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Job Contact Networks and the Ethnic Minorities

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Abstract: This paper examines the job finding methods of different ethnic groups in the UK. The theoretical framework shows that less assimilated ethnic unemployed workers are more likely to use their friends and family as their main method of search but they have less chance of finding a job using this method compared to whites and more assimilated ethnic unemployed workers that use formal job search methods (adverts, employment agencies etc.). Using data from the UK Quarterly Labour Force Survey (QLFS), we test these hypotheses. Our empirical findings are consistent with the theory since they suggest that, though networks are a popular method of finding a job for the ethnic minorities, they are not necessarily the most effective either in terms of gaining employment or in terms of the level of job achieved. However, there are important differences across ethnic groups with the Pakistani and Bangladeshi groups and those born outside the UK (the least assimilated), losing out disproportionately from using personal networks.

Keywords: Job search, networks, social capital, ethnic disadvantage.

JEL Codes: J15, J64

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1 Introduction

Individuals seek jobs using a variety of methods and the methods they use matter. These methods include the use of public employment agencies, their network of friends and family, responding to newspaper advertisements and making unsolicited approaches to employers. A number of studies for a range of countries have emphasized the popularity of using friends and family as a job search mechanism and indicate that they are an effective mechanism for obtaining job offers (Rees, 1966; Granovetter, 1974, 1995; Blau and Robins, 1990; Topa, 2000; Bentolila et. al, 2004; Wahba and Zenou, 2004). The empirical evidence reveals that around 50% of individuals obtain or hear about jobs through friends and family (Holzer 1988; Montgomery, 1991; Gregg and Wadsworth, 1996; Addison and Portugal, 2001). Such methods have the advantage that they are relatively less costly and may provide more reliable information about jobs compared to other approaches such as state employment agencies or direct approaches to firms.

Little is known, however, about the nature of job search methods across different ethnic groups and it is not clear how effective different methods are at linking job seekers to jobs for different ethnic groups. In particular, do the kinds of positive effects that have found for friends and family hold across all ethnic groups in the labor market? One reason to be sceptical is that the degree of assimilation varies considerably across ethnic groups and certain ethnic groups are generally seen as being more economically (in terms of the probability of working, expected earnings and occupational attainment), socially and spatially isolated with respect to the white majority and compared to other ethnic groups (Peach, 1996; Akerlof, 1997; Akerlof and Kranton, 2000; Battu et. al, 2003).¹ In essence, their connections may well be with their own ethnic group and the effectiveness of their ethnic connections may be diminished because of the higher incidence of unemployment amongst their own. Job seekers from these groups have fewer connections to employed individuals and so will be at a disadvantage in terms of gaining employment, since they are less likely to receive inside information about jobs and are also the least likely to be recommended by current employees to employers.²

¹In this paper we do not analyse why some ethnic workers choose to adopt or reject particular values. See Akerlof and Kranton (2000) and Battu et. al (2003) for a detailed analysis on identity choices.

²Another argument presented by Holzer (1987, 1988) is that informal methods may allow race to become more important in hiring, and so be detrimental to minorities' chances of gaining employment. Formal methods since they provide a more explicit criteria by which employers can evaluate potential employees may help Blacks obtain employment.

The empirical evidence that exists is limited and mostly for the US. Falcon and Melendez (1996) find that Latinos in Boston are more likely to use networks to gain employment relative to other job search methods. However, in an earlier study Falcon (1995) finds that Boston Latino's use of personal networks actually reduces their earnings. Green, Tigges and Browne (1999) also find an earnings penalty for Hispanics and Whites from utilising informal job searches (personal ties) as opposed to formal approaches such as replying to advertisements. In a more recent paper Mouw (2002) using longitudinal data finds that Black workers who used contacts to find employment did no worse compared to where they used formal methods. The European literature on this is practically non-existent, with little or no attention paid to the connections that ethnic individuals have or the role of connections in obtaining employment.³

This paper proposes a simple theory and tests it by examining the importance of different job search methods in determining labor market outcomes for ethnic groups in the UK. The theoretical framework shows that the less assimilated the ethnic unemployed workers are the more likely they are to use their network as their main method of search. It also shows that such networks are not always associated with a better chance of obtaining a job and in fact ethnic minorities who use mainly their friends to search for a job have less chance to find a job compared to whites and more assimilated ethnic workers that use formal search methods. We then try and test this theory in two steps. First, what job search methods do different ethnic groups utilize and do the least assimilated make greater recourse to friends and family? Second, do different methods of job search generate differential labor market outcomes and is there a penalty from using friends and family for the least assimilated? We use 12 consecutive waves of the UK Quarterly Labour Force Survey (QLFS).

The remainder of the paper has the following structure. Section 2 offers a theoretical model. Section 3 discusses our dataset and offers some descriptive statistics including information on the use of various job search methods across ethnic groups. Section 4 presents our empirical results. The final section summarizes our findings.

³A recent paper by Frijters et. al (2003) examines ethnic job search methods in the UK but focuses on the differences between male immigrants and males born in the UK.

2 Theoretical model

We develop a simple model that explains how job search decisions are made and how workers decide between formal and informal search methods.⁴

There is a continuum of workers in the economy whose total mass is 1. Workers can be white or nonwhite; the mass of nonwhites is equal to N_{NW} while the mass of whites is N_W , with $N_W + N_{NW} = 1$. Because this is true in most countries, at least on average (see for example Table 1 in Borjas, 1998), we assume that whites live in predominantly white neighborhoods while nonwhites reside in predominantly nonwhite neighborhoods.⁵ Thus, there are two neighborhoods. A predominantly white neighborhood where n_W^{PW} and n_{NW}^{PW} are respectively the number of whites and nonwhites (the superscript PW refers to the predominantly white neighborhood) and a predominantly nonwhite neighborhood where n_W^{PB} and n_{NW}^{PB} are respectively the number of whites and nonwhites (the superscript PB refers to the predominantly nonwhite neighborhood). We have $n_W^{PW} \gg n_{NW}^{PW}$ and $n_W^{PB} \ll n_{NW}^{PB}$, $n_W^{PW} + n_W^{PB} = N_W$, $n_{NW}^{PW} + n_{NW}^{PB} = N_{NW}$, and thus

$$(1 - u_W^{PW})n_W^{PW} > (1 - u_{NW}^{PW})n_{NW}^{PW} \quad (1)$$

$$(1 - u_W^{PB})n_W^{PB} < (1 - u_{NW}^{PB})n_{NW}^{PB} \quad (2)$$

Nonwhite workers only differ by their degree of assimilation to the white majority group. Assimilation captures different factors such as the fluency in English (for the US or the UK for example), if born or not in the country, the number of years in the country if not born there and so on. We denote by a this degree of assimilation and we assume that a is uniformly distributed on $[0, 1]$. If $a = 1$, there is no difference between a white and a nonwhite person so that a white person will always have $a = 1$ and some completely assimilated nonwhites could also have $a = 1$. If $a = 0$, then we have the opposite case in the sense that nonwhites are totally socially segregated from the white group. Finally, any value of a strictly between 0 and 1 captures people with diverse degrees of assimilation; the higher is a , the more assimilated is the individual.

There are two possible ways to find a job: either through formal (reply to advertisements or using state employment agencies) or informal methods

⁴For previous search models with social networks, see Calvó-Armengol (2004), Calvó-Armengol and Jackson (2004), Calvó-Armengol and Zenou (2002), Diamond (1981), Mortensen and Vishwanath (1994), Montgomery (1991). Our model is quite different since it focuses on differences between white and nonwhite workers while these papers analyze the different outcomes between formal and informal methods for workers of the same race.

⁵Even though the degree of residential segregation amongst ethnic groups in Britain is lower than that in the US (Peach, 1996), there is still considerable segregation, especially among Bangladeshis and Pakistanis.

(social networks). We assume that time is continuous and workers live forever. All workers are ex ante identical (apart from differing ethnicity). A vacancy can be filled according to a random Poisson process. Similarly, unemployed workers can find a job according to a random Poisson process. In aggregate, these processes imply that there is a number of contacts (or matches) per unit of time between the two sides of the market that are determined by the following standard matching function:

$$M \equiv M(U, V) \tag{3}$$

where U and V respectively denote the total number of unemployed workers and vacancies in the economy. As usual (Pissarides, 2000), $M(\cdot)$ is assumed to be increasing in both its arguments, concave and exhibits constant returns to scale. As a result, the rate at which workers leave unemployment using search method f , i.e. formal method, is given by:

$$p_f = d \frac{M(U, V)}{U} = dM(1, \frac{V}{U}) \equiv dp(\theta) \tag{4}$$

where $\theta = V/U$ represents labor market tightness and d labor discrimination. For whites, there is no discrimination and $d = 1$ while for nonwhites, $0 < d < 1$. Here there are two steps to get a job. First, one must have a contact with a firm (this occurs with probability $p(\theta)$) and then transform this contact into a match (this occurs with probability 1 for a white and $d < 1$ for a nonwhite).

Similarly, the rate at which workers of type a leave unemployment using search method n , i.e. networks, is equal to:

$$p_n^a = d \gamma(a) \frac{M(U, V)}{U} = d \gamma(a) p(\theta)$$

where $\gamma(a)$ is the number of employed friends a worker has. Obviously, the larger $\gamma(a)$, the higher the chance to obtain a job through friends and relatives since workers are connected to larger networks. We take the following specific form for $\gamma(a)$:

$$\gamma(a) = a(1 - u_W)N_W + (1 - a)(1 - u_{NW})N_{NW}$$

where $u_W \equiv U_W/N_W$ and $u_{NW} \equiv U_{NW}/N_{NW}$ denote respectively the unemployment rate of white and nonwhite workers. Here what matters for the social network is both the quantity (number of friends) and the quality (proportion of friends employed) of friends.

This formulation of $\gamma(a)$ implies that the more a worker is assimilated (a close to 1), the more white friends they have and the reverse is true for someone who has an a close to 0. Those with an a close to 1 would be more likely to receive job information from white friends.

Thus for whites living in any neighborhood we have:⁶

$$\gamma_W \equiv \gamma(a = 1) = (1 - u_W)N_W \quad (5)$$

This means that their social networks depends only on the number of white employed friends living in the same neighborhood. For nonwhites living in neighborhood $l = PW, PB$, we have:

$$\gamma_{NW}^l \equiv \gamma(0 \leq a \leq 1) = a(1 - u_W^l)n_W^l + (1 - a)(1 - u_{NW}^l)n_{NW}^l \quad (6)$$

with

$$\frac{\partial \gamma_{NW}^l}{\partial a} = (1 - u_W^l)n_W^l - (1 - u_{NW}^l)n_{NW}^l \quad (7)$$

which, using (1), is positive in the “white” neighborhood PW , and, using (2), is negative in the “nonwhite” neighborhood PB .

In this paper, we are not interested in the choice of a so we only consider the impact of a on the size and the quality of the network. In a more general model where a is chosen, there will be a trade off since higher a provides a better quality network (positive effect) but reduces the interaction with people of the same ethnic group (negative effect). See Akerlof (1997), Akerlof and Kranton (2000), and Battu et al. (2003) for models on this issue.

We now focus on the behavior of an unemployed worker of type a who searches for a job using search method $j = f, n$. Denote by W_{ujk}^a , the expected discounted lifetime utility of an unemployed worker of type a using search method j and being of race $k = W, NW$ and W_{ejk}^a , the expected discounted lifetime utility of an employed worker of type a using, when unemployed, search method j , and being of race $k = W, NW$. In steady-state, the Bellman equations describing these expected utilities are given by:

$$rW_{ufk}^a = b - C + d_k p(\theta) (W_{efk}^a - W_{ufk}^a) \quad (8)$$

$$rW_{unk}^a = b + d_k \gamma_k(a) p(\theta) (W_{enk}^a - W_{unk}^a) \quad (9)$$

$$rW_{ejk}^a = w - \delta (W_{ejk}^a - W_{ujk}^a) \quad (10)$$

where $r \in (0, 1)$ is the discount rate, w and b , the wage and the unemployment benefit, δ is the job destruction rate and C the cost of searching when using a formal method. Observe that $d_W = 1$ and $d_{NW} = d$, with $0 < d < 1$. Equation (8) has a standard interpretation. When a worker is unemployed today and searches using a formal method, they obtain an instantaneous (indirect) utility equal to $b - C$. Then, they can get a job with probability $d_k p(\theta)$ if nonwhite

⁶This is obviously a restrictive assumption but does not affect our results since the main focus is on nonwhites.

(and $p(\theta)$ if white) and, if so, obtain an increase in utility of $W_{efk}^a - W_{ujk}^a$. Equations (9) and (10) have a similar interpretation.

Observe that there is a trade off between the two search methods. If workers use a formal method (employment agency, replying to adverts, newspapers etc.), then they have to pay a cost C per unit of time for commuting to the employment agency, buying newspapers etc. but then have a probability $d_k p(\theta)$ of obtaining a job. When someone uses his/her network as his/her main method of search, he/she does not have to pay C (there is no cost to talk with friends) but their probability of obtaining a job depends of the size of their network. As a result, there must be a critical network size ($\tilde{\gamma}$) or equivalently a critical degree of assimilation (\tilde{a}) that make workers indifferent between the two search methods since workers with small networks prefer to use formal search methods while those with large networks prefer to rely on referrals.

We have the following result:

Proposition 1

- (i) *For whites, there is a critical level of network size, $\tilde{\gamma}_W$, which is given by:*

$$\tilde{\gamma}_W = 1 - \frac{[r + \delta + p(\theta)] C}{p(\theta)(w - b + C)} \quad (11)$$

such that for $\gamma \equiv (1 - u_W^l) n_W^l < \tilde{\gamma}_W$, workers use formal methods whereas for $\gamma \equiv (1 - u_W^l) n_W^l > \tilde{\gamma}_W$, workers use their social networks.

- (ii) *For nonwhites, for neighborhood $l = PW, PB$, there is a critical degree of assimilation:*

$$\tilde{a}^l = \frac{1 - (1 - u_W^l) n_{NW}^l - \frac{[r + \delta + d p(\theta)] C}{d p(\theta)(w - b + C)}}{(1 - u_W^l) n_W^l - (1 - u_{NW}^l) n_{NW}^l} \quad (12)$$

such that:

- (iia) *In the predominantly white neighborhood, for $a < \tilde{a}^{PW}$, workers use formal methods whereas for $a > \tilde{a}^{PW}$, workers use their social networks. This means that the lower the degree of assimilation, the more likely nonwhites use “formal methods” as their main method of job search.*
- (iib) *In the predominantly nonwhite neighborhood, for $a < \tilde{a}^{PB}$, workers use their social networks whereas for $a > \tilde{a}^{PB}$, workers use formal methods. This means that the lower the degree of assimilation, the more likely nonwhites use their social networks as their main method of job search.*

Proof. See the Appendix.

This result is quite intuitive. For whites, whatever the neighborhood, there is a size threshold of network above which they will use friends and relative as their main job-search method because the chance to obtain a job is quite high. However, when the size and quality of their network is below this threshold, they prefer to use formal methods and pay the cost C because the rewards of networking are low (either they do not have enough friends and/or too many are unemployed). For nonwhites, it depends on the neighborhood. If nonwhites live in predominantly white neighborhoods, then the more they are assimilated, the more they benefit from their white neighbors so that they are more likely to use networks as their main method of job search.

Let us focus on the most interesting case, i.e. when nonwhites live in predominantly nonwhite neighborhoods. In this case, workers who are the least assimilated are the ones who are most likely to use friends and relatives as their main search method. Indeed, workers who are less assimilated have obviously more nonwhite friends and thus are more likely to use their social contacts to find a job because the size of their networks is quite large. On the contrary, workers who are more assimilated but live in a predominantly nonwhite neighborhood have a network of lower size and thus prefer to use formal methods to search for a job.⁷

Observe that the critical network size for both white and nonwhite workers is given by (see (15) in the Appendix):

$$\tilde{\gamma}_k = 1 - \frac{[r + \delta + d_k p(\theta)] C}{d_k p(\theta) (w - b + C)}, \quad k = W, NW$$

It is easy to check that

$$\frac{\partial \tilde{\gamma}_k}{\partial C} < 0$$

i.e. the higher the cost of searching for jobs using formal methods C , the more likely workers use networks as their main search method.

In order to have more intuition of this result, let us extend the model in the following way. Assume now that C is a negative function of a (i.e. $C'(a) < 0$) so that the less a minority worker is assimilated, the higher is this

⁷In this model, we are not determining where people choose to live. However, a natural question that arises is the following: Why do assimilated nonwhites not live in predominantly white neighborhoods since they want to interact with whites? Two answers that are well documented can be given. First, most whites do not want to live with nonwhites (see e.g. Cutler, Glaeser and Vigdor, 1999). Second, housing discrimination is extremely important against nonwhites (see e.g. Yinger, 1976, 1995) and thus individuals do not always have the choice as to where to live.

searching cost because, for example, it is more costly for someone who speaks poor English to search formal jobs than someone who speaks better English or who has been in the country for a longer period of time. Then we have

$$\frac{\partial \tilde{\gamma}_{NW}}{\partial C} \frac{\partial C}{\partial a} > 0$$

which means that the lower a (less assimilation), the higher C , the lower $\tilde{\gamma}_{NW}$ and thus the more likely these workers use their networks. In other words, this reinforces our result (*iib*) of Proposition 1. Indeed, if C is higher for less assimilated workers, then if these workers reside in predominantly nonwhite neighborhoods, there are more likely to use “friends and relatives” as their main search method both because it is more costly to use formal methods and because they have a larger network of ethnic workers (i.e. poor English, little contact with whites).

Of course, the next natural question is how the choice of job search method affects the success of job search activities? We know from Proposition 1 that the rate at which whites leave unemployment is as follows: If $(1 - u_W) n_W < \tilde{\gamma}_W$, it is $p(\theta)$ while if $(1 - u_W) n_W > \tilde{\gamma}_W$, it is $\tilde{\gamma}_W^W p(\theta)$. We also know that, in predominantly nonwhite neighborhoods, the rate at which type- a nonwhites leave unemployment is: If $a < \tilde{a}$, it is given by $d\gamma_{NW} p(\theta)$ while for $a > \tilde{a}$, it is equal to $d p(\theta)$. We have the following straightforward result.

Proposition 2 *For a given θ , if there is enough labor discrimination, then*

- (i) *Whatever the method of search used, whites have a higher probability to find a job than nonwhites.*
- (ii) *In predominantly nonwhite neighborhoods, nonwhites who are less assimilated use mainly social networks and have a lower job acquisition rate than nonwhites who are more assimilated and who use mainly formal methods.*

These results are also fairly intuitive. Some ethnic minorities who are not very assimilated because, for example, they do not speak English fluently or have just arrived in the country are more likely to use their social networks as their main method of job search because they have a lot of ‘similar’ friends. However, because ethnic minorities are more likely to be discriminated against in the labor market than whites, then the quality of their social networks is quite poor and thus their chance to obtain a job is quite low. Other ethnic groups, who are more assimilated but use formal search methods because they do not interact very much with ethnic neighbors, have a greater chance to find

a job since they do not rely on the ‘quality’ of their social networks. As a result, by choosing to use their friends to search for a job, very assimilated ethnic groups can end up having a low chance to obtain a job both because of labor discrimination and the fact that their network is of poor quality.

We would like to now test our two main results (propositions 1 and 2) using British data.

3 Data and descriptive statistics

The empirical analysis presented in this paper utilizes data drawn from twelve consecutive waves of the Quarterly Labour Force Survey (QLFS) – the first wave is the December 1998 to February 1999 wave while the last wave is the September 2001 to November 2001 wave. Each wave covers around 60,000 households incorporating around 150,000 individuals. Only those of working age are used in our analysis (aged 16 to 65 for males and 16 to 60 for females).

The design of the QLFS has a quasi-panel aspect to it – individuals should be surveyed for five consecutive quarters before leaving the sample. Thus, in each sample around 12,000 households and 30,000 individuals should leave the sample and a similar number of each join the sample (this abstracts from the possibility of unintended levels of sample attrition). Thus, we should be able to view each individual for one year on a quarterly basis, and this quasi-panel aspect of the QLFS data is utilized in the empirical analyses discussed below. Aside from the quasi-panel element of the QLFS the dataset offers the advantage that it contains extensive information on the current job search methods of the unemployed and the recent job searches of the newly employed, and also contains sufficient numbers from each ethnic group in the UK to warrant econometric estimation.

The job search method data we utilize is obtained from the respondents in two ways. First, the currently unemployed are asked which job search method is their primary method for finding employment – they are shown a list of fifteen possibilities and asked which is the main one used (only one can be chosen). The fifteen options are:

job centre, careers office, job club, private employment agency, advertise yourself, answer adverts, situations vacant, direct approach, friends and family, waiting for responses, looking for premises/equipment, seeking permits, obtaining finance, anything else, not seeking employment

These are aggregated into four groups or methods in our empirical analyses:⁸ direct method (direct approach); adverts method (advertise yourself,

⁸Three of the original categories (looking for premises/equipment, seeking permits, and

answer adverts, situations vacant); institutional method (job centre, careers office, job club, private employment agency, waiting for responses, anything else, not seeking employment) and the personal networks method (friends and family).

Second, the newly employed (i.e. in their current job for no more than three months) are asked which job search method was the main method by which they obtained their current job – they are shown a list of eight possibilities and asked which was the main one used (only one can be chosen). The eight options are:⁹

replying to a job advertisement, job centre or job market, careers office, job club, private employment agency or business, hearing from someone who worked there, direct application, some other way.

These are also aggregated into four groups in our empirical analyses: direct method (direct application); adverts method (replying to a job advertisement); institutional method (job centre or job market, careers office, job club, private employment agency or business and some other way) and the personal networks method (hearing from someone who worked there).

To a considerable degree, the two aggregated variables we generate from the raw information are generally consistent with each other, encompassing the same number of categories and broadly the same range of raw information within each of those categories.

To ensure a reasonable sample size for our empirical analyses, we aggregate the twelve waves of data referred to above. However, to ensure that no one individual appears more than once in any particular empirical analysis, we use only the first instance where their employment status ‘qualifies’ them for inclusion in that empirical analysis.

Table 1 shows the primary job search methods used by our sample of unemployed individuals. By far the two most commonly used methods are institutional (job centres) and adverts with fewer than 10% of the unemployed having friends and family as their main job search method (personal networks). This ranking has been found elsewhere (Gregg and Wadsworth, 1996) and the relative unimportance of personal networks in the UK has also been found by Fritjers et al. (2003). The use of each of these job search methods does vary widely across different ethnic groups. Friends and family are used more heavily (business start-up) are excluded from the analysis on the basis that they contain very small numbers of observations (less than 150 combined) and (being very much related to business start-up) don’t fit in well with any other group.

⁹By definition this question excludes the three business start-up options available in the earlier question. Some of the categories in the second question are effectively amalgamations of categories in the first question.

ily by Indians, Pakistanis, Bangladeshis and ‘Others’ compared to Whites and Blacks. 14.2% of the Pakistani/Bangladeshi group have friends and family as their primary job search method. Blacks (Black-Caribbean and Black-African) are the least likely to use personal networks (8.2% of them use personal networks) and are the most likely to resort to the institutional method. The Pakistani/Bangladeshi ethnic group are also less likely to use adverts compared to the other ethnic groups.

Table 2 shows what job search method was successful – not necessarily what they were using as their primary job search method. The job search methods that generated the greatest success for the newly employed were in order of importance adverts, institutional and personal networks. Direct applications were only deemed successful for around 15% of respondents. From Table 2 it is clear that although Indians, Pakistanis, Bangladeshis and ‘Others’ used personal networks the most (Table 1), there is little evidence that they benefited from this method more so than whites.

4 The empirical results

As stated above, we would like now to test the main results of our model, that is less assimilated ethnic unemployed workers are more likely to use their friends and family as their main method of search but they have less chance of finding a job using this method compared to whites and more assimilated ethnic unemployed workers that use formal job search methods

4.1 The determinants of job-search methods

The first stage of our empirical analysis examines the determinants of job search methods. As previously indicated the job search method data within the QLFS was aggregated together, turning fifteen separate methods into four aggregated ones. The nature of this dependent variable (four mutually-exclusive, non-ordered values) indicates that a *multinomial logit estimation procedure* would be appropriate. The default category in the estimations is the institutional method incorporating both state and private employment agencies.

We estimate *four empirical models*, which only differ in the way ethnic and/or assimilation information is incorporated into the analysis. For each of the four (empirical) models there are three sets of estimates – one for a combined sample of males and females, one for males only and one for females only. Model 1 includes a simple dummy for whether or not the respondent is from an ethnic minority. Model 2 disaggregates this single ethnic dummy into

separate dummies for the Black, Indian, Pakistani and Bangladeshi and Other ethnic groups. Model 3, rather than using ethnic dummies, includes a set of assimilation variables: a dummy for whether the respondent was foreign born and (for those born outside of the UK) years since migration and its square. Model 4 incorporates both the four ethnic dummies from Model 2 and the three assimilation variables from Model 3.

Table 3 presents, for the unemployed sample as a whole and for each of the ethnic minorities individually, means for the variables used to explain the primary job search method chosen. These statistics present an interesting comparison of the different ethnic minority groups. The Pakistani and Bangladeshi unemployed respondents are the ones most likely to have been born in a foreign country, but have actually lived in the UK a little longer than the others; this, combined with the fact that they suffer the worst from unemployment, have the lowest levels of attained educational qualifications (UK qualifications) and make the greatest use of their personal networks, does suggest that they have the greatest problems assimilating into the UK's mainstream labor market.

Table 4 presents the full set of results for Model 1. Table 5 presents a summary of all four models, focusing on the effects of the ethnic and assimilation variables. Given that the coefficients and z -statistics for the other variables in Models 2, 3 and 4 were not materially different from those in Model 1 we exclude them from Table 5 for the sake of brevity.

From Model 1 it is clear that unemployed ethnic group member utilize personal networks more than whites. The single ethnic dummy is a significant predictor of the use of personal networks in the combined and female only results, and is just short of being statistically significant for the males only results. In addition, it is found that ethnic group members are more likely to use direct approaches to employers, though only for the combined and female samples. Given the degree of ethnic homophily direct approaches to employer's may be indicative of the use of broader networks where ethnic group members are directly approaching employers from their own community.

In Model 2 we replace the single ethnic dummy with separate dummies for Blacks, Indians, Pakistanis and Bangladeshis, and Others. In general the results indicate a greater use of personal networks and direct approaches to employers amongst South-Asians (Indian, Pakistani and Bangladeshi) relative to whites. The results for the combined sample indicate that Indians, Pakistanis, Bangladeshis and Others are more likely to use personal networks. Three out of four groups (Indian, Pakistani/Bangladeshi and Other) are more likely to use the direct methods approach relative to whites. There also some indication that Pakistanis and Bangladeshis are less likely to utilize adverts.

When disaggregating by gender, we find that the personal networks method is favored by South-Asian females and Indian females are more likely to resort to direct applications to employers. The negative effect on the adverts method for the Pakistani and Bangladeshi ethnic group is driven by males; they are less likely to answer adverts, place their own adverts or respond to situations vacant columns in newspapers. One reason for this is evident from the descriptive statistics in Table 3. Pakistanis and Bangladeshis are, out of all the unemployed, the ones least likely to possess good qualifications (e.g. higher/further education qualifications or A-levels and their equivalents). Success via adverts is likely to significantly depend on “objective” measures such as qualifications. The poor use of adverts may also reflect the low degree of assimilation of this group since confidence in, use of and responses to newspaper advertisements may only come with language proficiency and years of stay.

In conformity with our theoretical model, the results from both Model 1 and Model 2 suggest that *ethnicity does play a role in the choice of job search methods*. South-Asians tend to make greater use of personal networks and are more likely to approach directly potential employers. Given the extent of ethnic homophily it is not fanciful to suggest that such contacts are through ones own ethnic group or with employers within ones own community in ethnically-owned or ethnically-oriented businesses. Within the South-Asian category the Pakistani and Bangladeshi group stand out in their lower reliance on adverts. On various dimensions Blacks display greater levels of assimilation; they tend to be located in less geographically defined areas or communities with self-owned or self-oriented businesses, their primary language is English and a majority are born in the UK and as such they make less use of personal networks or direct approaches to employers. Indeed, there is little discernible difference between the Black ethnic group and whites with respect to job search methods. and, as such, differential job search patterns would seem to offer little by way of explanation of the gap between Blacks and Whites in the labor market.

Model 3 undertakes an explicit investigation as to whether assimilation, rather than ethnicity, has a role to play in determining the method of job search, and incorporates a dummy for being born outwith the UK, as well as years since first arrival in the UK (years since migration) and its square.¹⁰ The effects of these variables on the use of adverts and personal networks supports

¹⁰For those born in the UK there is a value of zero for the years since migration variable and its square. This ensures that the ‘default’ respondent for these three migration variables combined is someone born in the UK. Were we not to include the foreign born variable the default respondent for the two migration variables would be the UK born respondents and those foreign born respondents who had only just arrived in the UK, a rather strange default grouping.

our assimilation hypothesis. For the combined and males-only samples we find that use of the adverts method increases with years since migration (reaching peaks at 23 and 24 years respectively). For the females-only sample we find either no such effects or considerably less significant effects. Furthermore, for the adverts method only, there is a negative effect from being foreign born. This may reflect language problems though it is not possible to test this using the QLFS since no information is available on language proficiency. The negative effect for the foreign born may stem from the holding of only foreign qualifications, which may make replying to adverts less effective if prospective employers are unaware of what these qualifications are. For both the combined and males-only samples the foreign born effect on the use of the adverts method almost exactly offsets the years since migration effect at its peak, such that after 23 or 24 years of living in the UK the foreign born are little different (in terms of their propensity to use the adverts method) than the UK born. One can argue that the use of the adverts method is indicative of integration/assimilation into the general labor market. Though this constitutes only one perspective on labor market assimilation, at more than two decades it does seem to indicate that assimilation is not particularly easy.

For the personal networks method, the years since migration variables are insignificant but there is a positive effect for the foreign born dummy for all three samples. This suggests that the foreign born make use of personal networks to an extent that does not differ according to their years since migration to the UK. This finding is consistent with the view that the foreign born make use of personal networks related to their ‘home country’ (the relevant ‘émigré’ community) since on arrival in the UK they are unlikely to have many contacts outwith their own ethnic group. The use of the direct approach increases with years since migration (reaching peaks at 20 and 21 years respectively).

The results from Model 3 are consistent with the notion of a gradual assimilation of migrants into the home country’s labor market – over perhaps two decades or more they come to utilize the adverts method just about as much as the native born, but they never give up the labor market opportunities offered to them by their personal networks. Thus, we have further evidence in support of Proposition 1 (*iib*) from our theoretical section.

The results from Model 4 where we include individual ethnic dummies and our assimilation variables wash out most of the effects for the individual ethnic dummies. For example, controlling for assimilation means that South-Asians are no longer more likely to use personal networks compared to whites. The assimilation variables behave as before.

The remainder of the right-hand-side specification was the same for each of

the four models, and we briefly discuss the results from the remaining variables. The "First Six Waves" dummy variable (for whether the observation of the unemployed respondent was from the first six waves of the twelve QLFS waves we used) showed a general tendency for a positive and significant effect for the personal networks method. This is consistent with both a business cycle effect (as we move through the twelve waves the UK's unemployment rate was declining and so there was less need of 'non-mainstream' methods¹¹) and also a 'New Deal' effect (a new government initiative introduced in this period to cajole the unemployed into improving their job search activity); part of the New Deal initiative included greater supervision of the job search activities of the unemployed and this encourages the use of the institutional and adverts methods since they more readily provide documentation to support genuine claims of job search activity.

The gender and marital status variables indicate that females and married people use the direct approach and adverts methods more. The age and age-squared variables generate significant and consistent results for the direct approach method (this is less utilized in the middle of your working life) but the results for the adverts method were not consistently signed. There are similar findings in Schmitt and Wadsworth (1993) and Boheim and Taylor (2001).

The relationship between educational qualifications and job search methods is investigated through a series of dummies indicating the respondent's highest qualification. Previous studies have found that contacts are especially important for lowly educated workers (Corcoran, Datcher and Duncan, 1980; Boheim and Taylor, 2001). Our results support this. In particular, we find that the more highly educated (possessing a degree) are more likely to offer themselves directly to potential employers and are more likely to respond to advertisements. The highly educated are in a sense more pro-active in selling themselves to potential employers via more mainstream methods. The greater use of informal networks by those with no qualifications (the omitted category) suggests that they are more likely to use local information networks and have a narrower job search area. The more educated would also seem to operate in a wider labor market and are less reliant on local information networks (Boheim and Taylor, 2001). This is consistent with the view that formal screening will tend to 'weed out' those with lower levels of education and hence there is less of a disadvantage in situations where someone can 'put in a good word for you'.

Having lived in the same area for a long period of time (Time here 1

¹¹Between 1998 and 2001 the unemployment rate in the UK fell from 4.6% to 3.2%.

and Time here 2) can increase the likelihood of using either the adverts or the personal networks method. Personal networks tend to be local so that moving from one area to another area is likely to disrupt/undermine the usefulness of personal networks and encourage the use of other methods. Those who have a long residential tenure may have greater opportunities to generate and maintain networks.

It is expected that the longer the duration of your current spell of unemployment the less likely you are to use any of the alternatives to the institutional method. Institutional methods (via formal organizations) may then be seen as a method of last resort and may be used by job seekers primarily when jobs are scarce (Abraham, 1993). Formal screening is also likely to make the use of the direct approach and adverts methods pointless for the long-term unemployed, and there is only so much that ‘putting in a good word’ can do for them via the personal networks method, and so they must rely on the least worst option – the institutional method.

We evaluate whether the duration of unemployment matters across ethnic groups by interacting the duration of unemployment and ethnicity. It is found that those from the ethnic minorities sometimes have a lower propensity to utilize the direct approach method (racial prejudice perhaps reinforcing a general prejudice against the long-term unemployed). With respect to personal networks and in Model 1 only we find a lower propensity to use personal networks amongst unemployed non-whites relative to whites. There is little difference across whites and non-whites in this regard in the other three models

Finally, high local rates of unemployment discourage all three of the main alternatives to the institutional method. High unemployment (low local demand) tends to go hand-in-hand with few vacancies, and hence there are few adverts to respond to and the direct approach and personal networks methods are looking for the proverbial needle in the haystack – respondents may simply keep a close eye on the minimal offerings on offer at the local job centre and wait for local employment prospects to improve.

To conclude our discussion of the determinants of job search method, both ethnicity and (in particular) assimilation variables play an important role – both lead to a greater dependence on the use of personal networks. The South Asians and Others are more likely to make use of personal networks, as are those born outside of the UK; however, over time assimilation helps the foreign born (a large share of whom will be ethnic) to embrace more mainstream methods of job search activity. In particular, those born within the UK and those who have stayed longer in the UK rely more heavily on the adverts method (advertise yourself, answer adverts, situations vacant). As such these

findings support the prediction of our theoretical model that a lower degree of assimilation amongst non-whites results in a greater reliance on friends and family as a job search method (Proposition 1 (*ib*)).

4.2 The effects on employment

This section focuses on Proposition 2 of our model according to which irrespective of job search method whites have a higher probability of finding work than nonwhites and non-whites who are less assimilated (who use mainly personal networks) have a lower probability of finding work than nonwhites who are more assimilated. This we test by examining the likelihood that individuals in the sample do find employment. In particular, we take those who are observed as being unemployed during their five-wave sample period and examine whether they enter employment (before they leave the QLFS sample). We construct a binary variable below and undertake a logit regression with a range of empirical specifications:

0 = did not find employment before they left the QLFS sample

1 = did find employment before they left the QLFS sample

The results are presented in Table 6. The first part of this table focuses on ethnicity (Table 6a) and the second part focuses on assimilation (Table 6b). We go through each of them in turn.¹²

The first thing to note is that on controlling for job search methods whites are more likely to enter employment than non-whites (Model 1) and this disadvantage is clearly evident for Blacks and the Pakistani/Bangladeshi groups. Both models also reveal that the direct approach method is the most successful method of gaining employment. There is a strong effect throughout the estimations in Table 6a and b and being a member of an ethnic group does not diminish the importance of this effect relative to whites. Though personal networks do not seem to matter on their own they matter when interacted with the ethnic dummy and with each of the ethnic group dummies separately. With respect to the former we find that non-whites who make use of personal networks are less likely to enter employment (for the combined and male samples). However, this penalty is not evident across all the ethnic groups. Indeed, only in the case of the Bangladeshis and Pakistanis are networks a hindrance in terms of obtaining jobs. One interpretation of this is that this group's social network is disproportionately made up of other low-skilled

¹²The analysis does not control for selection bias. Gregg and Wadsworth (1996) find that controlling for selection effects has no significant impact on the effect of institutional methods on the probability of entering work in Britain.

Bangladeshis/Pakistanis and the low quality of this network implies a lower return from using networks. Other research does seem to support this in that these groups are the most disadvantaged and also the least assimilated (Modood et al., 1997; Battu et. al, 2003). In contrast, Indians do not experience a penalty from using personal network despite their greater use of such networks. One explanation might be that they are more assimilated and less segregated so that they have less racially homophilous friendship ties.

We also include the local unemployment rate in the regressions (not listed in the table). This captures not only the fewer vacancies in a local area but also the quality of networks. Information about jobs is more likely to come from those who are already employed and thus there will be less useful information in high unemployment neighborhoods (a low information area). Our results confirm that the higher is local unemployment the less likely it is that individuals escape unemployment.

The second part of Table 6 focuses on our assimilation variables. As one would expect the foreign born are less likely to enter employment. However, years since migration (and its square) matter little in the results. Again direct methods are the most successful in terms of gaining employment. Replying to adverts or using personal networks does not seem to matter. However, foreign-born females who directly approach employers are less likely to gain employment. Crucially, the use of personal networks by those born outside the UK lowers the probability of gaining employment and this effect is evident across all three samples.

Overall, these results are in line with our theoretical model in finding an employment penalty through using personal networks as your main method of finding employment – this is clearly evident for non-whites (and in particular, Pakistanis and Bangladeshis) and those born outside the UK.

4.3 The effects on job level

The choice of job search method affects not only the length of time required to move out of unemployment, but also the level (seniority) of the job that is obtained. In the QLFS the most appropriate variable for capturing this is the socio-economic group (SEG), which reflects the skill requirement of the job, ranging from unskilled work (a ‘score’ of 1) to professional work (a ‘score’ of 6). The ranking nature of this variable lends itself to an ordered logit analysis, and thus we were able to examine the effect of different job search methods on the level of job obtained. Note that in this instance we used the second job search method variable – those respondents who had been in their current job

for less than three months were asked which job search method had actually been successful in getting them their current job.

We can see from Table 7 (a and b) that the ethnic minorities appear to be currently entering into higher level jobs than whites, though this effect seems to be generated primarily by the males in our sample.

The job search method that elicited the current job plays a major role in determining the job level attained, with the direct and advert approaches generating higher level jobs for the combined and males-only samples, and the personal network approach generating lower level jobs for the combined and females-only samples. Perhaps the most interesting effect is obtained from the interaction of ethnicity and personal networks – for all three samples we find that those ethnic workers who obtained their current job as a result of their personal network are in a lower level job as a result (for the females-only sample this is significant at the 5.2% level). The coefficients on this interaction variable are not only significant, but also quite large (and similar across all three samples), suggesting that (at this level of disaggregation) ethnic group members have poor quality personal networks, or they use them inefficiently. Given that the ethnic minorities are more likely to use their personal networks (see results in Table 5), this is much to their disadvantage. This also helps to offset the surprising coefficients on the ethnic dummy and the separate ethnic dummies.

However, we have already seen that differences exist between the ethnic minorities, and Table 7 suggests that these differences also affect the level of job obtained. These ethnic-specific effects build on the finding that the use of personal networks continues to have negative and significant effects for the combined and females-only samples. In particular we find that obtaining a job as a result of personal networks has a negative and significant effect for Pakistanis and Bangladeshis in both the combined and males-only samples, and for Blacks in the females-only sample. That Indians (whether male or female) do not differ significantly from the default group (whites).

Turning to the assimilation variables we have used previously, we find in the second part of Table 7 that years since migration, its square, and a foreign born dummy are insignificant for all three samples, though obtaining a job through the direct approach or adverts methods tends to significantly improve the job level whilst personal networks tend to significantly worsen job level. However, the assimilation terms do gain significance when we interact them with the job search method dummies. In particular, for the foreign-born only, obtaining your current job through a personal network reduces the job level for the combined and females-only samples whilst for the direct approach the

effect is negative for the combined and males-only samples.

To conclude, the use of personal networks typically results in a lower level job, and for the ethnic minorities this effect is often compounded in the sense that they make a greater use of personal networks resulting a more severe job level penalty. This effect is most pronounced for male Pakistanis and Bangladeshis and female Blacks. The negative effect of personal networks is also present for the foreign born.

5 Conclusion

Though there is a considerable body of evidence examining ethnic disadvantage in the labor market, most of these studies tend to focus on individual characteristics such as education. This paper tries to gauge the importance of the connections that individuals from different ethnic groups have with others and endeavours to ascertain whether such connections hinder labor market achievement. This is done by examining the job finding methods of various groups and in particular, the importance of using friends and family for employment.

At the heart of our analysis is the view that informal contacts or connections with friends or relatives can affect the matching of workers to jobs by providing information and/or influence. The theoretical model that we set out shows that less assimilated ethnic unemployed workers are more likely to use their friends and family as their main method of search but they have less chance of finding a job compared to whites and more assimilated ethnic workers that use formal search methods. Our empirical results support the conclusions of the theoretical model. In terms of the determinants of job search method, both ethnicity and assimilation variables play an important role – both lead to a greater dependence on the use of personal networks. Three groups, namely the Pakistani and Bangladeshi and Indians, are more likely to utilize personal networks. However, there is no evidence from our results that more assimilated non-whites make greater recourse to formal means of job search

The greater use of personal networks amongst non-whites in general generates no payoff, since non-whites who make use of their friends and family are less likely to enter employment and tend to have a lower job level. This penalty is clearly evident in the case of the Bangladeshi and Pakistani ethnic groups. Thus our key conclusion is that informal job searches do not necessarily lead to better outcomes and may even be detrimental to certain ethnic groups (in our case, the Pakistani and Bangladeshi communities).

The heterogeneity across groups in terms of the use of networks and the

lack of payoff to networks suggest that blanket assumptions about the potential payoff to personal networks are unwarranted. Part of the explanation for the differences across ethnic groups has to lie with the quality or nature of contacts. Not all the unemployed are equally well connected. Pakistani and Bangladeshi friendship ties may display greater ethnic homophily so that their connections are with their own. If their own exhibit higher unemployment on average individuals in this group may have fewer friends and relative who are employed and can help them attain steady jobs.

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Appendix

Proof of Proposition 1

By combining (8), (9) and (10), we easily obtain:

$$W_{efk}^a - W_{ufk}^a = \frac{w - b + C}{r + \delta + d_k p(\theta)} \quad (13)$$

$$W_{enk}^a - W_{unk}^a = \frac{w - b}{r + \delta + d_k \gamma_k p(\theta)} \quad (14)$$

The critical size of a network that makes workers indifferent between using formal methods and networks is $\tilde{\gamma}_k$ and is the solution of

$$W_{ufk}^a = W_{unk}^a$$

Using (8), (9), (13) and (14), this is equivalent to:

$$\tilde{\gamma}_k = 1 - \frac{[r + \delta + d_k p(\theta)] C}{d_k p(\theta) (w - b + C)} \quad (15)$$

Let us demonstrate (i). For nonwhites, $d_W = 1$ and thus using (5), we have (11). Since W_{unW}^a is increasing in γ , we obtain the result.

For (ii), using (6), we have that nonwhites use networks if and only if

$$a(1 - u_W^l) n_W^l + (1 - a)(1 - u_{NW}^l) n_{NW}^l > \tilde{\gamma}_{NW}$$

and use formal methods otherwise. Solving this equation, we easily obtain (12).

For the predominantly white neighborhood $l = PW$, using (1) we easily obtain (iia).

For the predominantly nonwhite neighborhood $l = PB$, using (2) we easily obtain (iia). ■

Table 1: The main job search method used by the unemployed at the time of the survey

	Direct Approach	Adverts	Institutional	Personal Networks	Total (N)
White	10.3	40.1	40.4	9.2	21,168
Black	7.6	37.8	46.4	8.2	870
Indian	12.4	35.9	37.8	13.9	510
Pak / Bang	13.5	28.3	44.0	14.2	654
Other	11.4	35.0	41.0	12.6	725
Total	10.3	39.5	40.7	9.5	
Total (N)	2,472	9,441	9,729	2,283	23,927

All figures, except those in the final row and the final column, are percentages

Table 2: The job search method that generated success for the newly employed at the time of the survey

	Direct	Adverts	Institutional	Personal Networks	Total (N)
White	14.6	28.4	29.8	27.3	36,921
Black	12.0	31.4	37.2	19.4	723
Indian	16.5	25.8	33.8	23.9	636
Pak / Bang	17.6	20.9	32.0	29.5	444
Other	16.1	23.5	33.8	26.6	839
Total	14.7	28.2	30.1	27.1	
Total (N)	5,809	11,150	11,896	10,708	39,563

All figures, except those in the final row and the final column, are percentages

Table 3: Descriptive statistics (means): variables used to explain the primary job search method chosen

	All respondents	Black	Indian	Pakistani / Bangladeshi	Other
Years since migration	1.989	8.496	11.823	12.070	8.252
Years since migration sq	56.395	238.60	333.503	314.164	187.669
Foreign born	0.110	0.496	0.546	0.621	0.597
First six waves	0.649	0.619	0.623	0.601	0.612
Female	0.436	0.469	0.463	0.317	0.419
Married	0.392	0.236	0.486	0.494	0.345
Female and married	0.176	0.093	0.224	0.119	0.131
Age	32.415	32.042	32.217	29.238	30.644
Age sq	1226.929	1161.1	1200.072	998.762	1071.506
Qual = Degree	0.165	0.218	0.224	0.125	0.193
Qual = A-level	0.226	0.235	0.190	0.184	0.186
Qual = O-level	0.216	0.149	0.179	0.176	0.171
Qual = other	0.160	0.227	0.211	0.247	0.289
Time here 1	0.117	0.105	0.094	0.097	0.152
Time here 2	0.789	0.812	0.845	0.834	0.739
Health	0.170	0.151	0.141	0.161	0.145
Unemployment duration (ethnics only)		13.045	9.675	10.708	9.936
Local unemployment rate	3.206	3.856	3.238	3.676	3.680

Table 4: The determinants of the primary job search method – Model 1 (single ethnic dummy)

	Combined						Male						Female					
	Direct		Adverts		Personal networks		Direct		Adverts		Personal networks		Direct		Adverts		Personal networks	
Ethnic	0.210	2.55	-0.040	0.69	0.291	3.51	0.148	1.32	-0.044	0.56	0.179	1.68	0.291	2.33	-0.037	0.42	0.458	3.41
First six waves	0.048	0.97	0.022	0.66	0.109	2.06	0.056	0.84	-0.032	0.72	0.118	1.76	0.038	0.51	0.079	1.57	0.081	0.94
Female	0.364	6.42	0.585	14.23	0.004	0.05												
Married	0.226	2.99	0.218	4.66	0.237	3.41	0.192	2.38	0.256	5.12	0.225	3.08	0.197	2.22	0.330	6.17	0.185	1.96
Female and married	-0.064	0.62	0.165	2.52	-0.068	0.64												
Age	-0.152	13.39	0.019	2.49	-0.015	1.32	-0.144	9.76	-0.019	1.96	-0.021	1.49	-0.155	8.03	0.082	6.62	0.004	0.20
Age squared	0.002	11.68	-0.000	0.87	0.000	1.75	0.002	8.81	0.000	3.22	0.000	2.03	0.002	6.52	-0.001	5.80	-0.000	0.30
Qual = Degree	0.190	2.43	0.505	9.91	-0.412	4.72	0.220	2.13	0.692	10.16	-0.424	3.78	0.106	0.88	0.247	3.17	-0.441	3.13
Qual = A-level	0.117	1.70	0.312	6.65	-0.071	1.01	0.202	2.27	0.459	7.46	0.025	0.29	-0.064	0.58	0.083	1.11	-0.326	2.57
Qual = O-level	0.202	3.01	0.345	7.09	-0.003	0.04	0.266	2.95	0.441	6.47	0.100	1.06	0.088	0.87	0.183	2.57	-0.196	1.67
Qual = other	-0.204	2.52	0.099	1.93	-0.052	0.69	-0.204	1.89	0.169	2.38	0.018	0.19	-0.230	1.87	-0.014	0.18	-0.194	1.54
Time here 1	-0.170	1.69	0.060	0.86	0.172	1.55	-0.084	0.62	0.182	1.90	0.173	1.24	-0.279	1.88	-0.071	0.70	0.181	0.99
Time here 2	0.012	0.16	0.208	3.76	0.238	2.64	0.060	0.57	0.275	3.61	0.225	2.01	-0.048	0.41	0.124	1.52	0.268	1.77
Health	-0.243	3.46	-0.008	0.19	-0.105	1.57	-0.261	2.90	0.052	0.96	-0.119	1.46	-0.219	1.96	-0.078	1.17	-0.068	0.59
Unemp dur (ethnics)	-0.019	3.29	-0.003	1.26	-0.007	1.92	-0.021	2.92	-0.003	1.23	-0.007	1.73	-0.012	1.11	0.000	0.05	-0.001	0.14
Local unemploy rate	-0.060	2.79	-0.099	6.73	-0.031	1.34	-0.026	0.89	-0.074	3.69	0.015	0.52	-0.110	3.36	-0.135	6.17	-0.112	2.95
Constant	1.275	6.35	-1.008	7.12	-1.451	6.69	0.945	3.56	-0.635	3.36	-1.576	5.83	2.000	6.26	-1.041	4.70	-1.308	3.48
Observations			21,394						12,031						9,363			

Coefficients followed by the absolute value of z-statistics

Table 5: The determinants of the primary job search method – summary of Models 1 through to 4

	Direct		Combined Adverts		Personal networks		Direct		Male Adverts		Personal networks		Direct		Female Adverts		Personal networks	
Model 1																		
Ethnic	0.210	2.55	-0.040	0.69	0.291	3.51	0.148	1.32	-0.044	0.56	0.179	1.68	0.291	2.33	-0.037	0.42	0.458	3.41
Model 2																		
Black	-0.100	0.72	0.009	0.10	-0.023	0.16	-0.297	1.38	-0.014	0.11	-0.133	0.70	0.073	0.35	0.009	0.07	0.405	0.46
Indian	0.376	2.39	-0.033	0.29	0.555	3.64	0.272	1.24	0.039	0.25	0.239	1.12	0.495	2.15	-0.087	0.50	0.916	4.09
Pak / Bang	0.287	2.09	-0.202	1.90	0.301	2.16	0.255	1.47	-0.294	2.20	0.182	1.09	0.403	1.76	0.009	0.05	0.594	2.31
Other	0.276	2.30	0.083	0.95	0.313	2.57	0.353	2.25	0.194	1.67	0.325	2.10	1.147	0.77	-0.079	0.60	0.267	1.33
Model 3																		
Yrs since migration	0.030	1.57	0.024	1.95	-0.016	0.94	0.058	2.15	0.028	1.65	-0.019	0.84	-0.001	0.02	0.022	1.20	-0.013	0.49
Yrs since migration ²	-0.001	1.98	-0.001	2.05	0.000	0.13	-0.001	2.45	-0.001	1.71	0.000	0.09	-0.000	0.23	-0.001	1.27	0.000	0.23
Foreign born	0.077	0.44	-0.328	2.76	0.581	3.72	-0.072	0.29	-0.340	2.01	0.497	2.43	0.210	0.84	-0.326	1.91	0.682	2.80
Model 4																		
Black	-0.161	1.06	0.087	0.94	-0.156	1.04	-0.363	1.64	0.062	0.49	-0.220	1.12	0.041	0.19	0.078	0.57	-0.082	0.35
Indian	0.324	2.02	0.031	0.26	0.464	2.90	0.169	0.76	0.076	0.47	0.215	0.96	0.479	2.04	-0.010	0.05	0.737	3.14
Pak / Bang	0.201	1.39	-0.130	1.16	0.176	1.17	0.112	0.60	-0.231	1.61	0.109	0.60	0.383	1.61	0.071	0.38	0.422	1.57
Other	0.209	1.64	0.164	1.78	0.158	1.20	0.258	1.55	0.261	2.12	0.208	1.23	0.114	0.57	0.008	0.06	0.056	0.26
Yrs since migration	0.024	1.26	0.027	2.12	-0.025	1.40	0.052	1.93	0.032	1.83	-0.024	1.05	-0.008	0.28	0.022	1.16	-0.025	0.92
Yrs since migration ²	-0.001	1.67	-0.001	2.14	0.000	0.56	-0.001	2.22	-0.001	1.82	0.000	0.33	0.000	0.04	-0.001	1.23	-0.000	0.64
Foreign born	0.055	0.31	-0.377	3.08	0.564	3.48	-0.073	0.28	-0.403	2.29	0.481	2.23	0.177	0.70	-0.336	1.92	-0.663	2.64

Coefficients followed by the absolute value of z-statistics

Table 6a: The determinants of finding employment (Models 1 & 2)

	Model 1						Model 2					
	Combined		Male		Female		Combined		Male		Female	
Ethnic	-0.430	4.80	-0.491	4.19	-0.326	2.31						
Black							-0.486	2.97	-0.860	3.62	-0.053	0.23
Indian							-0.383	1.81	-0.318	1.20	-0.529	1.49
Pak / Bang							-0.562	2.98	-0.535	2.49	-0.733	1.81
Other							-0.126	0.72	0.122	0.56	-0.539	1.77
Direct	0.267	3.62	0.202	2.07	0.357	3.13	0.261	4.44	0.260	3.32	0.257	2.88
Adverts	-0.027	0.52	-0.033	0.46	-0.016	0.22	-0.017	0.40	-0.014	0.24	-0.024	0.40
Per Network	0.101	1.18	0.110	1.01	0.086	0.63	0.021	0.32	0.032	0.38	-0.003	0.03
Direct * Eth	-0.018	0.56	0.035	0.84	-0.093	1.73						
Adverts * Eth	0.008	0.33	0.013	0.39	-0.001	0.03						
Per Net * Eth	-0.091	2.21	-0.101	1.86	-0.080	1.28						
Direct * Blk							-0.293	0.76	-0.332	0.49	-0.471	0.98
Adverts* Blk							0.075	0.33	0.329	0.95	-0.195	0.62
Per Net * Blk							-0.236	0.56	-0.200	0.30	-0.351	0.62
Direct * Ind							-0.135	0.35	-0.166	0.32	-0.020	0.03
Adverts* Ind							0.125	0.43	0.037	0.10	0.319	0.71
Per Net * Ind							-0.494	1.16	-1.137	1.68	0.165	0.28
Direct * PB							-0.265	0.72	-0.021	0.05	-0.435	0.63
Adverts* PB							0.189	0.65	0.178	0.47	0.402	0.79
Per Net * PB							-1.010	1.98	-1.110	1.72	-0.734	0.86
Direct * Oth							-0.246	0.73	-0.185	0.43	-0.271	0.49
Adverts* Oth							-0.320	1.27	-0.606	1.75	0.130	0.33
Per Net * Oth							-0.581	1.46	-0.874	1.73	-0.123	0.19
Observations	17,983		10,118		7,865		17,983		10,118		7,865	

These specifications included all the other explanatory variables presented in Table 4, plus a variable for the number of further waves of data the respondent was expected to be present in

The lower number of observations compared to Table 4 arose from the fact that we excluded those unemployed who only became unemployed in the fifth of their five appearances in the QLFS dataset (and therefore could not be observed finding employment)

Table 6b: The determinants of finding employment (Models 3 & 4)

	Model 3						Model 4					
	Combined		Male		Female		Combined		Male		Female	
YSM	0.003	0.19	0.035	1.59	-0.029	1.37	0.002	0.13	0.033	1.50	-0.030	1.41
YSM ²	0.000	0.11	-0.001	1.17	0.001	1.35	0.000	0.16	-0.001	1.08	0.001	1.40
Foreign born	-0.330	2.35	-0.675	3.20	-0.004	0.02	-0.181	1.17	-0.600	2.67	0.271	1.25
Direct	0.238	4.27	0.259	3.48	0.212	2.50	0.262	4.47	0.255	3.27	0.271	3.05
Adverts	-0.017	0.43	-0.015	0.28	-0.021	0.35	-0.005	0.12	-0.013	0.22	0.008	0.14
Per Network	-0.031	0.50	-0.029	0.36	-0.041	0.40	0.037	0.56	0.021	0.25	0.063	0.58
Direct * For							-0.245	1.25	0.049	0.19	-0.627	2.07
Adverts * For							-0.120	0.89	-0.021	0.11	-0.271	1.42
Per Net * For							-0.676	3.10	-0.590	1.95	-0.837	2.61
Observations	17,983		10,118		7,865		17,983		10,118		7,865	

These specifications included all the other explanatory variables presented in Table 4, plus a variable for the number of further waves of data the respondent was expected to be present in

The lower number of observations compared to Table 4 arose from the fact that we excluded those unemployed who only became unemployed in the fifth of their five appearances in the QLFS dataset (and therefore could not be observed finding employment)

Table 7a: The determinants of the level of job found (Models 1 & 2)

	Model 1						Model 2					
	Combined		Male		Female		Combined		Male		Female	
Ethnic	0.562	3.93	0.753	4.24	0.236	0.95						
Black							0.459	2.01	0.495	1.65	0.422	1.15
Indian							0.197	0.61	0.333	0.79	0.084	0.16
Pak / Bang							1.049	3.55	1.213	3.63	0.552	0.87
Other							0.552	1.97	0.873	2.63	-0.195	0.39
Direct	0.237	2.77	0.286	2.52	0.176	1.31	0.237	2.77	0.288	2.53	0.177	1.32
Adverts	0.164	2.66	0.293	3.27	0.005	0.05	0.164	2.65	0.292	3.46	0.006	0.06
Per Network	-0.189	1.91	-0.083	0.67	-0.353	2.08	-0.189	1.92	-0.085	0.69	-0.353	2.08
Direct * Eth	-0.370	1.33	-0.646	1.80	0.054	0.12						
Adverts * Eth	-0.288	1.32	-0.464	1.58	0.095	0.28						
Per Net * Eth	-1.097	3.10	-1.045	2.20	-1.033	1.94						
Direct * Blk							0.170	0.31	0.175	0.20	0.131	0.17
Adverts* Blk							-0.059	0.16	0.265	0.49	-0.373	0.69
Per Net * Blk							-1.080	1.53	0.348	0.33	-1.997	2.17
Direct * Ind							-0.074	0.14	-0.400	0.53	0.168	0.20
Adverts* Ind							0.299	0.67	-0.207	0.33	0.973	1.43
Per Net * Ind							0.757	1.10	-0.523	0.51	-0.781	0.81
Direct * PB							-0.632	1.08	-0.645	0.90	-0.516	0.48
Adverts* PB							-0.761	1.57	-0.427	0.72	-0.788	0.88
Per Net * PB							-1.799	2.88	-2.709	2.88	0.126	0.09
Direct * Oth							-0.708	1.45	-1.082	1.90	0.348	0.35
Adverts* Oth							-0.636	1.53	-1.250	2.29	0.416	0.62
Per Net * Oth							-0.857	1.35	-0.866	1.09	-0.580	0.59
Observations	4,991		2,737		2,254		4,991		2,737		2,254	

These specifications included the gender, marital status, age and educational qualification variables from Table 4
 The lower number of observations compared to Table 4 arose from the fact that we are only looking at the newly employed

Table 7b: The determinants of the level of job found (Models 3 & 4)

	Model 3						Model 4					
	Combined		Male		Female		Combined		Male		Female	
YSM	0.014	0.62	0.041	1.20	-0.014	0.44	0.011	0.47	0.044	1.27	-0.023	0.72
YSM ²	-0.000	0.75	-0.001	1.06	0.000	0.07	-0.000	0.62	-0.001	1.14	0.000	0.30
Foreign born	0.150	0.67	-0.128	0.40	0.455	1.42	0.395	1.62	0.035	0.10	0.804	2.21
Direct	0.211	2.58	0.230	2.13	0.189	1.47	0.257	3.04	0.286	2.55	0.230	1.72
Adverts	0.137	2.30	0.241	2.98	0.017	0.18	0.160	2.57	0.256	3.04	0.046	0.49
Per Network	-0.274	2.89	-0.163	1.37	-0.458	2.84	-0.219	2.22	-0.141	1.15	-0.339	2.00
Direct * For							-0.639	2.00	-0.815	1.93	-0.483	0.96
Adverts * For							-0.242	1.15	-0.182	0.61	-0.270	0.87
Per Net * For							-0.679	1.91	-0.272	0.58	-1.186	2.27
Observations	4,991		2,737		2,254		4,991		2,737		2,254	

These specifications included the gender, marital status, age and educational qualification variables from Table 4
 The lower number of observations compared to Table 4 arose from the fact that we are only looking at the newly employed