu m + \lambda m\,(1 - u_W) N_W} \tag{18}$$

(iib) *When* $x = 1$*, the unemployment rate of non-whites is uniquely determined, strictly positive, strictly between* 0 *and* 1 *and is equal to:*

$$u(1) \equiv u_{NW}(1) = \frac{\delta + (\mu + \lambda N_W) m - \sqrt{\left[\delta + (\mu + \lambda N_W) m\right]^2 - 4\delta\lambda N_W m}}{2\lambda N_W m} \tag{19}$$

(iic) *When* $0 < x < 1$*, the unemployment rate of non-whites is uniquely determined, strictly positive, strictly between* 0 *and* 1 *and is given by:*

$$u_{NW}(x) = \frac{\delta + \mu m + \lambda m\left[(1 - x)\,(1 - u_W) N_W + x N_{NW}\right] - \sqrt{\Delta}}{2\lambda N_{NW} m\, x} \tag{20}$$

where

$$\Delta = \left[\delta + \mu m + \lambda m\left[(1 - x)\,(1 - u_W) N_W + x N_{NW}\right]\right]^2 - 4\delta N_{NW} \lambda m x > 0$$

Proof. (i) The unemployment rate of whites is defined by (13), which is equivalent to:

$$\lambda N_W u_W^2 - (\delta + \mu + \lambda N_W) u_W + \delta = 0 \tag{21}$$

The discriminant is $\Delta_W = (\delta + \mu + \lambda N_W)^2 - 4\lambda N_W \delta$. If $\mu > \lambda$, then $\Delta_W > 0$. We thus have two distinct roots that are given by

$$u_W = \frac{\delta + \mu + \lambda N_W \pm \sqrt{(\delta + \mu + \lambda N_W)^2 - 4\lambda N_W \delta}}{2\lambda N_W}$$

and both of them are strictly positive. Let us show that the root with the highest value is strictly greater than 1. This is equivalent to

$$\delta + \mu + \sqrt{(\delta + \mu + \lambda N_W)^2 - 4\lambda N_W \delta} > \lambda N_W$$

which is always true as soon as $\mu > \lambda$ (since $N_W < 1$). Let us show that the root with the lowest value is strictly less than 1. This is equivalent to

$$\delta + \mu - \lambda N_W < \sqrt{(\delta + \mu + \lambda N_W)^2 - 4\lambda N_W \delta}$$

or

$$4\lambda N_W \delta < (\delta + \mu + \lambda N_W)^2 - (\delta + \mu - \lambda N_W)^2$$
$$\Leftrightarrow \mu > 0$$

We have thus shown that there is a unique u_W such that $0 < u_W < 1$ and it is given by (17).

Let us now focus on u_{NW}, the unemployment rate of nonwhites, which is defined by (14). Different cases must be considered.

(iia) When $x = 0$, (14) reduces to

$$[\delta + \mu m + \lambda m(1 - u_W) N_W]\, u_{NW}(0) - \delta = 0$$

By solving these equations, we obtain

$$u_{NW}(0) = \frac{\delta}{\delta + \mu m + \lambda m(1 - u_W) N_W} > 0$$

It is obvious that $u_{NW}(0)$ is less than 1 since $\delta < \delta + \mu m + \lambda m(1 - u_W) N_W$.

We have thus shown that, when $x = 0$, there is a unique u_{NW} such that $0 < u_{NW}(0) < 1$ and it is given by (18).

(iib) When $x = 1$, (14) reduce to

$$\lambda N_{NW} m\, u_{NW}^2(1) - [\delta + (\mu + \lambda N_{NW}) m]\, u_{NW}(1) + \delta = 0$$

The discriminant is given by $\Delta_{NW}(1) = [\delta + (\mu + \lambda N_{NW}) m]^2 - 4\lambda N_W m \delta$. It is easy to verify that if $\mu > \lambda$, then $\Delta_{NW} > 0$. We thus have two distinct roots that are given by

$$u_{NW}(1) = \frac{\delta + (\mu + \lambda N_W) m \pm \sqrt{[\delta + (\mu + \lambda N_W) m]^2 - 4\lambda m \delta N_W}}{2\lambda N_W m}$$

and both of them are strictly positive. Let us show that the root with the highest value is strictly greater than 1. This is equivalent to

$$\delta+(\mu+\lambda N_W)m+\sqrt{[\delta+(\mu+\lambda N_W)m]^2-4\lambda N_W m\delta}>2\lambda N_W m$$

which is always true as soon as $\mu>\lambda$. Let us show that the root with the lowest value is strictly less than 1. This is equivalent to

$$\delta+(\mu+\lambda N_W)m-\sqrt{[\delta+(\mu+\lambda N_W)m]^2-4\lambda N_W m\delta}<2\lambda N_W m$$

or

$$(\delta+\mu m-\lambda N_W m)^2<[\delta+(\mu+\lambda N_W)m]^2-4\lambda N_W m\delta$$

$$\Leftrightarrow \mu m>0$$

We have thus shown that, when $x=1$, there is a unique u_{NW} such that $0<u_{NW}(1)<1$ and it is given by (19).

(iic) When $0<x<1$, (14) reduces to:

$$\lambda N_{NW} m x\, u_{NW}^2-[\delta+\mu m+\lambda m\,[(1-x)\,(1-u_W)N_W+xN_{NW}]]\,u_{NW}+\delta=0 \quad (22)$$

The discriminant of this equation is given by:

$$\Delta=[\delta+\mu m+\lambda m\,[(1-x)\,(1-u_W)N_W+xN_{NW}]]^2-4\delta N_{NW}\lambda m x$$

Let us check that it is positive. This is equivalent to:

$$[\delta+\mu m+\lambda m\,[(1-x)\,(1-u_W)N_W+xN_{NW}]]^2>4\delta\lambda N_{NW} m x$$

or

$$\begin{gathered}(\delta+\mu m)^2+\lambda^2m^2\,[(1-x)\,(1-u_W)N_W+xN_{NW}]^2\\ +2\,(\delta+\mu m)\,\lambda m\,[(1-x)\,(1-u_W)N_W+xN_{NW}]>4\delta\lambda N_{NW} m x\end{gathered}$$

or

$$\begin{gathered}\delta^2+\mu^2m^2+2\delta\mu m+\lambda^2m^2\,[(1-x)\,(1-u_W)N_W+xN_{NW}]^2\\ +2\mu\lambda m^2\,[(1-x)\,(1-u_W)N_W+xN_{NW}]+2\delta\lambda m\,[(1-x)\,(1-u_W)N_W]>2\delta\lambda N_{NW} m x\end{gathered}$$

$$\begin{aligned}\Leftrightarrow\quad &\delta^2+\mu^2m^2+\lambda^2m^2\,[(1-x)\,(1-u_W)N_W+xN_{NW}]^2\\ &+2\mu\lambda m^2\,[(1-x)\,(1-u_W)N_W+xN_{NW}]+2\delta\lambda m\,[(1-x)\,(1-u_W)N_W]\\ &\qquad\qquad +2\delta m\,(\mu-\lambda N_{NW}x)>0\end{aligned}$$

This last inequality is always true since $\mu>\lambda N_{NW}x$ because $N_{NW}<1$, $x<1$ and $\mu>\lambda$. Thus $\Delta>0$. As a result, we have two distinct roots that are given by:

$$u_{NW}(x)=\frac{\delta+\mu m+\lambda m\,[(1-x)\,(1-u_W)N_W+xN_{NW}]\pm\sqrt{\Delta}}{2\lambda N_{NW} m\, x}$$

and both of them are strictly positive. Let us show that the root with the highest value is strictly greater than 1. This is equivalent to

$$\delta + \mu m + \lambda m \left[(1-x)(1-u_W)N_W + xN_{NW}\right] + \sqrt{\Delta} > 2\lambda N_{NW} m\, x$$

or

$$\delta + m\left(\mu - \lambda N_{NW} x\right) + \lambda m \left[(1-x)(1-u_W)N_W\right] + \sqrt{\Delta} > 0$$

which is always true because $N_{NW} < 1$, $x < 1$ and $\mu > \lambda$. Let us now show that the root with the lowest value is strictly less than 1. We have:

$$\delta + \mu m + \lambda m \left[(1-x)(1-u_W)N_W + xN_{NW}\right] - \sqrt{\Delta} < 2\lambda N_{NW} m\, x$$

which, using the value of Δ, is equivalent to (taking the square on both sides):

$$\lambda N_{NW} m x - \delta + \sqrt{\Delta} > 0$$

Then, taking again the square on both sides gives and using the value of Δ:

$$\left[\delta + \mu m + \lambda m \left[(1-x)(1-u_W)N_W + xN_{NW}\right]\right]^2 > \delta^2 + \lambda^2 N_{NW}^2 m^2 x^2 + 2\delta\lambda N_{NW} m x$$

which is equivalent to:

$$\left[\delta + \mu m + \lambda m \left[(1-x)(1-u_W)N_W + xN_{NW}\right]\right]^2 > \left(\delta + \lambda N_{NW} m x\right)^2$$

or

$$m\left(\mu - \lambda N_{NW} x\right) + \lambda m \left[(1-x)(1-u_W)N_W + xN_{NW}\right] > 0$$

This last inequality is again always true because $N_{NW} < 1$, $x < 1$ and $\mu > \lambda$.

We have thus shown that, when $0 < x < 1$, there is a unique $u_{NW}(x)$ such that $0 < u_{NW}(x) < 1$ and it is given by (20). $\blacksquare$

Proof of Proposition 2

Before proving this proposition, we need the following three Lemmata.

Lemma 3 *Assume $\mu > \lambda$. The function $u_{NW}(x)$ is strictly increasing with x on the interval $[u(0), u(1)]$, where $0 < u(0) < 1$ and $0 < u(1) < 1$ are respectively defined by (18) and (19). More precisely, we have:*

$$\frac{\partial u_{NW}(x)}{\partial x} \equiv u'_{NW}(x) = \frac{\lambda m u_{NW}(x) \left[(1-u_W) N_W - (1-u_{NW}(x)) N_{NW} \right]}{D(x)} > 0 \tag{23}$$

where $D(x) \equiv \delta + \mu m + \lambda m \left[(1-x)(1-u_W) N_W + x N_{NW} \right] - 2\lambda N_{NW} m x\, u_{NW}(x)$.

Proof. By totally differentiating (22), we obtain (23). Furthermore, using Lemma 1 and the fact that $N_W > N_{NW}$, the numerator of (23) is clearly strictly positive. Finally, the denominator $D(x)$ of (23) can be rewritten as

$$D(x) = \delta + m\left(\mu - \lambda N_{NW} x u_{NW}(x)\right) + \lambda m (1-x)(1-u_W) N_W + \lambda N_{NW} m x \left(1-u_{NW}(x)\right)$$

Since $\mu > \lambda$, and x, N_{NW} and u_{NW} are all less than 1, then $m\left(\mu - \lambda N_{NW} x u_{NW}(x)\right) > 0$. As a result, the denominator $D(x)$ is strictly positive and $\partial u_{NW}(x)/\partial x > 0$. ■

Lemma 4 *Assume $\mu > \lambda$. Then, the function $u'_{NW}(x)$ is strictly increasing on the interval $[u'(0), u'(1)]$, where $u'(0)$ and $u'(1)$ have both finite values and are respectively given by*

$$u'(0) \equiv u'_{NW}(0) = \frac{\lambda m u(0) \left[(1-u_W) N_W - (1-u(0)) N_{NW} \right]}{\delta + \mu m + \lambda N_W m (1-u_W)} > 0 \tag{24}$$

$$u'(1) \equiv u'_{NW}(1) = \frac{\lambda m u(1) \left[(1-u_W) N_W - (1-u(1)) N_{NW} \right]}{\delta + \mu m + \lambda N_{NW} m (1-2u(1))} > 0 \tag{25}$$

where u_W, $u(0)$ and $u(1)$ are respectively defined by (17), (18) and (19).

Proof. By differentiating (23) with respect to x, we obtain:

$$\frac{\partial^2 u_{NW}(x)}{\partial x^2} \equiv u''_{NW}(x) \tag{26}$$

$$= \frac{\lambda m u' A D(x) + \lambda^2 m^2 u_{NW}(x) \left[(1-u_W) N_W - (1-u_{NW}(x)) N_{NW} \right] (A + 2N_{NW} x\, u')}{D(x)^2}$$

where $u' \equiv u'_{NW}(x)$ and

$$A \equiv \left[(1-u_W) N_W - (1-2u_{NW}(x)) N_{NW} \right] > 0$$

which is clearly strictly positive using Lemma 1 and the fact that $N_W > N_{NW}$. As a result, since $D(x) > 0$ and $u' > 0$ by Lemma 3, then $u''_{NW}(x) > 0$.

This shows that $u'_{NW}(x)$ is strictly increasing. To calculate the values of $u'(0)$ and $u'(1)$, it remains to respectively plug the value $x = 0$ and $x = 1$ in (23) and we easily obtain (24) and (25). Finally, let us show that $u'(0)$ and $u'(1)$ have both finite values. Since $u'(0) < u'(1)$, it suffices to show that $u'(1)$ is bounded above. In fact, it is easy to see that $u'(1) < 1/\left[(1-u(1))\,N_{NW}\right]$. Indeed, this rewrites

$$\frac{\lambda m u(1)\left[(1-u_W)\,N_W-(1-u(1))\,N_{NW}\right]}{\delta+\mu m+\lambda N_{NW} m(1-2u(1))} < \frac{1}{(1-u(1))\,N_{NW}}$$

or equivalently

$$\lambda m u(1)\,(1-u_W)\,N_W < \frac{\delta+\mu m-\lambda N_{NW} m u(1)}{(1-u(1))\,N_{NW}} + \lambda m + \lambda m u(1)\,(1-u(1))\,N_{NW}$$

Since $\mu > \lambda$ implies that $\mu m - \lambda N_{NW} m u(1)$, it suffices to show that

$$\lambda m u(1)\,(1-u_W)\,N_W < \lambda m$$

which is always true because $u(1)\,(1-u_W)\,N_W < 1$. This implies that $u'(1)$ has a finite value and thus both $u'(0)$ and $u'(1)$ have finite values. ■

Lemma 5 *The expected utility function $EV_{NW}(x_i)$ is strictly concave on* $[0,1]$.

Proof. The expected utility function $EV_{NW}(x_i)$ is given by:

$$EV_{NW}(x_i) = y_E + e\,x_i\overline{x}_j - u_{NW}(x_i)(y_E-y_U)$$

By differentiating twice this function, we easily obtain:

$$\frac{\partial^2 EV_{NW}(x_i)}{\partial x^2} = -u''_{NW}(x_i)(y_E-y_U) < 0$$

which is strictly negative since, in Lemma 4, we have shown that $u''_{NW}(x)$, defined by (26), is strictly positive. ■

Let us now prove Proposition 2.

The first order condition for non-whites is given by:

$$\frac{\partial EV_{NW}(x_i)}{\partial x_i} = e\,\overline{x}_j - u'_{NW}(x_i)(y_E-y_U) = 0$$

We focus on pure strategy symmetric Nash equilibria. Thus $\overline{x}_j = x_i = x^*_{NW}$. This first order condition can be written as

$$e\,x^*_{NW} - u'_{NW}(x^*_{NW})(y_E-y_U) = 0$$

We have to study this equation. Let us denote $g(x) \equiv \frac{e}{y_E - y_U}\, x$. Then this equation can be written as :

$$g(x_{NW}^*) = u'_{NW}(x_{NW}^*)$$

We know from Lemma 4 that $u'_{NW}(x)$ is strictly increasing on the interval $[u'(0), u'(1)]$, where $u'(0)$ and $u'(1)$ are both strictly positive and have finite values. Moreover, it easy to see that $g(\cdot)$ is a line with a positive slope of $\frac{e}{y_E - y_U}$ and with $g(0) = 0$ and $g(1) = \frac{e}{y_E - y_U}$.

(i) Consider first the case when $e/(y_E - y_U) < u'(0)$. Then it is clear that $u'_{NW}(x_{NW}) > g(x_{NW}), \forall x_{NW} \in [0,1]$ and thus $\partial EV_{NW}(x)/\partial x < 0$. As a result, the only possible equilibrium is when all workers choose $x_{NW}^* = 0$. It is obvious that no other equilibrium can exist since, in this case, worker i will always deviate to choose $x_{NW}^* = 0$. In this case, the unemployment rate of all non-whites (now referred to as status-seekers) is $u(0) \equiv u_{NW}(0)$ and is given by (18).

(iii) Consider now the other extreme case when $e/(y_E - y_U) > u'(1)$. From Proposition 1, we know that the equilibrium when all workers choose $x_{NW}^* = 0$ exists. There is clearly another equilibrium in which all workers choose $x_{NW}^* = 1$. Indeed, if $x_{NW}^* = 1$, then the first order condition writes: $e - u'_{NW}(1)(y_E - y_U) = 0$. Thus if $e/(y_E - y_U) \geq u'(1)$, we have that $\partial EV_{NW}(x)/\partial x > 0$, $\forall x \in [0,1]$. As a result, all workers choose $x_{NW}^* = 1$. Their unemployment rate $u(1) \equiv u_{NW}(1)$ is given by (19). Can we have another equilibrium in which $0 < x_{NW}^* < 1$? The answer is yes. Indeed, we have that $u'(0) > 0$ and that $g(1) > u'(1)$. Since the functions $g(\cdot)$ and $u'(\cdot)$ are both continuous and increasing in x, they have to intersect only once at x between 0 and 1. There is thus another equilibrium in which all workers choose a unique $0 < \widehat{x}_{NW}^* < 1$. Their unemployment rate is given by (20).

(ii) Consider the intermediate case when $u'(0) < e/(y_E - y_U) < u'(1)$. From Proposition 1, we know that the equilibrium when all workers choose $x_{NW}^* = 0$ exists. Is it possible to have an equilibrium in which all workers choose $x_{NW}^* = 1$? If this is the case, the first order condition for i is: $e - u'(1)(y_E - y_U)$, which is always negative so that the best reply for i is to choose $x_{NW}^* = 0$. Thus an equilibrium in which all workers choose $x_{NW}^* = 1$ cannot exist in this case. Consider thus symmetric equilibria in which all workers choose $0 < x_{NW}^* < 1$. Two cases may then arise. Either the curve $u'(x)$ is always above the line $g(x)$, $\forall x \in [0,1]$, and then the only equilibrium is that all workers choose $x_{NW}^* = 0$. Or the curve $u'(x)$ cuts the line $g(x)$ twice at $0 < \underline{x}_{NW}^* < 1$ and $0 < \overline{x}_{NW}^* < 1$.[15] We thus have two equilibria in which in one case all workers choose $\underline{x}_{NW}^*$ and in the other they all choose $\overline{x}_{NW}^*$. It should be clear that if all workers choose for example $\underline{x}_{NW}^*$ then this is an equilibrium since no worker will deviate because at $\underline{x}_{NW}^*$ his/her expected utility is maximum. In both equilibria, their unemployment rate is given by (20)

[15] There is also another case when the curve $u'(x)$ cuts the line $g(x)$ only once. We ignore this case since this happens on a set of measure zero.

with different values when $x = \underline{x}^*_{NW}$ and when $x = \overline{x}^*_{NW}$. It is finally easy to verify that $\widehat{x}^*_{NW}$ defined above in case (iii) is such that $\underline{x}^*_{NW} < \widehat{x}^*_{NW} < \overline{x}^*_{NW}$. ■

Let us now show that each equilibrium is stable. Basically, the only variable that is dynamic is the unemployment rate. The equation of evolution of unemployment is given by (11), which we can be written as:

$$\overset{\bullet}{u}_k = \delta(1 - u_k) - m_k \theta_k \, u_k \qquad , \qquad k = NW, W$$

By solving this differential equation, we easily obtain:

$$u(t) = \exp\left\{ - \left[\delta + m_k \theta_k\right] t \right\} + u^*_k$$

where u^*_k is the steady-state unemployment rate given by (12), i.e.

$$u_k = \frac{\delta}{\delta + m_k \theta_k} \qquad k = NW, W$$

It is easy to see that

$$\lim_{t \to +\infty} u(t) = u^*_k$$

As a result, the equation for the evolution of unemployment (11) is stable, i.e. for any given initial condition it always converges to its steady state value, and thus, for each regime, the steady-state equilibrium is also stable.

Finally, it is straightforward to see that

$$u_W < u_{SS} < \underline{u}_{IN} < \widehat{u}_{IN} < \overline{u}_{IN} < u_{CO}$$

since, by Lemma 1, the unemployment rate of whites u_W is always lower than any unemployment rate of nonwhites and the only difference between nonwhites' unemployment rates is the contact with whites through $1 - u_W$. ■

Table 1: Means and standard deviations of selected variables

Variable	Mean	Std. Dev.	Description
Emp	0.776	0.417	Employment status, 1 if employed 0 otherwise (ILO definition)
Rharra	0.131	0.338	1 if was racially harassed
Schrelig	0.167	0.373	1 if prefers own religion school for children
Arrmar	0.164	0.371	1 if had arranged marriage
Fluent	0.726	0.446	1 if speaks English fluently
UKborn	0.332	0.471	1 if born in the UK
Yrsmg	21.01	9.44	Years since migration
Oethcon	0.053	0.223	1 if living in own ethnic concentration area of 33% or more
Marown	0.673	0.469	1 if married to someone from own ethnic group
Intmar	0.053	0.210	1 if married to someone from a different ethnic group
Unmar	0.274	0.446	1 if single
Caribbean	0.296	0.457	1 if of Caribbean origin
African-Asian	0.159	0.365	1 if of African-Asian origin
Bangladeshi	0.056	0.229	1 if of Bangladeshi origin
Pakistani	0.165	0.373	1 if of Pakistani origin
Indian	0.278	0.428	1 if of Indian origin
Chinese	0.046	0.265	1 if of Chinese origin
Age	33.89	11.93	Age of respondent
Male	0.600	0.490	1 if male
Child04	0.407	0.491	Presence of children of age less than 5
Childd511	0.508	0.500	Presence of children between 5 and 11 years old
Child1215	0.328	0.469	Presence of children between 12 and 15 years old
Child16ov	0.370	0.483	Presence of children of 16 years or more
UKdegree	0.118	0.323	1 if has UK higher degree, degree, Diploma or equivalent
UKalevel	0.149	0.406	1 if has UK A-Level qualification or equivalent
UKolevel	0.255	0.498	1 if has UK O-Level qualification or equivalent
NUKqual	0.478	0.500	1 if has no UK qualifications
Fqual	0.206	0.404	1 if has any foreign qualifications
North	0.208	0.405	1 if living in north of England
Midlands	0.287	0.452	1 if living in the Midlands
South	0.505	0.500	1 if living in South or South East
Owner-occupier	0.720	0.449	1 if owner occupier
Own car	0.754	0.431	1 if owns a car
Un04	0.082	0.274	Ward unemployment rate less than 5%
Un59	0.304	0.460	Ward unemployment rate between 5 &9%
Un1014	0.229	0.420	Ward unemployment rate between 10 &14%
Un1519	0.143	0.350	Ward unemployment rate between 15 &19%
Un20m	0.242	0.428	Ward unemployment rate of 20% or more

Table 2: In many ways I think of myself as British (%)

	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese
Strongly agree	20.09	13.98	25.79	22.53	14.23	10.00
Agree	37.77	43.69	45.28	37.55	41.90	38.00
Neither	8.30	13.40	10.69	16.21	20.55	11.00
Disagree	24.02	23.30	16.04	15.22	18.58	33.00
Strongly disagree	9.83	5.63	2.20	8.50	4.74	8.00
N	458	515	318	506	253	100

Table 3: In many ways I think of myself as ....[Respondent's ethnic group] (%)

	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese
Strongly agree	49.89	39.81	43.71	44.36	49.61	53.00
Agree	34.06	47.57	42.14	41.78	44.09	40.00
Neither	6.50	7.18	8.80	9.70	2.75	1.00
Disagree	7.59	4.85	4.72	2.57	3.15	4.00
Strongly disagree	1.95	0.58	0.63	1.58	0.39	2.00
N	461	515	318	505	254	100

Table 4: If a close relative were to marry a white person (%)

	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese
Would not mind	82.43	51.87	66.25	38.61	49.60	84.69
Mind a little	6.51	10.02	11.04	11.09	9.20	6.12
Mind very much	8.24	27.89	13.56	36.83	33.20	7.14
Can't say	2.82	10.22	9.15	13.47	8.00	2.05
N	461	509	317	505	250	98

Table 5: How important is ethnicity in choosing a school? (%)

	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese
Very important	15.94	6.81	8.44	12.06	16.21	3.03
Fairly important	20.74	16.15	15.31	16.60	18.58	7.07
Not very important	16.16	13.42	10.31	15.02	16.21	15.15
No influence	44.32	57.78	59.06	47.23	38.34	73.74
Can't say	2.84	5.84	6.88	9.09	10.67	1.01
N	458	514	320	506	253	99

Table 6: What proportion of one's ethnic group would you like in your children's school? (%)

	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese
Fewer than half	16.67	11.07	14.42	9.49	14.17	23.23
About half	35.06	18.83	20.06	28.06	30.31	7.07
More than half	4.11	1.55	1.57	5.14	5.12	1.01
No preference	40.69	63.11	56.11	48.62	40.94	68.69
Can't say	3.46	5.44	7.84	8.70	9.45	0.00
N	462	515	319	506	254	99

Table 7: Oppositional identity variables

Variable	Description	Mean	Std. Dev.
Nbrit	1 if strongly disagree that in many ways I think of myself as British, 0 if neither agree or disagree, agree, disagree, strongly agree and can't say.	0.067	0.250
Oethnic	1 if strongly agree that in many ways I think of myself as being of the original ethnic group (e.g. Indian, Pakistani etc), 0 if neither agree nor disagree, agree, disagree, strongly disagree and can't say.	0.456	0.498
Smind	1 if mind very much if a relative marries a white person, 0 if does not mind, mind very little and can't say.	0.190	0.392
Schcon	1 if prefers school for children with half or more of the pupils being from his or her own ethnic group.	0.288	0.453
Opid	1 if extremely oppositional (at least two of nbrit, oethnic, smind or schch equal to one), 0 otherwise	0.0867	0.2815

Table 8: Non-white identities - probit regressions (first stage)

	Nbrit	Oethnic	Smind	Schcon	Opid
Rharra	0.046	0.006	0.122	0.060	0.056
	(2.37)*	(0.12)	(2.46)*	(1.76)+	(1.81)+
Schrelig	0.031	0.142	0.217	0.116	0.115
	(2.28)*	(3.50)**	(5.74)**	(3.22)**	(5.28)**
Arrmar	0.045	0.004	0.155	0.046	0.052
	(2.93)**	(0.10)	(4.49)**	(1.27)	(2.53)*
Fluent	-0.026	-0.135	-0.093	-0.009	-0.027
	(1.82)+	(2.92)**	(2.20)*	(0.22)	(1.98)*
UKborn	-0.048	-0.355	-0.084	-0.103	-0.084
	(3.30)**	(4.80)**	(1.16)	(1.57)	(3.30)**
Yrsmg	-0.003	-0.007	-0.012	-0.021	-0.003
	(4.02)**	(2.72)**	(0.09)	(0.67)	(2.21)*
Oethcon	0.041	0.128	0.039	0.014	0.027
	(2.44)*	(2.36)*	(0.87)	(0.30)	(1.11)
Marown	-0.010	-0.054	-0.075	-0.006	-0.020
	(0.58)	(0.94)	(1.41)	(0.11)	(0.70)
Intmar	-0.036	-0.067	-0.253	-0.097	-0.084
	(1.79)+	(0.76)	(3.63)**	(1.30)	(2.31)*
Caribbean	0.098	0.061	-0.224	0.177	0.001
	(2.70)**	(0.98)	(4.60)**	(2.98)**	(0.02)
African-Asian	-0.044	-0.094	-0.145	0.060	-0.049
	(2.02)*	(1.78)+	(3.33)**	(1.15)	(1.97)*
Bangladeshi/Pakistani	-0.004	-0.000	-0.074	0.102	0.003
	(0.33)	(0.01)	(1.96)+	(2.49)*	(0.16)
Age	-0.000	0.013	-0.010	-0.007	-0.011
	(0.08)	(0.93)	(0.76)	(0.54)	(1.65)+
Age2/100	0.002	-0.009	0.015	0.005	0.014
	(0.27)	(0.53)	(1.05)	(0.36)	(1.76)+
Male	-0.017	-0.027	-0.021	0.025	-0.012
	(1.43)	(0.73)	(0.63)	(0.78)	(0.61)
Child04	-0.022	0.005	0.018	0.037	-0.027
	(1.56)	(0.13)	(0.51)	(1.05)	(1.37)
Child511	0.011	-0.042	0.060	0.004	0.029
	(0.88)	(1.17)	(1.90)+	(0.13)	(1.68)+
Child1215	0.001	-0.037	0.009	0.030	0.026
	(0.12)	(0.97)	(0.27)	(0.89)	(1.34)
UKdegree	-0.017	-0.079	-0.097	0.160	0.004
	(0.92)	(1.17)	(1.48)	(2.42)*	(0.10)
UKalevel	-0.031	-0.019	0.164	0.016	0.011
	(1.71)+	(0.30)	(2.45)*	(0.26)	(0.28)
UKolevel	-0.025	0.023	-0.001	0.027	-0.032
	(1.54)	(0.41)	(0.02)	(0.56)	(1.19)
Fqual	0.008	-0.115	-0.061	-0.024	-0.026
	(0.59)	(2.92)**	(1.80)+	(0.67)	(1.45)
North	0.030	0.195	0.092	0.013	0.060
	(1.60)	(3.94)**	(2.02)*	(0.29)	(2.13)*
Midlands	0.027	0.048	0.034	0.042	0.036
	(1.85)+	(1.21)	(0.95)	(1.20)	(1.69)+
Owner-occupier	-0.036	-0.048	0.005	-0.081	-0.030
	(2.52)*	(1.14)	(0.12)	(2.26)*	(1.48)
Own car	0.020	0.052	-0.003	-0.060	-0.006
	(1.72)+	(1.22)	(0.08)	(1.69)+	(0.28)
Un59	0.008	-0.168	0.182	-0.011	0.011
	(0.18)	(1.63)	(2.26)*	(0.10)	(0.14)
Un1014	0.061	0.100	0.113	0.134	0.057
	(1.20)	(0.95)	(1.30)	(1.19)	(0.66)
Un1519	0.033	0.184	0.108	0.037	0.012
	(0.66)	(1.73)+	(1.22)	(0.33)	(0.17)
Un20m	0.034	0.137	0.161	0.122	0.007
	(0.75)	(1.28)	(1.78)+	(1.09)	(0.10)
Observations	942	1056	1057	1055	991
Pseudo R^2	0.2044	0.1609	0.1940	0.1665	0.1818
Unrestricted Log likelihood (φ)	-206.27	-686.60	-521.01	-578.69	-280.94
Wald χ^2(m)	88.66	80.42	212.20	93.50	114.44
Prob > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000
Restricted Log likelihood (θ)	-272.15	-815.04	-630.55	-685.84	-357.62
LR test χ^2 (3)	131.76	256.88	219.08	214.30	153.36

Robust z-statistics in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%.

Notes: LR test χ^2 (3) = 2[log L(φ) – log L(θ)]

Table 9: Employment - probit regressions (Second Stage)(correcting for endogeneity)

	(1)	(2)	(3)	(4)	(5)
Nbrit	-0.070				
	(1.89)+				
Oethnic		-0.065			
		(1.26)			
Smind			-0.064		
			(2.02)*		
Schcon				-0.049	
				(1.36)	
Opid					-0.058
					(1.99)*
Fluent	0.084	0.081	0.077	0.079	0.084
	(1.67)+	(1.86)+	(2.42)*	(2.40)*	(2.39)*
UKborn	-0.228	-0.234	-0.245	-0.237	-0.223
	(2.44)*	(1.92)+	(2.17)*	(2.04)*	(2.29)*
Yrsmg	0.012	0.009	0.007	0.007	0.009
	(2.73)**	(2.31)*	(2.40)*	(2.33)*	(2.64)**
Oethcon	-0.050	-0.059	-0.072	-0.059	-0.076
	(1.90)+	(1.57)	(1.12)	(0.92)	(1.19)
Marown	0.109	0.129	0.147	0.136	0.130
	(1.14)	(0.96)	(1.94)+	(1.76)+	(1.72)+
Intmar	0.170	0.183	0.197	0.196	0.201
	(1.43)	(1.50)	(1.91)+	(1.79)+	(2.01)*
Caribbean	-0.051	-0.053	-0.061	-0.052	-0.053
	(0.24)	(0.34)	(1.90)+	(0.36)	(1.31)
African-Asian	0.010	0.045	0.006	0.082	0.038
	(0.12)	(0.56)	(0.07)	(1.14)	(0.51)
Bangladeshi/Pakistani	-0.254	-0.266	-0.251	-0.236	-0.254
	(4.33)**	(4.47)**	(5.33)**	(3.87)**	(4.62)**
Age	0.066	0.058	0.055	0.050	0.052
	(3.79)**	(3.41)**	(3.45)**	(3.03)**	(3.30)**
Age2/100	-0.074	-0.065	-0.062	-0.060	-0.060
	(3.70)**	(3.25)**	(3.33)**	(3.10)**	(3.20)**
Male	-0.071	-0.063	-0.060	-0.064	-0.059
	(1.14)	(0.52)	(1.01)	(0.75)	(1.00)
Child04	-0.000	0.022	0.034	0.034	0.012
	(0.01)	(0.43)	(0.72)	(0.69)	(0.27)
Child511	-0.099	-0.112	-0.090	-0.116	-0.098
	(2.20)*	(2.75)**	(2.05)*	(2.75)**	(2.31)*
Child1215	-0.107	-0.104	-0.092	-0.098	-0.089
	(2.25)*	(2.14)*	(2.03)*	(1.61)	(1.98)*
UKdegree	0.225	0.221	0.234	0.253	0.238
	(2.67)**	(2.44)*	(2.90)**	(3.24)**	(3.05)**
UKalevel	0.097	0.090	0.109	0.110	0.097
	(0.90)	(1.05)	(1.37)	(1.38)	(1.23)
UKolevel	0.042	0.029	0.026	0.040	0.029
	(0.51)	(0.42)	(0.40)	(0.62)	(0.29)
Fqual	0.038	0.002	0.015	0.018	0.020
	(0.77)	(0.04)	(0.30)	(0.37)	(0.42)
North	0.111	0.114	0.119	0.113	0.117
	(2.60)**	(2.16)*	(2.75)**	(2.18)*	(2.69)**
Midlands	0.117	0.114	0.117	0.114	0.126
	(2.80)**	(2.43)*	(2.58)**	(2.53)*	(2.73)**
Owner-occupier	0.128	0.139	0.125	0.141	0.122
	(2.41)*	(3.07)**	(2.36)*	(3.24)**	(2.51)*
Own car	0.088	0.081	0.087	0.094	0.079
	(1.77)+	(1.53)	(1.84)+	(1.97)*	(1.61)
Un59	-0.055	-0.049	-0.057	-0.052	-0.058
	(0.74)	(0.22)	(0.34)	(0.74)	(0.69)
Un1014	-0.041	-0.052	-0.048	-0.031	-0.016
	(0.23)	(0.29)	(0.28)	(0.18)	(0.10)
Un1519	-0.059	-0.042	-0.047	-0.055	-0.045
	(0.34)	(0.12)	(0.10)	(0.46)	(0.27)
Un20m	-0.096	-0.118	-0.114	-0.097	-0.099
	(0.20)	(0.64)	(0.66)	(0.04)	(0.30)
Observations	705	706	706	704	703
Pseudo R^2	0.2103	0.2083	0.2110	0.2065	0.2074
Log likelihood	-348.03	-349.83	-348.62	-349.40	-348.11
Wald χ^2(m)	185.39	184.08	186.51	181.89	182.18
Prob > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000

Absolute value of z-statistics in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%.

Table 10: Employment- probit regressions (not correcting for endogeneity)

	(1)	(2)	(3)	(4)	(5)
Nbrit	-0.113				
	(1.82)+				
Oethnic		-0.008			
		(0.25)			
Smind			-0.050		
			(1.27)		
Schcon				-0.079	
				(2.18)*	
Opid					-0.090
					(1.66)+
Fluent	0.097	0.096	0.091	0.092	0.091
	(1.99)*	(1.97)*	(1.84)+	(2.01)*	(1.96)+
UKborn	-0.238	-0.234	-0.232	-0.226	-0.237
	(2.46)*	(2.43)*	(2.41)*	(2.35)*	(2.44)*
Yrsmg	-0.007	-0.007	-0.007	-0.007	-0.007
	(2.59)**	(2.47)*	(2.45)*	(2.39)*	(2.54)*
Oethcon	-0.083	-0.067	-0.073	-0.073	-0.072
	(1.57)	(1.26)	(1.39)	(1.39)	(1.35)
Marown	0.168	0.173	0.175	0.173	0.164
	(2.52)*	(2.57)*	(2.60)**	(2.59)**	(2.44)*
Intmar	0.207	0.212	0.210	0.205	0.198
	(2.81)**	(2.95)**	(2.86)**	(2.74)**	(2.63)**
Caribbean	-0.080	-0.075	-0.072	-0.081	-0.081
	(1.23)	(1.14)	(1.54)	(1.34)	(1.32)
African-Asian	0.065	0.066	0.064	0.073	0.066
	(1.04)	(1.24)	(1.01)	(1.18)	(1.05)
Bangladeshi/Pakistani	-0.238	-0.233	-0.242	-0.245	-0.237
	(5.00)**	(4.85)**	(5.04)**	(5.11)**	(4.93)**
Age	0.053	0.051	0.052	0.052	0.052
	(3.83)**	(3.63)**	(3.75)**	(3.76)**	(3.74)**
Age2/100	-0.061	-0.058	-0.059	-0.060	-0.059
	(3.65)**	(3.48)**	(3.56)**	(3.58)**	(3.55)**
Male	-0.051	-0.053	-0.052	-0.049	-0.047
	(1.05)	(1.08)	(1.05)	(0.88)	(0.95)
Child04	-0.005	-0.004	-0.004	-0.004	-0.004
	(0.11)	(0.02)	(0.01)	(0.02)	(0.03)
Child511	-0.093	-0.095	-0.093	-0.097	-0.092
	(2.50)*	(2.55)*	(2.50)*	(2.59)**	(2.46)*
Child1215	-0.087	-0.083	-0.088	-0.081	-0.086
	(2.14)*	(2.04)*	(2.18)*	(2.26)*	(2.11)*
UKdegree	0.247	0.250	0.249	0.249	0.248
	(3.80)**	(3.86)**	(3.91)**	(3.87)**	(3.81)**
UKalevel	0.061	0.069	0.068	0.065	0.066
	(0.89)	(1.01)	(1.00)	(0.96)	(0.97)
UKolevel	0.075	0.082	0.082	0.079	0.076
	(1.32)	(1.45)	(1.47)	(1.39)	(1.35)
Fqual	0.053	0.048	0.049	0.053	0.048
	(1.28)	(1.13)	(1.16)	(1.27)	(1.14)
North	0.107	0.104	0.110	0.108	0.109
	(2.34)*	(2.28)*	(2.43)*	(2.33)*	(2.40)*
Midlands	0.124	0.122	0.122	0.121	0.123
	(3.21)**	(3.19)**	(3.17)**	(3.15)**	(3.20)**
Owner-occupier	0.164	0.154	0.167	0.161	0.171
	(3.89)**	(3.94)**	(4.54)**	(3.14)**	(3.47)*
Own car	0.118	0.123	0.114	0.109	0.127
	(2.07)*	(1.83)+	(1.72)+	(1.62)	(1.89)+
Un59	-0.114	-0.112	-0.106	-0.103	-0.114
	(0.83)	(0.81)	(0.77)	(0.74)	(0.83)
Un1014	-0.054	-0.048	-0.064	-0.070	-0.056
	(0.37)	(0.33)	(0.43)	(0.50)	(0.38)
Un1519	0.017	0.015	0.008	0.003	0.012
	(0.12)	(0.10)	(0.05)	(0.02)	(0.08)
Un20m	-0.084	-0.072	-0.091	-0.093	-0.084
	(0.57)	(0.49)	(0.62)	(0.63)	(0.58)
Observations	826	827	828	827	823
Pseudo R^2	0.2134	0.2137	0.2127	0.2119	0.2120
Log likelihood	-404.68	405.42	-406.85	-407.01	-403.91
Wald χ^2(m)	167.39	170.86	168.64	169.98	164.98
Prob > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000

Robust z-statistics in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%.