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**The Internal Migration of Britain's Ethnic Groups**

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## **Abstract**

Despite the popular press and political focus on immigration, many more people migrate internally than internationally in Great Britain. This paper considers the ethnic dimension of changing usual residence at various spatial scales using one-year data from the 2001 Census, the only available comprehensive source of origin-destination flow data on Whites and non-white minority groups. The first part of the analysis identifies the variation in migration propensities at national level by ethnic group and by age and spatial patterns of ethnic migration are investigated at local authority district scale using an area classification based on migration variables extracted from the 2001 Census.

London contains the major concentration of non-white minority populations in the country and is an appropriate location for analysis at the ward scale. London has become an ethnically ‘super-diverse’ city, following waves of immigration since the end of the Second World War, many from countries with which Britain had strong colonial ties. Non-white minorities concentrated initially in certain parts of the city and their populations have evolved through natural change and further migration, both internal and international. A key question is the role that internal migration plays in redistributing both the White majority and the non-white minority populations: is ethnic concentration being accentuated or reduced? Is migration creating more ethnic segregation or more ethnic mixing? The second part of the paper therefore addresses these questions but it also considers the relationship between population concentration and internal migration in the light of levels of area deprivation and the location of immigrants in the year before the 2001 Census.

## **Keywords**

Migration; ethnicity; census; population concentration; deprivation

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## 1. Introduction

The subject of migration has become a very ‘big issue’ in the UK over the last few years. Much press attention has been paid to immigration as politicians have debated the need for ‘balanced’ international migration in the face of significant inflows of economic migrants in the years prior to the onset of recession in 2008. Controls on immigration were demanded because of the alleged effects of increased immigrant flows in terms of pressure on wages, longer waiting lists for houses and increased demand for public services. In August, 2010, Damian Green, Minister for Immigration, stated that “*we have pledged to get the immigration numbers substantially lower – from the hundreds of thousands to the tens of thousands... The new Government recognises that controlled immigration must be coupled with better skills for British workers and welfare reform*” (Green, 2010).

There has also been an issue over the counting of migrants both in and out of the country that has led to the Migration Statistics Improvement Programme (MSIP), following the report of an Inter-Departmental Task Force on Migration in 2006 (National Statistics, 2006), a programme of various activities designed to improve the measurement of international migration and, specifically, improve the international migration component of the Office of National Statistics (ONS) mid-year population estimates (UK Statistics Authority, 2009). Work is now ongoing at the ONS as part of the second phase of the MSIP programme to reconcile data from different sources and to identify the potential of the *e-borders* system administered by the UK Border Agency (UKBA) for providing much better information about who is coming into and leaving the country<sup>1</sup>.

Considerable attention has also been paid by ONS to internal migration within the UK, although there is less cause for concern in this component because of the availability of reasonably accurate administrative data sets with which to estimate annual (mid-year to mid-year) migration flows between local authority districts (Migration Statistics Unit, 2007). The volume of migration within the UK is significantly larger than the flows into and out of the UK. The 2001 Census indicates that in the 12 months before the census date, 6.2 million people changed their usual residence within the UK whereas 467,000 migrated into the UK from elsewhere in the world. A further 406,800 individual migrants were recorded by the 2001 Census whose destination locations were known but whose origins were unstated.

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<sup>1</sup> The *e-borders* project, worth £750million, has been delayed because the American contractor, Raytheon, has been removed from its lead role and the Home Office is in the process of appointing a new prime contractor.

Ethnicity, together with race and religion, have also been at the heart of ‘big’ social issues relating to community relations, housing, health and crime in the UK and as well as labour market dynamics. Several research projects reflecting recent ethnicity-based research across the social sciences are reported in Stillwell and van Ham (2010) and much work has been undertaken on the demography and geography of ethnic populations, particularly associated with the concentration of minority ethnic groups in British cities as exemplified through the work of Peach (1996), Simpson (2004) and Johnston *et al.* (2010) on measuring ethnic segregation. Amongst the welter of research on ethnicity, we can find an increasing volume of studies addressing research questions about *ethnic migration*, many of which are geographical in focus. Recent studies in the UK include those by Champion (1996; 2005), Finney and Simpson (2009a; 2009b) Simpson and Finney (2009), Finney (2010), Simon (2010), Stillwell *et al.* (2008), Stillwell and Hussain (2010a; 2010b) and Stillwell (2010a; 2010b) and Catney and Simpson (2010), all of which make use of data from Census of Population to examine variations between ethnic groups in the propensities, composition and spatial patterns of migrants.

This paper addresses two broad research questions relating to ethnic migration after introducing data issues and the spatial systems of interest in Section 2. First, we ask how different are the internal migration propensities and spatial patterns of migration between different ethnic groups in Britain? In answering this question, we adopt a conventional comparison of ethnic migration propensities at national level in Section 3 but then introduce a new migration-based area classification system as the framework for comparing spatial patterns of migration at district scale in Section 4. Second, we recognise that ethnic internal migration does not occur in a vacuum and therefore we ask: what are the relationships between internal migration and population concentration, area deprivation and immigration? The particular aim is to establish whether internal migration is reducing or accentuating levels of ethnic residential segregation. In answering this question in Section 5, the focus turns to GB’s capital city and patterns of net migration at the ward scale, disaggregated into moves within London and those between wards of London and the rest of the country. Using ward deciles and mean location quotients to measure population concentration, a set of graphs are presented for each ethnic group that allow insights into the relationships between population, deprivation and migration. Finally, some conclusions are provided in Section 6.

## 2. Data Sources and Spatial Systems

The 2001 Census is particularly important for research on ethnic migration ('ethnomigration') because it is the source of the most reliable data of the ethnic populations and migrants by ethnic group. Sadly, relatively little is known about the ethnic complexion of our population since the 2001 Census although Mateos (2007) has demonstrated the potential of surname analysis for tracking ethnic distributions and other data sets such as the annual School Census also have potential to tell us a great deal more about certain sub-sections of the population (Stillwell and Harland, submitted).

The tables of population counts that are output from the 2001 Census use an ethnicity classification comprising 16 groups (Table 1) but a reduced, broad categorisation of seven groups is used in the Special Migration Statistics (SMS), the data set that provides the counts of flows of migrants between origin and destination areas (Table 1) (Stillwell *et al.*, 2010). Since the analysis in this paper makes use of the SMS data, we are constrained to the broad classification but recognise the limitations that this puts on indentifying the variations that will exist between sub-groups of migrants within each broad category: The White group, for example, includes both British-born Whites and those born elsewhere in the world, whereas the non-white Other group contains an array of different ethnicities and nationalities including those non-whites born in Japan, Philippines, Republic of Korea, Malaysia and the USA.

At the district scale (level 1), the 2001 Census SMS provide one table containing 'Migrants by ethnic group by sex' (Table MG203) and another table with 'Migrants by age by sex (Table MG201)'. Unfortunately, there is no cross-classification of ethnicity by age, the dimension that enables some insights into changing migration propensities at different life cycle stages. At the ward scale (level 2), there is no disaggregation of the ethnic migration variable beyond White and non-White. Thus, following negotiation with ONS Customer Services over the categories, tables were commissioned from ONS at two different spatial scales. First, Table CO711 provides district-to-district flows for 7 age groups (0-15, 16-19, 20-24, 25-29, 30-44, 45-59, 60+) for 7 ethnic groups (as shown in Table). Second, Table CO723 is a two part table, the first part of which contains flows from each ward to each Government Office Region (GOR) and the second part contains flows from each GOR to each ward, for 7 age groups (0-15, 16-19, 20-24, 25-29, 30-44, 45-59, 60+) for 7 ethnic groups (as shown in Table). A full inter-ward matrix by ethnic group was not permitted

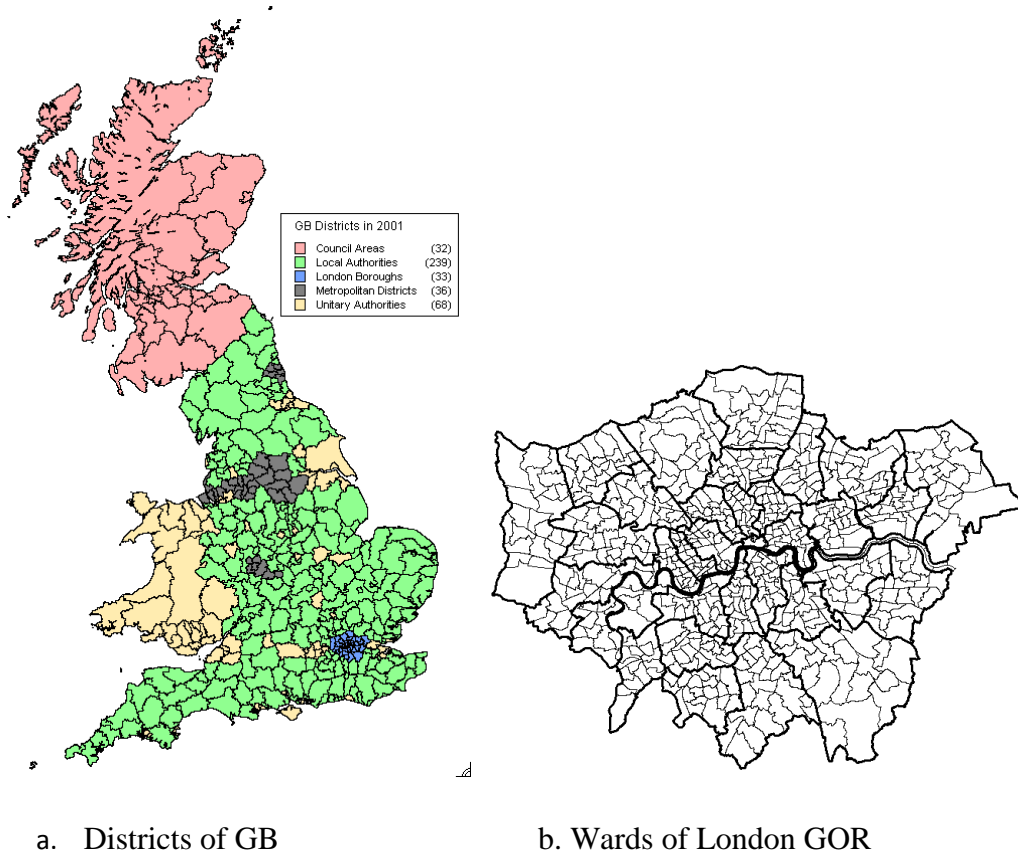
because of the small cell counts and the associated disclosure control issues (Duke-Williams, 2010).

**Table 1. The 2001 Census classification of ethnic groups**

<b>Label used in paper</b>	<b>Ethnic group defined in Special Migration Statistics (Level 1)</b>	<b>Ethnic group defined in Key Statistics</b>
White	White	White British; White Irish; Other White
Indian	Indian	Indian
POSA	Pakistani and Other South Asian	Pakistani; Bangladeshi; Other Asian
Chinese	Chinese	Chinese
Black	Caribbean, African, Black British and Black Other	Caribbean; African; Other Black
Mixed	Mixed	White and Black Caribbean; White and Black African; White and Asian; Other mixed
Other	Other	Other

Two sub-national spatial systems of interest are used in the paper (Figure 1). The first involves the 408 Local Authority Districts (LADs) that comprise England, Wales and Scotland whose administrative types are either Boroughs, Metropolitan Districts, Unitary Authorities, Other Local Authorities or Council Areas. This district typology is used Section 4 as a summary framework, together with an alternative district classification based on a set of migration variables extracted from the 2001 Census. The second set of geographical units are the 628 census wards of London Government Office Region (GOR) and these are used to report the analysis in Section 5, although results are presented for wards in decile groups. Although the functional boundary of London as a city does not necessarily conform with the boundary of the London GOR, the GOR does contain all the 32 London boroughs and the City of London and is a familiar boundary to administrators and planners.





**Figure 1. Administrative districts of Great Britain and 2001 Census wards of London**

### **3. Ethnic Composition of Britain's Usually Resident and Internal Migrant Populations**

The first research question – how different are the internal migration propensities and spatial patterns of migration between different ethnic groups in Britain? – can be addressed by considering the variations between ethnic groups at the national level and then exploring spatial variations at the sub-national LAD scale. In this section we concentrate briefly on the former.

According to the 2001 Census, the usually resident population of Great Britain numbered 57.1 million people on census date (29 April), of which 8% were recorded as being non-white. Table 2 indicates that those of POSA ethnicity formed the largest ethnic minority group, with the Black and Indian groups also having populations in excess of 1 million. Thereafter, the Mixed group accounted for 1.2% of the national population with the Chinese and Other groups each representing 0.4%.

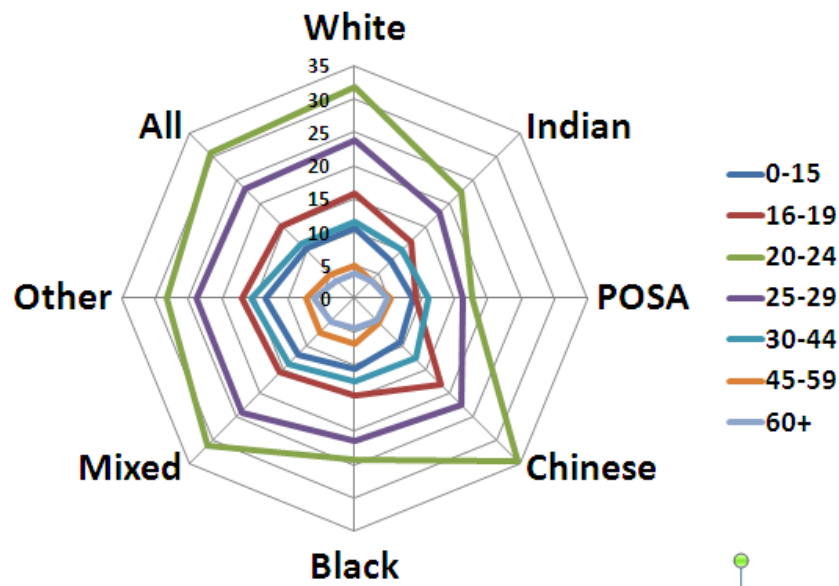
Ethnic minority migrants, on the other hand, comprised a slightly higher percentage of total internal migration (9%). The largest group of migrants were those classified as Black and there were more migrants classified as Other than those recorded as Chinese. So approximately half the ethnic usually resident and migrant populations were either POSA or Black.

**Table 2. The ethnic composition of Britain's population and internal migration**

<b>Ethnic group</b>	<b>UR population</b>			<b>Internal migrants</b>		
	<b>Number</b>	<b>% of total</b>	<b>% of non-white</b>	<b>Number</b>	<b>% of total</b>	<b>% of non-white</b>
White	52,481,225	91.9	-	5,512,052	91.0	-
POSA	1,277,023	2.2	27.6	131,831	2.2	24.2
Black	1,147,394	2.0	24.8	139,942	2.3	25.7
Indian	1,051,862	1.8	22.8	103,991	1.7	19.1
Mixed	673,917	1.2	14.6	97,350	1.6	17.9
Chinese	243,192	0.4	5.3	35,853	0.6	6.6
Other	229,238	0.4	5.0	35,985	0.6	6.6
<b>Total</b>	<b>57,103,851</b>	<b>100.0</b>	<b>100.0</b>	<b>6,057,004</b>	<b>100.0</b>	<b>100.0</b>

*Sources:* 2001 Census Standard Table ST101; SMS Table MG203

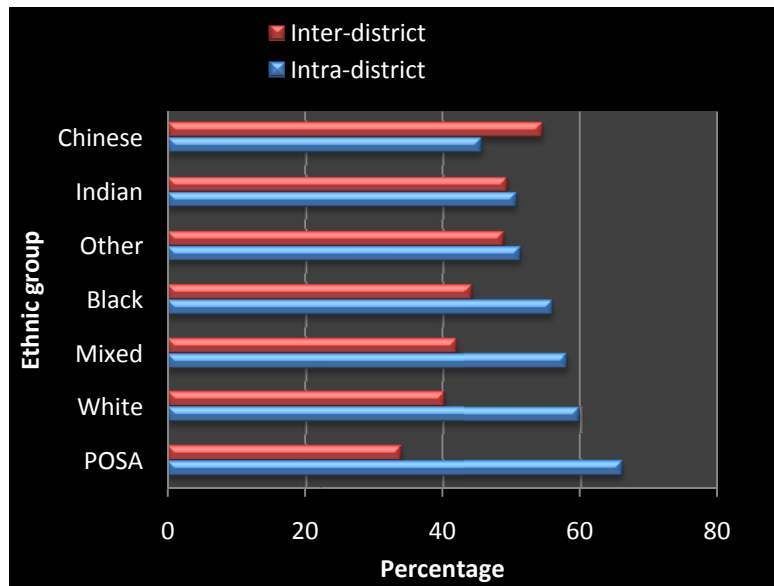
The variation in the migration propensities between ethnic groups by age, as shown in the radar diagram (Figure 2), is informative. The highest migration rates for all ethnic groups are for those in their twenties, particularly those aged 20-24 and it is the Chinese that have the highest rates this age group whereas the POSA group has the lowest rates for those aged 20-25 and 25-29. In the late teen ages (16-19), the Chinese are also found to have the highest propensities whereas the rates of migration for the POSA group aged 16-19 are again much lower, relative to other groups; cultural differences associated with the age of leaving home and going to away to higher education are likely to be important here in explaining this variation. The 0-15 and 33-44 age groups are likely to contain migrants changing usual residence as families and therefore it is consistent to observe similar rates for these two groups and much less variation between ethnicities. The two remaining groups have the lowest migration propensities and variations by ethnic group are relatively small.



Sources: 2001 Census Standard Table ST 01; Commissioned Table CO711

**Figure 2. Age-specific migration propensities by ethnic group**

The separation of flows into longer distance (those between districts) and shorter distance (those within districts), as shown in Figure 3, suggests that the Chinese are the more mobile over distance (and actually have a higher percentage of moves taking place between districts than within them) whilst the POSA migrants have the lowest propensity to move over distance and the lowest percentage of intra-district movers. We know from local evidence in Leeds (Stillwell and Phillips, 2007), for example, that Bangladeshis in particular tend to live in close proximity to one another and tend to be disinclined to migrate over long distances. All the remaining non-white groups have a larger proportion of inter-district moves than the White ethnic group, suggesting a willingness to move further when they migrate.



Source: 2001 Census SMS Table MG203

**Figure 3. Percentages of ethnic migration in Britain within and between districts**

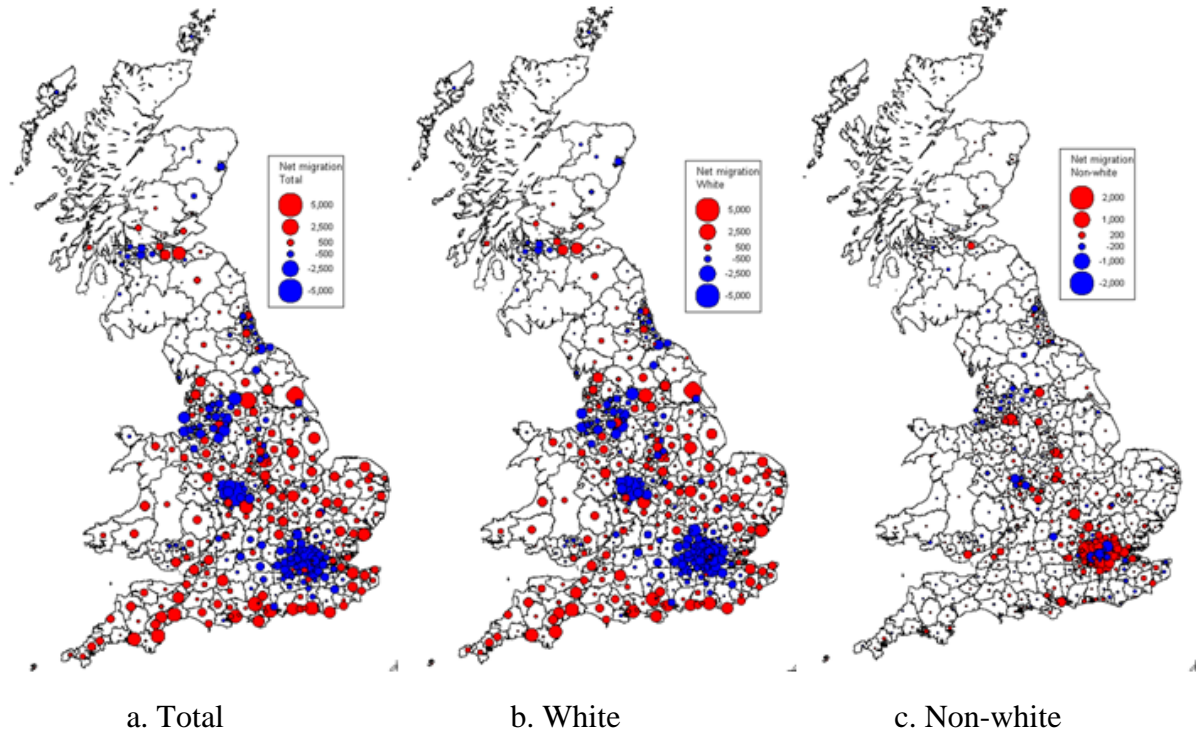
#### 4. District-level Analysis of Ethnic Migration in Britain

Let us now turn to the spatial variation in ethnic migration patterns across Britain. In Figure 4 we illustrate the net migration balances across the districts for all migrants, for Whites and for non-whites. The extent to which the aggregate pattern is determined by the White population is clear in terms of absolute numbers, with the maps showing a familiar pattern of counterurbanisation involving losses from the major cities and metropolitan areas and gains in areas lower down the urban hierarchy and in rural areas. In the case of non-whites, the pattern of absolute net migration gains and losses is much more confined to London and some of the major metropolitan areas, including Bradford, Birmingham, Leicester and Nottingham.

It would be entirely possible to show net migration maps for each of the ethnic minority groups but the problem with this approach is that distributions are difficult to see and the issue that we are confronted with here is trying to summarize the patterns – so we have experimented with various district aggregation frameworks, two of which are mentioned here:

- (i) an LAD classification based on type of administrative district; and

- (ii) an LAD classification based on cluster analysis using a range of migration variables from the 2001 Census.



Source: 2001 Census SMS MG203

**Figure 4: Net migration balance, by district**

When the administrative categorisation is used (Table 3), a coincidentally symmetrical pattern of total net migration flows is apparent: London Boroughs are losing large numbers (over 44,000) whereas Other Local Authorities (predominantly rural areas) are gaining large numbers (nearly 46,000) of net migrants. Metropolitan Districts, similarly are losing by net migration (approximately 20,000) whereas Unitary Authorities are losing by roughly the same number (approximately 17,000). The net flows for Council Areas in Scotland are relatively small.

The cells in Table 3 have been shaded blue for positive net migration and yellow for negative net migration to facilitate a comparison of the patterns of net migration between ethnic groups. Unitary Authorities appear to gain consistently for all ethnic groups. In London Boroughs and Other Local Authorities in England, it is the Chinese and Other minority migrant groups that have opposite balances to the total (and White) net migration flows.

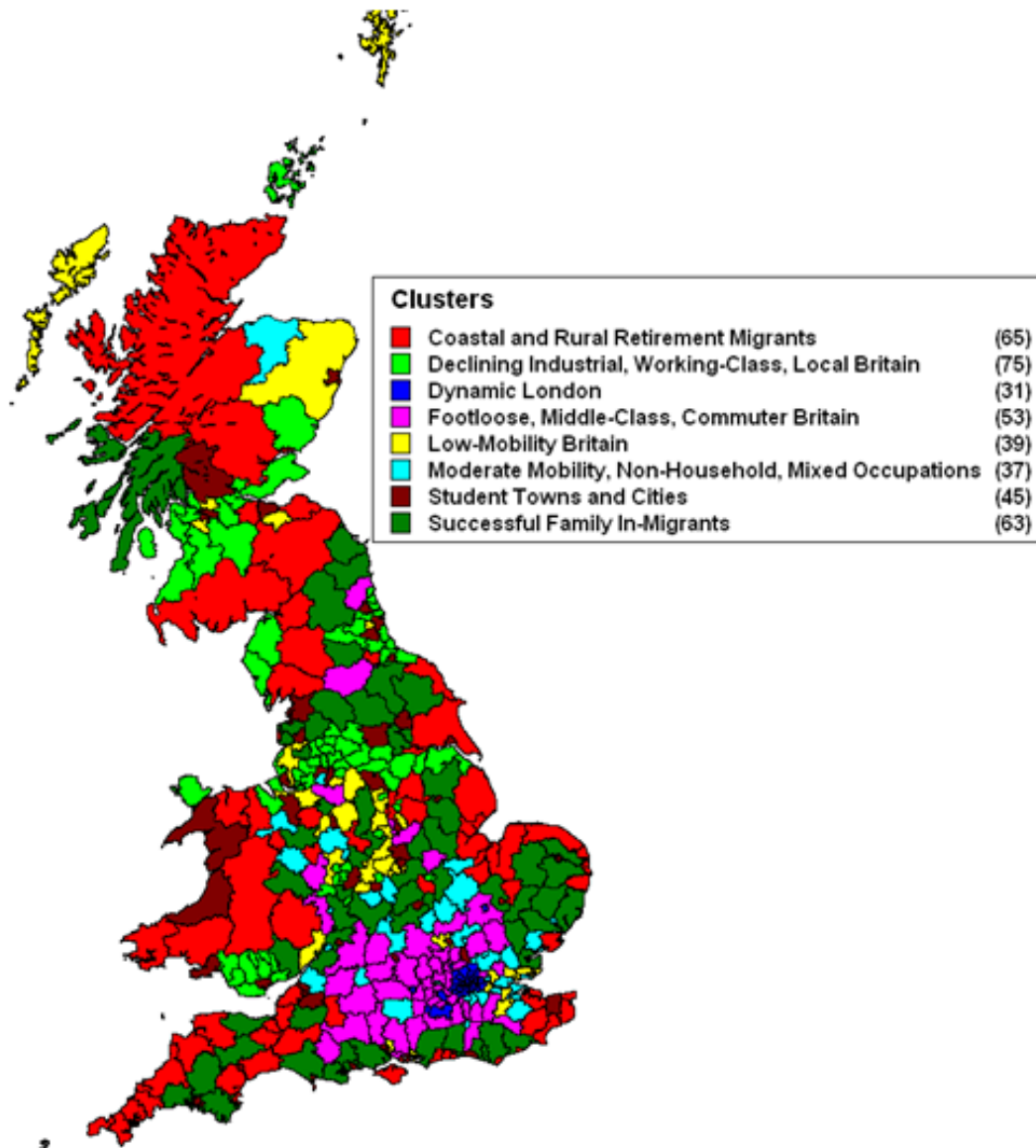
**Table 3. Net migration by type of administrative district by ethnic group**

Type of district	White	Indian	POSA	Chinese	Black	Mixed	Other	Total
London Boroughs	-44,405	-995	-1,586	225	-4,430	-1,899	57	-53,033
Metropolitan Districts	-20,320	-761	387	190	508	-37	65	-19,968
Unitary Authorities	17,266	340	899	76	2,228	677	125	21,614
Other Local Authorities	45,972	1,545	326	-361	1,769	1,375	-287	50,339
Council Areas	487	-129	-26	-130	-75	-116	37	48

Source: 2001 Census SMS MG203

Whilst the above district categorisation is purely administrative, a second district classification has been derived assuming that our understanding of complex migration processes can be enhanced through identification of the particular characteristics that migrants and migrant flows can contribute to defining different types of areas. Districts of Britain have therefore been classified by the types of migrant and the particular flows that they exhibit such that each classified area will have a distinct profile. The single-tier classification is derived by using *k-means* clustering (in MATLAB) based on 44 internal migration variables derived from the 2001 Census (capturing age, ethnicity, occupation, tenure, economic activity, etc, measured using migration rates or migration efficiencies). Details of the clustering procedure are reported fully in Dennett and Stillwell (2009) and the eight district categories emerging from the classification (Figure 5) are as follows:

- Cluster 1 *Coastal and Rural Retirement Migrants* – featuring districts around the periphery of Britain which attract older, often retirement age, migrants seeking the physical and social characteristics associated with these coastal and rural areas.
- Cluster 2 *Low-Mobility Britain* – characterised by lower levels of migration activity across the board.
- Cluster 3 *Student Towns and Cities* – with very high levels of young in-migrants and non-household migrants moving into privately rented accommodation.



Source: Dennett and Stillwell (2009)

**Figure 5. Migration-based district classification system**

- Cluster 4 *Moderate Mobility, Non-Household, Mixed Occupations* – featuring low levels of migration, but where migration is occurring, it tends to involve single migrants and those in more intermediate occupations.
- Cluster 5 *Declining Industrial, Working-Class, Local Britain* – a very distinctive cluster located in ex-industrial areas, where in-migration and out-migration is less common, but local, short distance moves predominate.
- Cluster 6 *Footloose, Middle-Class, Commuter Britain* – almost the antithesis of the previous cluster where in-migration and out-migration are very common and the migrants tend to be in the higher socio-economic groups.



- Cluster 7 *Dynamic London* – located almost entirely within the M25, where levels of in-migration and out-migration are very high across the board.
- Cluster 8 *Successful Family In-migrants* – a clear destination for family migrants and frequent origin for student migrants.

We can use this classification system as a summarising framework in a similar way to the administrative categorisation to compare spatial patterns of migration. In terms of aggregate net migration (Table 4), the only area category that shows consistency in the sign of the net migration balance is *Student Towns and Cities*, areas that are experiencing gains across each ethnic group. In addition to *Student Towns and Cities*, the other major areas of net in-migration are those groups labelled *Coastal and Rural Retirement Migrants* and *Successful Family In-migrants*, although these areas lose Chinese and Other migrants in net terms.

**Table 4. Net migration by type of district by ethnic group**

	White	Indian	POSA	Chinese	Black	Mixed	Other
<b>Coastal and Rural Retirement Migrants</b>	47,993	48	458	-351	186	360	-197
<b>Low-Mobility Britain</b>	-8,830	130	63	-65	1,046	246	22
<b>Student Towns and Cities</b>	11,453	711	869	590	1,270	483	78
<b>Moderate Mobility, Non-Household, Mixed Occupations</b>	-4,306	921	1101	-96	3801	496	367
<b>Declining Industrial, Working-Class, Local Britain</b>	-17,722	-1,656	-536	-395	253	-116	1
<b>Footloose, Middle-Class, Commuter Britain</b>	-17,269	1,625	1065	240	1515	549	8
<b>Dynamic London</b>	-33,051	-1,938	-3,087	406	-8,410	-2,255	-198
<b>Successful Family In-migrants</b>	21,732	159	67	-329	339	237	-81

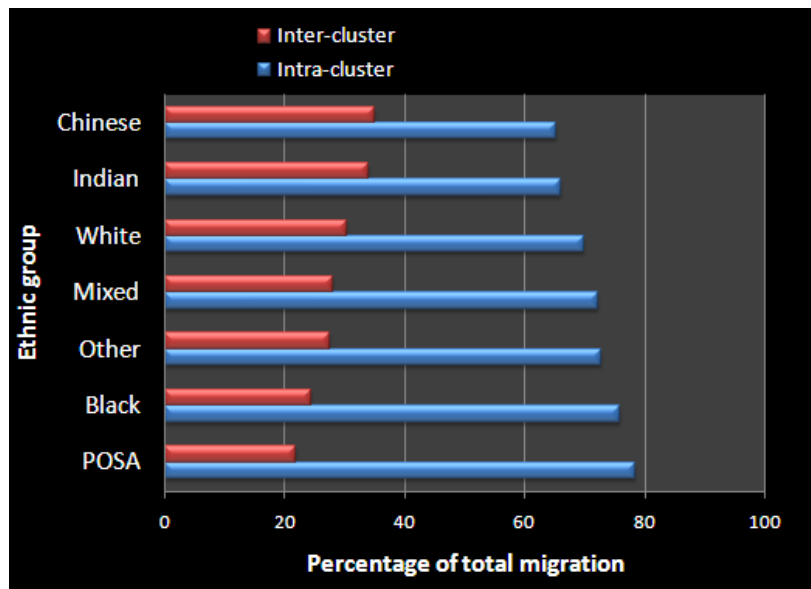
Source: 2001 Census SMS MG203

One important feature evident in Table 4 is the extent and consistency of net migration loss from *Dynamic London* across the ethnic groups, where only the Chinese show a positive in-migration balance. Black net out-migration reaches 8,410 from these areas with all other area categories showing Black gains. Losses are also experienced by Asian, Chinese and Mixed groups, as well as Whites, in areas classified as *Declining Industrial, Working Class, Local Britain*, with the highest absolute losses of Asians from this district type. We will return to



take a closer look at net migration London in Section 5. In the meantime, we can examine the migration flows within and between the clusters in the migration classification in more detail.

First, the ordering of migrants by ethnic group according to percentage moving within *vis à vis* between clusters re-emphasises the difference between Chinese migrants who have the smallest percentage of intra-cluster migrants and POSA migrants who have the highest intra-cluster migrants (Figure 6). The other Asian group, the Indians, appear to have a higher percentage of individuals moving between clusters and are more akin to the Chinese than the POSA population. The Chinese are well-known to disperse widely across the country, as noted by the ubiquity of their restaurants, but it is likely that the higher propensity of Indians to move further distances is related to the occupational structure of this ethnic group, which contains a significant number of professionals, particularly in the medical sector.

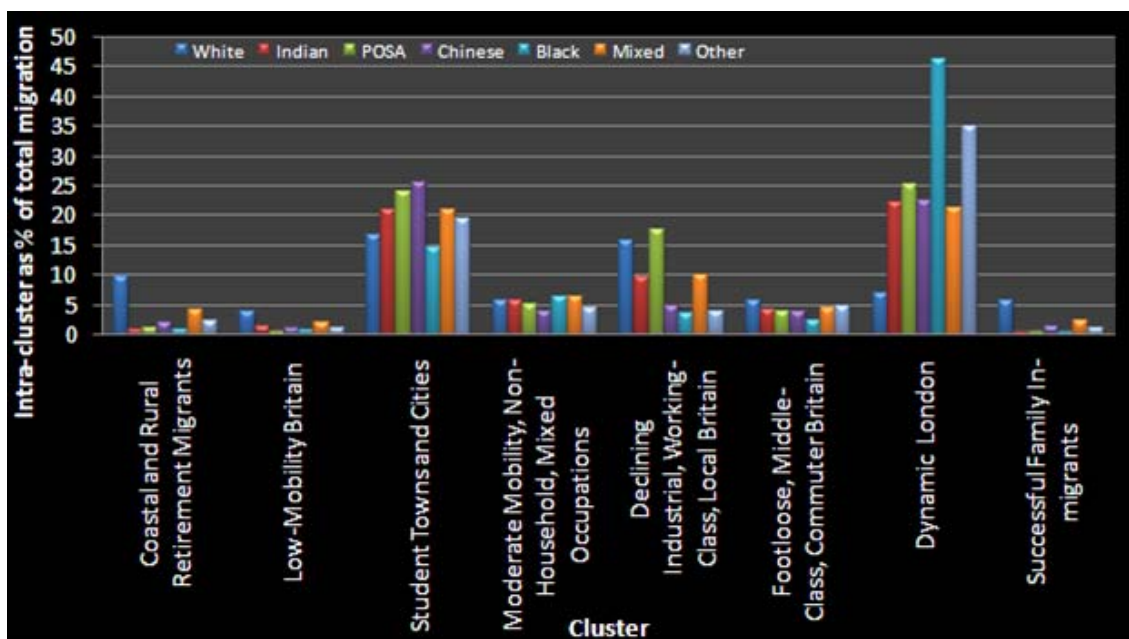


Source: 2001 Census SMS MG203

**Figure 6. Inter-cluster and intra-cluster migration shares by ethnic group**

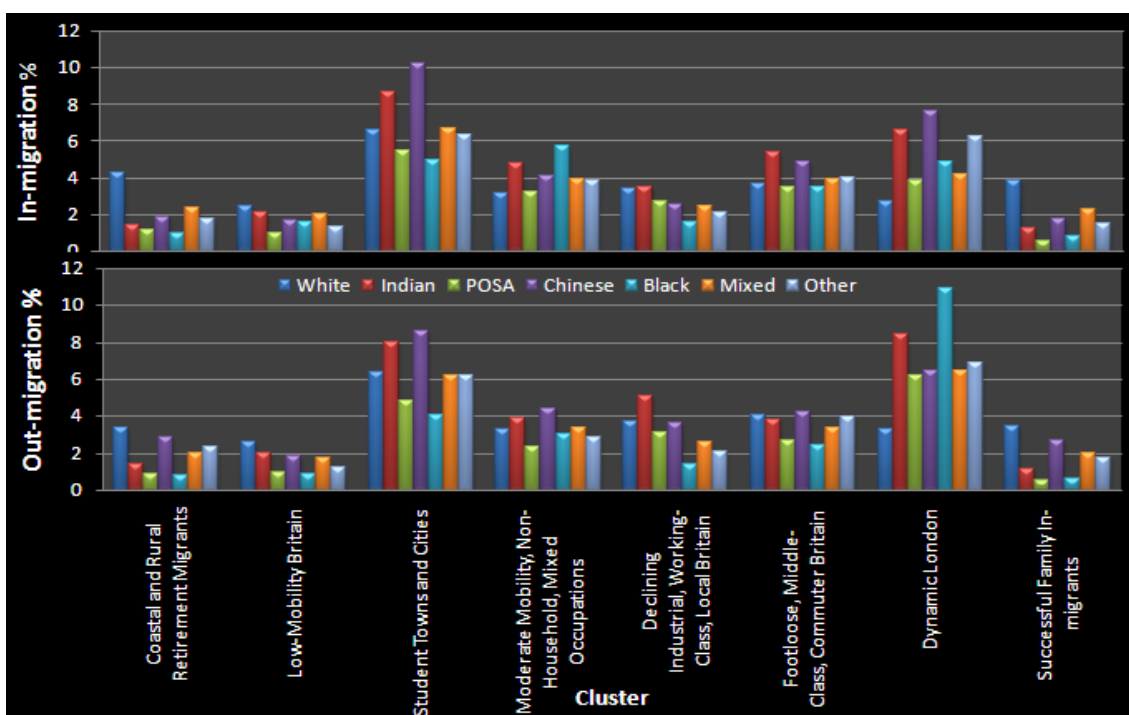
Second, we can examine the percentage shares of migration that are taking place within clusters (Figure 7) and between clusters (Figure 8) by ethnic group. The largest shares of intra-cluster migration across all the ethnic groups are to be found in the *Student Towns and Cities* and in *Dynamic London*, with over 45% of Black migration and 35% of Other migration and taking place within the latter cluster of districts. White, Asian and Mixed flows are relatively high in *Declining Industrial*, *Working Class*, *Local Britain*, whereas 10% of intra-cluster White migration takes place in the *Coastal and Rural Retirement Migrants* areas. The shares of total migration into clusters (Figure 8 top graph) are much smaller in most

cases, with *Student Towns and Cities* experiencing the greatest turnover across all ethnic groups, particularly Indians and Chinese.



Source: 2001 Census SMS MG203

Figure 7. Intra-cluster migration as % of total migration by cluster and ethnic group

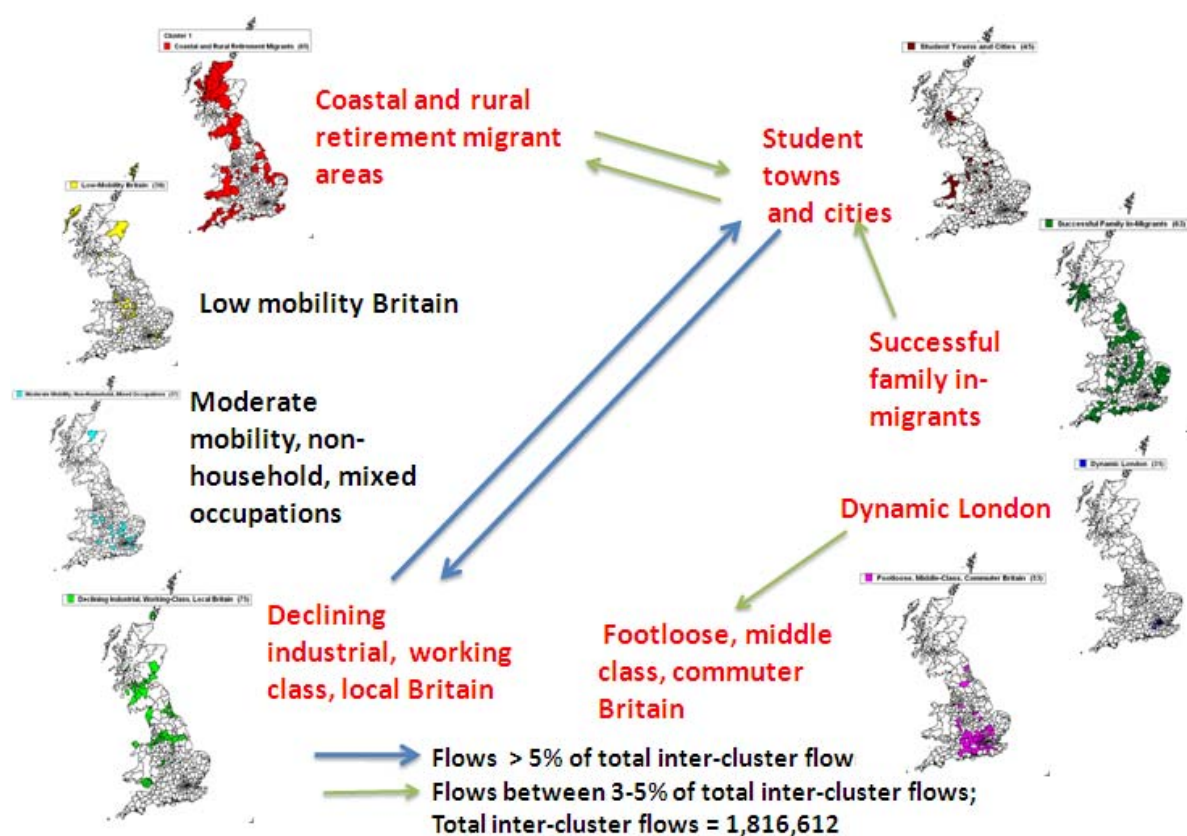


Source: 2001 Census SMS MG203

Figure 8. Inter-cluster in-migration and out-migration as % of total migration by cluster and ethnic group

Out-migration shares are highest for *Dynamic London* and the percentage for Whites is lower than for all non-white ethnic groups for this cluster of districts, as it is for in-migration. As has been found in much previous research using migration rates, there is a positive relationship between out-migration and in-migration; this is also apparent when using percentage shares.

Third, we can compare where the major inter-cluster directional flows are taking place. In aggregate terms (Figure 9), flows involving in excess of 5% of total migration occur between *Student Towns and Cities* and *Declining Industrial, Working Class, Local Britain*, whereas flows involving 3-5% of total migrants link *Student Towns and Cities* with *Coastal Rural Retirement Migrants* areas in both directions. There are also flows of this relative magnitude into *Student Towns and Cities* from *Successful Family In-migrants* and from *Dynamic London* into *Footloose, Middle Class Commuter Britain*.



Source: 2001 Census SMS MG203

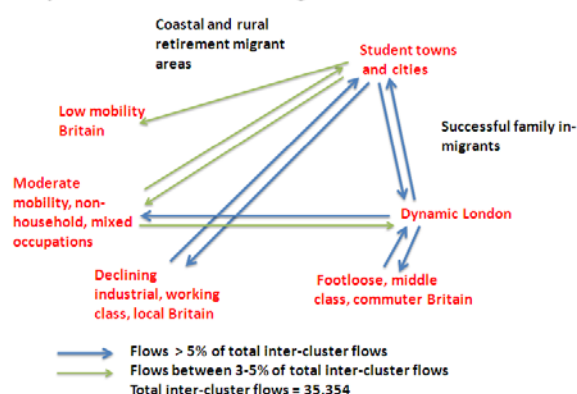
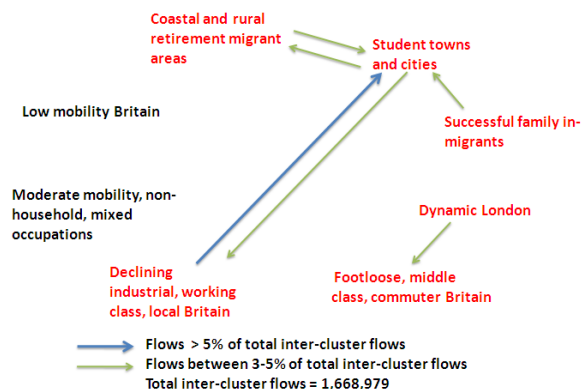
**Figure 9. Major inter-cluster directional migration flows**

Similar flows maps can be used to compare the major flows for each ethnic group (Figure 10) where the pattern for Whites involving 1.6 million individual migrants is shown to be

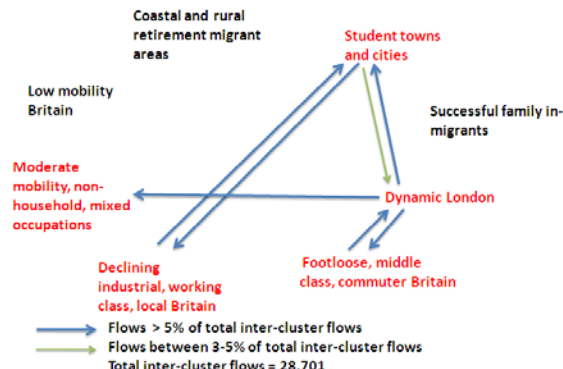
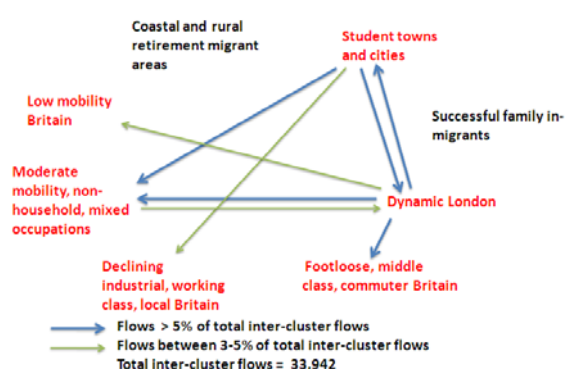
determining the overall pattern of movements involving 1.8 million, although there is a stronger flow into *Student Towns and Cities* from *Declining Industrial, Working Class, Local Britain* than in the opposite direction. The flow maps have been ordered for the ethnic minority groups in order of the volume of inter-cluster movement. Indians (35,354 migrants) appear to have relatively high inter-cluster connectivity, though not with *Coastal Rural Retirement Migrants* areas or with *Successful Family In-migrants* areas. In fact the former cluster is only important as an origin for Chinese migrants to *Student Towns and Cities* and is relatively unimportant for all non-white groups. The other cluster type that appears relatively isolated is *Low Mobility Britain*, although flows of 3-5% of Indians are received by *Student Towns and Cities* and of Blacks from *Dynamic London*. Chinese migrants (12,500 in total) are moving between all clusters at relatively high levels except for *Low Mobility Britain*. Unlike the White majority, all the non-white groups exhibit relatively strong links between *Dynamic London* and *Student Towns and Cities* and between *Dynamic London* and *Footloose, Middle Class, Commuter Britain*.

Propensities and patterns of migration vary with stage in life cycle and our final comparison of ethnic migration using the migration classification considers two further questions: How do migration propensities by age vary between area types and how consistent are the district type patterns of ethnic group net migration by age group? Figure 11 contains a radar graph of age-specific ethnic migration propensities (akin to Figure 2) for each district type, but the migration variable used in this case is a measure of ‘churn’ where the numerator is the total in-migration + out-migration + intra-cluster migration for each cluster and the denominator is the cluster population in 2001, following Dennett and Stillwell (2008). Migration propensities increase outwards from the centre of each graph where each age-group is represented by an octagon. The lack of symmetry in any octagon is indicative of greater variation between ethnic groups. Across all the district types, there is some consistency in the ordering of migration propensities in general terms, i.e. 20-24 and 25-29 year olds have the highest propensities, followed by those aged 16-19. The 0-15 and 30-44 age groups are always in unison since they represent family movement to a large extent and the two older age groups have the lowest propensities. In *Coastal Rural Retirement Migrants* areas, it appears that the Chinese have the highest churn propensities for those in their early twenties, with the Black and Indian migrants also having high rates for those aged 25-29 and 30-44. Chinese rates are relatively low in the family age groups as they are in the *Low Mobility* cluster also. The octagonal pattern is relatively symmetrical in this cluster of low rates for all age groups, but Black propensities aged 20-24 are

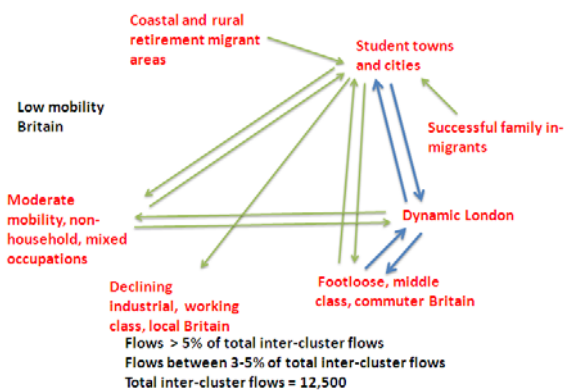
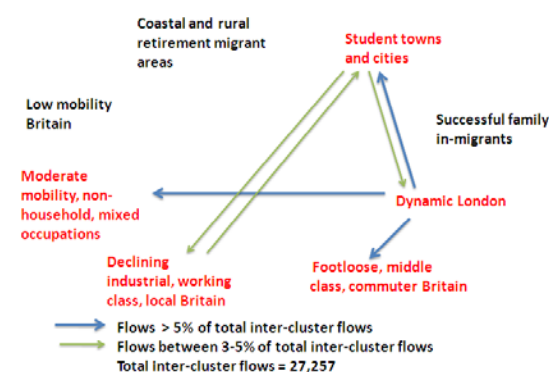
## Major inter-cluster migration flows: **White** Major inter-cluster migration flows: **Indian**



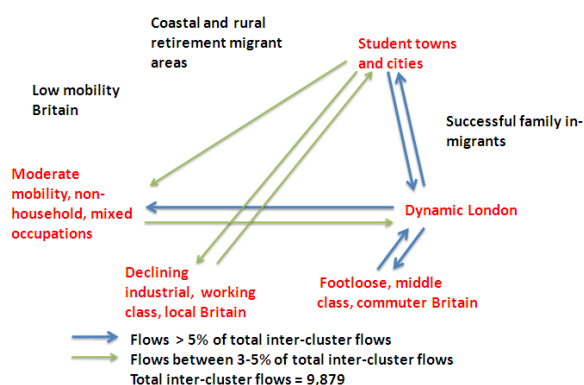
## Major inter-cluster migration flows: **Black** Major inter-cluster migration flows: **POSA**



## Major inter-cluster migration flows: **Mixed** Major inter-cluster migration flows: **Chinese**



## Major inter-cluster migration flows: **Other**



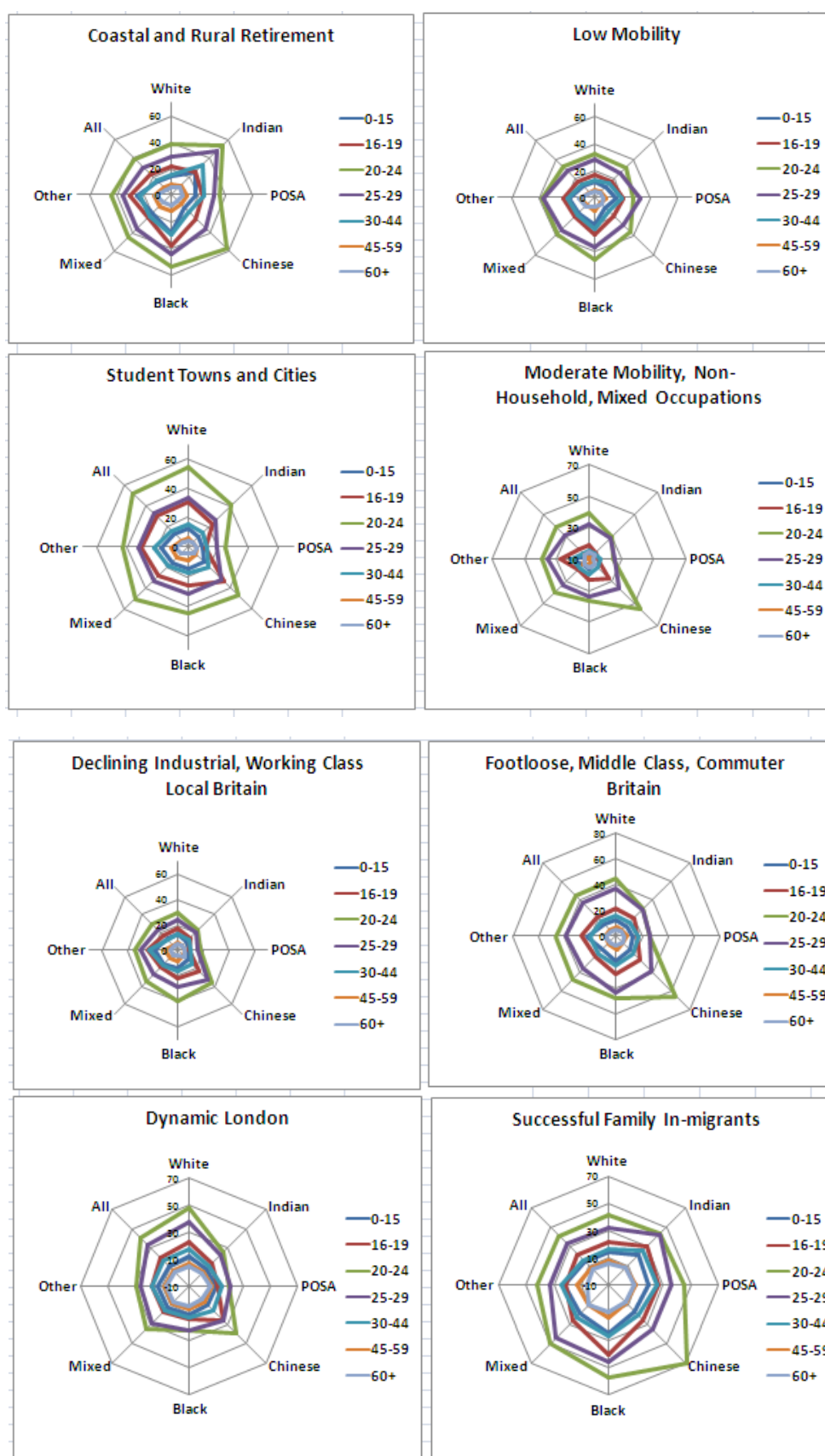
Source: 2001 Census SMS MG203

**Figure 10. Major inter-cluster directional migration flows by ethnic group**

relatively high and the propensity for the POSA group aged 25-29 is greater than that for those aged 20-24. As expected, the migration propensities for those aged 20-24 are significantly higher for all ethnic groups than the other age-specific propensities in the *Student Towns and Cities* cluster although the rate for the POSA group is noticeably lower for this age group as well as for those in their late teens and late twenties. Both Asian groups have relatively low propensities also in the *Moderate Mobility, Non-Household, Mixed Occupations* cluster, where the Chinese aged 20-24 exhibit the highest rates and the rates for family and older age migration are very low. Migration propensities by age and ethnic group are most clustered together in *Declining Industrial, Working Class Local Britain* whereas *Footloose, Middle Class Commuter Britain* has relatively high rates of Chinese migration aged 20-24 and relatively low rates of migration for Asians in their twenties. The highest migration propensities for those in their twenties in *Dynamic London* are experienced by White migrants with relatively low propensities for the major non-white minorities in this cluster. Finally, migration propensities are at their highest in the *Successful family In-migrant* cluster, particularly for Chinese aged 20-24, migrants of Indian and Mixed ethnicity aged 25-29 and Black migrants aged 16-19.

Net migration balances are shown in Table 5 for each district cluster by ethnic group in blocks for each age group, with blue shading for net migration gain and yellow shading for net migration loss. The patterns for family migrants aged 0-15 and 30-44 show are fairly consistent across the ethnic groups by cluster type with *Dynamic London* and *Student Towns and Cities* losing and other cluster gaining in the large majority of cases. The opposite pattern is apparent for 16-19 year olds since this is the age group involving migration for higher education or employment. However, *Dynamic London* only has net gains of White and Chinese migrants in this age group and there are Black migrant gains in all the other clusters apart from *Declining Industrial, Working Class, Local Britain* in this age group. There is less consistency in the net migration balances across the ethnic groups for those in their twenties, although *Student Towns and Cities* have gains in all ethnic groups of those aged 20-24 and districts of *Moderate Mobility, Non-Household, Mixed Occupations* have consistent gains of those aged 25-29. Other than *Dynamic London*, the balances are also rather inconsistent for those in that older working age group (45-59) and in the oldest age group (60+) although the balances for non-white groups in the latter age category are quite small.





Sources: 2001 Census Standard Table ST 01; Commissioned Table CO711

**Figure 11. Age-specific migration churn propensities by ethnic group and district type**

**Table 5. Net migration balances by cluster and ethnic group for each age group**

Age 0-15								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	15549	48	71	52	33	400	-64	
Low-Mobility Britain	3339	190	104	53	339	193	-6	
Student Towns and Cities	-14910	-151	-70	-94	91	-240	-74	
Moderate Mobility, Non-Household, Mixed Occupations	-1463	327	342	45	966	394	130	
Declining Industrial, Working-Class, Local Britain	4329	-36	206	-8	65	116	32	
Footloose, Middle-Class, Commuter Britain	1066	431	341	151	418	391	70	
Dynamic London	-19697	-870	-1011	-203	-1985	-1559	-144	
Successful Family In-migrants	11787	61	17	4	73	305	56	
Age 16-19								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	-13095	-40	-44	-231	10	-135	-51	
Low-Mobility Britain	-8232	-176	-81	-78	20	-38	-28	
Student Towns and Cities	62870	1474	709	670	647	879	262	
Moderate Mobility, Non-Household, Mixed Occupations	-6482	-365	-104	-222	45	-140	-52	
Declining Industrial, Working-Class, Local Britain	-16545	-538	-273	-127	-35	-138	-48	
Footloose, Middle-Class, Commuter Britain	-10596	-116	-51	-114	150	-197	-14	
Dynamic London	5187	-160	-154	310	-865	-94	-29	
Successful Family In-migrants	-13107	-79	-2	-208	28	-137	-40	
Age 20-24								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	-7614	-39	28	-159	42	-147	-43	
Low-Mobility Britain	-6940	-154	-72	-67	11	-40	-4	
Student Towns and Cities	6206	101	396	223	347	80	54	
Moderate Mobility, Non-Household, Mixed Occupations	4129	12	66	-78	179	38	17	
Declining Industrial, Working-Class, Local Britain	-8745	-376	-354	-176	26	-159	-21	
Footloose, Middle-Class, Commuter Britain	-3959	176	-16	-75	106	-10	-21	
Dynamic London	26547	332	-54	481	-693	361	119	
Successful Family In-migrants	-9624	-52	6	-149	-18	-123	-101	
Age 25-29								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	1802	53	100	-40	-29	-22	-3	
Low-Mobility Britain	-504	27	48	12	104	37	10	
Student Towns and Cities	-7583	-345	-126	51	145	-143	-105	
Moderate Mobility, Non-Household, Mixed Occupations	3641	335	203	22	573	82	29	
Declining Industrial, Working-Class, Local Britain	-1305	-312	-44	-115	41	-10	43	
Footloose, Middle-Class, Commuter Britain	218	236	174	-38	156	142	-49	
Dynamic London	3592	5	-337	143	-998	-85	86	
Successful Family In-migrants	139	1	-18	-35	8	-1	-11	
Age 30-44								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	18619	-10	233	58	69	193	-54	
Low-Mobility Britain	4314	159	35	3	495	82	51	
Student Towns and Cities	-20895	-174	4	-255	90	-49	-88	
Moderate Mobility, Non-Household, Mixed Occupations	553	509	411	133	1705	106	207	
Declining Industrial, Working-Class, Local Britain	3724	-364	-52	29	97	39	9	
Footloose, Middle-Class, Commuter Britain	4629	713	510	263	590	230	36	
Dynamic London	-26890	-1018	-1243	-270	-3252	-703	-162	
Successful Family In-migrants	15946	185	102	39	206	102	1	
Age 45-59								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	17696	25	31	-18	52	36	13	
Low-Mobility Britain	-1356	59	24	22	40	7	-7	
Student Towns and Cities	-6156	-125	2	-9	-63	-8	28	
Moderate Mobility, Non-Household, Mixed Occupations	-2816	110	112	-5	258	-12	29	
Declining Industrial, Working-Class, Local Britain	584	-49	-27	0	27	32	-9	
Footloose, Middle-Class, Commuter Britain	-5596	123	64	32	87	9	-6	
Dynamic London	-10408	-170	-188	-40	-439	-120	-62	
Successful Family In-migrants	8052	27	-18	18	38	56	14	
Age 60+								
	White	Indian	POSA	Chinese	Black	Mixed	Other	
Coastal and Rural Retirement Migrants	15036	11	39	-13	9	35	5	
Low-Mobility Britain	549	25	5	-10	37	5	6	
Student Towns and Cities	-8079	-69	-46	4	13	-36	1	
Moderate Mobility, Non-Household, Mixed Occupations	-1868	-7	71	9	75	28	7	
Declining Industrial, Working-Class, Local Britain	236	19	8	2	32	4	-5	
Footloose, Middle-Class, Commuter Britain	-3031	62	43	21	8	-16	-8	
Dynamic London	-11382	-57	-100	-15	-178	-55	-6	
Successful Family In-migrants	8539	16	-20	2	4	35	0	
ALL AGE								
	White	Indian	POSA	Chinese	Black	Mixed	Other	Total
Coastal and Rural Retirement Migrants	47993	48	458	-351	186	360	-197	48497
Low-Mobility Britain	-8830	130	63	-65	1046	246	22	-7388
Student Towns and Cities	11453	711	869	590	1270	483	78	15454
Moderate Mobility, Non-Household, Mixed Occupations	-4306	921	1101	-96	3801	496	367	2284
Declining Industrial, Working-Class, Local Britain	-17722	-1656	-536	-395	253	-116	1	-20171
Footloose, Middle-Class, Commuter Britain	-17269	1625	1065	240	1515	549	8	-12267
Dynamic London	-33051	-1938	-3087	406	-8410	-2255	-198	-48533
Successful Family In-migrants	21732	159	67	-329	339	237	-81	22124

Source: 2001 Census SMS MG203



## 5. Ward-level Analysis of Ethnic Migration in London

In the first half of the paper, we have seen the importance of London for migration both within the capital city and between London and other parts of the country. London is an important engine that drives the national migration system to a certain extent. London attracts internal in-migrants in particular age groups but it also attracts immigrants from overseas in sufficient number to offset the net loss of migrants from London in aggregate terms. In the remainder of the paper we want to address questions relating to the relationships between internal migration and population concentration, deprivation and immigration in London. Specifically, we want to ask if ethnic groups are moving to or from areas of high own-ethnic group concentration? Are they moving towards or away from areas of higher deprivation? Are ethnic group immigrants moving to areas of own-group concentration or to more mixed areas?

London's ethnic population profile (Table 6) illustrates the cosmopolitan nature of its population in 2001. In contrast to GB where 9% of the population is non-white, 29% of London's population is classified in this category. Whereas London contains only 9.7% of the GB White population, over two thirds of the country's Black population are usually resident in London together with almost half of the Other non-white group and one third of the POSA, Mixed and Chinese populations. The proportion of Indians (41.5%) is higher than that of other Asians.

**Table 6. London's ethnic population compared with that of GB**

Ethnic group	% pop in		% pop in GB	London share of GB pop'n	IoS* GB	IoS* London
	Pop'n	London				
White	5,103,203	71.2	91.9	9.7	0.53	0.36
Black	782,849	10.9	2.0	68.2	0.65	0.32
Indian	436,993	6.1	1.8	41.5	0.57	0.40
POSA	429,700	6.0	2.2	33.6	0.56	0.45
Mixed	226,111	3.2	1.2	33.6	0.34	0.21
Other	113,034	1.6	0.4	49.3	0.44	0.32
Chinese	80,201	1.1	0.4	33.0	0.32	0.31
Total	7,172,091	100	100	12.6		

\* Index of segregation =  $0.5 \sum |P^{ie}/P^{*e} - P^{ir}/P^{*r}|$  computed at district level

Source: 2001 Census Standard Table ST101

The index of segregation, computed at district level for GB and borough level for London, suggests that Blacks are the most segregated ethnic minority in GB whereas the POSA

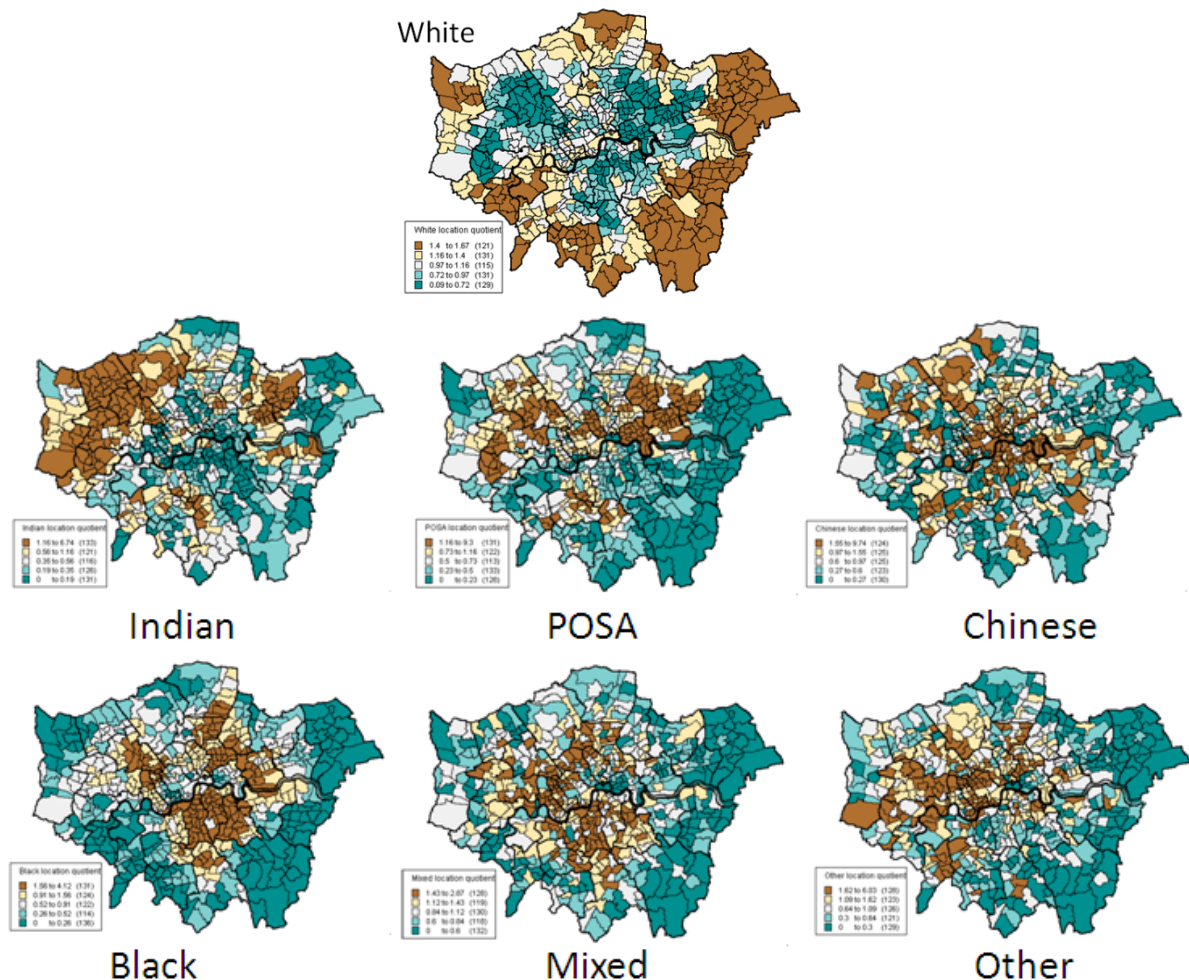
population is the most segregated in London. The Chinese, on the other hand, are the least segregated in GB and the Mixed sub-population is the least segregated in London. Figure 12 shows a proportional pie chart map of the non-white populations at borough level superimposed on a choropleth map of the percentage White population. There are two boroughs – Brent and Newham – where Whites are in the minority in 2001 and 15 boroughs where over three quarters of the population is White. The latter areas are found in the far west (Hillingdon), in the continuous set of boroughs on the eastern side of the GOR and also in a discontinuous band of boroughs running from Kingston upon Thames in the south-west to Enfield in the north-east. The sizes of non-white populations in total are represented by the proportional circles and the pies illustrate the proportions of each non-white group in each borough. Boroughs where over half the ethnic minority population is Black include Haringey, Hackney and Islington – north of the river – and Lambeth, Southwark and Lewisham – south of the river. Indians have a significant presence in most boroughs on the western side whereas almost 75% of the population of Tower Hamlets is POSA.

*Source:* 2001 Census Standard Table ST101

In this section of the paper, our methodology follows a series of steps, the first of which is to compute the location quotient (LQ) for each ethnic group in each ward. The LQ is a measure that allows the percentage of ethnic population  $e$  in each ward  $i$ ,  $P^{ie}$ , to be standardised by allowing for the differences in population sizes between ethnic groups. It is defined as:

$$LQ^{ie} = (P^{ie}/P^i)/(P^e/P^{**})$$

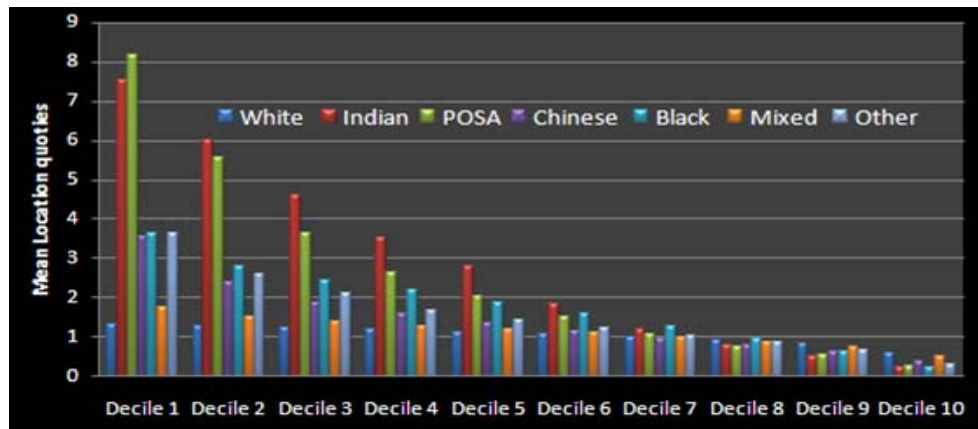
such that LQ values greater than 1 indicate over-representation of the ethnic group concerned whereas LQ values less than 1 indicate under-representation. The LQs for the ethnic groups in London are shown in Figure 13 in quintiles with brown shading representing wards in the quintile of highest population concentration and blue areas being wards in the quintile of lowest concentration.



Source: 2001 Census Standard Table ST10

**Figure 13. Ethnic location quotients for London wards**

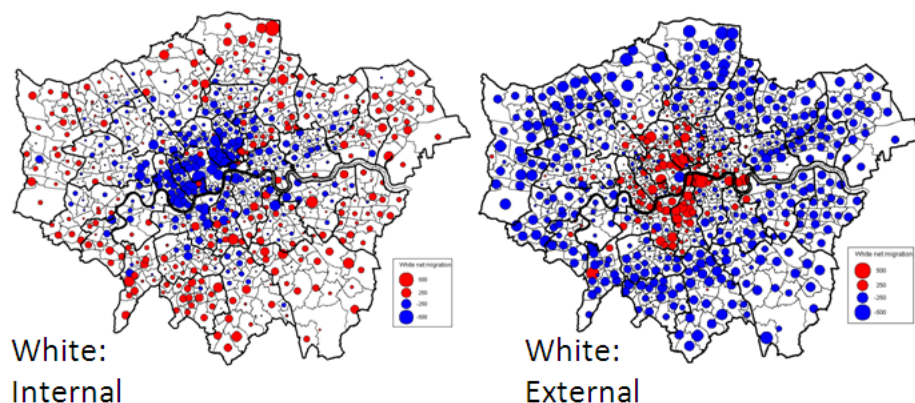
Then, for each ethnic group, ward LQs are ranked and the wards are divided into deciles of roughly equal population (not number of wards). The mean LQs for deciles are then computed and plotted on the graph to provide a comparison on levels of ethnic concentration across the city (Figure 14). The two Asian groups are the most concentrated whereas the White and Mixed groups are the least concentrated as implied by the index of segregation.



Source: 2001 Census Standard Table ST101

**Figure 14. Mean location quotients for each ethnic group by decile**

The second step is to use migration data from Commissioned Table CO723 on region to ward and ward to region flows. Counts of net migrants can be computed for each ward involving flows within London GOR (internal net migration) and flows to other regions in the rest of the country (external net migration). This disaggregation helps to expose certain key patterns of movement taking place. The Figure 15 shows the two ward-based net migration patterns for Whites using proportional symbols.



Source: 2001 Census Commissioned Table CO723

**Figure 15. Internal and external net migration balances for London wards, Whites**

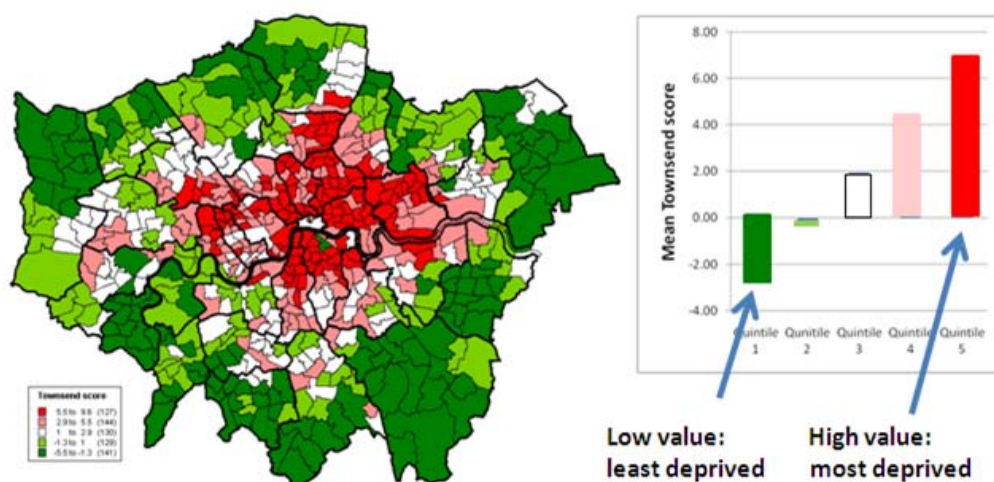


The internal migration map (on left) demonstrates the centrifugal process of deconcentration that is taking place from inner to outer London wards. White people are leaving the inner suburbs for the outer suburbs. Simultaneously, there is a process taking place of dispersal from the outer suburbs to the rest of the country as people move away from outer London to neighbouring regions or beyond. There is also a net inward movement to parts of inner London from the rest of the country. Comparable maps have been produced for other ethnic groups and are reported elsewhere (Stillwell, 2010b).

The third step is to compute an index of deprivation for each ward. The Townsend Index was devised by Townsend *et al.* (1988) to provide a material measure of deprivation and disadvantage. The index used here is based on four different variables taken from the 2001 Census:

- unemployment as a percentage of those aged 16 and over who are economically active;
- non-car ownership, as a percentage of all households;
- non-home ownership as a percentage of all households; and
- household overcrowding.

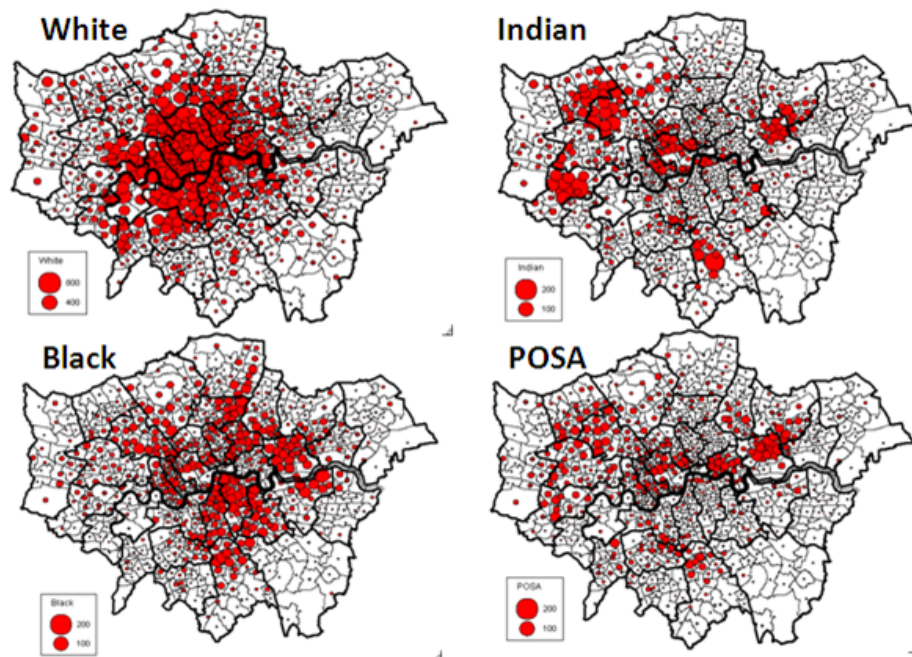
The four variables combine to form an overall score. The higher the Townsend Index score above 1, the more deprived or materially disadvantaged an area is thought to be. The distribution of deprivation across London based on the Townsend index is shown on the map in Figure 16 using quintile categories and the graph shows the mean Townsend scores for each quintile. There is a clear core-periphery pattern of deprivation shown by this index.



Source: Computed from 2001 Census variables

**Figure 16. Townsend index by ward and mean index per quintile**

The fourth step is to assemble data on international migration. Unfortunately there are no data on emigration available from the 2001 Census because only those persons enumerated or usually resident in each ward on census night are recorded. The migration question, however, does allow the identification of those inhabitants who were usually resident outside the UK 12 months before the 2001 Census and these absolute inflows are plotted on the maps in Figure 17 for the four major ethnic groups, revealing differences in the patterns of immigrant destination.



*Source: 2001 Commissioned Table CO723*

**Figure 17. Immigrant flow ward of London, main ethnic groups**

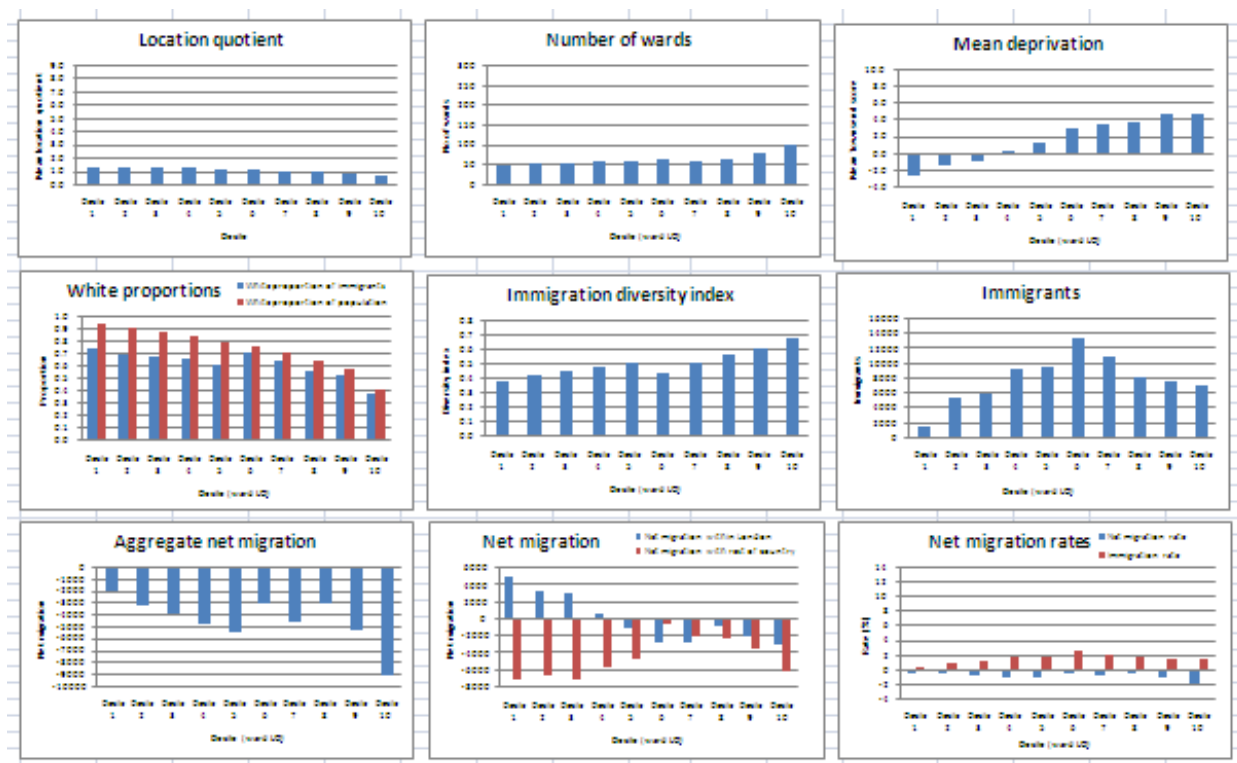
In summary, a number of indicators have therefore been assembled in the steps outlined and the objective of the exercise is to bring these indicators together to examine relationships between the variables concerned. Thus, in the final step, a set of nine graphs are juxtaposed for each ethnic group that measure:

- mean location quotient;
- number of wards;
- mean deprivation;
- ethnic group proportion of population and immigrants;
- mean ethnic diversity;
- total number of immigrants;
- aggregate net migration;

- internal net migration (within and outside London); and
- migration rates (internal migration and immigration).

These allow us to build up a picture/profile of each ethnic group. Wards grouped into deciles according to their location quotients are used to establish the horizontal axis of each graph, which therefore represents the extent of population concentration from high (left) to low (right), as shown by the first graph in each of Figures 18-24. We consider each ethnic profile in turn.

**White profile (Figure 18):** The White population of London spread is fairly evenly over wards with little variation in the LQ values; the number of wards per decile increases very gradually. There is an inverse relationship between deprivation and White concentration; mean deprivation is lowest in areas of highest concentration and highest in areas of lowest White concentration. As expected, the White proportion of population and immigrants diminishes as White population concentration reduces – but there is a lower proportion of Whites in the immigrant stream than in population as a whole.



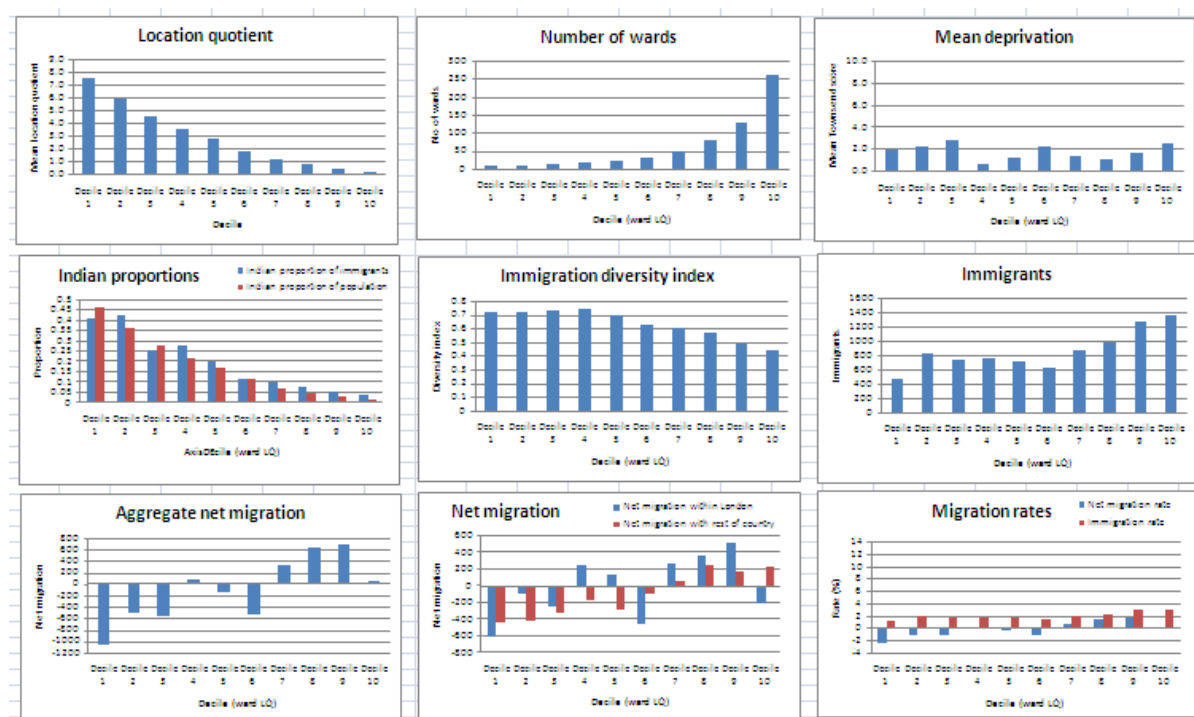
Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 18. Profile of White population and migrants**

The ethnic diversity of immigration increases with lower levels of White concentration, as expected. White immigrants tend to arrive in greatest numbers in wards of intermediate

White population concentration, i.e. immigrants are less inclined to go to areas of high White concentration (cannot afford the house prices) or to areas of low White concentration. In aggregate terms, Whites are leaving London from wards in all LQ deciles – in greatest numbers from areas of lowest White concentration. However, these aggregate flows obscure the internal gains in London to areas of highest White concentration from the rest of the country. White immigration rates are exceeding rates of internal net migration loss.

**Indian profile (Figure 19):** There is a fairly steep decline in the population concentration of Indians across London with a resulting increase in the number of wards in deciles 8, 9 and 10. Mean deprivation varies over the decile range. The proportions of Indians in the population and the immigrant stream decline as population concentration reduces, as does the ethnic diversity of the immigrant stream but most Indian immigrants appear to be heading for areas with lowest concentrations of Indian population. At the other end of the spectrum, wards with the highest concentrations of immigrants are receiving the lowest number of immigrants, i.e. Indian immigration is serving to disperse the Indian population.



Source: 2001 Census Standard Table ST101; Commissioned Table CO723

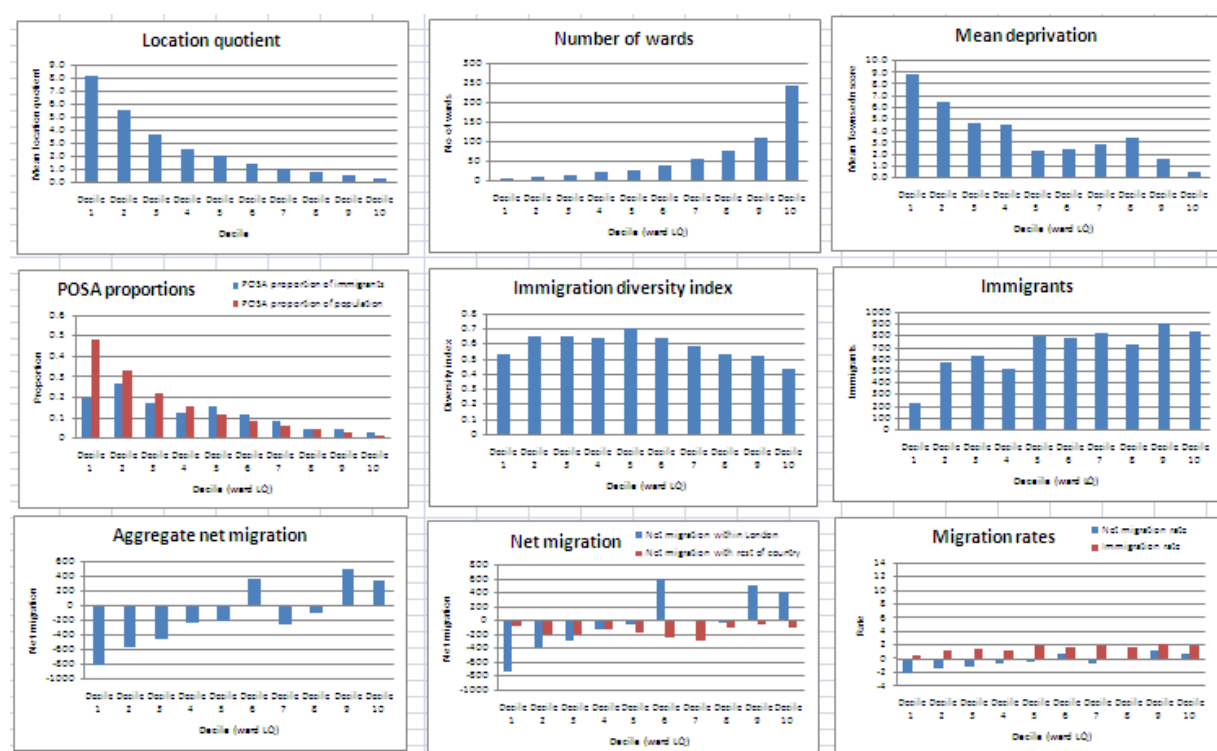
**Figure 19. Profile of Indian population and migrants**

Immigration flows to wards in deciles with lower Indian LQs are occurring at the same time as internal Indian migrants are leaving areas of higher own-group concentration to move to



areas of lower own-group concentration, both within London and outside London. Apart from decile 1, immigration rates generally exceed rates of net migration loss or gain for this ethnic group.

**POSA profile (Figure 20):** The POSA group exhibits a similar decline in LQ to that of Indians over the decile range and a similar increase in the number of wards in the higher deciles. However, unlike Indian deprivation by decile and opposite to that of Whites, deprivation tends to be greatest in areas of highest concentration of POSA population. The proportion of POSA in the immigrant stream is much lower than the proportion of POSA in the population in the areas of highest POSA population concentration and these areas tend to have the lowest number of POSA immigrants. It is the areas with high POSA LQs that also lose migrants in aggregate net terms internally. Whilst there are losses to the rest of the country across all the deciles, POSA migrants within London are leaving areas of POSA concentration and moving to areas of lower concentration.

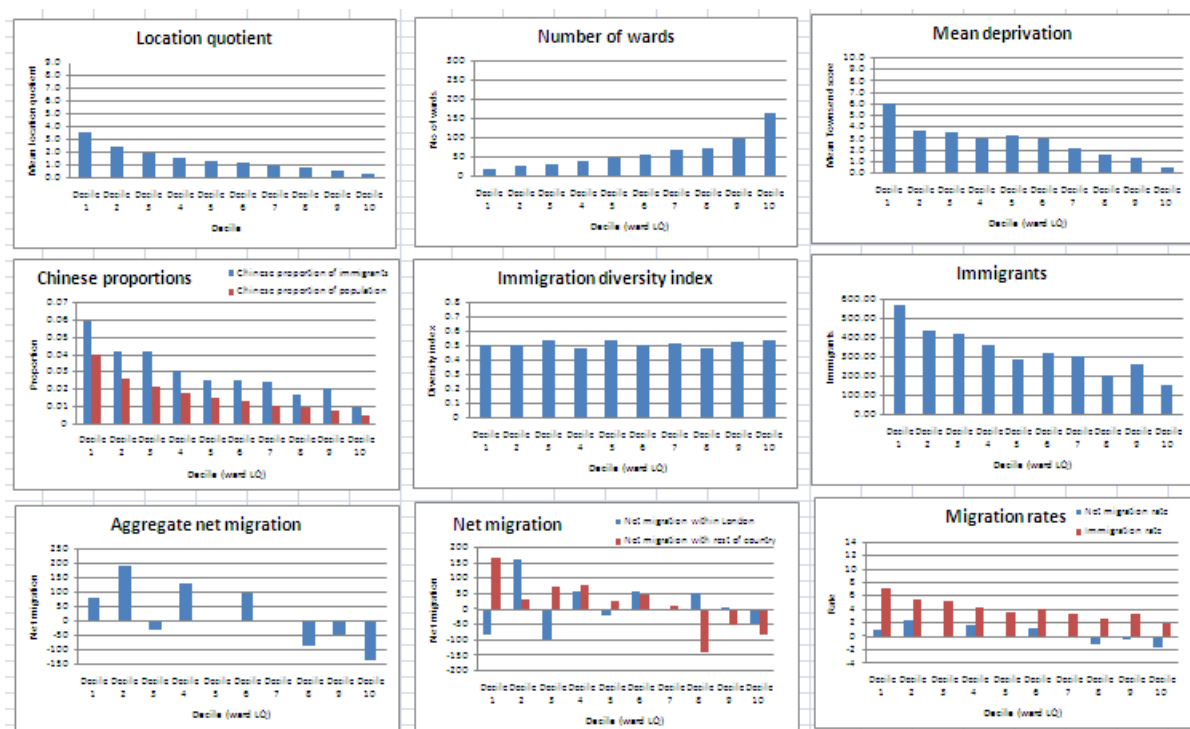


Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 20. Profile of POSA population and migrants**

**Chinese profile (Figure 21):** The Chinese population is less concentrated than that of either of the two previous Asian groups but there is a clear positive relationship between population concentration and level of deprivation with more deprivation in areas of highest population

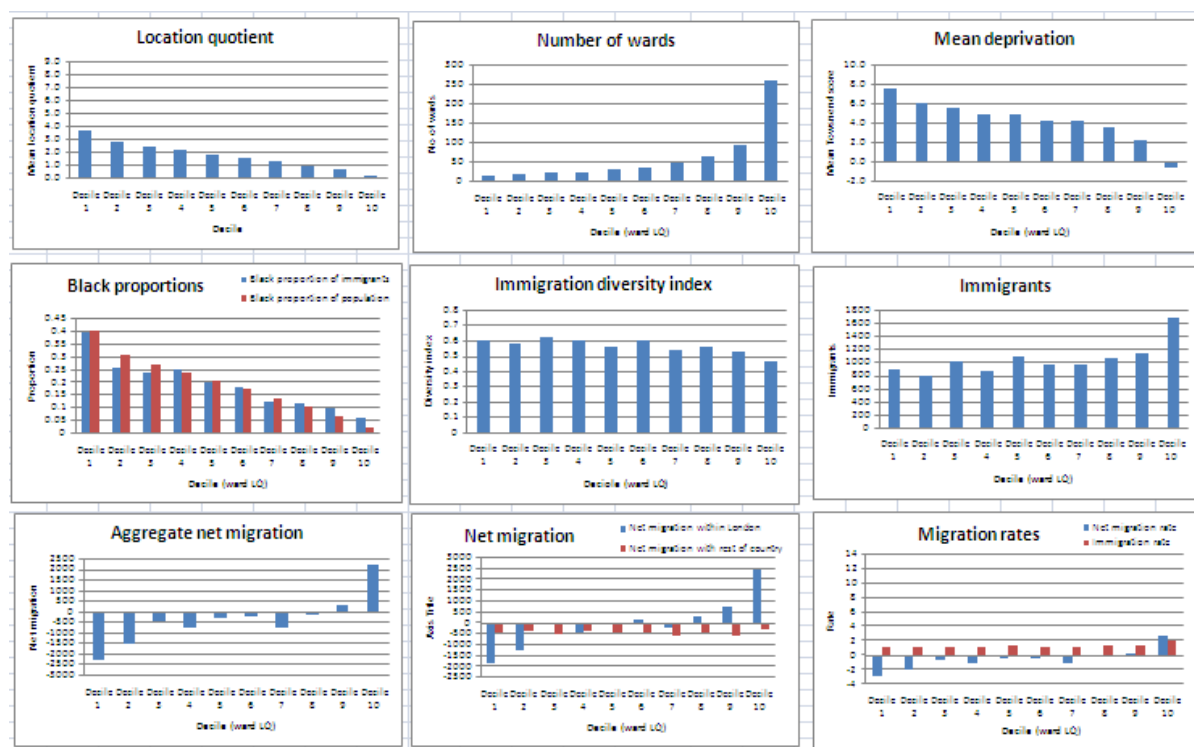
concentration. Chinese migrants form a higher proportion of the immigrants stream than the proportion of Chinese in the population of the destination areas, though mean ethnic diversity of the immigrant stream varies little between the deciles. Chinese immigrants, on the other hand, tend to migrate to areas of Chinese population concentration, as do internal migrants, both within London and from outside London. So, although Chinese are a less concentrated population, their migration patterns are tending to increase the concentration and immigration rates are much higher than net migration rates.



Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 21. Profile of Chinese population and migrants**

**Black profile (Figure 22):** The Black population has similar level of population concentration to the Chinese in London with higher levels of deprivation associated with higher levels of Black concentration. The Black proportion of the population reduces linearly by decile as does the Black proportion of the immigrant stream but there is a tendency for Black immigrants to favour areas with lower Black population concentrations. Internal migration balances indicate that Blacks are dispersing from areas of high concentration to areas of lower Black concentration within London, and that Black people are leaving London in net terms from all areas. Black immigrants are offsetting net internal migration losses in all but the top two deciles.



Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 22. Profile of Black population and migrants**

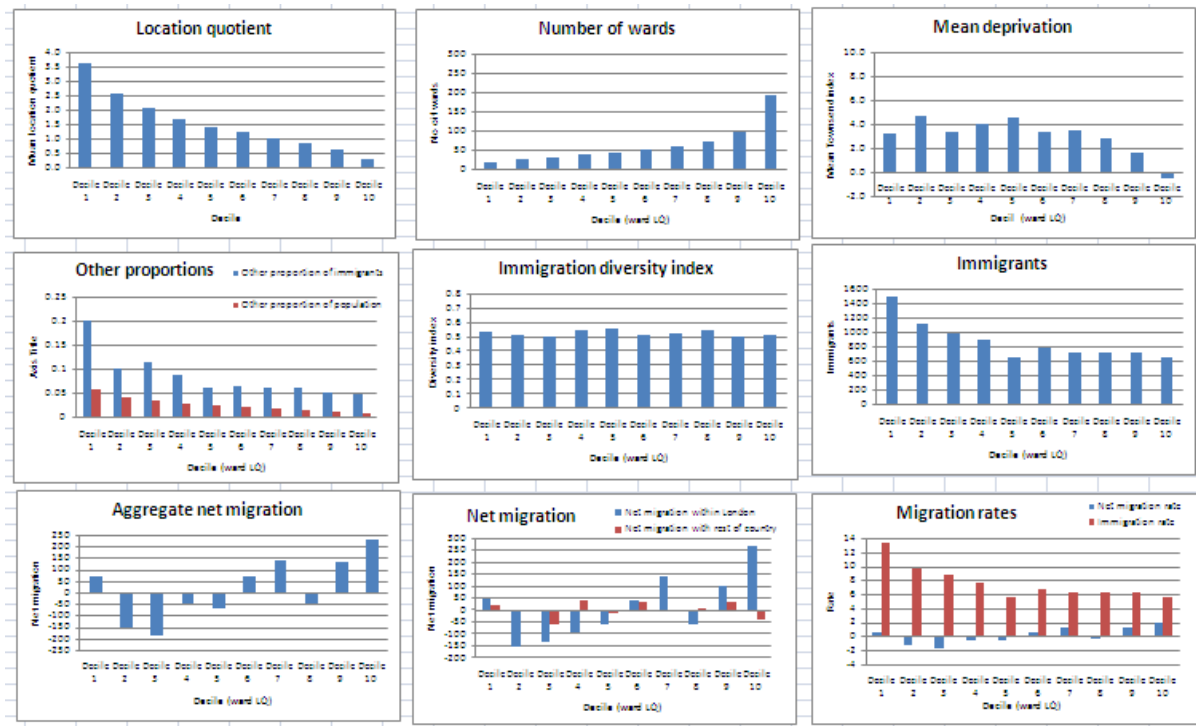
**Mixed profile (Figure 23):** The Mixed population, like the White population, has similar LQ scores across the decile range and therefore a more equal number of wards per decile. However, unlike the White population, there is a positive relationship with deprivation i.e. areas of highest Mixed concentration are those that are most deprived and those with lowest Mixed concentration are the least deprived. As the concentration of population of Mixed ethnicity declines, the percentage of the immigrant flow becomes greater than the percentage of Mixed in the population and the immigrants flows increase as the mean LQ per decile falls but only to decile 8. Wards in deciles 9 and 10 have relatively fewer immigrants. The aggregate net migration flows per decile are all negative apart from in the two deciles that have the lowest concentrations of Mixed populations and are the most deprived. These gains are due to shifts of migrants in London from areas of higher to lower concentration whereas net losses to the rest of the country and occurring across all deciles but most significantly from decile 10. Immigration is offsetting net internal migration losses from London.



Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 23. Profile of Mixed population and migrants**

**Other profile (Figure 24):** Whereas there is a linear decline in the LQ for Other non-whites, the mean Townsend score measuring deprivation varies from decile to decile. The immigrant flows appear to be accentuating the population concentration and there are higher percentages of Others in the immigrant flow that in the population in each decile – indicating that this is a much less well established population than some of the other minority ethnic groups. The immigration rates are significantly larger than the aggregate net migration rates across all the deciles, although the internal net migration is defining the aggregate net migration pattern with losses from four out of the five deciles with the highest LQs and gains in four out of the five deciles with lowest LQs.



Source: 2001 Census Standard Table ST101; Commissioned Table CO723

**Figure 24. Profile of Other population and migrants**

## 6. Conclusions and Further Work

The internal migration of ethnic population groups in Britain is complex both in terms of understanding its composition and the spatial patterns of movement that have occurred. Within each ethnic group, migrants will be influenced by different drivers according to their circumstances and the stage in their life course. The origins of the spatial patterns of some ethnic minority internal migrants are defined by the locations of previous waves of immigrants, most of whom arrived in British cities in search of work and who settled where cheap housing was available and distance to work was minimised. On the other hand, we know that certain groups contain professionals who are more footloose in terms of residential location and that the migration streams of those aged 16-24 contain a significant number of those who are moving to or from areas where higher education establishments are located. In 2000-01, student migration was a major component of Britain's inter-district migration, particularly for Whites, with a pattern of flows towards towns and cities that was contrary to the main counterurbanisation movements that characterised aggregate migration in this period and that have been a key feature of Britain's population redistribution over several decades.

Despite the limitations associated with the ethnic classification that has been used in this research, it is clear that migration propensities do vary by ethnic group and by age: the Chinese tend to experience the highest internal migration propensities whereas the POSA group appear to have the lowest propensities, particularly at ages 16-19 and 20-24. This spectrum of variation also applies to the proportions moving between districts, with more Chinese moving between districts in Britain than within them. One problem arises because of the difference in the relative sizes of the populations and the migrant streams involved when considering ethnicity – particularly when one group (White) is so predominant and when the number of minority ethnic populations or migrants can be very small. The small number problem actually provides further justification for use of such a broad based ethnic classification, despite the recognition that most groups will contain a variety of migrants with very different cultural and linguistic characteristics. There are also practical problem of how to handle migration interaction matrices containing lots of empty cells and how to display information in map form. In this instance we chose to use an area classification system as a summarizing framework for net and gross flows and demonstrated some of the features that distinguish ethnic migration both within and between areas of similar type.

Whilst spatial analysis at the district scale has provided insights into the sub-national patterns of internal migration, it is well-known that the magnitude of migration flow increases as the spatial unit of study reduces in size; our results confirm that, apart from the Chinese, the proportion of shorter-distance migration (within districts or clusters) is much higher than longer-distance moves (between districts or clusters). Consequently, attention focused in the latter part of the and on movements at the ward scale in London, although lack of data on migration flows within or between wards disaggregated by ethnic group meant that commissioned data were used to estimate net migration balances. One important general conclusion is that the patterns of internal movement when summarised in deciles based on population concentration vary from one ethnic group to another and it is not appropriate to think of the non-white population behaving in a similar way in contrast to the White population. Some ethnic groups are moving to areas of high own-ethnic group concentration whereas others are moving away; most groups are moving away from areas of deprivation; some immigrant groups are locating in areas of own-group population concentration whereas others are accentuating dispersal to more mixed areas.

The profiles of each ethnic group show the different relationships between selected indicators. In summary:

- **Whites** are concentrating in less deprived areas where there are higher concentrations of Whites but White immigrants are moving into intermediate areas.
- **Indian** and **POSA** groups are deconcentrating through internal migration and immigration to wards with lower levels of own-group population and towards less deprived areas in case of POSA.
- **Chinese** are a less concentrated population but their migration patterns are tending to increase the concentration and immigration rates are much higher than net migration rates.
- **Black** migrants, like Asians, are dispersing from areas of high concentration and immigration is also highest in areas of lower concentration and deprivation.
- **Mixed** migrants are concentrated in more deprived areas, are moving to areas of lower concentration within London and immigration is also an agent of dispersal.
- **Other** immigrants are accentuating own-group population concentration in more deprived areas but there is evidence of dispersal through internal migration within London.

The analysis that has been reported is, of course, only partial and there is no element of change involved. Natural change and emigration components of population change are not considered and no attempt has been made to estimate ethnic populations at the start of the 2000-01 period for which internal migration and immigration flows have been used. Births and deaths by ethnic group, as well as start of period populations, are not available (Wohland *et al.*, 2010) and would need to be estimated for a more comprehensive analysis of ethnic population dynamics in London over this period. This provides one avenue of further research. Other work in future might usefully build on existing data and involve: analysis at the ward level by age group – particularly so as to tease out the student dimension *vis á vis* other age groups; analysis of origins and destinations of migrants between London and the rest of the country; and analysis of relationships between the indicators in provincial cities with concentrations of ethnic minorities. Moreover, the forthcoming 2011 Census, the last of its kind, will provide an opportunity to apply the same type of analyses reported in this paper to data for 2010-11 and allow us to establish what changes have taken place both nationally and in London since 2001.

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