Pushed Out or Pulled In? Self-Employment Among Ethnic Minorities in England and Wales

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Abstract

This paper attempts to explain why ethnic minorities in England and Wales are over-represented in the self-employment sector. Two distinct sets of causal factors are investigated. First, it is argued that ethnic minority workers are *pushed* into self-employment as a rational response to labour market obstacles, often in the form of employer discrimination, facing their group. Second, other factors may *pull* ethnic minorities into self-employment. Such factors include the existence of ethnic enclaves which provide a self-sustaining economic environment, the influence of religion and access to informal sources of labour through familial ties or shared culture and language. The paper outlines a simple theoretical model which incorporates these factors and then estimates the importance of various push and pull factors using data from the *Fourth National Survey of Ethnic Minorities*. The results suggest that discrimination against ethnic minorities in paid-employment is a contributory factor to the over-representation of minority workers in self-employment but also that there is a role for pull factors. Some specific pull factors are discussed in detail.

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1. Introduction

In common with many other developed countries, ethnic minorities and immigrants in Great Britain are disproportionately represented within the self-employment sector. According to data from the 1991 *Census of Population*, Britain's non-white minorities had a self-employment rate of 14.6 per cent compared to 12.3 per cent for whites. This disguises significant variation between different ethnic groups, however. Self-employment rates ranged from 5.8 per cent for black Caribbeans to 26.6 per cent for Chinese. Research on this empirical phenomenon in Britain (see for example, Metcalf *et al*., 1996 or Clark and Drinkwater, 1998) has focused on two distinct sets of causal factors[1]. First, it is argued that ethnic minority workers enter self-employment as a rational response to labour market obstacles, often in the form of employer discrimination, facing their group. These obstacles (or push factors) reduce the opportunity cost of self-employment and hence, other things equal, should lead to an increased representation of discriminated-against groups in that sector. This, however, ignores the possibility that there may be group or culture-specific influences which would lead minorities into self-employment even in the absence of discrimination. This second set of (pull) factors includes such things as the existence of ethnic enclaves which may provide a self-sustaining economic environment, the influence of religion and access to informal sources of finance and labour through familial ties or shared culture and language.

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[1] For details on other countries, see Borjas (1986), Yuengert (1995) and Farlie and Meyer (1996) on the United States, Maxim (1992) on Canada, Kidd (1993) on Australia and Marie (1996) on European Union member states.

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In this paper we present a simple theoretical model which demonstrates that both push and pull factors can influence the rewards available to members of different ethnic groups and so alter the relative attractiveness of entrepreneurship and paid-employment. We test the predictions of the model using an econometric framework in which the determination of earnings and choice of sector are considered. We use a data set specially designed to investigate the economic and social circumstances of Britain's ethnic population, *the Fourth National Survey of Ethnic Minorities*. The paper concludes by discussing the importance of culture specific and labour market factors on the determination of the self-employment propensities of different ethnic groups.

2. Theoretical Background

Given that self-employment is such a diverse and multi-faceted form of economic activity, it is unlikely that there will be one all encompassing theory which can explain why ethnic minorities are over represented in this sector. Economists have tended to focus on the disadvantages faced by ethnic minorities in the paid labour market as the primary cause for their higher rates of self-employment. However, it is difficult to reconcile this explanation with the large variations in self-employment rates seen across ethnic groups. Therefore, a number of alternative explanations, mainly concerned with cultural factors and developed in the sociological literature, have been proposed. In this section we show that, within the context of a simple theoretical model, both push (employer discrimination) and pull (cultural resources) factors may be important.

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In the standard economic model of sectoral choice the decision to enter either self-employment or wage-employment is based on a comparison of earnings in each sector. We augment a model of de Wit (1993) by introducing individuals from different ethnic groups and show that factors which alter the relative rewards between sectors affects the self-employment probabilities of different groups.

Consider a perfectly competitive goods market in which entrepreneurs (a term we use interchangeably with self-employed) can sell their output x at price p. Entrepreneurial ability $\theta \in [\bar{\theta}, \underline{\theta}]$ is distributed among individuals with distribution function $F(\theta)$. The firm faces a cost function $c(x, \theta)$ with partial derivatives $c_x > 0$, $c_\theta < 0$, $c_{xx} > 0$ and $c_{x\theta} < 0$. Maximisation of the profit function

$$\pi = px - c(x, \theta) \tag{1}$$

yields $x = x(p, \theta)$ and $\pi = \pi(p, \theta)$ where output and profits are increasing in both price and entrepreneurial ability.

Suppose that "outside" earnings from paid-employment are exogenously given by e. Individuals will choose to enter self-employment so long as $e < \pi(p, \theta)$. This condition defines a marginal value of θ, call it θ^*, such that

$$e = \pi(p, \theta^*) \tag{2}$$

Individuals with θ higher that θ^* will enter self-employment. Those with a lower θ will enter paid-employment. The proportion of individuals entering self-employment will be $1 - F(\theta^*)$.

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Suppose now that there are two ethnic groups, whites and non-whites[2]. Due to discrimination in paid-employment, non-whites face lower earnings, i.e. $e_N < e_W$. From (2) it follows that $\theta^*_W > \theta^*_N$ and, assuming the same distribution of ability for both groups, a higher proportion of non-whites will enter self-employment compared to whites.

This is an entirely intuitive result. Lower earnings in paid-employment reduce the opportunity cost of self-employment for non-whites thus pushing such workers out of paid-employment by making self-employment a more attractive option. We know, moreover, that non-whites in Britain face a considerable earnings disadvantage in the paid labour market. Recent estimates by Blackaby *et. al.* (1998a) suggest that the difference in mean log earnings is around 0.11. Decomposition analysis suggests that only 5 per cent of this earnings gap can be explained by differences in human capital endowments between whites and non-whites. There is therefore a potential role for discrimination as a push factor in explaining higher non-white self-employment rates.

This is, however, an unduly restrictive view of ethnic minority self-employment. Many arguments, centred around cultural and demographic influences, have been put forward as alternative explanations of high non-white self-employment rates. As Rafiq (1992) points out

"Culture is important in any discussion of entrepreneurship because it can determine the attitudes of individuals towards entrepreneurship … certain cultural institutions may facilitate or hinder entry into entrepreneurship.

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[2] The analysis can be easily extended to allow for more ethnic groups.

Culture is also important in influencing consumer attitudes and the creation

of demand for certain goods and services." (p. 46)

In this paper we examine the importance of four possible pull factors : enclaves,

language, religion and immigrant status. We briefly discuss each in turn.

(i) *Enclaves.* An enclave is usually defined as a high concentration of individuals

from the same ethnic background within a specific geographical location. In theory,

this provides a number of incentives to become self-employed. It is argued that

enclaves give rise to a protected market in which particular ethnic groups are able to

trade with one another through their preferred language. Aldrich *et al.* (1985) note

that minority entrepreneurs will usually know more about the special tastes and

preferences of ethnic markets which gives them an initial advantage but expanding the

business into the wider community might prove difficult. The provision of foodstuffs

or clothing with religious or cultural significance is an example of the type of business

in which minorities should have a comparative advantage. Aldrich and Waldinger

(1990) outline a counter argument whereby enclaves could spark too much

competition amongst entrepreneurs and could have the effect of limiting

entrepreneurial opportunities. Allied to the fact that enclaves tend to be poor areas

where residents have low purchasing power, the potential for the growth of these

businesses may be constrained.

(ii) *Language*. Related to the enclave hypothesis is the view that lack of fluency in

the English language is another form of labour market disadvantage faced by some

ethnic groups. Those who are less fluent face a restricted set of paid-employment

opportunities.[3] Given that minorities are able to trade with individuals from the same

ethnic group using their own language, it might be expected that self-employment

rates for people with English language difficulties would be higher. Evans (1989)

suggests that it is group fluency that is important because minorities who are not

fluent in the English language form a linguistically isolated labour pool and it will be

more efficient for them to be employed by a co-ethnic entrepreneur. Using Australian

data, Evans finds that the larger the percentage of the group who are not fluent in

English, the more likely that members of that group are to be business owners.

However, evidence from the US suggests that the opposite is true - those with English

language difficulties are less likely to be self-employed (Portes and Zhou, 1996;

Fairlie and Meyer, 1996).

(iii) *Religion*. Rafiq (1992) argues that some religions view self-employment in a

very positive light. For example, in the Muslim and Sikh communities,

entrepreneurship is looked upon favourably because prominent figures in both of these

religions were businessmen and in Hinduism, there are special castes which specialise

in business activities. If this argument is correct then not only will religious

denomination be important but so should the degree to which the religion is observed.

(iv) *Immigrant Status.* Ethnic minorities are also more likely to consist of

immigrants. Due to arguments of self-selection and hence higher levels of

unobservable motivation, it might be expected that immigrants would be more

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[3] English skills are not evenly distributed amongst Britain's ethnic populations. The Bangladeshis have the lowest levels of fluency, followed by Pakistanis. Migration is an important determinant of English language ability, with proficiency positively associated with the length of residence in Britain and negatively related to age on arrival.

inclined towards entrepreneurial activities than natives. Borjas (1986) finds that not only is immigrant status important but so too is the number of years that have elapsed since the immigration. Self-employment rates are expected to increase along with the length of time that immigrants have been resident in the host country because the cost of entry into self-employment is likely to deter more recent cohorts of immigrants. Given that post-war immigration into Britain has taken place in distinct waves[4], it might be expected that differences in the self-employment rates of the immigrant's home country would be important. Yuengert (1995) explored this possibility and found a positive and significant coefficient on the ratio of the home country self-employment rate to the overall US rate. However, in an extension to this analysis, Fairlie and Meyer (1996) found that this effect was not statistically significant.

It is also possible that family concerns play an important role in the decision whether to become self-employed as family members can be a source of cheap, informal and reliable labour. We consider this separately as this is true of all potential entrepreneurs, not just those from ethnic minorities. It may, however, be the case that certain minorities have closer-knit families and larger extended families who provide a pool of potential workers.

Within the context of our model, these pull factors can be incorporated in one of two ways:

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[4] Of the ethnic groups under consideration in this study, Caribbeans were the first group of immigrants, with the arrival of the *Empire Windrush* in Britain in 1948. Indians and Pakistanis mainly arrived in the 1960s and 1970s, while Bangladeshis and Chinese are the most recent arrivals. For more details, see Blackaby *et al.* (1998b).

(i) Non-white entrepreneurs face lower production costs relative to their white competitors. If this results in higher non-white profits for given levels of x and θ then through equation (2) this reduces θ^*_N relative to θ^*_W and so the proportion of non-whites in self-employment will increase.

(ii) Non-whites have a "better" distribution of entrepreneurial ability. Suppose that non-whites have a distribution of θ given by $G(\theta)$ where $G(\theta) \leq F(\theta) \; \forall \; \theta$. For any level of θ^*, the proportion of non-whites entering self-employment will be at least as high as that for whites.

3. Data

The data used in this paper are taken from the *Fourth National Survey of Ethnic Minorities* - the latest in a series of studies undertaken by the Policy Studies Institute investigating the social and economic conditions of Britain's ethnic minorities[5]. The interviews took place between November 1993 and December 1994 and covered a wide range of topics including family structures, employment, income, education, housing, racial harassment, health and cultural identities. The main advantage of this survey in comparison with the much larger and more regular government surveys is that it contains a considerably larger sample of individuals from the ethnic minorities. This was achieved by a sampling mechanism which selected a disproportional amount from the minority groups relative to whites.[6] A total of 5196 individuals of Asian and Caribbean origin, aged 16 and over, were interviewed, as well as 2867 whites.

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[5] The previous surveys were conducted in 1966/7, 1974 and 1982.

[6] For precise details of the sampling procedures used, see Smith and Prior (1996) and Modood *et al.* (1997). The survey covers England and Wales only because no interviews were scheduled for Scotland.

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The definition of ethnic group used in the *Fourth Survey* is slightly different to that used in the *1991 Census of Population*. For example, the Caribbean group in the *Fourth Survey* not only refers to those born in the Caribbean but also to others whose parents originated from the Caribbean, who are mainly described as Black Other (British) in the *Census*. An African Asian group can also be separately identified in the survey, as opposed to the *Census* where they tend to be grouped with Indians. The six different minority groups which can be identified are Caribbeans, Indians, African Asians, Pakistanis, Bangladeshis and Chinese. This implies that the largest omitted group, compared to the *Census,* is the Black Africans.

The variables of most direct interest to us are those which contain information about employment status and on earnings from employment. Table 1 shows that there is a substantial variation in self-employment rates between the individual ethnic groups, which justifies treating the minority groups separately and not collectively. For males, the Pakistanis exhibit the highest propensity to be in self-employment, with a self-employment rate of over 35 per cent, followed by Indians, African Asians and Chinese, who each had around 30 per cent in self-employment. 20 per cent of white males were self-employed, with only Bangladeshis and Caribbeans having lower rate. Table 1 also shows that self-employment rates for females tends to be much lower. This is true for all ethnic groups with the possible exception of the Chinese, who have a self-employment rate of 26 per cent amongst females. African Asian and Caribbean females both had lower self-employment rates compared with whites, particularly Caribbeans, whose rate was less than 3 per cent.

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The income questions which appear in the *Fourth Survey* were asked in a banded format

and require the respondent to indicate which of the amounts shown on a card best

represents their income. The 16 income bands were the same for both paid and self-

employees and these are shown in the appendix in Table A1. For employees, the

income definition refers to usual gross pay from their main job, including overtime and

bonuses but before any deductions. The self-employed were asked to estimate their

average net takings. This amount consists of their income after the costs of materials,

stock, running expenses and other costs but before tax.

Figure 1 shows the distribution of paid and self-employed earnings of six ethnic groups

(the Pakistanis and Bangladeshis were combined to achieve an adequate sample size).

Each panel compares, for each ethnic group, the percentage of paid and self-employees

distributed amongst five income categories (condensed from the 16 shown in Table 2),

ranging from those who earn less than £6000 per annum to those whose earnings are in

excess of £35000 per annum. The sample sizes used to construct Figure 1 are smaller

than those reported in Table 1 due to the fact that some workers refused to answer the

income question.[7] Refusal rates were lowest for Whites and Chinese and highest for

Indians. A greater proportion of paid-employees answered the income question

compared to self-employees for each of the ethnic groups.

A feature that is common to each of the panels in Figure 1 is that a far larger percentage

of self-employees are in the top income bracket compared to those in paid employment.

The earnings of Chinese and Indian entrepreneurs are particularly high, with around 20

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[7] All workers who answered the income question were included in the sample. This includes part-
timers because almost half of the respondents from the ethnic minorities were not asked a question

per cent of their samples earning more than £35000 a year. It can also be seen that

Pakistanis and Bangladeshis have the lowest earnings, with similar distribution of

earnings for both paid and self-employees. Caribbeans are mainly concentrated in the

middle income category (£12000-£23999), with relatively low proportions found in the

lowest and highest categories. Self-employed Caribbeans also are more highly

concentrated in the low income category than their paid-employed counterparts, a

feature also shared by the African Asians.

4. Estimation and Results

To investigate the importance of the push and pull factors outlined in section 2,we

model the decision to enter self-employment using the equation :

$$Z_i^* = \alpha_0 + \alpha_1(Y_i^S - Y_i^P) + \alpha_2 W_i + \eta_i \quad i = 1,\ldots, n \qquad (3)$$

Here Z_i^* is an index of self-employment propensity, Y_i^S and Y_i^P are log earnings in self

and paid-employment respectively, W_i is a vector of characteristics which influence

choice of sector and η_i is a normally distributed random error term. The α terms are

parameters to be estimated. The parameter α_1 measures the importance of the log

earnings differential between self and paid-employment. We would expect the

parameter to be positive. Those with higher earnings in self-employment should,

other things equal, choose that sector. The vector W_i will contain other variables some

of which are human capital characteristics of the individual while others are included

to proxy the push factors that were discussed in the previous section.

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about the number of hours they usually worked.

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Since we observe members of our sample in only one sector, to estimate (3) we need to form predictions of Y_i^S and Y_i^P. These predictions are based around standard Mincer earnings functions of the kind

$$Y_i^j = X_i^j \beta^j + \varepsilon_i^j \qquad\qquad i = 1,..., n \; ; j = S, P \qquad\qquad (4)$$

where log earnings depend on the vector X_i which includes an individual's accumulated human capital and other controls. ε_i is a random error term which captures the unsystematic component of earnings. Consistent estimation of the β vectors and hence prediction of the Y's implies that we take into account the potential influence of sample selection bias. This requires the simultaneous estimation of (4) with the selection equation

$$Z_i^{j\,*} = V_i \gamma + u_i \qquad\qquad i = 1, ..., n \qquad\qquad (5)$$

where we observe $Z_i^j = 1$ if an individual is in sector j and $Z_i^j = 0$ if they are in the other sector.

The data set does not provide us with a continuous measure of earnings. Rather we observe which of 16 groups the individual's earnings lie in. We observe the indicator variable M_{ik}^j ($j = S,P$; $i=1,...n$, $k=1,...,16$) and $M_{ik}^j = 1$ if individual i employed in sector j reports earnings which fall in group k. Bhat (1994) shows that consistent estimates of the β^j are obtained from maximisation of the likelihood function

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$$L = \prod_{i=1}^{n} \left[[1-\Phi(V_i\gamma)]^{1-Z_i^j} \times [\prod_{k=1}^{16} \{\Phi_2(\frac{a_k - X_i\beta^j}{\sigma^j}, V_i\gamma^j, -\rho) - \Phi_2(\frac{a_{k-1} - X_i\beta^j}{\sigma^j}, V_i\gamma^j, -\rho)\}]^{M_{ik}^j} \right]^{Z_i^j}$$

(6)

where σ^j is the standard deviation of ε^j, ρ is the correlation between ε^j and ν and Φ_2 is the bivariate normal distribution function.

Maximisation gives consistent estimates of β^j which can be used to predict continuous values of log earnings for all observations (see Bhat, 1994 for details of the calculation). The predicted differential $\hat{Y}^S - \hat{Y}^P$ is substituted into (2) which enables us to estimate the α parameters using a probit.

Our estimates are based on a sample of non-whites from six ethnic groups in paid and self-employment for whom data was available on earnings and other relevant characteristics. We include male workers aged 16-64 and females aged 16-59. All regression results reported in the paper use unweighted data.

Table 2 presents the results of estimating the selectivity corrected earnings equations. We show the coefficient estimates for the earnings equations only. The selection equation parameter estimates are given in Table A2 in the appendix. The results are standard for work of this kind. Earnings are generally related to age, marital status, gender, qualifications, region and firm size in the expected manner.

Ethnicity remains an important determinant of earnings after controlling for human capital. In each earnings equation the excluded ethnic dummy is for the Caribbean

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group and, on the whole, earnings are lower for the other groups compared to this. The only exception to this is for Chinese self-employed who have higher earnings than the other Asian groups. Amongst the paid-employed, the Pakistanis and Bangladeshis are the least well rewarded groups when we control for human capital. These are substantial differences too - much greater that those between male and female employees according to the results.

Estimates of the error correlation between selection equation and earnings equation are positive and highly significant for workers from each sector. The implication is that failure to account properly for sample selectivity bias would lead to an over-prediction of earnings as those in a particular sector with high earnings relative to their observable characteristics are also more likely to be observed in that sector. Figure 2 plots a kernel density estimate of the predicted earnings distributions for paid and self-employment. Density estimates of the predictions obtained from estimation of the earnings functions without accounting for sample selectivity are also plotted for comparison. It is clear that the potential effects of selectivity bias are substantial, especially for the self-employed.

Having obtained prediction of the log earnings differential between self and paid-employees we now consider probit estimation of the parameters of equation (3). Our methodology is to estimate a baseline specification containing standard variables, including the fitted earnings differential and ethnic group, which are thought to influence choice of sector. We then augment the baseline specification with the specific groups of variables relating to language, immigrant status, religion and enclaves which reflect or proxy the pull factors discussed previously.

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Table 3 contains the results of this exercise. We report the marginal effects and p-values. Thus the reported estimates show the effect on the probability of self-employment of a unit change in the relevant independent variable. The choice of which variables to include in the baseline specification was made on the basis of those variables available to us which theoretical work and the empirical literature on choice of employment sector suggest are important. The baseline results contained in column (1) suggest that self-employment propensity is increasing in age but is lower for those with formal educational qualifications and females. Housing tenure, which proxies access to capital, is important as are the region in which an individual lives and local unemployment rates, with the lowest self-employment probabilities seen in areas with an unemployment rate of over 20 per cent. Most of these results are consistent with earlier work (Clark and Drinkwater, 1998). Interestingly the presence of a spouse or dependent children reduces the probability of self-employment. The argument that family members provide a convenient source of labour is not well supported by the data. In the raw data less than 35 per cent of ethnic minority entrepreneurs reported that family members worked regularly in the business, just over half of whom were paid, and 23 per cent said that a family member was a partner in the business. The Chinese were most likely to employ family members and to have business partners who were family members.

In the baseline specification the predicted earnings differential between self and paid-employment has a positive coefficient (α_1) and is highly significant. A unit increase in the log differential is estimated to increase the self-employment rate by 8 percentage points when calculated at the sample mean. This is a very important

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finding as it is through this mechanism that discrimination against non-whites in the paid labour market, one of the push factors outlined earlier, impacts on choice of sector. If discrimination in employment were to disappear then we would expect to see the earnings differential narrow. The results suggest that this would reduce the probability of non-whites entering self-employment. Some idea of the magnitude of this effect can be gained by using Blackaby *et al.*'s (1998a) estimate that discrimination (or at least the part of the log earnings differential not explained by human capital endowments) is around 0.1. Combined with our estimate of α_1, this suggests that the non-white self-employment rate would fall by just under one percentage point if there was no earnings discrimination in paid-employment. This is a somewhat artificial exercise as, firstly, the absence of any ethnic earnings differential is an extreme counterfactual and, secondly, we have ignored earnings differences between different ethnic groups. Nonetheless it gives a flavour of the size of the push effect.

Controlling for the variables in the baseline specification does not remove ethnic differences in self-employment propensities. Relative to the excluded Caribbean group, the other ethnic groups exhibit significantly higher self-employment probabilities. The Pakistanis are the group most likely to be in self-employment followed by the Indians and African Asians then the Bangladeshis and Chinese. The existence of these ethnic differences even when earnings, human capital and other variables have been taken into account strongly suggests the existence of additional influences related to ethnicity which affect an individual's choice of sector. In the remainder of this section we investigate what these might be.

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We first turn our attention to the influence of enclaves Column (2) of Table 3 adds variables relating to ethnic enclaves to the baseline specification. The variables measure the ethnic composition of the area of residence of sample members, more specifically, the proportion of the population of the ward in which a respondent lives that belong to the respondent's ethnic group[8]. The results suggest that self-employment rates are negatively related to the proportion of co-ethnics in a ward. Compared to the reference category of an ward with less than 2 per cent of the individual's own ethnic group, minorities are far less likely to be self-employed in areas where there are higher concentrations of co-ethnics[9]. Recall that the usual argument relating to enclaves is that areas with large numbers of co-ethnics provide niche markets for culture-specific or ethnic goods. Presumably in such areas consumer discrimination, of the type suggested by Borjas and Bronars (1989), against ethnic entrepreneurs would also be expected to be low. Hence higher self-employment rates are anticipated. Offsetting this is the argument that enclaves mean there is more competition in the supply of the services offered by ethnic businesses. Moreover enclaves might also offer better opportunities in paid-employment for non-whites if non-white employers in such areas provide non-discriminatory employment opportunities. The evidence suggests that in the UK this latter set of forces dominates and the overall impact of the existence of clusters of members of minority groups is to reduce entrepreneurial opportunities.

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[8] Wards are the lowest geographical unit for which spatial data are provided in the UK. There were 9527 wards in England and Wales in 1991, each with an average population of 5327 inhabitants.
[9] Clark and Drinkwater (1998) using data from the 1991 *Census* and larger areas also find a negative relationship.

The data provide some direct evidence on whether minority owned businesses engage in the production of goods and services which have ethnic significance. 17 per cent of businesses reported that they produced "specialist ethnic" goods or services but there was considerable variation by group with Bangladeshis and Chinese much more likely to produce such goods. Table 4 cross tabulates the responses to this question with the ward level proportion of co-ethnics. While sample sizes are small, the evidence suggests that minority entrepreneurs in areas with large populations of their own group are less likely to supply ethnic goods or services. This is direct evidence against the usual hypothesis concerning enclaves. Furthermore, 75 per cent of the respondents said that whites were the main customers of their business.

It is argued that enclaves sustain economic communities based around shared culture and language. Language differences are explored in column (3) of the table. In the data set the English language ability of respondents was assessed by interviewers and classified as either "fluent", "fair", "slight" or "not at all". In the estimation we have collapsed the latter two categories into a single dummy variable. The excluded category is fluent. The results show that compared to those fluent in English, respondents who had difficulties with English were less likely to be in self-employment. The effect was strongest for those with the weakest English. In the raw data, those whose English was classified as "fair" had the highest self-employment rates but this does not control for other factors notably age which is related to both English language ability and self-employment propensity. The language issue is more complicated than this of course since it is possible to be fluent in more than one language. Many members of the ethnic minorities are bilingual and there is evidence

to suggest learning two or more languages at an early age can increase a child's

intelligence and hence affect employment outcomes later in life (Baker, 1995).

Column (4) of Table 3 investigates the role of religion. The data set gives a great deal

of detailed information about religion. For the purposes of estimation this has been

collapsed into broad categories. There are no significant differences in self-

employment probabilities by these broad groups (Muslim is the benchmark group).

Indeed, the religion dummies were jointly insignificant at the ten per cent level on the

basis of a likelihood ratio test of their exclusion. This is simply one aspect of religion

and it may be the case that a finer breakdown of denomination would yield different

results. Limitations on the size of the data set prevent us from attempting this. We

were however able to examine whether the strength of religious conviction made a

difference. We experimented with different measures of "devoutness" including how

often respondents attended religious ceremonies and how important they viewed

religion in their lives. Neither specification provided any evidence that religiousness

was a significant determinant of sector.

The results of adding to the baseline specification dummy variables which reflect

arrival date in the UK for those born abroad are presented in column (5) of Table 3.

The excluded category is those who arrived in the 1960s, the decade when

immigration to the UK was at its height. The table provides some evidence that more

recent arrivals have lower self-employment rates. This supports the idea that more

recent immigrants find the costs of setting up in business higher than those who have

been here longer. There is no strong evidence, however, that UK born non-whites are

any less motivated or have lower unobservable talents for self-employment than their

immigrant counterparts. If anything, the opposite is the case. UK born non-whites have higher predicted self-employment rates than more recent immigrants.

The final column of Table 3 includes all of the dummy variables relating to the push factors explored above. While there is a loss of precision in the estimates, the basic story remains the same : higher ward proportions of co-ethnics, lack of English language fluency and more recent arrival for immigrants reduce self-employment while religion has little or no effect. Taking all of the results in Table 3 as a whole, it is interesting to observe the behaviour of the coefficients on the ethnic group dummies as other groups of variables are added. There are some quite substantial changes suggesting interactions between the various pull factors and ethnicity. This is hardly surprising. Any sensible answer to the question : "What is ethnicity?" would undoubtedly raise such issues as language, religion, immigrant status and so on. It is reasonable to ask whether it makes sense to include both the ethnic dummies and the other pull factors. Re-estimation of the model without the ethnic dummies leaves most of the results qualitatively unchanged. The exception is religion where, in contrast to Table 3, Christians are found to be significantly less likely than other religions to be self-employed. We postpone further investigation of these interactions for future research.

5. Concluding Comments

The *Fourth Survey of Ethnic Minorities* has been used to identify which factors can account for the differences in self-employment rates amongst ethnic minorities in England and Wales. It is found that the difference between an individual's predicted

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earnings in paid and self-employment exerts a powerful influence, suggesting that the existence of discriminatory wages in the paid-employment sector leads minorities into entrepreneurial activities. However, even after controlling for this effect, inter group differences persist, implying a role for other factors.

Of the cultural factors analysed, it is found that members of ethnic enclaves are less likely to be self-employed, which is the opposite to what the protected market hypothesis would predict. Furthermore, those with poor English language skills have lower self-employment probabilities. Neither religious denomination nor the devoutness of the individual are found to be important determinants of self-employment, at least when ethnicity itself is also included as a control. However, many of the cultural factors are specific to particular ethnic groups and when the ethnic controls are removed, these factors assume greater prominence.

It would be wrong to claim that the pull factors explored in this paper, taken together, exhaust the possible influences of ethnicity on self-employment. As always in this kind of work, there are factors which theory and casual empiricism suggest are important but which are unavailable. Informal loan arrangements between members of ethnic minorities are one example of this. The existence of such arrangements and the results of this paper suggest that there are many interesting, unanswered questions associated with ethnicity and its interaction with self-employment.

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TABLE 1

Self employment rates as a percentage of those in employment

	White	Caribbean	Indian	African Asian	Pakistani	Bangladeshi	Chinese	All ethnic minorities
Male								
Rate	20.4	13.4	30.8	30.0	35.3	17.5	29.7	25.9
Weighted N	771	363	348	295	182	61	127	1377
Unweighted N	692	255	354	263	258	112	71	1313
Female								
Rate	8.4	2.9	13.7	8.0	14.1	11.0	26.2	9.7
Weighted N	708	444	269	193	60	7	120	1093
Unweighted N	668	327	252	162	64	13	63	881

Notes: 1. The self-employment rates are based on weighted data. A discussion of the sample weights used in the *Fourth Survey* is given in Smith and Prior (1996).
2. Sample consists of working age population (males aged 16-64 and females aged 16-59), who are in paid work.

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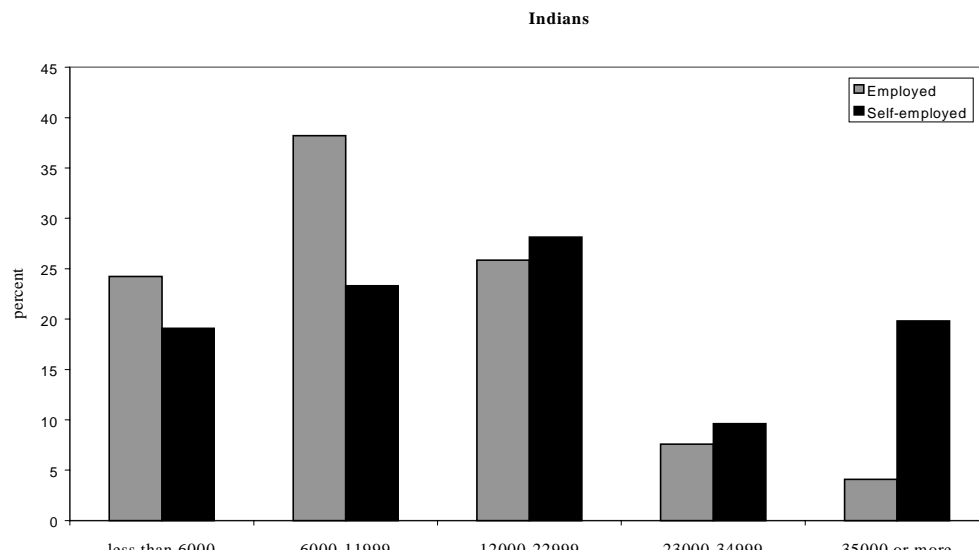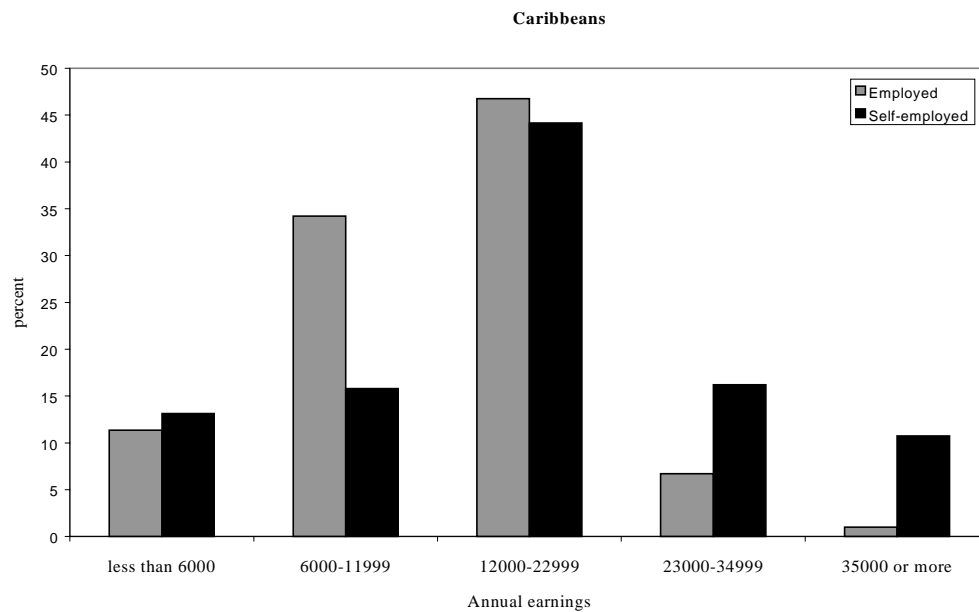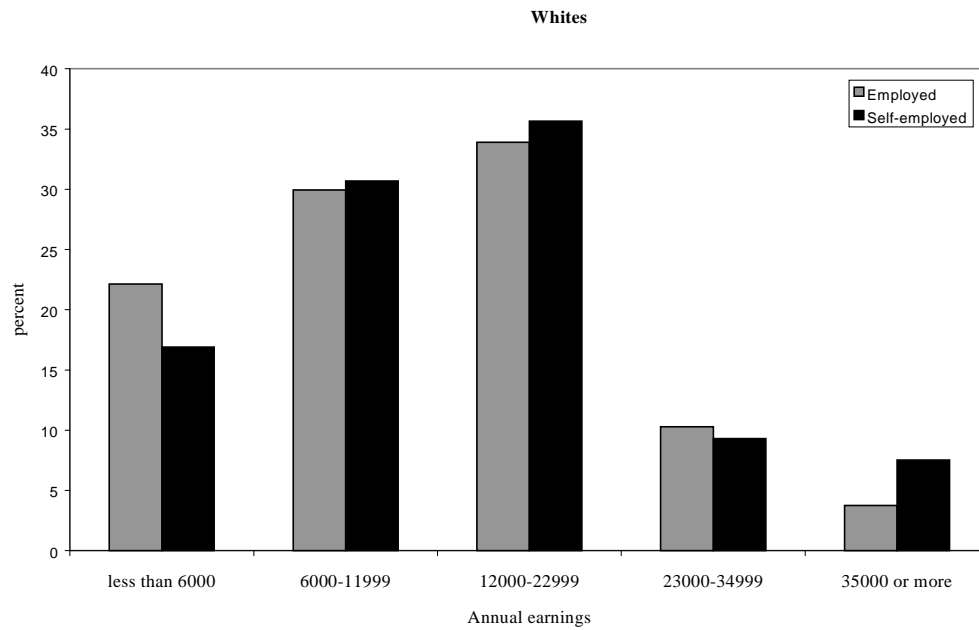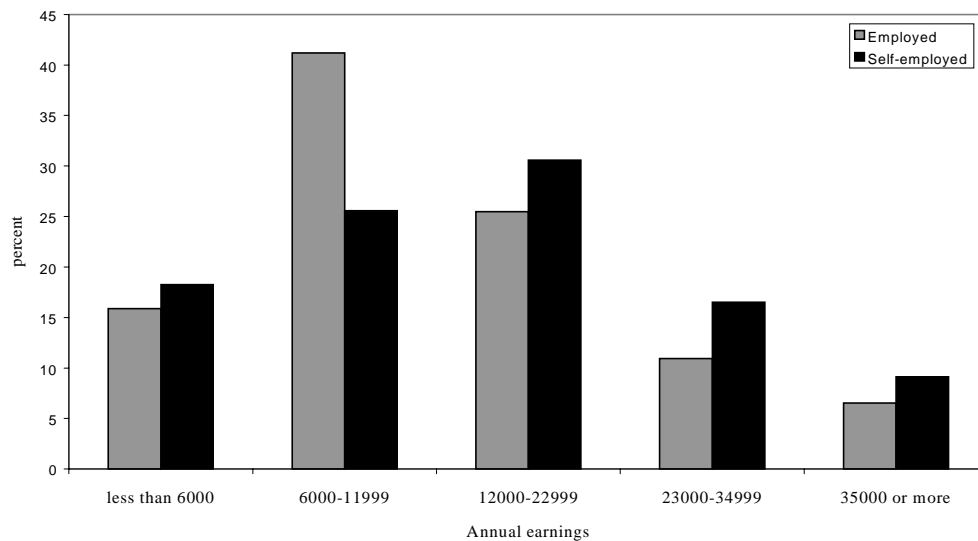# FIGURE 1: Distribution of Earnings for Employees and Self-employed

Whites

Caribbeans

Indians

FIGURE 1 (Continued)

African Asians

Pakistanis and Bangladeshis
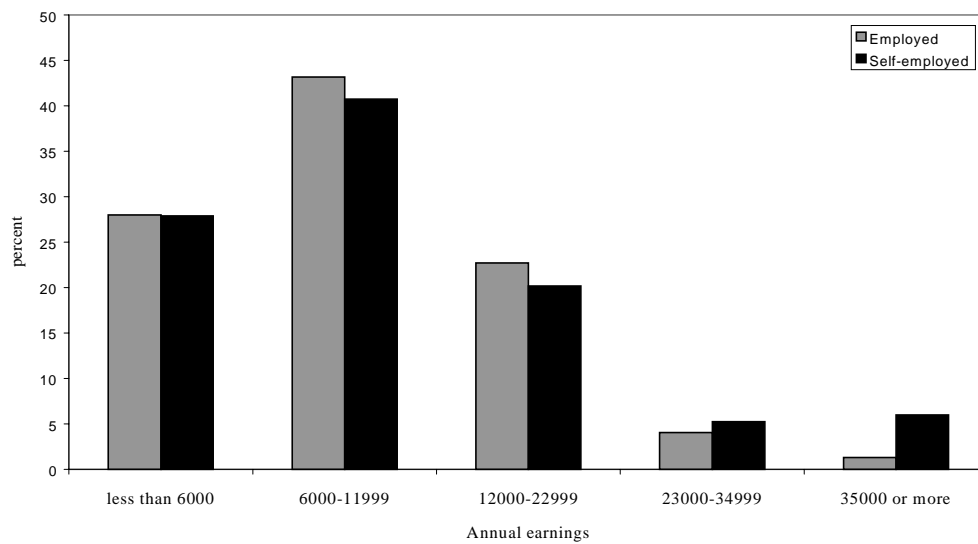
Chinese
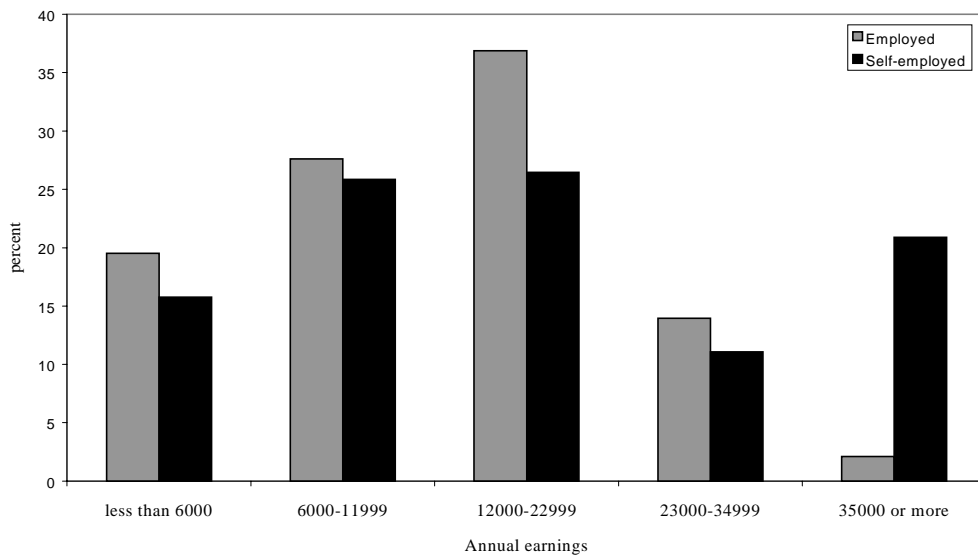
TABLE 2

Selectivity Corrected Earnings Functions

	Self-Employed	Paid-Employed
Constant	2.255 (0.106)	4.771 (0.000)
Age/100	11.718 (0.024)	3.912 (0.000)
Age squared/10000	-12.958 (0.036)	-4.967 (0.000)
Married	0.430 (0.029)	0.042 (0.338)
Female	-0.360 (0.087)	-0.278 (0.000)
High Qualifications	0.413 (0.002)	0.430 (0.000)
North	-0.168 (0.291)	-0.166 (0.000)
No Employees	-0.559 (0.000)	
Small Plant		-0.278 (0.000)
Indian	-0.458 (0.066)	-0.276 (0.000)
African Asian	-0.406 (0.093)	-0.217 (0.000)
Pakistani	-0.242 (0.386)	-0.408 (0.000)
Bangladeshi	-0.628 (0.039)	-0.483 (0.000)
Chinese	0.133 (0.659)	-0.232 (0.001)
ρ	0.713 (0.000)	0.659 (0.000)
σ	0.926 (0.000)	0.574 (0.000)
Number of Observations	218	1355

TABLE 3

Structural Probit Estimates of Self-Employment Incidence

	(1) Baseline	(2) Enclaves	(3) Language	(4) Religion	(5) Cohorts	(6) All
Constant	-0.110	-0.086	-0.117	-0.093	-0.107	-0.062
	(0.006)	(0.019)	(0.004)	(0.021)	(0.017)	(0.118)
Earnings	0.080	0.074	0.077	0.076	0.080	0.065
Differential	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age/100	0.415	0.385	0.467	0.346	0.449	0.357
	(0.044)	(0.044)	(0.025)	(0.082)	(0.042)	(0.062)
Agesq/	-0.519	-0.485	-0.575	-0.431	-0.600	-0.470
10000	(0.042)	(0.041)	(0.026)	(0.080)	(0.028)	(0.047)
High Quals	-0.0125	-0.011	-0.015	-0.012	-0.010	-0.011
	(0.035)	(0.031)	(0.015)	(0.043)	(0.076)	(0.048)
Married	-0.029	-0.027	-0.028	-0.025	-0.025	-0.020
	(0.004)	(0.005)	(0.005)	(0.010)	(0.010)	(0.020)
Female	-0.046	-0.043	-0.046	-0.043	-0.046	-0.039
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Renting House	-0.015	-0.014	-0.014	-0.015	-0.011	-0.011
	(0.048)	(0.041)	(0.053)	(0.046)	(0.136)	(0.093)
North	0.017	0.015	0.019	0.016	0.017	0.014
	(0.020)	(0.025)	(0.011)	(0.027)	(0.021)	(0.033)
Illness	0.009	0.008	0.008	0.010	0.011	0.011
	(0.268)	(0.264)	(0.326)	(0.180)	(0.187)	(0.133)
Children	-0.018	-0.016	-0.018	-0.016	-0.020	-0.016
	(0.020)	(0.027)	(0.016)	(0.028)	(0.009)	(0.020)
Indian	0.037	0.034	0.041	0.031	0.043	0.027
	(0.000)	(0.000)	(0.000)	(0.048)	(0.000)	(0.060)
African Asian	0.037	0.035	0.039	0.028	0.046	0.026
	(0.000)	(0.001)	(0.000)	(0.073)	(0.000)	(0.076)
Pakistani	0.040	0.037	0.044	0.032	0.044	0.025
	(0.000)	(0.001)	(0.000)	(0.066)	(0.000)	(0.103)
Bangladeshi	0.024	0.019	0.029	0.019	0.032	0.015
	(0.057)	(0.106)	(0.026)	(0.318)	(0.025)	(0.362)
Chinese	0.018	0.007	0.022	0.006	0.025	0.004
	(0.086)	(0.466)	(0.029)	(0.582)	(0.029)	(0.672)
2-5%	0.024	0.012	0.020	0.023	0.021	0.009
unemployment	(0.117)	(0.377)	(0.154)	(0.114)	(0.164)	(0.471)
5-10%	0.042	0.032	0.037	0.040	0.040	0.023
unemployment	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.011)
10-15%	0.039	0.033	0.038	0.037	0.038	0.030
unemployment	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.002)
15-20%	0.031	0.028	0.031	0.031	0.031	0.027
unemployment	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.004)
2-10% own group		-0.013				-0.011
		(0.043)				(0.071)

TABLE 3 CONTINUED						
10-25% own group		-0.017 (0.027)				-0.016 (0.029)
> 25% own group		-0.014 (0.127)				-0.012 (0.159)
UK Born					-0.006 (0.546)	-0.006 (0.467)
Arrived pre 1960					0.004 (0.782)	-0.001 (0.958)
Arrived 1970-79					-0.015 (0.037)	-0.012 (0.056)
Arrived 1980-89					-0.019 (0.048)	-0.012 (0.128)
Arrived 1990-94					-0.043 (0.020)	-0.030 (0.065)
English Fairly Good			-0.007 (0.289)			-0.004 (0.500)
English Poor			-0.021 (0.024)			-0.015 (0.068)
No Religion				0.010 (0.540)		0.002 (0.851)
Hindu				0.003 (0.775)		0.005 (0.578)
Sikh				-0.002 (0.836)		-0.004 (0.697)
Christian				-0.014 (0.375)		-0.018 (0.201)
Other Religion				0.018 (0.390)		0.014 (0.448)
Percent Correct	94.3	94.3	94.1	94.6	94.2	94.3
Likelihood Ratio Test	783.34 (0.000)	6.38 (0.094)	6.96 (0.031)	7.27 (0.201)	12.41 (0.030)	30.46 (0.010)
Sample Size	1572	1572	1537	1550	1549	1493

Notes:

1. Likelihood Ratio tests are for variable deletion where the null model in column one excludes all regressors save the constant, in column 2 excludes the cohort variables, in column three the enclave variables and so on. In the final column the null model excludes all variables added to the baseline specification.

2. The table reports marginal effects computed at the sample means of the independent variables. p-values are in parentheses.

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FIGURE 2

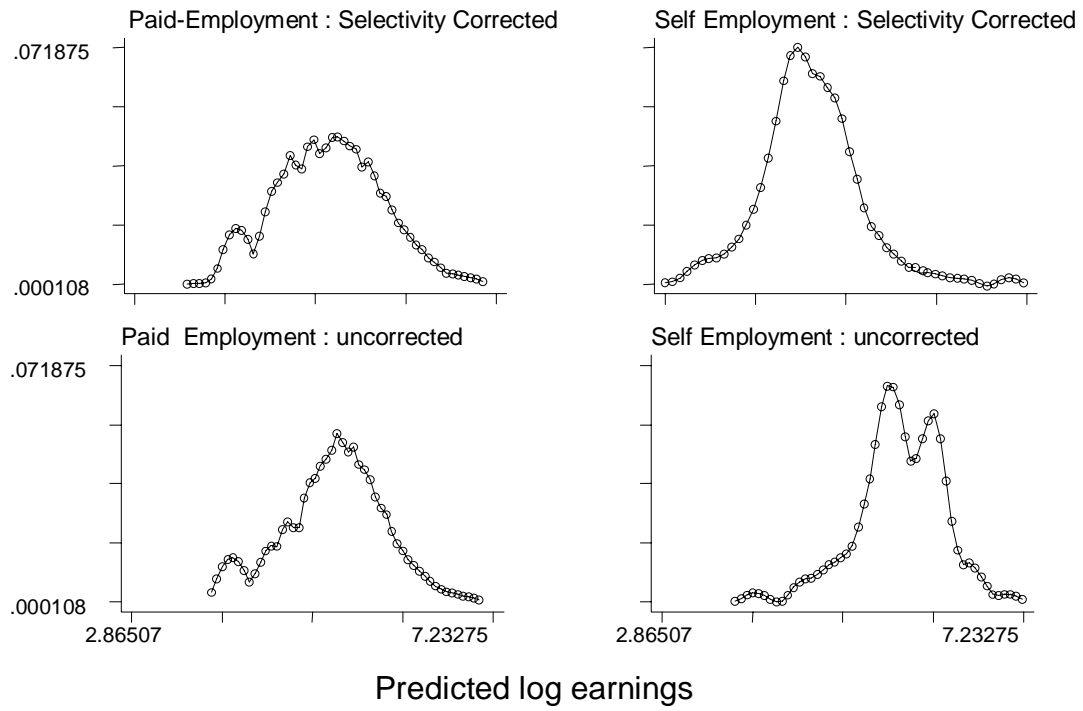**Kernel Density Estimates of Predicted Earnings Distributions**

Predicted log earnings

TABLE 4

Enclaves and Ethnic Goods

	Produces no ethnic goods	Produces ethnic goods	Total
0-1.99% own group in ward	94 (73.44)	34 (25.56)	128 (100)
9.99% own group in ward	92 (83.64)	18 (16.36)	110 (100)
10-24.99% own group in ward	80 (91.95)	7 (8.05)	87 (100)
≥ 25% own group in ward	40 (88.89)	5 (11.11)	45 (100)
Total	306 (82.70)	64 (17.30)	370 (100)

Note: The table shows unweighted counts and the row percentages in parentheses.

APPENDIX

TABLE A1

Income Card

Band	Weekly Income Before Tax	Annual Income Before Tax
1	Less than £77	Less than £3999
2	£78 - £115	£4000 - £5999
3	£116 - £154	£6000 - £7999
4	£155 - £192	£8000 - £9999
5	£193 - £230	£10000 - £11999
6	£231 - £289	£12000 - £14999
7	£290 - £346	£15000 - £17999
8	£347 - £385	£18000 - £19999
9	£386 - £442	£20000 - £22999
10	£443 - £500	£23000 - £25999
11	£501 - £558	£26000 - £28999
12	£559 - £615	£29000 - £31999
13	£616 - £673	£32000 - £34999
14	£674 - £730	£35000 - £37999
15	£731 - £788	£38000 - £40999
16	£789 or more	£41000 or more

TABLE A2

Estimates from Selection Equation

	Coefficient (p-value)
Constant	-4.329
	(0.000)
Age/100	13.510
	(0.000)
Age squared/	-15.443
10000	(0.001)
High	-0.119
Qualifications	(0.240)
Married	0.144
	(0.294)
Female	-0.521
	(0.000)
Renting House	-0.048
	(0.685)
North	0.187
	(0.136)
Illness	0.009
	(0.268)
Children	-0.254
	(0.016)
Indian	0.401
	(0.007)
African Asian	0.417
	(0.005)
Pakistani	0.782
	(0.000)
Bangladeshi	0.341
	(0.111)
Chinese	0.686
	(0.000)
2-5%	0.265
unemployment	(0.250)
5-10%	0.462
unemployment	(0.000)
10-15%	0.430
unemployment	(0.000)
15-20%	0.428
unemployment	(0.003)
Sample Size	1572