

Does neighbourhood influence ethnic inequalities in economic activity? Findings from the ONS Longitudinal Study

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Abstract

This article aims to test whether geographical factors have an important role in explaining ethnic inequalities in transitions between economic activities. It is based on the Office for National Statistics Longitudinal Study, which links together results from successive censuses in England for a random sample of respondents. It allows us to estimate the probability of transition into and out of employment and the labour market. Our analyses reported that ethnic minorities were, more likely than their White peers, to become unemployed and less likely to become employed. Living in a deprived neighbourhood was associated (positively) with transitions to unemployment and (negatively) with transitions to employment, especially among men. Ethnic diversity was negatively associated with job loss among employed women, but also for homemaking women and their chances of finding employment. Deprivation partially explained the ethnic minority disadvantage in the English labour market.

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1. Introduction

Evidence suggests that ethnic minority groups in England face disadvantage in the labour market; a higher risk of unemployment and a lower probability of finding employment (Modood et al., 1997; Berthoud, 2000; Heath et al., 2000, 2008; Blackaby et al., 2002; Li and Heath, 2008). This disadvantage can be partially explained by conventional factors operating at the individual level, such as lack of recognized qualifications possessed by some ethnic minority groups (Battu and Sloane, 2002; Lindley, 2009). Gendered divisions of labour, including the likelihood of becoming a full-time homemaker (economically inactive, taking care of the home and family) as an alternative to economic activity (employment and unemployment) are also relevant, contributing to a diverse range of experiences between men and women and across ethnic groups (Lindley et al., 2004; Dale et al., 2006). However, after taking into account conventional factors (e.g. education, age and couple status) and the probability of homemaking, ethnic minorities remain at greater risk of unemployment compared with their White peers (Heath et al., 2000, Heath

and Smith, 2003; Simpson et al., 2009). Some have referred to these unexplained risks as 'ethnic penalties' (Carmichael and Woods, 2000).

Ethnic penalties are likely to reflect omitted variables including, to a potentially large extent, processes operating geographically. With most studies focusing on conventional factors, which are usually the characteristics of individuals, few studies have investigated the role of geographical context. But outside of the literature that focuses on ethnic inequalities in the labour market, the idea that geography can shape people's life chances has been the subject of widespread debate (Ellen and Turner, 1997; Galster, 2001; Dietz, 2002; Friedrichs et al., 2003; Cheshire, 2007). Wilson's (1987) groundbreaking study of deprived neighbourhoods in Chicago was the catalyst for over 20 years of research spanning North America (e.g. Elliott, 1999; Oreopoulos, 2003; Kling et al., 2007) and Western Europe (e.g. Buck, 2001; Musterd et al., 2003; Musterd and Andersson, 2006; Bolster et al., 2007; Propper et al., 2007; van Ham and Manley, 2010). The aim of this study is to investigate the impact of geographical factors on labour market transition. In particular, how far are geographical processes operating at the neighbourhood level responsible for ethnic minority disadvantage in the labour market?

Some studies of deprivation, the most widely investigated neighbourhood characteristic, have reported association with an increased risk of job loss (Musterd et al., 2003), poor geographical access to job opportunities (Kain, 1992), dysfunctional values and social norms (Wilson, 1987) and reduced chances of finding jobs (Buck, 2001, Musterd and Andersson, 2006). Other studies have not replicated these effects (e.g. Katz et al., 2001; Oreopoulos, 2003; Bolster et al., 2007; Kling et al., 2007; Propper et al., 2007). Despite the equivocal findings of previous studies, the fact that ethnic minorities in England are geographically concentrated in some of the most deprived neighbourhoods (Phillips, 1998; Peach, 2006) could explain their labour market disadvantage compared with Whites, though surprisingly few studies have explicitly tested this hypothesis.

One explanation for why this hypothesis remains largely untouched can be put down to non-trivial methodological challenges that have been the subject of recent and ongoing debate by commentators in Economic Geography within this Journal (see Bolster et al., 2007; van Ham and Manley, 2010) and elsewhere (see Buck, 2001; Dietz, 2002; Oreopoulos, 2003; Propper et al., 2007). Randomized controlled trials are held as the gold standard for scientific enquiry; however, a legion of ethical, economic and practicality issues reduce the feasibility of their implementation in the context of answering whether neighbourhoods affect ethnic inequalities in the labour market over time. People cannot *usually* be randomly assigned to rich or poor neighbourhoods and forced to stay for a decade or more to see whether the long-term treatment of enhanced or diminished circumstances has improved or worsened their chances in the labour market [although the 'Moving To Opportunity' study did come close to this on some counts; see Kling et al. (2007)]. Studies of this genre therefore tend to rely upon observational data and study designs which attempt to reduce confounding (e.g. longitudinal designs), though most still do not examine ethnic inequalities due to small sample sizes which prohibit robust inferences for ethnic minority groups.

Using a longitudinal study design and a unique data set containing reasonably large sample sizes for many ethnic groups in England, we investigate whether ethnic minority disadvantage in the English labour market can be explained by their geographical location in some of the most deprived neighbourhoods in England. As ethnic minorities in England tend to be clustered together, not in co-ethnic segregation, but in ethnically diverse contexts (Peach, 1996; Johnston et al., 2002, Simpson and Finney, 2009), we also

consider the potential influence that ethnic diversity has on labour market outcomes. Conducting our analysis with longitudinal data facilitated the temporal ordering of neighbourhood-level exposure prior to the measured outcome, avoiding the potential for reverse causality (e.g. loss of income from being made redundant could necessitate relocation into cheaper and often more deprived neighbourhoods). Analysing a variety of transitions between employment, unemployment and homemaking and controlling for a range of conventional factors, we find strong and consistent evidence that neighbourhood deprivation has a detrimental effect on the risk of becoming unemployed and the likelihood of remaining unemployed (particularly among men). These effects are consistent across ethnic groups and controlling for neighbourhood deprivation also partially explains some of the ethnic minority disadvantage compared with Whites.

On the other hand, neighbourhood ethnic diversity has little influence on any outcomes for men. But in line with Allport's Contact hypothesis (1954), which suggested that ethnic diversity could nurture tolerance and cooperation between different ethnic groups, we find ethnic diversity appears to promote transitions from unemployment to employment among women. We hypothesize that women may benefit more from local ethnic diversity than men. This may be because gendered household divisions of labour result in longer durations of exposure to neighbourhood conditions and nurture a greater level of connectedness with other people in the neighbourhood. This may increase the likelihood of developing social support and networks that facilitate access to information and job opportunities (Bell and Ribbins, 1994, Jarvis, 1999; Russell, 1999; Kwan, 2000; Coulthard et al., 2002, Lowndes, 2004).

The next section frames our hypothesis within the context of existing literature. Section 3 discusses the empirical methodology. Section 4 presents the results of our statistical analyses. We contextualize the results of our study in Section 5, along with assessing the strengths, limitations and generalizability of the study.

2. How could neighbourhoods influence ethnic inequalities?

Various processes linking life chances to neighbourhood of residence have been hypothesized (Galster, 2008). Some processes are hypothesized to influence all people within a neighbourhood irrespective of their individual characteristics, such as postcode discrimination by employers (Atkinson and Kintrea, 2001). Negative stereotypes get attached to deprived neighbourhoods because they are often composed of dilapidated buildings, poor infrastructure and a lack of resources to resolve visual ills (e.g. litter, graffiti and vandalism). According to the 'Broken Windows' theory (Wilson and George, 1982), these circumstances create a self-reinforcing prejudice that all people living within deprived neighbourhoods lead dysfunctional lives, indifferent to the crime and disorder which goes on nearby (Sampson and Raudenbush, 2004). This could perpetuate ethnic inequalities, as ethnic minorities in England are significantly more likely than Whites to live within deprived neighbourhoods, and so they are also more vulnerable to discrimination based on their neighbourhood of residence.

Other mechanisms linking neighbourhood deprivation to labour market outcomes can be selective or relevant only to certain residents. For example, lack of local jobs for people without higher educational qualifications is likely to have a bigger influence on residents who do not have the financial or other means with which to look further afield in search of opportunities (Kain, 1992). Although job opportunities requiring high levels of education

are nationally advertised, people with low or no qualifications do not enjoy the same benefits and are often more dependent upon local networks for information (Ioannides and Loury, 2004). Consequently, jobs and neighbourhood-based social networks are often geographically clustered for residents of deprived neighbourhoods that may help to nurture strong ties (e.g. family members and close friends), which are often good sources of social support, but are not always useful for finding jobs (Portes, 1998). For some residents, these relationships may be a harmful influence due to negative role models (Wilson, 1987). The geographical clustering of networks within deprived neighbourhoods also acts to prevent residents meeting people in different walks of life to their own; reducing the likelihood of making weak ties, which may provide new (and therefore more valuable) information on job opportunities (Granovetter, 1973). Again, the over-representation of ethnic minorities in deprived neighbourhoods in England means that they are more at risk of these detrimental influences on their labour market careers than their White peers.

The geographical concentration of ethnic minorities may also have additional effects on labour market outcomes, independent of neighbourhood deprivation. Many have investigated the potentially negative effects of living in neighbourhoods characterized by ethnic 'segregation' in North America (Cutler and Glaeser, 1997; Galster et al., 1999; Mendenhall et al., 2006; Cutler et al., 2008) and Europe (Clark and Drinkwater, 2000, 2002; Musterd 2005; Musterd et al., 2008; Khattab et al., 2010.). It is hypothesized that residents in ethnically segregated neighbourhoods are less likely to interact with people in different ethnic groups, are isolated from information on job opportunities and are at risk of exploitative circumstances such as under-cut salaries and skills-mismatch (Wacquant, 1993; Waldinger, 1997; Ram et al., 2007).

However, though these hypotheses are relevant in countries like the USA where some ethnic minorities comprise very high proportions of the neighbourhood ethnic composition (Massey, 1990), studies in England (Peach, 1996; Johnston et al., 2002) have demonstrated that no one ethnic minority group dominates the composition of a neighbourhood to the same extent as occurs in the USA. In fact, neighbourhoods described as 'segregated' in England are some of the most ethnically diverse (Peach, 2009; Simpson and Finney, 2009). Therefore, hypotheses concerning the ethnic diversity of neighbourhoods appear more relevant for studies in England.

According to the 'Contact' hypothesis, diversity increases the likelihood of ethnic mixing, increased tolerance and cooperation (Allport, 1954; Pettigrew, 1998). In theory, the more ethnically diverse a neighbourhood is, the greater is the potential to develop 'weak ties' (Granovetter, 1973) with people from different ethnic groups and to hear news about job-related opportunities (Mollica et al., 2003). Neighbourhoods with a greater proportion of ethnic minorities may also create demand for niche businesses and institutions (Aldrich et al., 1985; Aldrich and Waldinger, 1990; Portes and Manning, 2005). This suggests that ethnic diversity may have a positive influence on the chances of labour market success, even among residents of deprived neighbourhoods. However, other hypotheses indicate otherwise.

In contrast to the 'Contact' hypothesis, the 'Conflict' hypothesis suggested that competition is more likely to occur in ethnically diverse neighbourhoods, particularly where jobs are scarce and resources are limited (Blumer, 1958; Bobo and Hutchings, 1996). Due to homophily, or the principle by which people with similar characteristics tend to be drawn to each other, it is likely that the competition is between ethnic groups. More recently, it has been suggested that ethnic diversity erodes social capital not only between ethnic groups, but also between all individuals [the 'Constrict' hypothesis by

Putnam (2007)]. If neighbourhood ethnic diversity does affect labour market outcomes, the over-representation of ethnic minorities within these neighbourhoods means that they are more likely to be affected than their White peers. If neighbourhood ethnic diversity is beneficial, then it may help to reduce the negative effect of deprivation. On the other hand, if diversity is detrimental, then ethnic minorities face a neighbourhood-based 'double jeopardy' (negative effects of deprivation and ethnic diversity). To our knowledge, no study has examined hypotheses related to neighbourhood deprivation or ethnic diversity (Contact, Conflict and Constrict) with a view towards explaining the persisting ethnic minority disadvantage in the English labour market.

3. Methods

3.1. Data

Our data came from the Office for National Statistics Longitudinal Study (ONS LS). The ONS LS is a nationally representative 1% sample of the population of England and Wales (approximately 500,000 members). The ONS LS is the only data set in England and Wales that tracks large samples of ethnic minority groups across time. The ONS LS started from 1971, but the 1991 census was the first to include a question on self-reported ethnic identity in the UK. The ethnic groups included in the 1991 ONS LS in England and Wales were: White, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African and Chinese. Groups which were numerically too small for separate analysis (e.g. Other Asian, Black Other) were aggregated into an 'Other ethnic group' category and retained in the models, but not directly interpreted.

We used the ONS LS to investigate the change in a person's circumstances between 1991 and 2001. Therefore, people who only appeared in 1991 or 2001, but not both, were omitted from the sample. For reasons of internal validity, we also chose to focus on ONS LS members in towns and cities of England, because few ethnic minorities live in rural areas (Simpson and Finney, 2009). This ensures that Whites and ethnic minorities were exposed to the same contexts. Finally, we also limited the age range of the 1991 sample to those men who were aged 18–54 years and women aged 18–49 years to exclude those sample members who reached the national retirement ages of 65 and 60 years, respectively, by 2001. These criteria produced a sample of 99,169 men and 95,633 women or 37.7 and 34.1% of the ONS LS membership in 1991.

The variables used in the analysis can be divided into three types. The focus of the analysis is on labour market transition, different forms of which for different ethnic groups were used as dependent variables in our models. Our independent or explanatory variables include those conventionally used in social mobility and related studies (sometimes referred to here as conventional variables), and the neighbourhood characteristics which this article is primarily concerned with (neighbourhood deprivation and neighbourhood ethnic diversity). The next few paragraphs describe all these variables in more detail.

3.2. Employment, unemployment and homemaking

We focused on economic activity and inactivity variables that were harmonized between the 1991 and 2001 censuses by the ONS LS team. The 'economically active' population includes all people who answered positively in the census to whether they had a job (i.e. employed), or were looking for a job and available to start within 2 weeks

(i.e. unemployed). People were also classified as employed if they were casually employed for a small number of hours per week or on a Government-sponsored training scheme, if they should have been working but were absent during census week due to temporary sickness or holiday, if they were women on maternity leave and those who were in paid or unpaid work for a family business. For men and women, we investigated transitions between employment and unemployment.

We also looked at women's transitions between employment, unemployment and economic inactivity for what we refer to as 'homemaking' reasons. Our definition of homemaking refers to people who identified their economic status within the census as 'looking after the home'. This differentiates homemakers from people who were not looking for work for other reasons, such as those who were retired, in full-time education or suffering from a permanent illness. The term is not fully satisfactory as it is a category that may include people whose lives do not fully accord with stereotypes about child rearing and unpaid domestic work. Nevertheless, there are substantial numbers of ONS LS members making transitions between employment, unemployment and homemaking, transitions which are important for understanding the geography of ethnic labour market differences in England. 'Homemaking' status among women is common in England, with women traditionally bearing the majority of household responsibilities (Kwan, 2000), but is much rarer among men and our preliminary results confirmed this. Therefore, transitions between employment, unemployment and homemaking were investigated among women only.

3.3. Conventional variables and regional geography

The following conventional variables were used in our analysis: age, household tenure, place of birth, spatial mobility, qualifications status, couple status and 1991 Standard Region. We used age in 1991 aggregated into three categories: 18–29; 30–39; 40–54 years (40–49 years for women). Household tenure in 1991, as an indicator of long-term disadvantage, was categorized as: owner, private renter and social renter. Place of birth was expressed as a dichotomous variable: UK-born or overseas-born. Changes of residential address (i.e. spatial mobility) between 1991 and 2001 were dichotomized into mover (regardless of distance) and non-mover categories.

People were identified as having no educational qualifications in 1991 or 2001, as having qualifications in 1991 and 2001 and as having qualifications in 2001 but not 1991. A similar time-variant approach was adopted for measuring couple status, sorting people into one of four groups: to be in a couple in both 1991 and 2001, single in both 1991 and 2001, in a couple in 1991 and single in 2001 and single in 1991 and in a couple in 2001. We used Standard Regions in England in the 1991 census to take account of large-scale geographical variation in labour markets throughout England.

3.4. Social class

We used the National Statistics Socio-economic Classification to define social class. This classification defines routine and manual occupations as 'low class', intermediary occupations as 'middle class' and professional and managerial occupations as 'high class' (Office for National Statistics, 2012). As this measure of social class is based upon occupation, this variable was only available for those in the sample who were employed in 1991. For this reason, we only included the social class variable when modelling transition from employment in 1991 to unemployment in 2001.

3.5. Neighbourhood deprivation

Census wards were used as proxies for neighbourhoods in our study (mean population of a ward was 5500 residents). The ONS LS team linked ward-level measures of deprivation (and ethnic diversity—see Section 3.6) to the longitudinal study for our analysis. We used four variables extracted in percentage form from the 1991 census to calculate the Townsend index of deprivation (Townsend, 1987): These were: (i) households without a car or van; (ii) overcrowded households; (iii) households who were not owner-occupiers; (iv) people aged ≥ 16 years who were unemployed. The z-scores of each variable are summed together to form the Townsend deprivation index, which is centred at a mean of zero. Higher scores on the Townsend index identify more deprived neighbourhoods. Note that the neighbourhood variables are themselves subject to inter-censal change (Boyle and Norman, 2009). Neighbourhood deprivation was expressed in tertiles to identify low, moderate and high levels of exposure with each tertile including one-third of the sample population.

3.6. Neighbourhood ethnic diversity

We used the Herfindahl index (Putnam, 2007) to measure neighbourhood ethnic diversity. Instead of looking only at the proportion of non-White people in a neighbourhood, the Herfindahl index takes into account the proportion of every ethnic group in a neighbourhood separately. It is calculated as the sum of the squared proportions of each ethnic group within a neighbourhood. We subtracted the Herfindahl index from 1 to format the score so that it ranges from 0 (least ethnically diverse—i.e. one group dominates) to 1 (most ethnically diverse—all ethnic groups equally represented). Data to construct the Herfindahl index were extracted from the 1991 census. Neighbourhood ethnic diversity was also expressed in tertiles.

3.7. Analysis

The distribution of each outcome was examined for each explanatory variable. Univariate regression models were used to explore association between each labour market outcome and each explanatory variable. Binary logit regression was used for analyses of transitions for men. Multinomial logit regression was used for analyses of women, to model mobility in labour market outcomes and moves into and out of homemaking at the same time. The base outcome category was set to reflect no change in labour market outcome between 1991 and 2001. Therefore, the models both predicted the likelihood of mobility of labour market outcomes. The coefficients from the binary and multinomial logit models were exponentiated to odds ratios (ORs) and relative risk ratios (RRRs), respectively. The interpretations of ORs and RRRs are similar: they refer to the likelihood that mobility between labour market outcomes will occur, compared with the likelihood of no change occurring. Huber–White standard errors were used to take into account the clustering of individuals within wards (Williams, 2000).

Ethnic inequalities were investigated by fitting ethnicity as a categorical variable in univariate regression models, with the White group set as the reference category. We refer to this model as the ‘baseline model’. We constructed multivariate models in five steps. First, baseline models were adjusted by conventional variables and the region variable. Second, we added neighbourhood deprivation to the model. Third, the

measure of ethnic diversity was included. Fourth, but only for individuals who were employed in 1991, we adjusted for the social class of their occupation. Fifth, interactions between each explanatory variable were tested for statistical significance, which was assessed by using p -values <0.05 . All analyses were conducted in Stata v.10 (StataCorp LP, College Station, TX, USA).

4. Results

Table 1 shows the prevalence of each outcome among men between 1991 and 2001, across each explanatory variable. Among men who were employed in 1991, 3.0% became unemployed by 2001. In comparison, 82.7% of unemployed men in 1991 were employed by 2001. Important variation was found by ethnic group, with minorities more likely to become unemployed and in most cases less likely to become employed. Bangladeshi men were more likely to become unemployed compared with White men. Men in deprived and ethnically diverse neighbourhoods were more likely to become unemployed and less likely to become employed. Compared with men in the South East, the risk of becoming unemployed was higher and the likelihood of finding employment was lower further north. Transitions out of employment were highest among men in low social class occupations.

Table 2 shows the prevalence of each outcome among women between 1991 and 2001, across each explanatory variable. Among women who were employed in 1991, 1.8% became unemployed and 10.6% became homemakers. Compared with White employed women, ethnic minority employed women were more likely to become unemployed, especially Bangladeshis. Employed Pakistani and Bangladeshi women were also more likely to become homemakers compared with White women, whereas other minorities were less likely to do so. Employed women in more deprived and ethnically diverse neighbourhoods were more likely to become unemployed and homemakers. Compared with employed women in the South East, there was little regional variation in the likelihood of becoming unemployed. Lower rates of employment to homemaking transitions were reported in regions in the north of England compared with the South East. Among women who were unemployed in 1991, 66.0% became employed and 26.5% became homemakers. Women in higher class occupations in 1991 were less likely to become unemployed or move into homemaking.

Variation in transitions from unemployment to employment and homemaking by ethnic groups was found, with higher rates of employment among Indian, Black Caribbean and Black African women compared with Whites. The likelihood of becoming employed was particularly low for Pakistani and Bangladeshi women, which was reflected in the high rates of transitions to homemaking among these groups. Unemployed Black Caribbean and Black African women were less likely to become homemakers compared with White women. Unemployed women in more deprived and ethnically diverse neighbourhoods were less likely to become employed and more likely to become homemakers.

Little regional variation in transitions from unemployment to employment was found among women. However, unemployed women were more likely to become homemakers in northern regions compared with those in the south. Among women who were homemakers in 1991, 57.9% became employed by 2001. In comparison, only 4.2% became unemployed. Compared with White homemaking women, ethnic minorities

Table 1. The prevalence of mobility of labour market outcomes between 1991 and 2001, by explanatory variables (men)

	In 1991 <i>N</i> employed	By 2001 Unemployed (%)	In 1991 <i>N</i> unemployed	By 2001 Employed (%)
Total	73,215	3.0	5956	82.7
Ethnic group				
White (ref)	69,005	2.8	5331	82.8
Indian	1777	4.8	158	82.9
Pakistani	614	9.0	151	78.1
Bangladeshi	175	12.6	36	80.6
Black Caribbean	520	7.5	96	83.3
Black African	163	6.1	47	76.6
Chinese	223	x*	13	x*
Age (years)				
18–29 (ref)	24,325	2.7	3118	84.1
30–39	23,244	2.7	1564	82.5
40–54	25,646	3.5	1274	79.5
	73,215			
Couple status				
Couple in 1991 and 2001 (ref)	40,873	2.4	1910	88.6
Single in 1991 and 2001	16,098	4.8	2661	75.5
Couple in 1991, single in 2001	5567	4.6	419	80.4
Single in 1991, couple in 2001	10,677	1.7	966	91.8
	73,215			
Social class (for those employed in 1991 only)				
Low	29,708	3.3		
Middle	17,332	2.3		
High	25,597	1.9		
Qualifications status				
No qualifications (ref)	15,972	4.7	1936	75.7
Qualifications in 1991 and 2001	14,611	1.8	446	90.1
None in 1991, gained by 2001	42,585	2.7	3571	85.6
Household tenure				
Owner (ref)	61,591	2.5	3301	87.6
Private renter	3717	4.1	594	77.6
Social renter	7620	6.4	2015	76.4
Place of birth				
UK born (ref)	67,272	2.8	5336	82.9
Migrant/overseas born	5943	4.8	620	80.6
Spatial mobility				
Non-mover (ref)	33,848	3.1	2241	79.1
Mover	39,337	2.9	3709	84.9
Neighbourhood deprivation				
Low (ref)	26,469	2.0	1233	89.8
Moderate	24,731	2.8	1766	85.9
High	20,935	4.4	2848	77.6

(continued)

Table 1. Continued

	In 1991 <i>N</i> employed	By 2001 Unemployed (%)	In 1991 <i>N</i> unemployed	By 2001 Employed (%)
Neighbourhood ethnic diversity				
Low (ref)	24,421	2.7	1822	83.2
Moderate	24,800	2.6	1848	84.3
High	22,914	3.7	2177	80.9
1991 Standard Region				
South East (ref)	27,642	2.7	2052	86.1
South West	6755	2.1	493	90.5
East Anglia	3098	2.6	207	87.4
East Midlands	6580	3.0	492	82.3
West Midlands	8370	3.9	657	78.8
Yorkshire and Humberside	7432	3.2	701	78.2
North West	9039	3.1	878	79.6
North	4293	4.0	476	76.1

Source: Created by the authors using the Office for National Statistics Longitudinal Study.

*In line with ONS protocol, cell counts below 10 have been blanked out to preserve the anonymity of sample members.

were less likely to become employed, especially Bangladeshi women. Some ethnic minority homemaking women, particularly Black Caribbeans and Black Africans, were more likely to become unemployed compared with White women. Homemaking women in more deprived and ethnically diverse neighbourhoods were less likely to become employed, but more likely to become unemployed. In northern regions, homemaking women were less likely to become employed, but more likely to become unemployed compared with those in the south.

The results described so far have been obtained from descriptive analysis of the relationship between labour market transitions and potential explanatory variables. These results however assume that there is a simple relationship between variables and it is not necessary to control for the effects of other variables. In practice, we would expect reality to be more complicated, with at least two and probably more explanatory variables being related to the dependent variables. For example, neighbourhood deprivation is significantly related to movement from employment to unemployment, but it may be that the relationship reflects other variables with which neighbourhood deprivation is correlated. Analysis proceeded, therefore, to fitting a set of univariate models and then fitting multivariate models to see which variables remained significant when the others were controlled for.

In univariate models, men and women in more deprived neighbourhoods who were employed in 1991 were significantly more likely to become unemployed by 2001. Figure 1 shows the effect of neighbourhood deprivation on outcomes in fully adjusted regression models. Adjusting for other explanatory variables reduced the effect size substantially, but the association remained significant. Similarly, for men and women who were unemployed, living in a deprived neighbourhood was associated with reduced likelihood of finding employment by 2001. A univariate association was found between

Table 2. The prevalence of mobility of labour market outcomes between 1991 and 2001, by explanatory variables (women)

	In 1991		By 2001		In 1991		By 2001		In 1991		By 2001	
	<i>N</i> employed	Unemployed (%)	Homemaking (%)	Unemployed (%)	<i>N</i> unemployed	Employed (%)	Homemaking (%)	Employed (%)	<i>N</i> homemaking	Employed (%)	Unemployed (%)	
Total	57,549	1.8	10.6	10.6	3507	66.0	26.5	66.0	18964	57.9	4.2	
Ethnic group												
White (ref)	54,395	1.7	10.7	10.7	3010	66.7	25.8	66.7	17175	60.0	4.1	
Indian	1296	3.7	8.9	8.9	162	71.0	23.5	71.0	497	55.7	5.0	
Pakistani	192	6.3	17.2	17.2	77	39.0	51.9	39.0	509	15.1	3.7	
Bangladeshi	54	x*	31.5	31.5	29	x*	72.4	x*	213	9.4	x*	
Black Caribbean	598	3.8	7.2	7.2	76	69.7	19.7	69.7	147	54.4	8.8	
Black African	199	x*	8.0	8.0	43	76.7	x*	76.7	53	49.1	x*	
Chinese	151	x*	9.9	9.9	16	62.5	x*	62.5	75	50.7	x*	
Age (years)												
18–29 (ref)	22,222	1.9	15.4	15.4	2159	62.7	30.4	62.7	7008	58.3	5.8	
30–39	17,849	1.8	6.7	6.7	809	71.7	20.5	71.7	7630	65.3	3.8	
40–49	17,478	1.7	8.6	8.6	537	71.1	19.4	71.1	4326	44.3	2.4	
Couple status												
Couple in 1991 and 2001 (ref)	29,391	1.3	9.9	9.9	1042	71.2	24.4	71.2	11,986	58.0	2.4	
Single in 1991 and 2001	13,337	2.8	7.8	7.8	1494	64.7	24.7	64.7	3090	53.6	8.5	
Couple in 1991, single in 2001	5532	2.9	7.2	7.2	319	63.9	27.0	63.9	2682	61.4	6.9	
Single in 1991, couple in 2001	9289	1.3	19.0	19.0	650	62.2	33.5	62.2	1206	60.4	5.1	
Social class (for those employed in 1991 only)												
Low	21,144	2.2	11.5	11.5								
Middle	20,349	1.5	9.3	9.3								
High	15,546	1.1	7.3	7.3								

(continued)

Table 2. Continued

	In 1991		By 2001		In 1991		By 2001		In 1991		By 2001	
	<i>N</i> employed	Homemaking (%)	Unemployed (%)	Homemaking (%)	<i>N</i> unemployed	Employed (%)	Homemaking (%)	Employed (%)	<i>N</i> homemaking	Employed (%)	Unemployed (%)	
Qualifications status												
No qualifications (ref)	11,613	13.9	2.3	40.7	941	49.9	40.7	6867	43.1	4.2		
Qualifications in 1991 and 2001	10,255	7.2	1.0	11.2	313	84.7	11.2	1347	70.9	2.5		
None in 1991, gained by 2001	35,656	10.6	1.9	22.6	2249	70.3	22.6	10,745	65.7	4.4		
Household tenure												
Owner (ref)	47,608	10.0	1.6	23.0	2043	71.5	23.0	12,304	61.8	2.7		
Private renter	3243	14.7	2.3	23.5	421	67.2	23.5	900	55.7	6.6		
Social renter	6505	13.4	3.4	34.5	1023	55.0	34.5	5707	49.9	7.0		
Place of birth												
UK born (ref)	53,204	10.7	1.7	25.8	3035	66.8	25.8	16,692	60.0	4.2		
Migrant/overseas born	4345	9.8	3.0	30.6	470	61.5	30.6	2272	42.7	4.3		
Spatial mobility												
Non-mover (ref)	25,987	7.8	1.6	22.5	1135	69.0	22.5	9342	56.6	3.3		
Mover	31,539	13.0	2.0	28.4	2369	64.7	28.4	9619	59.2	5.1		
Neighbourhood deprivation												
Low (ref)	20,136	10.2	1.4	23.3	733	72.2	23.3	5770	63.6	2.6		
Moderate	19,725	10.4	1.7	22.6	1026	70.8	22.6	5993	61.9	3.9		
High	16,940	11.4	2.4	30.2	1671	60.7	30.2	7064	49.9	5.7		
Neighbourhood ethnic diversity												
Low (ref)	18,916	10.2	1.8	26.4	1,010	67.7	26.4	6,367	61	3.6		
Moderate	19,338	10.4	1.6	25.2	959	67.9	25.2	6148	61.1	4.0		
High	18,547	11.2	2.1	27.3	1461	64	27.3	6312	51.6	4.9		

(continued)

Table 2. Continued

	In 1991		By 2001		In 1991		By 2001		In 1991		By 2001	
	<i>N</i> employed	Unemployed (%)	Homemaking (%)	<i>N</i> unemployed	Employed (%)	Homemaking (%)	<i>N</i> homemaking	Employed (%)	<i>N</i> homemaking	Employed (%)	Unemployed (%)	
1991 Standard Region												
South East (ref)	21,656	1.8	12.0	1302	66.6	25.7	7152	58.0			3.8	
South West	5308	1.8	10.4	292	73.3	22.3	1643	64.3			3.2	
East Anglia	2318	1.6	10.7	113	69.0	23.9	783	61.0			2.8	
East Midlands	5070	2.1	10.2	277	67.5	24.2	1628	60.6			4.4	
West Midlands	6196	2.1	9.7	449	62.4	29.4	2158	54.8			4.9	
Yorkshire and Humberside	5999	1.9	10.0	314	65.3	26.1	2056	55.4			5.3	
North West	7564	1.5	9.1	515	64.1	28.9	2283	57.3			4.5	
North	3433	1.4	9.7	242	63.6	28.9	1261	53.8			5.2	

Source: Created by the authors using the Office for National Statistics Longitudinal Study.

*In line with ONS protocol, cell counts below 10 have been blanked out to preserve the anonymity of sample members.



Figure 1. Effect of living in the most versus least deprived neighbourhood tertiles on mobility of labour market outcomes between 1991 and 2001. Bars represent ORs/RRRs for the most deprived tertile. Bars are fully adjusted for: age, place of birth, educational qualifications, couple status, household tenure, spatial mobility, neighbourhood ethnic diversity, social class (for those employed in 1991 only) and region.

deprivation and the likelihood of employed women becoming homemakers, but this was no longer significant after other explanatory variables were accounted for. Unemployed women in more deprived neighbourhoods were less likely to become homemakers, but not significantly so. Homemaking women in more deprived neighbourhoods were significantly less likely to become employed and more likely to become unemployed in the univariate model. However, after full adjustment for other explanatory variables, the size of these effects was considerably reduced.

In univariate models, employed men and women in less diverse neighbourhoods were significantly less likely to become unemployed. Employed women in the least diverse neighbourhoods were also significantly less likely to become homemakers. Figure 2 shows the effect of neighbourhood ethnic diversity on outcomes in fully adjusted regression models. After controlling for all other explanatory variables, the effect on employed men was no longer significant. Similarly, employed women were no longer less likely to become homemakers. However, the effect of diversity had changed direction for the risk of becoming unemployed, with less diversity associated with an

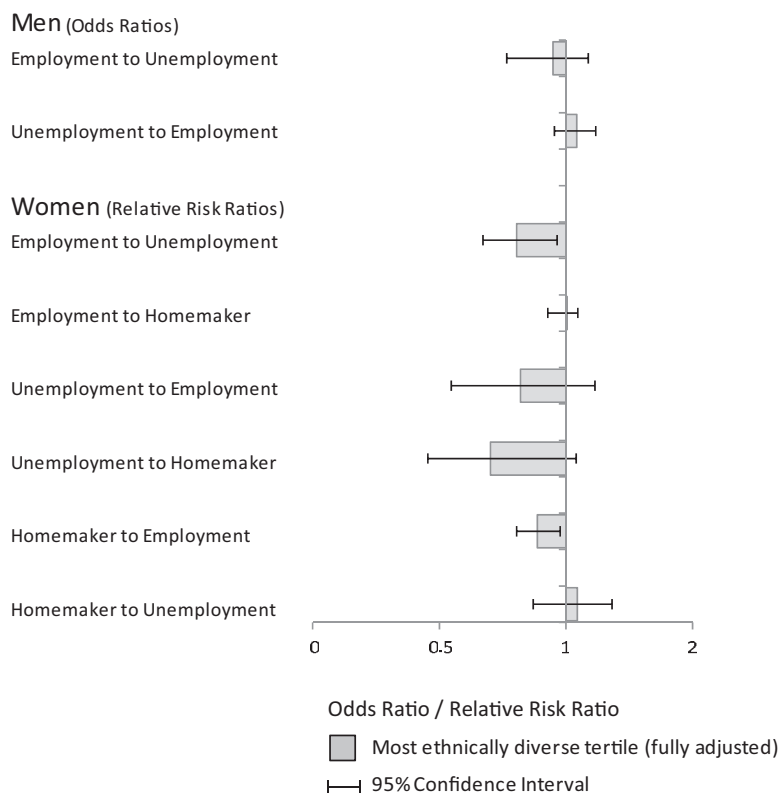


Figure 2. Effect of living in the most versus least ethnically diverse neighbourhood tertiles on mobility of labour market outcomes between 1991 and 2001. Bars represent ORs/RRRs for the most ethnically diverse tertile. Bars are fully adjusted for: age, place of birth, educational qualifications, couple status, household tenure, spatial mobility, neighbourhood deprivation, social class (for those employed in 1991 only) and region.

increased risk. For unemployed women, univariate models showed significantly higher rates of becoming employed and homemakers in the least diverse neighbourhoods, but these associations were no longer significant after controlling for other explanatory variables. Homemaking women in the least diverse neighbourhoods were significantly more likely to become employed in univariate and multivariate models. In comparison, homemaking women were not significantly less likely to become unemployed.

Table 3 shows the results of a systematic approach to investigating whether ethnic inequalities in labour market outcomes are explained by neighbourhood deprivation. Baseline (univariate) models demonstrate variation in the extent of ethnic inequalities. Among employed men and women in 1991, ethnic minorities were significantly more at risk of becoming unemployed. Adjusting for conventional variables, such as age, education, couple status and so on, modified the ethnic inequalities among men and women but did not remove them. Controlling for neighbourhood deprivation significantly reduced the inequality in the risk of becoming unemployed between employed White and minority groups, except for Indian men where the OR increased

Table 3. Ethnic differences in economic activity transitions between 1991 and 2001: unadjusted and adjusted ORs (men) and RRRs (women) with 95% confidence intervals

		Indian	Pakistani	Bangladeshi	Black Caribbean	Black African	Chinese	N (persons)	N (clusters)
Men									
Employment to unemployment	Baseline	1.72 (1.37–2.16)*	3.45 (2.57–4.64)*	4.97 (2.98–8.28)*	2.69 (1.92–3.75)*	2.30 (1.22–4.36)*	1.14 (0.54–2.43)	72,342	7684
	+ Conventional	2.16 (1.63–2.86)*	4.20 (2.96–5.97)*	5.67 (3.28–9.80)*	2.10 (1.47–3.02)*	2.27 (1.15–4.50)*	1.19 (0.56–2.56)		
	+ Deprivation	1.96 (1.48–2.60)*	3.70 (2.60–5.26)*	5.31 (3.07–9.16)*	1.91 (1.33–2.73)*	2.02 (1.02–3.99)*	1.14 (0.53–2.44)		
	+ Ethnic diversity	1.93 (1.45–2.55)*	3.61 (2.54–5.14)*	5.23 (3.02–9.03)*	1.87 (1.30–2.69)*	1.99 (1.01–3.95)*	1.13 (0.53–2.42)		
	+ Social class in 1991	1.86 (1.40–2.46)*	3.50 (2.46–4.99)*	4.77 (2.71–8.39)*	1.77 (1.23–2.55)*	1.91 (0.97–3.77)	1.18 (0.55–2.53)		
Unemployment to employment	Baseline	1.06 (0.68–1.66)	0.74 (0.50–1.11)	0.83 (0.38–1.81)	1.03 (0.58–1.81)	0.66 (0.36–1.23)	0.47 (0.14–1.52)	5863	3373
	+ Conventional	0.67 (0.39–1.14)	0.52 (0.32–0.85)*	0.56 (0.24–1.31)	1.16 (0.64–2.09)	0.52 (0.24–1.12)	0.40 (0.10–1.53)		
	+ Deprivation	0.76 (0.45–1.29)	0.59 (0.37–0.96)*	0.62 (0.26–1.48)	1.27 (0.70–2.30)	0.58 (0.27–1.25)	0.40 (0.10–1.55)		
	+ Ethnic diversity	0.78 (0.46–1.34)	0.61 (0.38–1.00)*	0.64 (0.27–1.52)	1.30 (0.72–2.37)	0.60 (0.28–1.29)	0.41 (0.11–1.60)		
Women									
Employment to unemployment	Baseline	2.22 (1.65–2.98)*	4.23 (2.36–7.61)*	8.11 (3.15–20.84)*	2.26 (1.49–3.42)*	2.78 (1.43–5.41)*	1.17 (0.37–3.69)	56,911	7492
	+ Conventional	2.11 (1.46–3.07)*	4.32 (2.33–8.01)*	6.62 (2.48–17.71)*	1.51 (0.96–2.37)	2.01 (0.99–4.06)*	1.24 (0.39–3.98)		
	+ Deprivation	1.99 (1.37–2.89)*	4.02 (2.16–7.48)*	6.39 (2.41–16.95)*	1.41 (0.89–2.22)	1.87 (0.92–3.77)	1.20 (0.37–3.85)		
	+ Ethnic diversity	2.07 (1.42–3.03)*	4.25 (2.28–7.93)*	6.69 (2.51–17.78)	1.45 (0.92–2.30)	1.91 (0.94–3.86)	1.23 (0.38–3.95)		
	+ Social class in 1991	1.98 (1.35–2.90)*	4.22 (2.26–7.87)*	6.50 (2.42–17.46)*	1.47 (0.93–2.34)	1.80 (0.88–3.68)	1.23 (0.38–3.94)		
Employment to homemaker	Baseline	0.84 (0.69–1.03)	1.85 (1.27–2.69)*	4.38 (2.49–7.70)*	0.67 (0.49–0.92)*	0.78 (0.47–1.30)	0.87 (0.50–1.50)	56,911	7492
	+ Conventional	0.75 (0.59–0.94)*	1.46 (0.99–2.16)	2.27 (1.30–3.96)*	0.73 (0.52–1.01)	0.75 (0.44–1.29)	0.87 (0.49–1.58)		
	+ Deprivation	0.74 (0.59–0.93)*	1.45 (0.98–2.14)	2.26 (1.29–3.95)*	0.72 (0.52–1.00)*	0.74 (0.43–1.28)	0.87 (0.48–1.57)		
	+ Ethnic diversity	0.74 (0.58–0.93)*	1.43 (0.97–2.12)	2.24 (1.28–3.92)*	0.71 (0.51–0.99)*	0.74 (0.43–1.27)	0.87 (0.48–1.57)		
	+ Social class in 1991	0.70 (0.55–0.88)*	1.39 (0.94–2.07)	2.10 (1.20–3.68)*	0.71 (0.51–0.99)*	0.70 (0.40–1.20)	0.84 (0.46–1.52)		
Unemployment to employment	Baseline	1.38 (0.65–2.91)	0.47 (0.22–1.01)*		0.73 (0.34–1.55)	0.88 (0.30–2.52)	0.55 (0.12–2.52)	3435	2403
	+ Conventional	1.26 (0.54–2.92)	0.45 (0.19–1.05)		1.08 (0.48–2.41)	1.41 (0.40–4.92)	0.69 (0.15–3.10)		
	+ Deprivation	1.37 (0.59–3.17)	0.51 (0.22–1.18)		1.18 (0.53–2.64)	1.51 (0.44–5.25)	0.73 (0.16–3.23)		
	+ Ethnic diversity	1.42 (0.62–3.26)	0.53 (0.23–1.23)		1.22 (0.55–2.72)	1.54 (0.45–5.31)	0.73 (0.17–3.25)		

(continued)

Table 3. Continued

	Indian	Pakistani	Bangladeshi	Black Caribbean	Black African	Chinese	N (persons)	N (clusters)
Unemployment to homemaker	Baseline	1.17 (0.52-2.62)	1.63 (0.75-3.54)		0.53 (0.22-1.28)	0.43 (0.12-1.52)	3435	2403
	+ Conventional	0.82 (0.33-2.06)	1.02 (0.44-2.35)		0.78 (0.31-1.98)	0.52 (0.13-2.13)		
	+ Deprivation	0.88 (0.35-2.18)	1.12 (0.49-2.57)		0.82 (0.32-2.10)	0.55 (0.13-2.22)		
	+ Ethnic diversity	0.95 (0.38-2.33)	1.22 (0.53-2.79)		0.87 (0.34-2.24)	0.57 (0.14-2.29)		
Homemaker to employment	Baseline	0.85 (0.69-1.03)	0.11 (0.09-0.14)*	0.07 (0.04-0.11)*	0.88 (0.62-1.24)	0.75 (0.41-1.36)	18,850	6104
	+ Conventional	1.04 (0.82-1.33)	0.14 (0.10-0.18)*	0.10 (0.06-0.17)*	1.03 (0.71-1.50)	0.92 (0.49-1.74)		
	+ Deprivation	1.10 (0.86-1.41)	0.15 (0.11-0.20)*	0.11 (0.07-0.18)*	1.08 (0.74-1.58)	0.97 (0.51-1.84)		
	+ Ethnic diversity	1.14 (0.89-1.46)	0.16 (0.12-0.21)*	0.11 (0.07-0.19)*	1.12 (0.77-1.64)	1.00 (0.52-1.89)		
Homemaker to unemployment	Baseline	1.12 (0.71-1.76)	0.40 (0.25-0.64)*	0.38 (0.19-0.76)*	2.09 (1.16-3.77)*	2.61 (1.08-6.30)*	18,850	6104
	+ Conventional	1.86 (1.10-3.13)*	0.59 (0.33-1.05)	0.55 (0.25-1.18)	1.34 (0.72-2.52)	1.77 (0.68-4.60)		
	+ Deprivation	1.81 (1.07-3.06)*	0.57 (0.32-1.03)	0.54 (0.25-1.16)	1.32 (0.70-2.48)	1.74 (0.67-4.53)		
	+ Ethnic diversity	1.80 (1.06-3.07)*	0.57 (0.32-1.02)	0.54 (0.25-1.16)	1.32 (0.70-2.49)	1.74 (0.67-4.54)		

Source: Created by the authors using the Office for National Statistics Longitudinal Study.

Note: * $p < 0.05$.

from 1.72 to 1.96. Further adjustment for neighbourhood ethnic diversity reduced the ethnic inequality for men, but increased it for women. Among unemployed men, no ethnic inequalities in the likelihood of becoming employed were found at baseline. For unemployed women, Pakistanis were significantly less likely to find employment compared with Whites.

Adjusting for conventional variables explained the White–Pakistani difference among women, but reduced the likelihood of becoming employed among Pakistani men. Adjustment for neighbourhood deprivation and ethnic diversity continued to widen the male White–Pakistani difference in the likelihood of becoming employed. Employed Pakistani and Bangladeshi women were significantly more likely to become homemakers by 2001 compared with employed White women. In comparison, employed Black Caribbean women were significantly less likely to become homemakers. Adjusting for conventional variables explained the difference between White, Pakistani and Black Caribbean women. Adjusting for neighbourhood deprivation and ethnic diversity did not substantively affect the ethnic inequalities among employed women and the transition to homemaking. For unemployed women, no ethnic inequalities in the likelihood of becoming a homemaker were observed.

Among women who were homemakers in 1991, Pakistanis and Bangladeshis were significantly less likely to become employed (or to become unemployed) by 2001 compared with Whites. In comparison with White homemaking women, Black Caribbean and Black African women were significantly more likely to become unemployed by 2001. Adjusting for conventional variables did not explain the ethnic inequalities in transitions from homemaking to employment, but significantly reduced the inequalities in becoming unemployed for Pakistani, Bangladeshi, Black Caribbean and Black African homemakers compared with Whites. However, adjusting for conventional variables also increased the risk of Indian homemaking women becoming unemployed by 2001. Adjusting for neighbourhood deprivation and ethnic diversity had little effect on the remaining ethnic inequalities in transitions from homemaking among women between 1991 and 2001.

People who were unemployed in 1991 were not included in the penultimate stage of our modelling, as the measure of social class was only available for those who were employed. Adjusting for social class resulted in attenuation of the ethnic differences, but only partially. Additionally, the association between neighbourhood deprivation, ethnic diversity and transitions out of employment were not modified by the adjustment for social class.

The last phase of our analysis was to look for interaction effects between variables in all of the models. We found no statistically significant evidence of interactions between ethnicity, deprivation and ethnic diversity for any of the outcome variables.

5. Discussions and conclusions

5.1. Main findings

We investigated whether over-representation in deprived and ethnically diverse neighbourhoods explained some of the ethnic minority disadvantage in the English labour market. We found consistent evidence for a detrimental effect of neighbourhood deprivation on the risk of becoming unemployed. Unemployed men and women were also significantly less likely to become employed if they were residents in a deprived

neighbourhood. Compared with Whites, employed ethnic minorities were significantly more likely to become unemployed and those who were unemployed were less likely to become employed regardless of where they lived. This ethnic minority disadvantage was partially explained by neighbourhood deprivation. In contrast, neighbourhood ethnic diversity had inconsistent effects on labour market outcomes and did not substantively explain any of the ethnic minority disadvantages compared with Whites. Among employed women, the risk of becoming unemployed was lower in more ethnically diverse neighbourhoods. For homemaking women, the likelihood of becoming employed was higher in less ethnically diverse neighbourhoods. No effects of neighbourhood ethnic diversity were observed for men independent of other explanatory variables.

5.2. Interpretation

Studies of longitudinal data have been equivocal in concluding whether there is a detrimental effect of neighbourhood deprivation on labour market outcomes. A study in the Netherlands (Musterd et al., 2003) found modest neighbourhood deprivation effects on the risk of employed people becoming dependent upon welfare benefits. Similar results have been reported in Sweden (Musterd and Andersson, 2006) and the UK (Buck, 2001; van Ham, 2001) with unemployed people significantly less likely to become employed if they were residents of deprived neighbourhoods. In comparison, studies such as the 'Moving To Opportunity' experiment in the US (Kling et al., 2007) and those focusing upon earnings in the UK (Bolster et al., 2007; Propper et al., 2007) and Canada (Oreopoulos, 2003) have reported little association with neighbourhood deprivation. The clear associations between labour market outcomes and neighbourhood deprivation in our study, especially for men, draw favourable comparisons with the longitudinal studies of labour market outcomes in the Netherlands, Sweden and UK (Buck, 2001; van Ham, 2001; Musterd et al., 2003; Musterd and Andersson, 2006). The effect of neighbourhood deprivation was reduced, but remained modest in size although statistically significant after controlling for important conventional factors (e.g. educational qualifications). In summary, the effect of neighbourhood deprivation did explain some, but not all, of the ethnic minority disadvantage in labour market outcomes. This extends to previous literature which has tended to emphasize conventional explanations at the level of individuals and households, but not the neighbourhoods in which people live (e.g. Modood et al., 1997; Berthoud, 2000; Heath et al., 2000, 2008; Blackaby et al., 2002; Li and Heath, 2008).

In contrast to the results for neighbourhood deprivation, ethnic diversity had a less consistent influence upon labour market outcomes independent of other explanatory variables. Most notably, ethnic diversity was associated with some labour market outcomes for women, but none for men. For employed women, living in an ethnically diverse neighbourhood was associated with a decreased likelihood of becoming unemployed. This suggests that living in an ethnically diverse neighbourhood is beneficial for women in finding and retaining employment, which could be related to less discrimination and more cooperation as suggested by the 'Contact' hypothesis (Allport, 1954; Pettigrew, 1998). The opportunity to meet people in different ethnic groups means that ethnically diverse neighbourhoods offer a greater potential for making weak ties, which may then provide new information on job-related opportunities (Granovetter, 1973; Mollica et al., 2003).

Additionally, the geographical concentration of ethnic minorities, many of whom were born outside the UK, may create local demand for niche businesses and institutions that provide jobs that are not available in predominantly White neighbourhoods (Aldrich et al., 1985; Aldrich and Waldinger, 1990; Portes and Manning, 2005). This geographical concentration of ethnic minority (and immigrant) groups has also been suggested to provide conditions within which some cultural traditions can persist, such as attitudes promoting the restriction of women's participation in the labour market (Peach, 1996). In support of this hypothesis, we found that homemaking women were less likely to become employed if they lived in a more ethnically diverse neighbourhood, independent of well-known differences between ethnic groups (Lindley et al., 2004; Dale et al., 2006). We did not find any evidence of men or women being more at risk of becoming unemployed or being less likely to find employment while living in ethnically diverse neighbourhoods. Some recent studies have suggested that neighbourhood deprivation, not ethnic diversity, should be a key focus for UK policymakers (Letki, 2008; Sturgis et al., 2010; Twigg et al., 2010). Our findings support these studies, but also suggest that the beneficial effects of neighbourhood ethnic diversity on the likelihood of women avoiding unemployment requires further investigation.

Another important finding of our study was the difference in neighbourhood effects between men and women. Deprivation was a stronger determinant of labour market outcomes for men, whereas ethnic diversity only influenced women. Explanations for gender differences in neighbourhood effects are not straightforward, but may be related to the level of connectedness with the local environment. Unlike men, women are often 'homemakers' and responsible for most household-related tasks, regardless of whether they are employed or not (Kwan, 2000). This also includes being involved in other local activities where social networking can take place, such as schools and community institutions (Bell and Ribbins, 1994). The networks developed in these contexts by women are known to be important resources of social support and financial assistance for balancing work and family life (Jarvis, 1999; Russell, 1999). In addition to having better access to local informal social support networks, women are also more likely to know and trust their neighbours and have frequent contact with friends and relatives (Coulthard et al., 2002). Therefore, women appear more likely than men to be strongly connected to their neighbourhoods and to nurture local networks, which can also result in the making of weak ties of potential use in finding employment (Lowndes, 2004).

This is important because if there is a greater potential supply of weak ties available within ethnically diverse neighbourhoods, women appear more likely to benefit from these resources than men. As ethnically diverse neighbourhoods are often among the most deprived in England, it may be that women's greater potential to benefit from ethnic diversity eases the effect of deprivation on their labour market outcomes. In comparison, men are at greater risk from the detrimental effects of deprivation on labour market outcomes because they lack a similar level of connectedness with their neighbourhood.

5.3. Strengths and limitations

Our study has many strengths. It is the first to use longitudinal data to examine ethnic inequalities in the English labour market at the neighbourhood scale. Our data follows people in urban areas over a 10-year period, with large samples of the major ethnic

groups in England and a variety of key explanatory variables. The use of longitudinal data, through modelling the lagged effects of neighbourhood exposure on trajectories through time avoids the reverse causality problem that is inherent in all cross-sectional studies (Galster, 2008). With longitudinal data, we were also able to model change over time in some conventional variables that have been previously shown to be very important for labour market participation (e.g. qualifications, couple status and household relocation). Furthermore, unlike many earlier studies that examine only transitions between employment and unemployment, we also directly took into account transitions to and from homemaking among women.

In terms of limitations, our use of observational data means that individuals were not randomly assigned to neighbourhoods. We used wards as proxies for neighbourhoods, but this is only an approximation and may inadequately reflect processes at the neighbourhood scale (Galster, 2001; Flowerdew et al., 2008). It is possible that some of the remaining deprivation effects in our study are the results of selection bias due to the non-experimental nature of the data (Galster, 2008). However, were data available on where people moved to, or the extent that neighbourhoods changed around people who did not move between 1991 and 2001, it would not be straightforward to identify whether improving local circumstances (e.g. decreased neighbourhood deprivation) led to better chances in the labour market (or vice-versa). This is because, with the outcome (change in economic status) measured at the same time as the exposure (change in neighbourhood circumstances), it is impossible to determine which is in fact the causal agent. A similar limitation can be drawn against the use of individual-level variables that we allowed to vary across time (education and couple status).

Additionally, as the ONS LS is constructed from the decennial censuses, there is no information collected on labour market status that could have been used to identify people who moved into or out of the labour market for periods between 1991 and 2001. This is a limitation as it is impossible to distinguish people who were unemployed consistently between the 1991 and 2001 censuses, from those who may have been employed for some of the intervening period. On the other hand, the long duration of follow-up and knowledge of whether a person moved are also strengths of the study. This is because the influence of neighbourhoods on residents' outcomes may not occur instantaneously. More likely, neighbourhood exposures accumulate over a period of time and shape opportunities and access to resources (and vice-versa). Ideally, the combination of a long-term follow-up of study participants would be combined with frequent data gathering to chart trajectories in person outcomes and their correlates. The annual British Household Panel Survey was an almost ideal for this purpose, but was ultimately inappropriate because of the very small sample size of ethnic minority groups. As the ONS LS is the only dataset available to conduct these analyses, this shows that there is lack of routinely collected, high-quality data to track the life chances of individuals in specific ethnic minority groups over time. New data are needed to be able to provide better evidence for policymakers, though in the meantime, we are limited to using the best data available.

Despite the large sample sizes for ethnic minority groups, most remained too small for analysis stratified by ethnicity. Meanwhile, there are other ethnic minority groups, including people with mixed ethnicities (Aspinall, 2010) which we were unable to investigate due to small numbers. Sample restrictions meant that we only examined people in urban areas of England, who were within a specific age group in the ONS LS between 1991 and 2001. These restrictions influenced sample sizes among some ethnic

groups more than others. White women were the least influenced (79% of sample retained), whereas the most affected were Black African men (44.7% retained). This is partly because some people are known to have died or emigrated between 1991 and 2001, but there are others for whom there was no record of death or emigration (Platt et al., 2005). The likelihood of emigration is higher among some ethnic minority groups, especially those individuals born outside the UK who often return to their country of origin upon retirement or if they become ill (Boyle and Norman, 2009). Our results are therefore based upon a selected sample, with generalizability limited to people who remain in England, and not to those who chose to emigrate in search for employment or for other reasons.

5.4. Conclusions

Ethnic inequalities in the English labour market remain significant after taking into account the contexts in which people live. The importance of context was assessed in two ways: the deprivation of the ward of residence and the degree of ethnic diversity. Gender differences in neighbourhood effects on labour market outcomes were observed. The strongest neighbourhood effects on labour market outcomes were found for deprivation, especially among men. Neighbourhood ethnic diversity was associated with a decreased likelihood of employed women becoming unemployed, but also reduced likelihood of homemaking women becoming employed.

The study provides two potential recommendations for policymakers. First, as the effect of neighbourhood deprivation did not interact with ethnicity, a key message is that reducing geographical inequalities in deprivation could help to improve labour market outcomes for everybody, regardless of ethnic group. It is not, however, a ‘cure all’ solution and further work which identifies factors that explain persisting ethnic inequalities in the labour market is crucial for evidence-based policymaking.

Second, as ethnic minorities are over-represented in some of the most deprived neighbourhoods, reducing geographical inequalities in deprivation may be an important part of any strategy designed to lessen their disadvantage in the English labour market.

Future research on ethnic inequalities in the labour market needs to take into account the concentration of ethnic minorities in deprived neighbourhoods as well as other spatial phenomena that may inhibit or enhance life chances. Economic geographers are well positioned to continue making contributions on this policy relevant area of work, as geography not only represents a way of targeting resources to those judged to be in greatest need, but also addressing unwarranted disparities within populations.

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In line with ONS protocol, all cell counts below 10 and related percentages have been blanked out in every table reporting ONS LS data to preserve the anonymity of sample members. Special thanks go to Chris Marshall at CeLSIUS for his support in data management, and to the reviewers and editor for their constructive comments on the article.

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