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Choice based letting, ethnicity and segregation in England

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Abstract. Choice-based letting (CBL) has been widely introduced to the social housing sector in England to give applicants more freedom in where they live. Concerns have been expressed that giving people more choice in residential locations has the potential to increase neighbourhood segregation. It has also been argued that a lack of *real choice*, not self-segregation, might be a cause of social and ethnic segregation. In social housing real choice might not be available and the most vulnerable are likely to access the easiest housing options: often in deprived and segregated neighbourhoods. This paper analyses the probability that households applying for social housing using different allocation systems end up in deprived or ethnically concentration neighbourhoods. Using unique data representing lettings made in the social housing sector in England we show that ethnic minorities, and especially those using CBL, are the most likely to end up in deprived and ethnic concentration neighbourhoods.

Keywords: Social Housing, Housing Allocation, Choice Based Letting, Ethnicity, Neighbourhood, Segregation

Introduction

Neighbourhood segregation along ethnic and socio-economic lines is often regarded as a problem potentially leading to disadvantage for individuals and hindering the development of a sustainable multicultural society (Pawson & Kintrea, 2002; Dekker & Rowlands, 2005). Segregation has been blamed for the 2001 riots in several cities in the North of England (Denham, 2001). A report by the Independent Review Team (2001) criticised the role played by housing policy and housing provision in creating segregated communities noting that, in many cases, the segregation was *self enforced* with ethnic minorities *choosing* to live in communities comprised predominantly of people of the same ethnicity. To avoid a repeat of the 2001 riots – and to avoid a range of other potential negative side-effects of segregation – the UK government promoted the creation

of ethnically and socio-economically mixed neighbourhoods (DETR, 2000a; ODPM, 2005).

Around the time of the riots, the Housing Green Paper, *Quality and Choice: A decent home for all* (DETR, 2000b) placed choice for social renters at the centre of British social housing policy. Based on the Green Paper, choice-based letting (CBL) was introduced as a means of access for those looking to rent in the public sector. CBL was designed to empower people in social housing to make decisions over how and where they live, and allows applicants to bid on properties in neighbourhoods of their 'choice' instead of being allocated to a dwelling by a housing officer (Kullberg, 1997; 2002; DETR, 2000b, Brown & Yates, 2005; Brown & King, 2005). The objectives of policies to create socially mixed neighbourhoods and policies to give people more choice on the housing market are potentially contradictory.

Concerns have been expressed that CBL could lead to higher levels of segregation, or at least will help to sustain current levels of segregation (Van Ham & Manley, 2009). It is well established that there are differences between ethnic groups in the desired ethnic mix of the neighbourhoods in which they live and these (sometimes small) differences can lead to marked patterns of ethnic segregation (Schelling, 1969, 1971; see Clark, 1991 for the US; Van Ham & Feijten, 2008 for the Netherlands). So giving people more choice in residential locations under CBL has the potential to increase neighbourhood segregation. The government report *Monitoring the Longer Term Impact of Choice Based Lettings* (Pawson et al., 2006) concluded that there is no evidence that CBL had resulted in greater ethnic segregation. However, Pawson and Watkins (2007) state that the above conclusion possibly does not reflect experiences of all British social landlords using CBL.

Paradoxically, it has also been argued that a lack of *real choice* under CBL, and not self-segregation, might be a cause of (sustained) social and ethnic segregation in neighbourhoods (Pawson & Watkins, 2007). Having real choice means being able to select a preferred option from a set of distinctive alternatives. In social housing, a safety net for those without options, distinctive alternatives might not be available. The most vulnerable housing applicants with urgent or specific housing needs are likely to use CBL to go for the easiest-to-get dwellings in the least desirable areas: often deprived and ethnically segregated neighbourhoods. Those with more time on their hands will have the opportunity to wait until they can secure a more desirable property.

One of the problems of CBL is that the number of desirable dwellings in desirable neighbourhoods is limited and demand for dwellings is high in most areas. So although people are given some degree of choice, also under CBL there will be 'winners' and 'losers' with households ending up in the least desirable neighbourhoods (Van Ham & Manley, 2009). Although consumer responses to the recently introduced CBL systems have been investigated (Kullberg, 2002) we know relatively little about CBL outcomes in terms of their spatial or distributional effects (Pawson & Watkins, 2007). This paper will contribute to our knowledge of mechanisms behind neighbourhood segregation in three ways. First, we will focus on the role of social housing allocation systems, and specifically on the role of CBL, in neighbourhood sorting. We will investigate whether different allocation systems lead to different neighbourhood outcomes for different ethnic groups. Second, we will take a dynamic approach by analysing unique flow data on nearly all new lettings in the social housing sector in England in the 1999/2000 and

2008/2009 financial years. We will compare patterns of neighbourhood sorting for lettings made by the same social landlords before and after CBL was introduced. In addition, we will investigate for the most recent financial year whether lettings made using CBL lead to different patterns of neighbourhood sorting compared to the old housing allocation systems. Third, we will study both the ethnic and socio-economic dimensions of destination neighbourhoods as this will give us more insight in the various mechanisms that might underlie household neighbourhood 'choices'. It can be argued that if CBL is enabling the expression of genuine choice, it is unlikely that any households would choose to live in the most deprived neighbourhoods (see for instance Marsh *et al.*, 2005). However, if certain deprived ethnic concentration neighbourhoods offer ethnically specific amenities such neighbourhoods might still be attractive to live in for certain groups (Pawson *et al.*, 2006; see also Bowes *et al.*, 1997).

Background and literature review

Segregation and neighbourhood choice

The proportion of ethnic minorities in the overall population in England was around 9 percent at the time of the 2001 Census. Ethnic minorities are generally concentrated in large urban areas compared to rural areas. Ethnic minorities are also over represented in social housing. On average, 17 percent of the white population in England lives in social housing and 27 percent of the ethnic minority population lives in social housing (SEH, 2007). As mentioned in the introduction, the spatial concentration of ethnic minorities is of great concern to the British Government. Concerns have also been expressed about the concentration of ethnic minorities in social housing – which is not independent from the spatial concentration concerns – which suggests that ethnic minorities are less able than others to satisfy their housing needs in the market (Independent Review Team, 2001; Commission for Racial Equality, 1990; 2004; Cabinet Office, 2003; Home Office 2001).

The severity and the scale of both ethnic and socio-economic spatial separation in England, and whether or not it should be termed 'segregation' have been debated extensively. Using 1991 Census data for the United Kingdom, Champion (1996) reported that in England ethnic minorities are spatially dispersed and that areas with the highest concentrations of ethnic minorities do not match the image of racialised 'ghettos' as known in the USA (see also Peach, 1996; Johnston *et al.*, 2002). In a more recent analysis using the 2001 Census, the national trend of dispersion of ethnic minorities, albeit with pockets of ethnic concentrations, was confirmed by Johnston (2006, p.988). In another study using both 1991 and 2001 Census data Dorling and Rees (2003) suggested that there was evidence at the local authority level of increasing segregation between the white majority and ethnic minorities. Using proxy measures, such as access to bathrooms and central heating as indicators of socio-economic status, Dorling and Rees (2003) also point to growing economic segregation, especially between housing tenure groups. They state: "[t]o be growing up in a council house now marks a household out geographically far more than it did a decade ago" (p.1301).

It is clear from the literature that the selective mobility of residents into and out of neighbourhoods has the potential to create and reinforce patterns of deprivation and segregation (Bailey & Livingstone, 2008; Van Ham & Feijten, 2008; Feijten & Van Ham,

2009; Van Ham & Clark, 2009). Individual preferences related to the ethnic composition of the neighbourhood population, and the consequent moving behaviour of these individuals, can cumulate in aggregate to highly segregated neighbourhoods (Schelling, 1969, 1971; see also Clark, 1992; Emerson et al., 2001; Ihlanfeldt and Scafidi, 2002; Ionnides and Zabel, 2003). Alternatively, the 'racial proxy hypothesis' argues that members of the majority population leave ethnic concentration neighbourhoods not because they have an aversion to living near minority group members per se, but because these neighbourhoods are often deprived (Taub *et al.*, 1984; Clark, 1992; Harris, 1999; Crowder, 2000). This is partly because some ethnic minority groups are more likely to be unemployed and poor, and partly because ethnic minorities often end up in poor, deprived and unstable neighbourhoods as a result of limited choice on the housing market.

Simpson (2004) has highlighted that to fully understand apparent neighbourhood segregation it is necessary to move beyond issues of selective migration. Using demographic data for Bradford, Simpson (2004) reported that significant changes in the relative distribution of the South Asian community, relative to rest of the population, was caused by natural population growth. Bradford was one of the cities in the North of England that experienced riots during the summer of 2001, and it is notable that Simpson's conclusion on the causes of segregation was at odds with the government report which focussed on self-segregation of ethnic minorities through their residential choices (Independent Review Team, 2001). The same report does not acknowledge that 'self-segregation' is often rooted in poverty and deprivation, and not necessarily the result of real choice (Hickman and Robinson, 2006; Robinson, 2005).

Housing 'choice' and segregation

The above discussion of household preferences with regard to the ethnic composition of their neighbourhood and subsequent selective mobility into and out of neighbourhoods is only relevant when households can exercise some level of choice in their housing behaviour. This is the case (to some extent) in the owner-occupied market, but much less so in the social housing sector. Over the last 30 years, the social housing sector in England has undergone major structural changes, eroding the choice set of social housing available. In 1981, 31 percent of all households in England lived in social housing and by 2007 this figure had fallen to 18 percent (SEH, 2007). In under three decades, the social housing sector has been redefined from a tenure of destination (Hickman and Robinson, 2006) into a tenure of last resort, to be accessed only when all other housing options have been exhausted by those unable to afford housing by other means (Taylor, 1998). Historically low investment in the building of new social housing, combined with the sales of millions of social housing units to sitting tenants under the right-to-buy (Jones and Murie, 2006) has severely depleted the social sector. The right-to-buy was mainly used to purchase the most desirable dwellings in the most desirable neighbourhoods, resulting on the residualization of the remaining social housing stock.

Prior to 2001, social housing in England was exclusively allocated using waiting lists. Housing needs and the priority levels of applicants were assessed using points or category based systems (Pawson & Watkins, 2007). Housing officers used the outcome of the assessment to match households with available properties. Households could refuse an offer made, but this usually led to penalties such as temporary suspension from the

housing waiting list (Pawson & Watkins, 2007) or exclusion through one-offer-only policies (Pawson & Kintrea, 2002).

Housing allocation practices from as far back as the 1950s have been linked to current patterns of ethnic segregation. It was repeatedly shown that housing officers intentionally and unintentionally promoted segregated outcomes by discriminating applicants based on ethnicity and socio-economic background and allocated households to dwellings and neighbourhoods based on whether they 'deserved' a dwelling, or were 'suitable' for a neighbourhood (Duke, 1970; Simpson, 1981; Henderson & Karn, 1984; Clapham & Kintrea, 1984; Malpass & Murie, 1994; Peach, 1996; Somerville, 2001; Sarre *et al.*, 1989). There is no recent research providing evidence of discriminatory practices, so it is fair to assume that these practices have been eliminated. However, also the categorisations used in needs-based assessments as included in the 1996 Housing Act have been accused of reflecting "household types that may be considered especially 'deserving'" (Fitzpatrick & Pawson, 2006, p.180). As a result of these categorisations, allocation practices using needs based assessment have the propensity to reproduce the geographic concentration of poverty (Fitzpatrick & Pawson, 2006).

In 2001 CBL was introduced to empower people in social housing to make decisions over how and where they live (DETR, 2000b, Brown & Yates, 2005; Brown & King, 2005). The model for CBL came from the 'advert' or 'supply' model developed in the late 1980s in the city of Delft in the Netherlands (Kullberg, 1997; 2002). The system was designed to "open up the letting of social housing" and operates by enabling eligible households to bid on a range of properties (Pawson *et al.*, 2006, p.5). Eligibility is determined using a variety of different forms of 'currency' – such as points and waiting time or housing need bands – to rank bidders (Marsh *et al.*, 2004). Also within the CBL framework, social landlords still have the legal obligation to operate a needs-based allocation system. By introducing a quasi-market system into social housing allocation it was hoped that demand would be stimulated in harder to let areas (Marsh, 2004) and that households would access properties and locations that were more suitable to their needs and reflected the kind of places in which they would like to live, theoretically encouraging households to become stakeholders in their neighbourhoods. The Department of Communities and Local Government, the Government department responsible for social housing policy in England aims to have CBL available to all housing applicants by 2010. Letting data for the 2008/9 financial year as used in this study, shows that CBL is used for 30 percent of all lettings

As discussed in the introduction, one of the possible negative side effects of CBL is that it might lead to segregation, or at least sustain current levels of segregation, as people are able to choose where to live based on ethnic preferences in line with Schelling's (1969, 1971) hypothesis, or because they prefer to live in neighbourhoods with ethnic specific amenities. It has also been argued that a lack of *real choice* in CBL, and not self-segregation, might also be a cause of social and ethnic segregation in neighbourhoods (Pawson & Watkins, 2007; see also Van Ham & Manley, 2009). Having *real choice* means being able to select a preferred option from distinctive alternatives. In social housing, a safety net for those without options, distinctive alternatives might not be available. Research by Marsh and colleagues (2004) showed that tenants who accessed social housing using CBL, identified a lack of choice as a real problem. Tenants stated that they frequently ended up bidding on properties and neighbourhoods they deemed to

be of sub-standard quality. An essential prerequisite for real choice is information (knowledge) about alternatives (see Elster, 1999 as in Brown & King, 2005). Some social housing applicants using CBL will have more and better information than others, either as a result of English language skills (Pawson *et al.*, 2006), skills in using the CBL system, time to assess alternatives, or greater knowledge about the local housing market and neighbourhoods in their choice set. Ultimately, this will bias the allocation system in their favour (Brown & King, 2005). Research in the Netherlands showed that applicants with low incomes and those from ethnic minority groups (often overlapping groups) were more likely to lack understanding of the CBL system and therefore fared less well in terms of housing outcomes (Kullberg, 2002).

CBL might also lead to segregation because those with urgent housing needs, but without priority status, use their choice to bid on the easiest-to-get dwellings which increases the likelihood to be accommodated in a less desirable area (Van Ham & Manley, 2009). Fitzpatrick and Pawson noted that “the importance of the ‘ability to wait’ in driving spatial polarisation is germane to the potential impact of the ‘choice’ agenda” (2006 p.172). This is especially true as in cases where households with similar needs bid on the same property, waiting time is often used as a means to allocate the dwelling to the household with the longest waiting time. As a result of the above, concerns have been expressed that CBL might be detrimental to the interests of already disadvantaged groups (Pawson & Watkins, 2007). Ethnic minorities may end up in ethnic concentration neighbourhoods, and especially deprived ethnic concentration neighbourhoods, not as a result of choice, but as a result of a lack of choice (Van Ham & Manley, 2009).

To date, work assessing the impact of CBL on segregation has largely focussed on changes in the level of segregation in the neighbourhoods affected. Work for the Department of Communities and Local Government (Pawson *et al.*, 2006), and extended in Pawson and Watkins (2007), used a number of case studies from social housing estates and concluded that “there is no evidence that [CBL] has resulted in more ethnically polarized patterns of letting than those arising from previous lettings systems where decisions on which properties to offer to which applications were largely in the hands of landlord staff” (Pawson *et al.*, 2006, p.14; see also Pawson & Watkins, 2007). In terms of ethnic mix in communities Pawson and colleagues found that “[m]any applicants preferred ethnically mixed areas, rather than areas where one ethnicity predominated, which suggests that diffusion is more likely than segregation under CBL” (2006, p.183).

In this study we argue that as neighbourhoods are dynamic environments with households moving in and out all the time, some process of neighbourhood sorting must be in place even when overall levels of segregation to stay the same (Van Ham & Manley, 2009). Sorting mechanisms within previous letting systems might simply have been replaced by (self) selection mechanisms within the CBL system.

Data and Methods

The data used in this study were assembled from (LA)COntinuous REcording which records information on the characteristics of both the household and the dwelling each time social unit is let in England. We used two approaches to model the effect of social housing allocation systems on neighbourhood sorting. Each of these approaches has

shortcomings, but we believe that in combination they provide a robust insight into the effects of housing allocation systems.

In the first approach we compared patterns of neighbourhood sorting for lettings made by the same social landlords before and after the introduction of CBL. We compared lettings from the CORE Housing Association data for the financial years 1999/2000 and 2008/9. The dataset was restricted to include only lettings by Housing Associations which made more than 90% of their lettings through CBL in 2008/9 and for which we could also identify lettings in 1999/2000. We selected lettings made by the same Housing Associations in two time periods, in an attempt to keep housing stock and neighbourhood characteristics constant over time. We acknowledge that there will have been substantial changes in the structure of Housing Associations during the 8 years through the processes of transfers, mergers and acquisitions which alter the staffing composition, management structures and policies practiced by the associations. Nevertheless, we feel that the comparability of the stock is sufficient for the analysis we wish to conduct, especially when combined with the second approach outlined below. To enhance comparability, only lettings made in urban areas were selected. Urban areas were identified using the Office of National Statistics urban – rural classification system (ONS, 2010). In practice the urban restriction did not reduce the data substantially as most CBLs were made in urban areas. The first dataset had a usable set of 26,398 lettings.

In the second approach we compared patterns of neighbourhood sorting for lettings made using CBL and traditional allocation methods in the 2008/9 financial year only. We combined data on lettings by Housing Associations and Local Authorities, effectively creating a census of lettings made in 2008/9 (CORE, 2009). The data is complete for 92% of Local Authorities (CHR, 2009) and for all Housing Associations with more than 250 units or 250 bed spaces in England. Social landlords with less than 250 units or bed spaces or not registered with the Housing Corporation but who are affiliated to the National Housing Federation are invited to complete CORE logs. CORE was launched in 1989 and around 600 Housing Associations are now recording more than 125,000 general needs lettings, 90,000 supported housing lettings and 16,000 sales per year. LACORE, recording lettings made by Local Authorities, was started in 2004 and although the data is not complete, we considered it to be important to include LACORE data in the analysis so the data would be representative of most of the social housing sector. For 2008/9 LACORE comprised of almost 96,000 Supported Housing and General Needs lettings. In total the combined dataset provided us with detailed information on 227,668 useable lettings.

The CORE data from 1999/2000 and 2008/9 and LACORE data from 2008/9 include low-level geocoding recording the location of the dwelling which allows linking neighbourhood characteristics to individual lettings. We defined neighbourhoods using the administrative units Super Output Areas (SOAs). Whilst we acknowledge the potential fallacies associated with using administrative to describe neighbourhoods (see Galster, 2001), SOAs were designed in conjunction with extensive external consultation to be of a similar scale to the most commonly perceived neighbourhood geography, and equate on average to areas of 1,500 people. Neighbourhood information was derived from two data sources: the Index of Multiple Deprivation (IMD) for England (ODPM, 2007) and the 2001 Census for the percentage of ethnic minorities in neighbourhoods. The first year for which the IMD data is available at the SOA level is 2004. As a result,

the IMD 2004 was linked to the 1999/200 data and the IMD 2007 to the 2008/9 data. Although the dates of the IMDs are not identical to the dates of the lettings, it is valid to use deprivation information from different time periods as deprivation is largely static over time (see Meen et al., 2007)

Instead of directly using the national absolute measures of neighbourhood deprivation and ethnicity we created bespoke relative measures for local housing markets. Given that most households search locally, not nationally, for housing, we chose to create variables reflecting the relative position of a neighbourhood in the local housing market. We explored various ways to make local housing markets operational such as Local Authorities (LA), Travel to Work Areas (TTWA), and Government Office Regions (GOR). We decided that Travel to Work Areas come closest to what we see as local housing markets as they are defined so that 75% of those living in the area also work in the area and 75% of those working in the area also live in the area (Coombes & Raybould, 2004). Super Output Areas nest conterminously within Travel to Work Areas.

Using the scores for the Index of Multiple Deprivation we identified the 20 percent most deprived Super Output Areas in each Travel to Work Area. Using the percentage of ethnic minorities in each Super Output Areas we identified the 20 percent neighbourhoods with the highest percentage of ethnic minorities in each Travel to Work Area. We then used these bespoke relative measures of neighbourhood deprivation and ethnicity to code our dependent variable (type of destination neighbourhood) into four categories: (1) non-deprived and non-ethnic concentration neighbourhoods; (2) deprived but non-ethnic concentration neighbourhoods; (3) non-deprived but ethnic concentration neighbourhoods, and; (4) deprived and ethnic concentration neighbourhoods. The distribution of lettings according to destination neighbourhood type can be found in Table 1. These four categories are based on research which shows that many people see deprived neighbourhoods and ethnic concentration neighbourhoods as less desirable (Harris, 1999; Bolt et al., 2008). We believe that our four types of neighbourhoods are a proxy for neighbourhood desirability in local housing markets, where the first type of neighbourhood is more desirable than the other three types (although there is no particular order between types two, three or four).

<Table 1 here please>

Given that we have an outcome variable with four mutually exclusive categories we used multinomial logistic regression to model destination neighbourhoods. Because the dataset includes multiple lettings within each housing market, the basic assumption of independence of observations required for standard logistic regression is violated. We have therefore used a multilevel multinomial logistic regression model (with fixed slopes) using the data analysis software STATA with the optional GLLAMM module (Rabe-Hesketh and Skrondal, 2008). Level 1 in our model represents individual households (or lettings made to individual households) and level 2 represents the local housing market in the form of Travel to Work Areas. The crucial part of the multilevel model structure is the areal level variance term, which enabled us to discuss the amount of variation explained by local housing market structures compared to the amount of variation explained by individual level characteristics.

Most independent variables included in the model were coded as dummies. Ethnic minority households were defined as households where the head does not belong to any of the following groups: White, White Irish or White Other. Ethnic minorities were coded as 1 and others were coded as 0. Employment status was measured in three categories: employed (reference category), unemployed, and other. Household composition was measured in 5 categories: single, single parent, two adult household with children, two adults without children (reference category), and other households. Dummy variables were created for lettings in the Supported Housing sector, lettings to new households entering the social sector from other tenures (compared to lettings made to households within the social sector), lettings made to households entering new stock (compared to household entering existing stock), and lettings made to households using CBL. Because CBL is more common in the Local Authority sector than in Housing Association properties, a dummy for households renting Local Authority dwellings (opposed to renting through a Housing Association) was included. Age of the head of household was measured in years, and included as a continuous variable. The number of bedrooms in the property was not available for all Supported Housing properties. For the rentals where this information was missing the average number of bedrooms was imputed which gives unbiased estimates (see Cohen & Cohen, 1975, chapter 7). The numerical distributions for the variables are described in table 1.

Housing market areas differ largely in the types of neighbourhoods on 'offer' and we had to control our models for this fact. In local housing markets with a high percentage of social housing in deprived neighbourhoods, social housing applicants are more likely to end up in a deprived neighbourhood. Likewise, in local housing markets with a high percentage of ethnic minorities, social housing applicants are more likely to end up in an ethnic concentration neighbourhood. To control for structural differences between local housing markets we added two more variables to our models: the proportion of lettings made across the housing market in deprived and ethnic neighbourhoods.

Results

Table 2 shows the results of a multilevel multinomial regression model of neighbourhood outcomes in which we compare neighbourhood outcomes for lettings made in the financial year 1999/2000 (before CBL was introduced) with the outcomes of lettings made in the financial year 2008/9 (after CBL was introduced). As outlined in the data and methods section, for comparability we selected lettings made by the same Housing Associations in both periods. This design allows us to gain insight into the impact of introducing CBL on neighbourhood sorting.

The reference category in Table 2 consists of non-deprived, non-ethnic concentration neighbourhoods. The results show that ethnic minorities are 1.3 times more likely than others to rent a dwelling in a deprived neighbourhoods; 2.6 times more likely to rent a dwelling in an ethnic concentration neighbourhood; and 3.1 times more likely to rent a dwelling in a deprived ethnic concentration neighbourhood. Those who rented a dwelling in 2008/9 (after the introduction of CBL) were more likely to end up in a deprived neighbourhood or an ethnic concentration neighbourhood, but not more or less

likely to enter a deprived and ethnic concentration neighbourhood compared to the reference category. The interaction effect between the ethnicity dummy and the CBL dummy shows that ethnic minorities using CBL are the most likely to rent a dwelling in deprived neighbourhoods, ethnic concentration neighbourhoods and deprived ethnic concentration neighbourhoods. A full overview of the effects will be given at the end of this section.

<Table 2 here please>

The model in Table 2 also contains a set of additional control variables which will only be discussed briefly here. The effects of the control variables reflect a combinations of factors such as the housing allocation practices of social housing providers, the structure of the local housing market, and a limited degree of choice (even under the old allocation system). The results show that the older the head of the household, the less likely it is that the household is allocated (or has chosen) a dwelling in any of the deprived or ethnic concentration neighbourhoods. The age effect might be a proxy for the time households have been on a waiting list. The longer the waiting time, the more likely it is that a household gets the dwelling of their choice in a more desirable neighbourhood. Alternatively, the age effect might reflect differences in the composition in housing stock between neighbourhoods where housing suitable for older applicants might be more likely to be located in non-deprived and non-ethnic concentration neighbourhoods. Households with children are the least likely of all household types to move into or within any of the deprived or ethnic concentration neighbourhoods. These results are in line with those found by Bolt and colleagues (2008) who demonstrated that households with children tend to avoid areas with negative reputations, which would include deprived and ethnic concentration areas (see Permentier et al., 2008 on neighbourhood reputations). Consistently, single person households (without children) and other household types are the most likely to rent a dwelling in any of the three deprived or ethnic concentration neighbourhood types.

Non-working households (including households where the head is retired or providing care) are more likely than working households to enter deprived neighbourhoods. Households entering social housing from other tenures, either owner occupation or private renting (labelled new tenants), are more likely to enter deprived neighbourhoods than existing tenants. This is not surprising as it might be assumed that new entrants to the social housing sector are more likely to have pressing housing needs, because of the loss of their previous accommodation, than those already in the sector who normally only move to improve their current housing situation. Those who move into larger dwellings (measured by the number of bedrooms in the property) are slightly more likely to rent in deprived neighbourhoods and less likely to rent in ethnically concentrated neighbourhoods. Finally we controlled for some local housing market characteristics. We included a London dummy and we controlled for the composition of neighbourhoods in the local housing market to take into account regional differences in housing market structures. The higher the percentage of lettings in the local housing market made in the 20 percent most deprived neighbourhoods (Super Output Areas), the more likely that a social housing applicant ends up in a deprived neighbourhood. The higher the percentage of lettings in the local housing market made in the 20 percent most ethnically concentrated

neighbourhoods, the more likely that a social housing applicant ends up in an ethnic-concentration neighbourhood. The direction of these two local housing market effects is in line with our expectations.

Table 3 reports the results of a multilevel multinomial regression model of neighbourhood outcomes for the full set of lettings from 2008/9. In this model we compare neighbourhood outcomes of CBL and traditional letting practices in the same financial year allowing us to compare the outcomes of the different letting mechanisms. As in the previous table, the reference category consists of non-deprived, non-ethnic concentration neighbourhoods. The results show that ethnic minorities are more likely than others to rent a dwelling in deprived neighbourhoods, ethnic concentration neighbourhoods and deprived and ethnic concentrated neighbourhoods. Those who rented their dwelling using CBL are more likely to end up in a deprived or ethnic concentration neighbourhood than those who rented their dwelling using traditional allocation mechanisms. The interaction effect between the ethnicity dummy and the CBL dummy shows that ethnic minorities using CBL are the most likely to end up in deprived and ethnic concentration neighbourhoods. Table 3 also reports the effects of a range of control variables which show roughly similar results to those found in the model in Table 2.

<Table 3 here please>

Table 4 shows the overall effects of the ethnicity dummy, the CBL dummy and the interaction effects for the models as presented in Tables 2 and 3. Although different modelling approaches were used, the results are very similar. In both approaches ethnic minorities are consistently more likely to enter not only neighbourhoods with concentrations of other ethnic minorities but also neighbourhoods that have a high level of deprivation. Both approaches also show that ethnic minorities using CBL are far more likely than others (including ethnic minorities using the older allocation mechanisms) to rent a dwelling in deprived neighbourhoods, ethnic concentration neighbourhoods and especially deprived ethnic concentration neighbourhoods.

Discussion

Using unique data on nearly all new lettings in the social housing sector in England from both the 1999/2000 and 2008/9 financial years we analysed whether CBL leads to different types of destination neighbourhoods compared to the old allocation systems and whether CBL leads to different outcomes for ethnic minorities compared to other groups. As discussed, we used two different modelling approaches and we acknowledge that both modelling approaches have shortcomings (as discussed in the data and methods section). However, given that both approaches lead to the same conclusions we are confident that the results are robust.

The first conclusion is that among those who do not use CBL, ethnic minorities are far more likely than non-ethnic minorities to end up in deprived and especially ethnic-concentration neighbourhoods. This indicates that the old social housing allocation system where housing officers make allocation decisions, still plays an important role in

creating or sustaining segregated neighbourhoods. This is an important finding. The underlying mechanisms might be diverse: self-selection as a result of the limited possibility of rejecting a dwelling offered under the old allocation system; allocation practices of social landlords; and local housing market and population structures. The second conclusion is that those who rent their dwelling through CBL (both non-minority and ethnic minority households) are more likely to end up in a deprived neighbourhood (and to a lesser extent in an ethnic-concentration neighbourhood) than those who get their dwelling using the older allocation systems. This is most likely an indication that CBL is mainly used by social landlords with a lot of stock in deprived neighbourhoods, although we partially controlled for this in our first modelling approach by selecting lettings from the same social landlords in both years. If in a local housing market the majority of dwellings on offer using CBL is located in deprived neighbourhoods, then the majority of tenants using CBL will end up in a deprived neighbourhood. We attempted to control for local housing market structures, but we acknowledge that these variables do not catch all differences between local housing markets.

The third conclusion is that ethnic minorities renting through CBL are much more likely to end up in ethnic concentration neighbourhoods than any other group. This could be seen as a positive result of choice: ethnic minorities choosing to live in neighbourhoods with other ethnic minorities. However, it is interesting that ethnic minorities using CBL are also the most likely to end up in deprived and deprived ethnic-concentration neighbourhoods. As it is unlikely that people 'choose' to live in deprived neighbourhoods, this finding gives some support to the alternative explanation that ethnic minorities using CBL end up in (or move within) less desirable neighbourhoods not because of choice, but because of a lack of real choice. We do acknowledge that some of these deprived neighbourhoods will offer ethnic specific amenities which might make them attractive for some groups. Some ethnic minority groups might choose to live in certain deprived neighbourhoods because of the importance of kinship, cultural or infrastructural ties, which are more important in choosing a neighbourhood than the desire to live in less deprived neighbourhoods (see for example Bowes et al., 2007).

Our overall conclusion is that both CBL and the old allocation mechanism sort ethnic minorities into ethnic concentration neighbourhoods. Ethnic minorities renting through CBL are the most likely to end up in ethnic concentration neighbourhoods. We did not investigate whether the level of segregation in neighbourhoods changed after the introduction of CBL, but our analyses at least show that CBL leads to selective sorting. The fact that ethnic minorities using CBL are not only the most likely to end up in ethnic concentration neighbourhoods, but also in deprived neighbourhoods suggests that the selective sorting is not only a result of choice and self-segregation, but also a result of a lack of real choice. Part of this lack of real choice seems to be caused by social landlords using CBL in the most deprived neighbourhoods and the most difficult to let stock. When having *real choice* means being able to select a preferred option from distinctive alternatives, CBL does not offer real choice.

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Table 1: Summary statistics of variables used

Data set used	2008/2009	1999/2000 & 2008/9
Number of cases	227,668	26,398
<i>Dependent variable</i> (4 types of destination neighbourhoods)		
Non-deprived non-ethnic concentration (reference)	103,369	10,456
Deprived but non-ethnic concentration	21,708	7,770
Non-deprived but ethnic concentration	22,058	2,308
Deprived and ethnic concentration	80,533	5,864
<i>Independent variables</i>		
Choice-based letting (ref = other lettings)	83,704	N/A
Ethnic Minority household (ref = not ethnic minority)	31,608	4,642
Letting made in 2008/9 (ref = lettings in 1999/2000)	N/A	16,920
Household type		
Single (reference)	20,664	2,542
Single Parent	137,875	11,237
Couple without Children (reference)	34,688	6,060
Couple with Children	23,453	4,048
Other Household	10,988	1,737
Economic Activity		
Employed (reference)	41,198	7,720
Unemployed	44,608	4,883
Other Activity	137,862	13,825
New Tenant (ref = existing tenant)	82,787	10,267
New Let (ref = relet)	23,999	12,150
Supported Housing (ref = not Supported Housing)	89,749	N/A
Local Authority letting (ref is Housing Association)	54,230	N/A
London (ref = rest of England)	26,471	3,385
Average Values		
Age	41.94	39.05
Number of bedrooms	1.88	1.89
Percentage of lettings in the 20% most deprived SOAs in local housing market	44.59	45.79
Percentage of lettings in the 20% most ethnically concentrated SOAs in the local housing market	44.89	29.50

Source: Author's own calculations using CORE and LACORE lettings data 1999/2000 and 2008/9 (N/A = not applicable to dataset)

Table 2: Multilevel Multinomial Regression Model of neighbourhood outcomes (reference group: non-deprived, non-ethnic concentration neighbourhoods) for lettings made by urban Housing Associations in both 1999/2000 and 2008/9.

	Deprived Neighbourhood			Ethnic Concentration Neighbourhood			Deprived & Ethnic Concentration Neighbourhood		
	OR	Std Err	Sig	OR ^a	Std Err	Sig	OR ^a	Std Err	Sig
Ethnic minority household (ref: non ethnic min)	1.294	0.113	**	2.630	0.297	**	3.077	0.225	**
CBL 2008/9 (ref: 1999/2000 non CBL)	1.478	0.086	**	1.235	0.096	**	0.904	0.053	
Interaction Ethnic*CBL 2008/9	1.099	0.123		1.247	0.171		1.655	0.157	**
<i>Household level control Variables</i>									
Age	0.988	0.001	**	0.997	0.002	*	0.988	0.001	**
Household type (ref: couple without children)									
Single	1.051	0.060		1.113	0.093		1.207	0.082	**
Single Parent	0.762	0.052	**	0.818	0.083	*	0.867	0.068	
Couple with children	0.720	0.053	**	0.892	0.098		1.111	0.093	*
Other Household	1.029	0.088		1.126	0.141		1.254	0.120	**
Economic Activity (ref: employed)									
Unemployed	1.353	0.066	**	1.027	0.075		1.408	0.075	**
Other Activity	1.163	0.045	**	1.067	0.061		1.269	0.056	**
Letting Information (ref: existing tenant)									
New Tenant	1.426	0.066	**	1.034	0.071		1.319	0.063	**
New let	0.725	0.034	**	1.133	0.078		1.091	0.052	
Number of Bedrooms	1.165	0.036	**	0.965	0.044		1.040	0.035	
London (ref: rest of England)	0.670	0.108	*	0.506	0.089	**	1.215	0.196	
% lettings in 20% most deprived SOAs in LHM	1.043	0.005	**	0.998	0.006		1.012	0.005	*
% lettings in 20% most ethnically concentrated SOAs in the LHM	0.995	0.004		1.043	0.005	**	1.062	0.004	**
Initial log likelihood	-32,615.1								
Model log likelihood	-29,639.2								
Variance at Level 2 Housing Markets (TTWA)	3.146	0.758	**						

*=p<0.05; **=p<0.01; ^aOdds Ratio

Source: Author's own calculations using CORE and LACORE lettings data 1999/2000 and 2008/9

Table 3: Multilevel Multinomial Regression Model of neighbourhood outcomes (reference group: non-deprived, non-ethnic concentration neighbourhoods) for full 2008/9 data.

	Deprived Neighbourhood			Ethnic Concentration Neighbourhood			Deprived & Ethnic Concentration Neighbourhood		
	OR ^a	Std Err	Sig	OR ^a	Std Err	Sig	OR ^a	Std Err	Sig
Ethnic minority household (ref: non ethnic)	1.594	0.062	**	1.241	0.038	**	1.602	0.030	**
Choice-based letting (ref: non CBL)	1.192	0.026	**	1.069	0.020	**	1.133	0.022	**
Interaction Ethnic*CBL	1.160	0.075	*	1.283	0.060	**	1.474	0.043	**
<i>Household level control Variables</i>									
Age	0.986	0.001	**	0.991	0.001	**	0.984	0.001	**
Household type (ref: couple without children)									
Single	1.269	0.041	**	1.124	0.033	**	1.217	0.023	**
Single Parent	1.143	0.046	**	1.043	0.040		1.218	0.029	**
Couple with children	1.050	0.045		1.076	0.045	**	1.074	0.030	*
Other Household	1.354	0.073	**	1.146	0.054	**	1.499	0.046	**
Economic Activity (ref: employed)									
Unemployed	1.279	0.040	**	1.179	0.033	**	1.401	0.025	**
Other Activity	1.122	0.027	**	1.068	0.025	**	1.112	0.017	**
Letting Information (ref: existing tenant)									
New Tenant	1.458	0.028	**	1.458	0.026	**	1.733	0.021	
New let	0.963	0.026		0.927	0.028	*	0.968	0.017	**
Supported Housing (ref: general needs)	1.036	0.025	**	1.049	0.024	*	1.232	0.018	**
Number of Bedrooms	1.030	0.020	**	1.025	0.017		1.064	0.012	**
Local Authority Letting	1.251	0.030	**	1.314	0.026	**	1.094	0.015	**
London (ref: rest of England)	1.589	0.099	**	5.789	0.261	**	3.130	0.113	**
% lettings in 20% most deprived SOAs in LHM	1.104	0.029	**	0.926	0.002	**	1.023	0.003	**
% lettings in 20% most ethnically concentrated SOAs in the LHM	0.909	0.001	**	1.131	0.001	**	1.049	0.001	**
Initial log likelihood	-279,708.1								
Model log likelihood	-207,114.5								
Variance at Level 2 Housing Markets (TTWA)	2.280	0.089	**						

*=p<0.05; **=p<0.01; ^aOdds Ratio

Source: Author's own calculations using CORE and LACORE lettings data 2008/9

Table 4: Total effects of ethnicity and choice-based letting, including interaction effect, using odds ratios from models in Tables 2 and 3.

	Deprived Neighbourhood	Ethnic Concentration Neighbourhood	Deprived & Ethnic Concentration Neighbourhood
Total effects using data from 1999/2000 and 2008/9 for HA lettings in urban areas (from Table 2)			
White before CBL	1.000	1.000	1.000
Ethnic before CBL	1.294	2.630	3.077
White after CBL	1.478	1.235	0.904
Ethnic after CBL	2.102	4.050	4.604
Total effects using data from 2008/9 for HA and LA lettings (from Table 3)			
White, not using CBL	1.000	1.000	1.000
Ethnic minority, not using CBL	1.594	1.241	1.602
White, using CBL	1.192	1.069	1.133
Ethnic minority, using CBL	2.204	1.702	2.675

Source: Author's own calculations using CORE and LACORE lettings data 1999/2000 & 2008/9