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Paul Frijters
Michael A. Shields
Stephen Wheatley Price

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Paul Frijters
Australian National University

Michael A. Shields
University of Melbourne and IZA Bonn

Stephen Wheatley Price
University of Leicester and IZA Bonn

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IZA

P.O. Box 7240
D-53072 Bonn
Germany

Tel.: +49-228-3894-0
Fax: +49-228-3894-210
Email: iza@iza.org

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ABSTRACT

Immigrant Job Search in the UK: Evidence from Panel Data*

Most immigrant groups experience higher rates of unemployment than the host countries native population, but it is as yet unclear whether differences in job search behaviour, or its success, can help explain this gap. In this paper, we investigate how the job search methods of unemployed immigrants compare with those of the native born, using panel data from the UK Quarterly Labour Force Survey. We explore the relative effectiveness of different job search methods, between the main native born and immigrant groups, in terms of their impact on the duration of unemployment. Our main finding is that immigrant job search in the UK is less successful than that of UK born whites. However their relative failure to exit unemployment cannot generally be explained by differences in the choice of main job search method or in observable characteristics. We find no support for a policy that would constrain immigrants to use verifiable job search methods.

JEL Classification: J61, J64

Keywords: unemployment, job search, immigrants, duration analysis, panel data

Corresponding author:

Stephen Wheatley Price
Department of Economics
University of Leicester
University Road
Leicester LE1 7RH
United Kingdom
Fax: +44 116 2522 908
Email: swp2@le.ac.uk

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1. Introduction

Most immigrant groups in major immigrant-receiving countries are known to be significantly more likely to report being unemployed than are members of the native born populations (see e.g. for the US, Chiswick, Cohen and Zach, 1999 and, for the UK, Wheatley Price, 2001). Also, in the UK unemployment rates are generally higher amongst members of the main ethnic minority groups (Blackaby et al. 1997, 1999) and their unemployment is predominantly involuntary in nature (Shields and Wailoo, 2002). Several explanations for these findings have been explored to date, the main two of which are that UK employers' hiring decisions discriminate on the grounds of ethnicity and that many immigrant groups lack the necessary English Language skills for success in the labour market (see Hatton and Wheatley Price, 1999, for a survey).

Job search behaviour may provide a further explanation for the observed differences in unemployment rates, according to immigrant status. It may be the case that immigrants employ different job search methods from the native born, or that their chosen methods are not as effective. This may be the consequence of their lack of (apparently) similar human capital, lack of familiarity with the workings or institutions in the UK labour market or because immigrants' job search methods are more limited than those of other job seekers. So far a lack of suitable longitudinal data has hindered the empirical exploration of this area in the UK. The contribution of this paper is to provide one of the first detailed investigations into the job search activities of the main male ILO unemployed[1] UK born and immigrant groups. Specifically, we provide identify the main job search methods they use, and examine how successful each method is for (re-)entering employment, using the panel element of the Quarterly Labour Force Survey of the United Kingdom, pooled over the 1997-2001 survey years.

The policy relevance of the analysis is three-fold. Firstly it is important to deepen our understanding of the reasons behind the differences in unemployment rates across UK born and immigrant groups. If it turns out that these differences are mainly due to differences in observables, such as education, the clear policy implication is to tackle such causes. If, on the other hand, the differences arise from unobservable differences between these groups, addressing observable differences would have little impact. The second policy relevant issue is that if verifiable search methods are more successful than non-verifiable search methods, stimulating the increase of such methods, including the use of government-funded Job Centres, could boost employment rates. Thirdly, a particular concern of policy makers is the public perception, often highlighted by the national media, that immigrants pose a competitive threat to UK born job seekers. If it is the case

[1] According to the internationally recognised standard devised by the International Labour Office (ILO), a person is unemployed if they are of working age, without a paid job, are available to start work in the next two weeks and have

that immigrants are more successful in their job search, and take jobs that would otherwise be filled by UK born workers, it is argued that the government should tighten immigration controls further.

The remainder of the paper is organised as follows. In Section 2, we briefly review previous explanations for the observed unemployment gap and outline the main hypotheses concerning immigrant job search behaviour. In Section 3 we describe our sample and present a descriptive analysis of immigrant job search methods in the UK. Our empirical methodology is explained in Section 4 and the resultant findings are discussed in Section 5. Section 6 draws some policy conclusions.

2. Literature Review

2.1 The Ethnic and Immigrant Unemployment Gap in the UK

There is now a considerable body of econometric evidence documenting unexplained unemployment rate differences between different ethnic groups in the UK.[2] In particular, Blackaby *et al.* (1997, 1999), using the 1991 Census and annual Labour Force Surveys[3], respectively, find that characteristic differences fail to explain the majority of the unemployment gap between whites and the main ethnic minority groups in the UK. These results are attributed to a number of factors including differences in the extent of employer racial discrimination experienced, contrasting responses to the presence of racial discrimination in the labour market (e.g. Dex, 1982), disparities in the degree of assimilation, variations in the endowment of unobserved characteristics, particularly in English language fluency (Blackaby *et al.* 1997, 1999), differences in the take up of higher education (Modood and Shiner, 1994; Leslie and Drinkwater, 1999) and a differential willingness to commute (Thomas, 1997), across ethnic groups. However, different cultural attitudes to work appear to have no impact (Thomas, 1998).

Variations between and within ethnic groups, according to immigrant status, have been shown by Wheatley Price (2001) to help explain ILO unemployment rates in the UK. He shows that white immigrant men have, on average, a 30% higher probability of being unemployed than UK born men, whilst ethnic minority men are twice as likely to be unemployed. Furthermore, even after accounting for time spent in the UK, there remains wide variations in the unemployment experience of immigrants, within these broad ethnic groups, according to country of birth. This evidence motivates our exploration of immigrant job search behaviour and its success.

2.2 Immigrant Job Search: Hypotheses

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either looked for work at some time in the previous four weeks, or are waiting to begin employment which has already been secured (see Sly, 1994, technical note).

[2] For more descriptive evidence see the results from the four national surveys of ethnic minorities (Daniel 1968; Smith 1977; Brown 1984 and Modood *et al.* 1997) and Jones (1993), based on the 1988-1990 annual Labour Force Surveys.

Empirical research into the use of job search avenues by immigrants, and their relative effectiveness, has been very limited.[4] Most of the standard empirical job search literature has looked at job search behaviour in the general population and has paid little attention to issues of ethnicity or immigrant status.[5] Chiswick (1982), in his model of immigrant employment adjustment, clearly hypothesizes that immigrant job search will be less effective, when compared to the native born, resulting in immigrants spending longer in unemployment. There are three main supporting arguments for this.

Firstly, immigrants may lack, or appear to lack, equivalent human capital. Although immigrants acquire human capital, in the form of formal schooling and labour market skills, in their country of birth, these skills do not transfer perfectly across national borders. This may be because of the different characteristics of each country's labour market (Chiswick, 1978), because immigrants lack the language skills to effectively use their acquired human capital (Dustmann and Fabbri, 2003; Leslie and Lindley, 2001; Shields and Wheatley Price, 2001, 2002), or because employers are unable to correctly evaluate non-UK qualifications and experience. The greater the dissimilarity between the country of origin and the UK, especially in terms of educational systems and labour market institutions, the fewer will be the number of job offers received by immigrants and the longer they will spend engaged in job search in comparison to native workers.[6] Should this argument find empirical support, governments might wish to aid employers' recognition of foreign qualifications, through some verification or certification process. Additionally, they could encourage the acquisition of UK qualifications and English language skills by existing immigrants and select future immigrants on the basis of particular transferable skills that are in demand by employers.

Secondly, immigrants may have a limited knowledge of the local labour market institutions, the range of job opportunities, the specific nature of many jobs and where the most profitable job opportunities lie. Furthermore, a lack of English language fluency would reduce immigrants' access to jobs advertised in the media or via job centres. Immigrants would then have an incentive to spend

[3] There are minor differences in the definition of unemployment used in these two surveys. Consequently, the Census reports slightly higher rates of unemployment in comparison to the LFS.

[4] Dex (1982) focuses on Black / White differences in job search behaviour and how it is influenced by employer racial discrimination. Beggs and Chapman (1990) formulate some hypotheses of immigrant job search behaviour, which are largely compatible with those of Chiswick (1982), but their evidence concerns unemployment outcomes rather than the job search process itself. Daneshvary *et al*. (1992) find evidence that immigrants in the US use job search information to the same extent as the US born just 12 years after immigration.

[5] See, for example, Holzer (1998) for the US, Osberg (1993) for Canada, Gregg and Wadsworth (1996) for Britain, and more recently, Boheim and Taylor (2001) for Britain, Addison and Portugal (2002) for Portugal and Weber and Mahringer (2002) for Austria.

[6] According to Dex (1982) job search theories that incorporate the employer discrimination in the labour market (thus reducing the number of job offers received and the expected return from additional search effort) predict an increase in the costs of job search and a reduction in the duration of job search, under the usual assumptions. However, whilst Dex

more time in the job search process, given equal entitlement to welfare benefits, than the native born, in order to increase the effectiveness of their job search, reduce the uncertainty surrounding any job offers they receive and increase the likelihood of a suitable match. One policy response would be for the government to fund job search training and support for immigrants.

Thirdly, immigrants' job search methods are more limited. Like native born job seekers, immigrants may make use of social networks and employer contacts. However, the size of these networks is likely to be smaller, than that of a native born job seeker, giving access to a narrower range of potential job opportunities, a reduced number of suitable job offers and an increased duration of job search for immigrants (Beggs and Chapman, 1990). If this is the case, governments might wish to encourage immigrants make use of more formal and verifiable job search methods in order to reduce their duration of unemployment. Importantly, we are able to examine the effectiveness of formal job search methods for immigrants in the empirical analysis that follows.

A further hypothesis put forward by Chiswick (1982) is that immigrant job search will become more effective, and their unemployment duration will decrease, the longer they spend in the destination country. This will occur as they accumulate location-specific human capital, become familiar with the local labour market and utilise more similar job search methods, to those of native born job seekers, over time. Indeed there is considerable evidence that the native-immigrant unemployment gap narrows with increasing years since migration (Beggs and Chapman, 1990, Chiswick, 1982, Chiswick, Cohen and Zach, 1997, Wheatley Price, 2001). However, it is argued that these parameter estimates may be confounded by cohort and selection effects (see Borjas 1994 for a review). Unfortunately, our immigrant sample is inadequate to explore this issue effectively.

3. Sample Construction and Descriptive Analysis

3.1 Sample Construction and Key Definitions

Our sample is derived from the Quarterly Labour Force Survey (QLFS) of the United Kingdom. The Labour Force Survey has been undertaken since 1973. Its primary purpose is to collect internationally comparable employment and unemployment data at a regional and national level for the UK. At the beginning of 1992 a quarterly element was introduced, for Great Britain. The total number of households successfully questioned each quarter is approximately 64,000, amounting to some 167,000 persons. Each household is questioned for five successive surveys, so that if the household is first surveyed in the Spring (interviews conducted between March and May) of one year (wave 1) interviews will be attempted with that household for each successive quarter (waves 2, 3 & 4) up to (and including) the Spring of the following year (wave 5).

(1982) finds supporting evidence of higher job search costs, amongst young Black school-leavers in Britain, job search durations are longer, perhaps due to Blacks receiving a different distribution of wage offers than Whites.

The panel element of the QLFS has been relatively under-utilised in empirical work and is the largest source of panel data on the labour market activity of immigrants in the UK.[7] We constructed a series of 16 overlapping panel datasets, the first of which comprises those individuals who are first successfully interviewed in the Spring QLFS of 1997, following them through to the Spring QLFS of 1998. The next panel was first sampled during the Summer QLFS of 1997 (interviews conducted between June and August), and completed its duration in the panel in the Summer QLFS of 1998. Our sixteenth and final panel comprises individuals whose first interview took place during the Winter QLFS of 2000 and whose final interview was undertaken in the Winter QLFS of 2001 (between December 2001 and February 2002).

The specific sample we utilise comprises males, aged 16-65, who are resident in the United Kingdom and not engaged in full-time education. We select those who report currently experiencing a spell of ILO unemployment at least once, during their time in one of the QLFS panels described above, and who report country of birth information. The resultant sample of 60890 observations is based on 16435 individuals, who are present for an average of 3.7 quarters (or waves). We classify our groups of interest primarily according to country of birth and self-reported ethnicity. We distinguish between males who report their country of birth as the UK, according whether their ethnicity is White (termed White UK born) or other than White (termed ethnic minority UK born). Immigrants, those born outside the UK, comprise four groups: White immigrants report their ethnicity as white, Black immigrants report an ethnicity other than white and were born in the Caribbean and Africa, South Asian immigrants were born in Bangladesh, India and Pakistan, and do not report a White ethnic origin, or were born in East Africa and report an Indian, Pakistani or Bangladeshi ethnicity, Other immigrants constitute all other males born outside the UK, mainly in China and Southeast Asia, who report an ethnicity other than White.

The proportion of the sample that report currently being ILO unemployed in any spell is on average 54.1%. This proportion declines gradually with duration in the panel, reflecting both attrition and exits from unemployment. In particular, 25.2% of the UK born whites in our sample, who were unemployed in one quarter, reported being in work in the subsequent quarter. This exit rate into employment is substantially lower for ethnic minority UK born men (20.7%) and all immigrant groups (22.7% for white immigrants, 17.6% for Black immigrants, 16.7% for South Asian immigrants and 23.6% for Other immigrants). Table A1, in Appendix 1, provides a

[7] The British Household Panel Survey, used in Boheim and Taylor (2001), yields a sample of 655 males, who experience an unemployment spell and for whom job search strategy information is available. Immigrants would constitute no more than 10% of this sample.

descriptive picture of the main features of this sample, for each group of interest.[8] For brevity we do not discuss them in detail here.

Our main methods of job search are defined as follows. The variable Job Centre includes the three questionnaire categories of visiting a Job Centre/ Job Market or Training and Employment Agency Office, visiting a Careers Office and visiting a Job Club. Adverts / Newspapers indicates the job search activities of advertising for jobs in newspapers, journals or on the internet, answering advertisements in those sources and studying situations vacant columns in the same media. The next two variables (Direct to Employer and Social Networks) represent just one questionnaire category each, namely that of applying directly to an employer and that of asking friends, relatives, colleagues or trade unions about job opportunities. The final variable (Agency / Other) covers the six remaining questionnaire categories of job search which are: - having your name on the books of a private employment agency (which accounts for the largest proportion of responses for this variable), waiting for the results of an application for a job, looking for premises or equipment for a job, seeking any kind of permit to be able to do a job, trying to get a loan or other financial backing for a job or business and doing anything else to find work. The duration of job search is given by the number of months since the individual last left their last job or full-time education, as appropriate.

3.2 Descriptive Analysis

In Table 1 we report a descriptive analysis of the job search activity of the individuals observed currently in ILO unemployment. All respondents are looking for a job as an employee or for self-employment (or for both) in the four complete weeks prior to interview. In the upper half of the Table we report the percentage of the unemployed that report using one of the five broad job search activities as their main method of looking for work. In the lower half of the Table we report the percentage using each activity as any method of job search together with the mean number of broad methods used.

Amongst the UK born Job Centre and Adverts / Newspapers are by far the most common main job search methods, being used by about 35% of respondents each. Each of the other three broad job search activities are utilised by approximately 10% of the ILO unemployed UK born samples as their main method. For White immigrants and Other (ethnic minority) immigrants Adverts / Newspapers are the commonest form of main job search method, whereas for Black and South Asian immigrants Job Centres are most likely to be used. Only 24.4% of ILO unemployed South Asian immigrants make use of Adverts / Newspapers as their main job search method which may

[8] One important limitation of the QLFS is that approximately 30% of interviews are conducted with a proxy, usually the partner of the actual respondent. However, our variables of interest are likely to be well known to such proxies.

partially be due to their lower levels of English language fluency. In contrast, this group of immigrants are the most likely to rely mainly upon their Social Networks for job search, with all immigrant groups using this strategy to a greater extent than the UK born. All immigrant groups also use direct approaches to employers as the main method of job search more commonly, than do the UK born, with the exception of Black immigrants who use this method the least. All groups, other than South Asian immigrants, rely on Agency and Other job search methods to a greater extent than White UK born men.

Interestingly, there is some indication that immigrant job search activity is more limited in scope than that of the UK born as the total number of job search methods reported is slightly lower for all immigrant groups. However, there is also considerable variation in the percentage of each immigrant group who report ever using any of the different job search activities. All immigrant groups are much less likely to ever search for work through Adverts / Newspapers, slightly less likely to directly approach employers about job opportunities and, bar South Asians, all make less use of formal Job Centres, than UK born ILO unemployed men. White immigrants report a reduced average use of Social Networks, compared to White UK born men, whilst all ethnic minority men, especially South Asian immigrants, are more likely to report using this method. Finally, ethnic minority UK born and Other immigrant men use Agency and Other methods more frequently whereas White, Black and, especially, South Asian immigrants use this method the least.

In Table 2 we report the percentage of previously ILO unemployed individuals, subsequently observed in work, who report the actual job search method that resulted in them getting a job.[9] Interestingly, successful employment outcomes do not vary enormously by the method used. For White UK born men Social Networks (27.3%) account for the largest proportion of successful job search methods, followed by Adverts / Newspapers (23.5%), Job Centres (19.7%), Agency / Other (18.6%) with Direct approaches to employers (10.9%) being the least fruitful activity. Interestingly, Social Networks are also the most profitable avenue of job search for all immigrant groups, with around 25% of White and Black immigrants, and more than 36% of South Asian and Other immigrants, who obtained a job, using this method. For ethnic minority UK born men, Job Centres accounted for 26.5% of job outcomes, with direct approaches to employers also being more successful for this group than for White UK born. For all immigrant groups Agency and Other categories of job search proved the second most successful method, whilst Direct to Employer was also a more profitable employment route for ethnic minority immigrants than for White UK born

[9] This variable is only available for a small proportion of our sample, namely, those who started a job in the three months prior to interview. Hence we cannot use it in the econometric analyses that follow. The percentage of those, who obtained a job, reporting the successful search method to be the same as the main reported method of job search used in the previous quarter is 43.9%. This compares favourably with the 63.2% who report using the same main method of job search from one quarter to the next.

men. Of those who found employment, the vast majority were in permanent employment. This proportion was highest for White UK born men (73.9%), South Asian (73.0%), Other (70.9) and White (70.5%) immigrant men, but lowest for ethnic minority UK born (68.9%) and Black immigrant men (68.2%).

3.3 Job Search by Duration of Unemployment

So far our description of immigrant job search behaviour has overlooked how the main method of job search is affected by the duration of unemployment. In figures 1 to 6 the distribution of the main search category used, at various durations of unemployment, is plotted for each group of interest. It is clear that the proportion using each main job search method does change as the duration of unemployment increases, but not equally for all groups. White UK born men are more likely to rely on Job Centres and Adverts / Newspapers, and depend less on direct approaches to employers, Social Networks and Agency / Other avenues, as their duration of unemployment increases. In comparison, White immigrants initially rely mainly on Job Centres and Adverts / Newspapers, then increasingly use Social Networks and Agency / Other methods, between 3 and 10 months of unemployment duration, and finally revert back more to the former methods. Black immigrants follow a broadly similar pattern, but with a much greater initial reliance on Adverts / Newspapers and private job agencies and other methods. South Asian immigrants depend to a greater extent on Adverts / Newspapers and Job Centres, and less on all other methods, as their unemployment duration increases. All long-term unemployed men rely mainly on Job Centres and Adverts / Newspapers, with the proportions of these and other categories broadly similar across all groups.

Clearly these actual patterns are confounded by differences in the average characteristics across groups and by the selection process (into work) over time, as some individuals get jobs whilst others remain ILO unemployed. Hence we now turn to a more structured investigation of the choice of main job search method and the influence it has on unemployment duration.

4. Empirical Methodology

4.1 Duration Model

Given that our ultimate interest is in analysing the determinants of job finding probabilities, we begin by specifying the hazard rate θ of individual i with UK born / immigrant group j at time t as:

(1) $$\theta_{ijt} = \lambda_t e^{x_{it}\beta + z_{it}\gamma_j}$$

i.e. we take the standard Proportional Hazard specification. Here, λ_t is the baseline hazard (which we allow to be non-parametric, taking it to be piece-wise constant); x_{it} is a vector of individual

characteristics that are not group-specific, such as education, family circumstances, and year dummies; z_{it} is a vector of variables that differ in content between the UK born and immigrant groups, such as indicators for group status and the job search method used. With this hazard rate, the probability of observing someone making a transition to work between T_{k-1} and T_k can then be written as:

$$(2) \qquad P\{T_{k-1} < t \leq T_k \mid x_{it}, t > T_{k-1}\} = 1 - \exp(-\int_{T_{k-1}}^{T_k} \lambda_t * \exp(x_{it}\beta + z_{it}\gamma_j)dt)$$

which means that the probability of the duration of unemployment between T_{k-1} and T_k, given that it occurs no earlier than T_{k-1}, equals one minus the integrated hazard of that period. The big advantage of this hazard model is that it naturally takes account of right-censoring, which applies to most of our data and which includes moves from unemployment to non-participation. Unusually for this model, we allow for several time-varying characteristics, such as the number of children, marriage, and year effects.[10] The estimates from the duration model are presented in Table 3 and discussed in Section 5.1 below.

4.2 Choice of Job Search Method

We model the choice of main search method as an optimal choice problem, whereby the expected pay-off to individual *i* of UK born / immigrant group *j* at time *t* of choosing search method s equals

$$(3) \qquad \Pi_{ijst} = x_{it}'\delta_s + w_{it}\eta_{js} + e_{ist}$$

where w_{it} now includes group-specific variables, which are not however all the same as z_{it}. Here, the pay-off Π_{ijst} implicitly includes the probability of finding a job with search method *s* and the costs of using search method *s*. This pay-off can therefore be seen as the reduced-form of an optimising decision model. Allowing more flexibility than the standard multinomial logit choice model, we take e_{ist} to have a normal distribution and to be orthogonal to any e_{ilt} with $l \neq s$. The probability of observing an individual at time *t* choosing method s is thus the probability that method s has the highest pay-off:

[10] Our data does not allow us to include unobserved heterogeneity: including unobserved heterogeneity would force us to look only at those we observe entering unemployment (the flow sample). The number of new entrants we have for each UK born / immigrant group is simply too small, and even then we would still be hampered by the fact that many durations less than 3 months would not be observed. Assuming no unobserved heterogeneity, whilst using very rich observed heterogeneity, has the advantage that the problem of lacking many small spells does not affect the estimates of observed characteristics. It also reduces the importance of functional form for our estimates, because the identification of unobserved heterogeneity in single-spell data is known to be heavily dependent on functional form (e.g. Baker and Melino, 2000).

$$P\{S_{it} = s \mid x_{it}, t\} = P\{x_{it}'\delta_s + w_{it}\eta_{js} + e_{ist} > \max_{l \neq s}[x_{it}'\delta_l + w_{it}\eta_{jl} + e_{ilt}]\}$$

$$= \Phi\left(\frac{x_{it}'\delta_s + w_{it}\eta_{js} - \max_{l \neq s}[x_{it}'\delta_l + w_{it}\eta_{jl} + e_{ilt}]}{\sigma_s}\right) \quad (4)$$

where S_{it} is the observed main search method at time t by individual *i*, and $\Phi()$ denotes the standard normal cumulative density function. Estimating this structural model requires 5-dimensional integration, which we tackle by simulated likelihood in Gauss.

For this model we include in x_{it} the same time-invariant and time-variant individual characteristics (obviously excluding the search method variables) as in the duration model. We therefore estimate 16 parameters per search method *s*. In w_{it} we include a baseline function, defined on the same 6 intervals as in the duration analysis, that is specific to each of the 6 separate UK born / immigrant groups. Here we estimate 36 variables per search method *s*. Now, as normalisations to this model, we have to set one of the pairs $\{\delta_s, \eta_{js}\}$ to zero. It can trivially be seen, from equation 4, that we can arbitrarily add any $(x_{it} + w_{it})'\alpha$ to all Π_{ijst} without changing the optimal choice. We choose to set $\delta_1 = \eta_{j1} = 0$ and normalise σ_1 to equal 1. This leaves 52*4 parameters and 4 variances to be estimated. As a means of presenting the mass of results from the job search method choice model we replicate Figures 1 to 6, correcting for all observable characteristics. Hence, in figures 7 to 12, we can see how the distribution of main job search methods would appear, if all groups possessed average characteristics equivalent to the mean values for the white UK born population. These results are discussed in Section 5.2 below.

4.3 Decomposition Analysis

Our third set of empirical results is derived from using a combination of the parameter estimates from the duration model and from the choice of job search method model. We define 6 different typical individuals, one for each UK born / immigrant group in our data[11]. We then explore the determinants of their job-finding probabilities, at durations of 6 months and 2 years, with the aid of four simulations:

Simulation 1: Here we simply calculate the probability of a transition to a job, for these typical individuals, directly from their respective hazard rates.[12]

[11] The white UK born typical individual for instance will have a hazard rate equal to $\lambda_t e^{\bar{x}_{it}^{WhiteUK}\beta + \bar{z}_{it}^{WhiteUK}\gamma_1}$ where $\bar{x}_{it}^{WhiteUK}$ and $\bar{z}_{it}^{WhiteUK}$ denotes the average individual and search characteristics of the White UK born.

[12] Note that this statistic cannot really be attained without using a duration model because the data does not actually have the specific information on employment transitions at precisely 6 months or 2 years.

Simulation 2: Next, we simulate the probability of a transition to a job, for each representative of the UK born and immigrant groups, as if they possessed average White UK born characteristics.[13] Importantly, the choice of job search method, and unemployment duration, parameters used are group specific.

Simulation 3: As in Simulation 2, we compute the probability of a transition to a job, for the representative individuals, with their characteristics changed to equal the mean White UK born values. However, here we additionally allow these characteristics to influence the choice of job search method, whilst keeping the unemployment duration parameters group specific.[14] Simulation 3 shows the importance of individual characteristics on job-finding probabilities through their effect on the choice of job search method. Together with Simulation 2 these findings reveal the full importance of individual characteristics.

Simulation 4: Lastly, we simulate what the job-finding probabilities would be, for each representative individual over the two specified periods, if their observed characteristics and their influence on job search method choice and success would be precisely that of the white UK born.[15]

Residual: As a final calculation we examine the influence of group-specific unobserved factors on the job finding probabilities of the representative individuals.[16] The residual we report is equal to the job finding probabilities of the white UK born (from Simulation 1) minus the results from Simulation 4. It provides an indication of the relative search effectiveness, or job-finding success, between white UK born and other ethnic / immigrant groups in the UK, after controlling for the full impact of observable characteristics on both the choice of job search methods and the duration of unemployment.

The findings from the decomposition of these simulation results are discussed in Section 5.3 below.

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[13] i.e. we set the $\bar{x}_{it}$ for every group equal to $\bar{x}_{it}^{WhiteUK}$. The hazard rate for Black Immigrants, for example, then equals $\lambda_t e^{\bar{x}_{it}^{WhiteUK}\beta+\bar{z}_{it}^{Blackimm}\cdot\gamma_{Blackimm.}}$.

[14] i.e. we set the $\bar{z}_{it}$ for every group equal to the predicted $\hat{z}_{it}(\bar{x}_{it}^{WhiteUK}, \bar{w}_{it}^{j})$. This means we insert $\bar{x}_{it}^{WhiteUK}$ for each individual in equation (3), and then predict for each time period the average search behaviour of each representative individual, given white UK born characteristics. These predictions require micro-simulations because they involve all possible values of the 5-dimensional error-structure in equation (3). The hazard rate for Black Immigrants, for example, then becomes equal to $\lambda_t e^{\bar{x}_{it}^{WhiteUK}\beta+\hat{z}_{it}(\bar{x}_{it}^{WhiteUK},\bar{w}_{it}^{Blackimm})\gamma_{Blackimm}}$.

[15] This, for example, means that the hazard rates of Black immigrants would be $\lambda_t e^{\bar{x}_{it}^{WhiteUK}\beta+\bar{z}_{it}^{WhiteUK}\gamma_{Blackimm}}$.

[16] i.e. the importance of the parameters γ_j.

5. Results

5.1 The Duration of Unemployment

The full results from the duration model are presented in Table 3. The main results are consistent with a number of well-known findings in the literature, for example older persons have a harder time finding a job, and generally seem perfectly plausible, confirming the validity of our data. Turning to the main variables of interest, we find a differential speed of exit between native whites and some immigrant groups, conditional on search method. In particular, white immigrants move out of unemployment more quickly than white natives, but the converse is true for South Asian immigrants. The latter finding is important given that South Asian immigrants represent a large group of immigrants resident in the UK with relatively high unemployment rates.

A clear policy-relevant finding is that job search methods, which are generally informal, are more effective in gaining employment for white natives than using the Job Centre. This concurs with recent evidence for Portugal by Addison and Portugal (2002). On the whole, our results appear to support the notion that methods that cannot be objectively verified (Direct to Employer, Social Networks and Agency / Other) are preferable to directly verifiable methods of jobs search (Job Centres, Adverts / Newspapers). Hence an insistence on verifiable search effort is likely to be counter-productive for UK born males.[17] However, we find that ethnic minority UK born, white immigrants and Other immigrants each experience the highest probability of exiting unemployment from using Job Centres. But we find no significant evidence of a differential unemployment exit rate by main job search method for either Black or South Asian immigrants. These results are limited in their ability to inform policy because they do not directly compare the efficiency of the different job search methods for immigrants relative to white UK born nor allow for the endogeniety of the job search method choice to the duration of unemployment.

5.2 Choice of Main Job Search Method

Our findings from estimating this model appear sensible: many parameters are significant and the most important relationships look reasonable (see Appendix 2 for a more formal examination of the explanatory power of this model). For instance, better-educated persons have a higher expected pay-off with the Agency / Other method and individuals with a family have higher pay-offs from using Social Networks to search for jobs. Given that these results comprise 212 parameter estimates, whose effects involve complex interactions, we present the results graphically. Figures 7 to 12 show the predicted distribution over time of the main job search methods, for the different

[17] Such a findings concur with the results of a Dutch policy-experiment into rewarding observable search effort, evaluated by van den Berg and van der Klaauw (2002). However, some caution should be given to our finding as it might be that lower ‘quality’ individuals who predominately use Job Centres as their main job search method.

groups, once observed heterogeneity (education and family details) is controlled for. If the graphs, for each group, are identical to the descriptive patterns in Figures 1-6 then we can conclude that differences in the choice of main job search method are predominantly due to unobserved factors associated with belonging to one of these ethnic / immigrant groups.

Indeed it is straightforward to see that the two sets of graphs look very similar. Most of the major patterns of job search behaviour that we observed in the raw data, over the duration of unemployment and across the different groups, are retained in the corresponding predicted graphs.[18] Hence it appears the case that something, not captured by our explanatory variables, drives the main differences in search behaviour between white UK born men and the other groups. Therefore, we conclude that the education, family composition and business cycle variables are unable to account for the reported differences in job search behaviour across groups. Furthermore, the unexplained group differences in the use of search channels are substantial, implying that different search channels offer different rewards to individuals from the different UK born and immigrant groups.

5.3 Decomposition Analysis

We present the results of the decomposition analysis in Table 4. For the sake of brevity we will concentrate on the main findings from this analysis. Firstly, it is clear from all the simulation results that a typical white male immigrants' probability of finding a job is most similar to that of an average white UK born men, and that the gap is narrower at 24 months unemployment duration, than at 6 months. Secondly, Other (ethnic minority) immigrants have a similar job-finding probability to that of ethnic minority UK born men, at both unemployment durations (from Simulation 1). Thirdly, the ethnic minority UK born unemployed have more favourable observable characteristics than the white UK born, on average (compare Simulation 2 with that of Simulation 1) and their lower probability of successful job search cannot be explained by their choice of job search method (compare Simulations 3 & 4 with that of Simulation 2). Hence the unemployment situation of these men would be even worse, was it not for their relative youth and higher qualification levels. Fourthly, Black immigrants and, especially, South Asian immigrant men are much less likely to find a job than all other groups, regardless of the time horizon.

For a typical individual from each immigrant group, when compared to an average White UK born unemployed male, it is evident that the vast majority of the difference in the probability of transition from ILO unemployment to a job cannot be explained by:

[18] One counter example the Other immigrant group. In figure 12 it is clear that the predicted use of Agency / Other over time is much lower at high unemployment durations than in Figure 6. This implies that the degree to which Other immigrants use this method of job search can be 'explained', to a substantial extent, by their observable characteristics.

a) Differences in average observable characteristics between each immigrant group and White UK born men (compare the results of Simulation 2 with that of Simulation 1),
b) Differences in the combined effect of these average characteristic differences and their influence on the choice of main job search method and its success across groups (compare the results of Simulation 4 with that of Simulation 1).

It is clear directly from the calculated residuals that it is unobserved differences, between white UK born men and the respective immigrant groups, which predominantly account for the reduced probability of ILO unemployed immigrant men finding a job. In other words, immigrant job search appears to be less effective than that of equivalent native born job seekers, for reasons not captured by the control variables used in our estimated models. This results in immigrant men being less likely to exit into work, than UK born men, and, consequently, spending more time in unemployment. This finding is consistent with Chiswick's (1982) contentions that immigrants may obtain a lower return to their human capital, due to employer's being unfamiliar with foreign qualifications or immigrants lacking the English language fluency to fully utilise their human capital acquired before migration, and that immigrant job search may be less effective due to a lack of familiarity with the local labour market. Unfortunately, our data does not allow us to attempt to distinguish between these two hypotheses. Consequently, policymakers should seek to address both aspects until more detailed analysis becomes possible.

However, a hypothesis that is clearly rejected by our findings is that Black, South Asian and Other immigrants should be required to use verifiable job search methods (such as Job Centres or Adverts / Newspapers) rather than non-verifiable or more informal methods. All these immigrant groups use direct approaches to employers, Social Networks and Agency / Other methods at least as much as white UK born men do. Moreover, the duration results show that these informal methods are no less effective for these groups than the verifiable method of Job Centres. Finally, the decomposition analysis reveals that the choice of search methods explains virtually none of the difference in job-finding probabilities between UK born whites and these immigrant groups. Hence, the observed differences in employment success cannot be attributed to a lack of social networks or the failure to use more formal and verifiable job search methods: all the 'action' is still in the dummies and baseline hazards for immigrant group status, implying something unobserved determines differential hazards. Put bluntly, immigrants appear to do worse at all forms of job search and not just verifiable methods or those requiring social networks.

6. Conclusion

In this paper, we have contributed to the literature on the economic performance of immigrants in the UK by utilising a large panel data sample of native born and immigrant ILO unemployed men to investigate the: (1) whether different groups of immigrants are as effective in their job search

behaviour as the native born, and (2) whether verifiable job search methods are more successful, than non-verifiable methods, in determining the re-employment probabilities of immigrants. To explore these issues we have estimated both a duration model of immigrant unemployment and a multinomial probit model of main job search method used. In order to aid the interpretation of the estimated parameters we have developed a useful graphical presentation of the actual and predicted choice of job search method and devised a decomposition framework that combines the parameter estimates from both models.

The clear finding from this analysis is that male immigrants in the UK have more trouble finding jobs than white UK born males and that most of this difference cannot be explained by differences in average characteristics or in the choice of search methods across these groups. In particular, amongst Black, South Asian and Other (ethnic minority) immigrant groups their preference for informal or non-verifiable job search methods (such as direct approaches to employers, use of social networks and private employment agencies) does not reduce the effectiveness of their job search. Hence we find no support for a policy of constraining immigrant job search to be mainly via verifiable methods, such as using a government Job Centre. The reason is that the most effective job-finding methods for both natives and immigrants turn out to be informal. This finding also clearly demonstrates the important role that asymmetric information plays in the UK labour market, because only then is informal information contained in informal networks valuable.

The lower job-finding probabilities that we observe for all immigrant groups turn out to be attributable to their lower job-finding hazards in every search method. Education and family circumstances only explain a small minority of the difference in job search success between immigrants and natives. In addition, it is quite clear that there are substantial differences in job search success across the different groups. Ethnic minority UK born men are much less successful at exiting unemployment than white UK born men, and this differential would be wider if the former group were not so young or well educated. On its own this result would indicate that discriminatory behaviour on the part of employers might be to blame for their higher unemployment rates.

However, amongst immigrant groups the differences in job-finding probabilities cannot simply be explained by employer discrimination. A leading candidate for an unobserved characteristic that could explain these differences is differential average language ability across these groups. This has been shown in a number of other recent studies to be an important determinant of employment prospects for immigrants in the UK (e.g. Dustmann and Fabbri 2003; Leslie and Lindley 2001; Shields and Wheatley Price, 2001). Indeed the fact that South Asian immigrants, who are known to have the lowest average level of English language fluency (amongst all immigrant groups in the

UK), have the least chance of successful job search would be consistent with conjecture. An additional potential explanation for these differences in job search success is that immigrants are searching in different parts of the labour market to white UK born men. For instance, they might be searching mainly for jobs amongst members of their own ethnic / immigrant group or employment at different skill levels to the UK born. These arguments would imply that the size of the job market that immigrants are searching over is much smaller than that explored by the UK born, resulting in a lower probability of success, regardless of the choice of search method.

It is quite clear that immigrants, in contrast to their public perception as a competitive threat to the UK born in the labour market, actually experience substantial difficulties in accessing employment. However, the specific reasons behind their relative lack of job search success in the UK labour market remain unclear. More detailed investigations of the causes of their difficulties in this area, and of the differences in job search success within the broad immigrant groups in the UK, must await the arrival of larger and more informative panel data for such minority groups.

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TABLE 1: Main Method and All Methods of Job Search used by Current ILO Unemployed

Percentage	Job Centre	Adverts / Newspapers	Direct to Employer	Social Networks	Agency / Other	Total Number
Main Job Search Method						
All	35.9	35.1	8.2	9.8	9.2	-
	(0.3)	(0.3)	(0.2)	(0.2)	(0.2)	
White UK Born	36.2	35.9	7.9	9.5	8.8	-
	(0.3)	(0.3)	(0.2)	(0.2)	(0.2)	
Ethnic Minority UK Born	36.9	31.3	8.9	9.1	12.6	-
	(1.4)	(1.3)	(0.8)	(0.8)	(1.0)	
White Immigrants	28.6	33.5	11.0	11.8	12.9	-
	(1.3)	(1.3)	(0.9)	(0.9)	(0.9)	
Black Immigrants	35.9	32.9	7.1	11.3	12.0	-
	(1.9)	(1.9)	(1.0)	(1.3)	(1.3)	
South Asian Immigrants	38.3	24.4	12.2	16.1	8.5	-
	(1.5)	(1.3)	(1.0)	(1.1)	(0.9)	
Other Immigrants	26.9	33.2	14.7	12.7	10.8	-
	(2.1)	(2.2)	(1.6)	(1.5)	(1.4)	
All Job Search Methods						
All	80.9	88.7	56.7	65.4	60.8	3.53
	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.01)
White UK Born	81.8	89.7	56.9	65.0	60.9	3.54
	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.01)
Ethnic Minority UK Born	84.3	85.7	58.1	69.5	66.0	3.64
	(1.0)	(1.0)	(1.4)	(1.3)	(1.4)	(0.04)
White Immigrants	68.0	83.7	55.2	61.0	59.8	3.27
	(1.3)	(1.0)	(1.4)	(1.4)	(1.4)	(0.4)
Black Immigrants	71.7	83.8	51.4	66.8	58.3	3.32
	(1.8)	(1.5)	(2.0)	(1.9)	(2.0)	(0.05)
South Asian Immigrants	81.5	79.8	55.5	75.9	53.6	3.46
	(1.2)	(1.2)	(1.5)	(1.3)	(1.6)	(0.04)
Other Immigrants	69.2	77.8	55.8	66.8	62.1	3.32
	(0.2)	(1.9)	(2.3)	(2.2)	(2.3)	(0.07)

Note: Standard error of mean in parentheses (adjusted for repeated individual observations).

TABLE 2: Actual Successful Job Search Methods Used
(for those reporting gaining employment in the last 3 months)

Percentage	Job Centre	Adverts / Newspapers	Direct to Employer	Social Networks	Agency / Other
All	19.8	22.9	11.0	17.4	18.9
	(0.5)	(0.5)	(0.4)	(0.5)	(0.5)
White UK Born	19.7	23.5	10.9	27.3	18.6
	(0.5)	(0.5)	(0.4)	(0.6)	(0.5)
Ethnic Minority UK Born	26.5	20.2	12.6	22.7	18.1
	(2.9)	(1.6)	(2.1)	(18.1)	(2.5)
White Immigrants	21.5	19.9	7.2	26.7	24.7
	(2.6)	(2.5)	(1.6)	(2.8)	(2.7)
Black Immigrants	18.0	19.1	16.9	24.7	21.4
	(4.1)	(4.2)	(4.0)	(4.1)	(4.4)
South Asian Immigrants	13.4	16.2	12.7	36.6	21.1
	(2.9)	(3.1)	(2.8)	(4.1)	(2.7)
Other Immigrants	14.5	11.8	13.2	36.8	23.7
	(4.1)	(3.7)	(3.9)	(5.6)	(4.9)

TABLE 3: Duration analysis of Unemployment

General variables			Search method variables		
	β	$\|t\|$		β	$\|t\|$
Unemployed 0-3 months	-1.642	19.7	*White UK born*		
Unemployed 4-6 months	-1.145	14.7	Adverts / Newspapers	0.210	4.9
Unemployed 7-9 months	-1.201	14.8	Direct to Employer	0.833	15.7
Unemployed 10-12 months	-1.394	16.3	Social Networks	1.418	34.0
Unemployed 13-24 months	-1.553	19.5	Agency / Other	1.147	25.0
Unemployed > 24 months	-2.307	28.5	*Ethnic Minority UK born*		
Number of children	-0.058	3.9	Adverts / Newspapers	-0.374	1.6
Age	-0.018	12.8	Direct to Employer	-0.283	1.1
Married/Cohabiting	0.219	5.6	Social Networks	-0.265	1.2
Widowed/Divorced/Separated	-0.227	3.6	Agency / Other	-0.567	2.4
1998	0.015	0.3	*White Immigrants*		
1999	0.037	0.7	Adverts / Newspapers	-0.398	1.8
2000	0.092	1.6	Direct to Employer	-1.147	3.6
2001	0.158	2.6	Social Networks	-0.432	2.1
2002	-0.114	0.7	Agency / Other	-0.394	1.9
Degree or equivalent	0.786	14.9	*Black Immigrants*		
Higher vocational qualification	0.635	9.3	Adverts / Newspapers	-0.369	0.9
'A' level or equivalent	0.520	11.6	Direct to Employer	0.561	1.4
'O' level or equivalent	0.480	10.8	Social Networks	-0.064	0.2
Other qualification	0.456	9.8	Agency / Other	-0.493	1.3
Foreign qualification	-0.050	0.5	*South Asian Immigrants*		
Limiting long-term illness	-0.313	7.5	Adverts / Newspapers	0.458	1.3
			Direct to Employer	0.278	0.7
Ethnic Minority UK born	-0.119	0.8	Social Networks	0.316	1.0
White Immigrant	0.285	1.8	Agency / Other	0.574	1.7
Black Immigrant	-0.152	0.5	*Other Immigrants*		
South Asian Immigrant	-0.750	2.8	Adverts / Newspapers	-1.256	2.6
Other Immigrant	0.340	1.1	Direct to Employer	-0.748	1.7
			Social Networks	-0.196	0.5
			Agency / Other	-0.430	1.1

Mean Log likelihood	-0.47332
Quarterly Observations	23772

Notes: Omitted reference group is single white UK born with no qualifications, no pre-school age children, no limiting long-term illness, using Job Centre as main search method in 1997. Absolute *t*-values in parentheses.

TABLE 4: Job-Finding Probabilities for Typical Individuals

Duration	Simulation 1	Simulation 2	Simulation 3	Simulation 4	Residual
After 6 Months of Unemployment					
White UK Born	0.501	-	-	-	-
Ethnic Minority UK Born	0.436	0.370	0.368	0.378	0.123
White Immigrants	0.479	0.494	0.482	0.477	0.024
Black Immigrants	0.399	0.409	0.375	0.406	0.096
South Asian Immigrants	0.374	0.412	0.385	0.357	0.144
Other Immigrants	0.431	0.455	0.428	0.430	0.071
After 24 Months of Unemployment					
White UK Born	0.916	-	-	-	-
Ethnic Minority UK Born	0.877	0.817	0.816	0.819	0.097
White Immigrants	0.906	0.915	0.907	0.905	0.011
Black Immigrants	0.855	0.864	0.835	0.842	0.074
South Asian Immigrants	0.792	0.832	0.818	0.790	0.126
Other Immigrants	0.878	0.895	0.869	0.862	0.053

Figures 1-6: Actual Main Search Method - Group Average

Figure 1: Actual Method - White UK Born Men

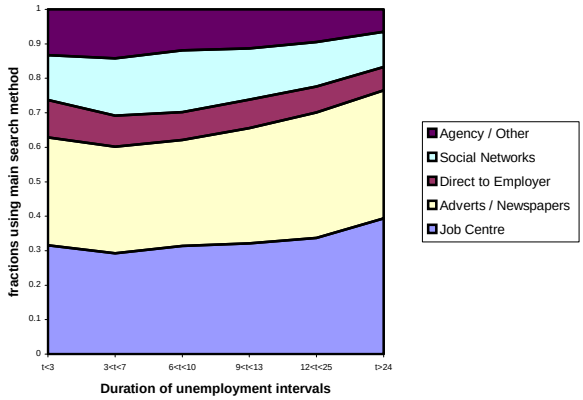

Figure 2: Actual Method - Ethnic Minority UK Born Men

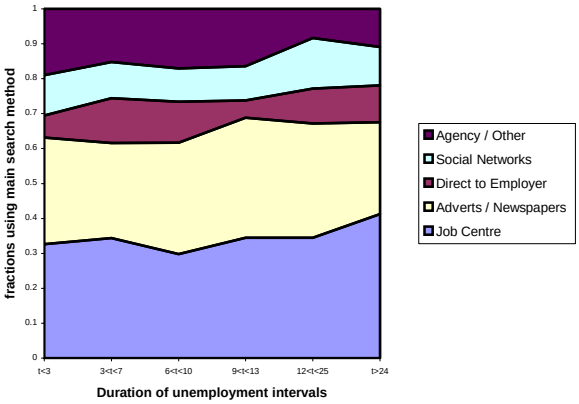

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Figure 3: Actual Method - White Immigrant Men

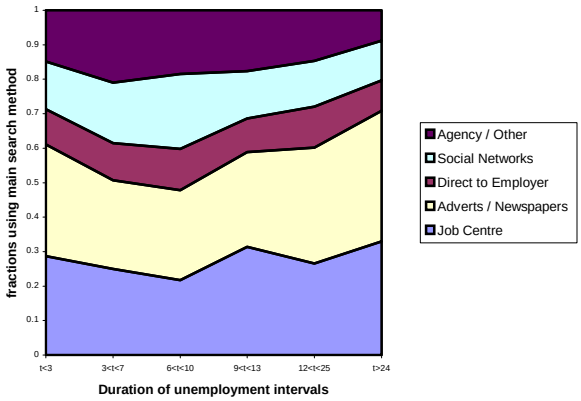


Figure 4: Actual Method - Black Immigrant Men

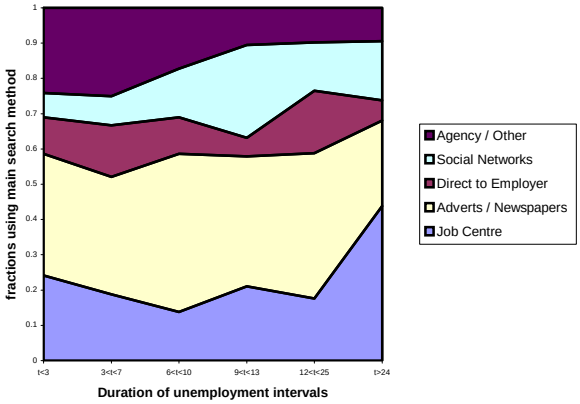


Figure 5: Actual Method - South Asian Immigrant Men

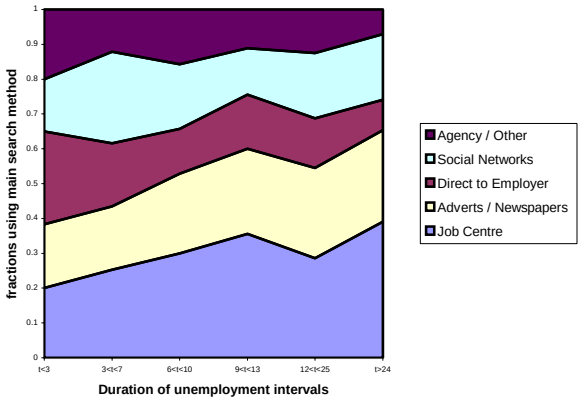
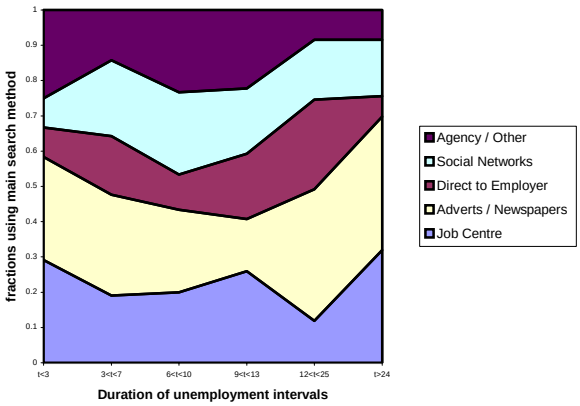


Figure 6: Actual Method - Other Immigrant Men



Figures 7-12: Predicted Main Search Method - Group Average

Figure 7: Predicted Method - White UK Born Men

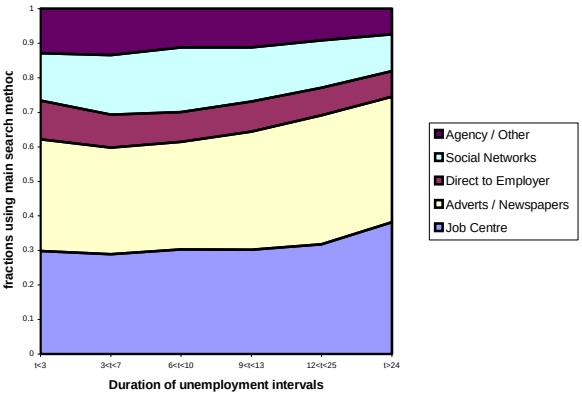


Figure 8: Predicted Method - Ethnic Minority UK Born Men

Figure 9: Predicted Method - White Immigrant Men

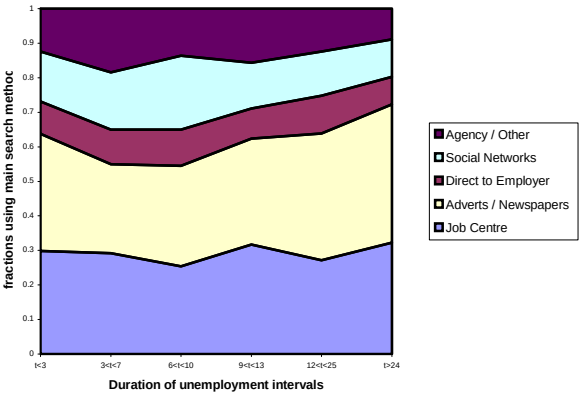


Figure 10: Predicted Method - Black Immigrant Men

Figure 11: Predicted Method - South Asian Immigrant Men

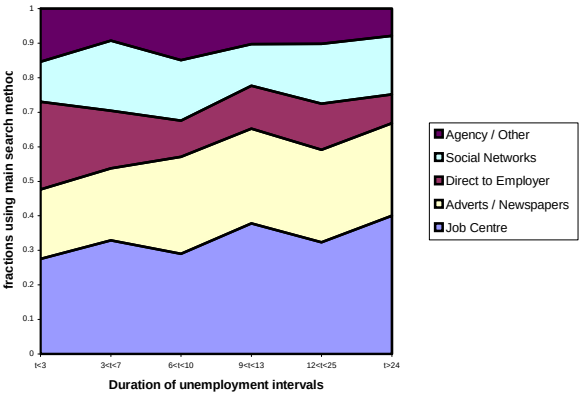


Figure 12: Predicted Method - Other Immigrant Men

APPENDIX 1

TABLE A1: Sample Means

	White UK Born	Ethnic Minority UK Born	White Immigrants	Black Immigrants	South Asian Immigrants	Other Immigrants
Age	36.1	25.4	38.0	39.5	39.7	39.4
Single	45.4	76.0	37.5	30.0	13.1	35.4
Married/Cohabiting	44.9	20.1	52.1	49.9	81.8	50.7
Widowed/Divorced/Separated	9.7	3.9	10.3	20.1	5.1	13.0
Number of children	0.58	0.64	0.59	0.72	1.56	0.63
Limiting long-term illness	20.0	12.9	21.1	18.0	22.3	20.1
Degree or equivalent	9.3	14.1	12.7	19.8	8.7	11.6
Higher vocational qualification	5.2	4.2	3.8	4.4	3.1	3.0
'A' level or equivalent	24.5	19.7	19.8	14.5	10.9	16.1
'O' level or equivalent	20.9	26.0	12.4	10.1	9.3	10.7
Other qualification	16.2	16.2	28.5	34.6	34.3	34.0
No qualifications	23.9	19.8	22.8	16.6	33.7	24.6
Foreign highest qualification	0.0	0.0	44.3	62.0	45.9	56.3
Years since migration	0.0	0.0	21.1	16.7	21.5	20.0
Interviewed in 1997	10.8	10.4	9.8	10.5	9.6	11.6
Interviewed in 1998	27.5	25.4	26.3	25.3	28.0	21.3
Interviewed in 1999	26.1	23.5	27.4	26.9	25.7	19.5
Interviewed in 2000	22.7	24.4	24.3	26.2	23.8	29.7
Interviewed in 2001	12.3	15.2	11.8	10.7	12.4	17.4
Interviewed in 2002	0.6	1.1	0.4	0.3	0.6	0.5
Number of Observations	52829	2042	2332	1043	1818	826
Number of Individuals	14126	627	672	311	498	245
Percentage of Sample	86.0	3.8	4.1	1.9	3.0	1.5
Average length in panel	3.74	3.26	3.47	3.35	3.65	3.37

APPENDIX 2 - *Explanatory Power of Choice Model*

Here we establish how well our estimated model explains the differential search outcomes of natives and immigrants. We derive a simple measure of goodness-of-fit by comparing the variance in proportions for white UK born in the raw data with that of the predicted data by computing:

(A5) $$\sum_t \sum_s (p_{st}^{WhiteUK} - p_{st}^{jt})^2 \text{ and } \sum_t \sum_s (p_{st}^{WhiteUK} - \hat{p}_{st}^{jt})^2$$

where $p_{st}^{WhiteUK}$ is the proportion of white UK born men, at a certain duration *t*, who use search method *s*. Here, $\hat{p}_{st}^{jt}$ denotes the predicted proportions of a different group. Now, the statistic $1 - \frac{\sum_t \sum_s (p_{st}^{WhiteUK} - \hat{p}_{st}^{jt})^2}{\sum_t \sum_s (p_{st}^{WhiteUK} - p_{st}^{jt})^2}$ is an indication of amount of variance in the proportions explained by observable differences between the two groups. This statistic equals 0.15 for ethnic minority UK born men; 0.47 for white immigrants, 0.39 for South Asian immigrants, 0.36 for Black immigrants, and 0.5 for Other immigrants. This indicates that differences in observable characteristics capture roughly 40% of the difference in-group search behaviour, whilst 60% is due to unobservable characteristics.

As a direct measure of the goodness of fit of the search model itself, we compute $\frac{\sum_t \sum_s (p_{st}^{WhiteUK} - \hat{p}_{st}^{WhiteUK})^2}{\sum_t \sum_s (p_{st}^{WhiteUK} - p_{st}^{jt})^2}$ which is the 'residual' variance in proportions of white UK born men in search relative to the differences with another group *j*. This statistic should be 0 for the perfect model. Its maximum across the range of possible reference groups *j* equals only 0.045, which we consider an indication of a very good fit. In other words, the unexplained part of the white UK born group is less than 5% of the difference between the white UK born men and any other group. This good fit is not surprising though given that we extensively control for observable characteristics (i.e. 212 parameters).

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