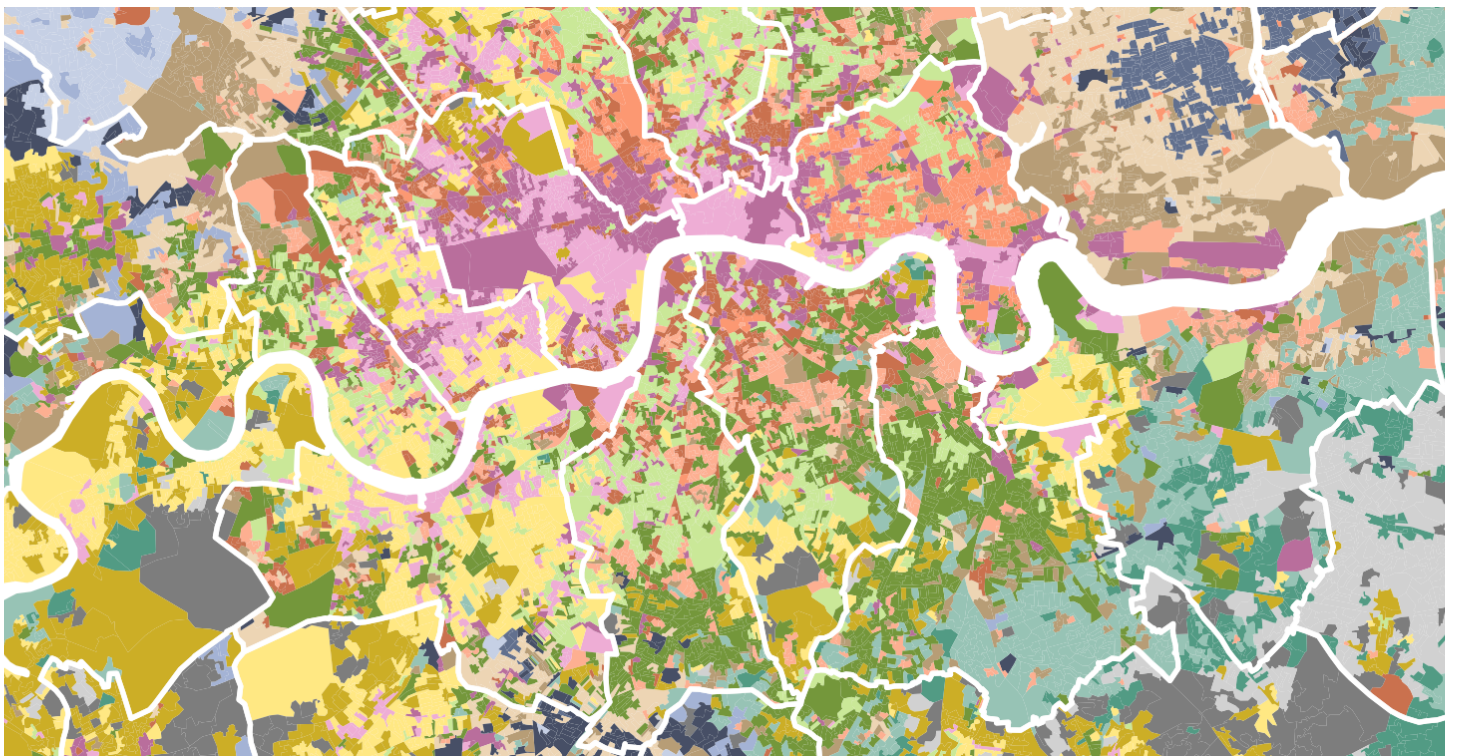


# London Output Area Classification (LOAC)



## *Final Report*

Paul Longley

Alex Singleton

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## Overview

Our brief was to create an Output Area Classification specific to London (a 'London OAC', LOAC) by applying the methodology used to create the 2011 Office for National Statistics Output Area Classification ('2011 OAC') to Census data for London alone. Our view is that this process creates additional granularity and insight.

We have applied the 2011 OAC methodology to the London data and conducted a range of sensitivity analyses. The results suggest that the most parsimonious number of Super Groups is 8 (the same number as for the 2011 OAC) and that these might be partitioned into a total of 21 Groups. We do not see merit in further dividing the Groups into Sub Groups.

We have assigned names and developed pen portraits for the Super Groups and Groups using much the same process as was used for 2011 OAC. This is inevitably a sensitive issue in the creation of classifications for use in public services, and in developing these outputs we have been mindful of the views of ONS on the equivalent 2011 OAC outputs. Our interim proposals were presented to members of the GLA Census Users' Group on May 6 2014, and we have amended some of the names and descriptions in the light of the very useful feedback received. We have also responded to a very useful suggestion that the descriptions be supplemented by key statistics in order to further clarify the nature of the assignments made (see Appendix 1).

The work carried out to date has been instructive in assessing the usefulness of the full range of 2011 OAC variables in creating LOAC, and in identifying ways in which the LOAC might be updated using Open Data in the coming years. A major problem is that only a limited range of Open Data are available at the granularity of the Output Area. Our recommendation is therefore to use annual updates of Office for National Statistics Mid Year Population Estimates and updates to the Council Tax Valuation List. London is a fast-changing and dynamic city, albeit that the scale and pace of

change is by no means geographically uniform. One of the much-vaunted advantages of commercial geodemographic classification products is that purely census based classifications such as the 2011 LOAC will be uniformly unreliable because there is no temporal updating of input (Census) data. Yet while some London neighbourhoods are prone to sudden changes, many others change very incrementally over time. Mid-year population estimates and dwelling stock data make it possible to gauge the stability or otherwise of neighbourhood conditions. There are various ways in which the uncertainty associated with the 2011 LOAC classification can be communicated, such as the use of hue in updates of the PDF atlases that have been produced as part of this project. As a measure of uncertainty, a “cluster fit” statistic was generated for each area, and calculated as the sum of the squared distances for all variables relative to their attributed cluster mean. Maps for each Super Group cluster can be found in Appendix 2, where the squared distance measures for each Super Group cluster have been divided using natural breaks (jenks).

## Methodology in Brief

A full draft methodological report relating to the ONS Output Area Classification is in preparation. The methodology for OAC was mirrored for LOAC.

In brief, the methods followed an initial process of variable selection, aiming to maintain similarity of attributes with the 2001 OAC. As with 2001 OAC, attributes were considered for their distribution, coverage across all countries of the UK and relationships with one another (e.g. correlation). After evaluation, a final set of 60 attributes were selected, comprising 58 percentage scores and two ratios. These input variables, with their specification extracted from the England and Wales Census tables can be found in Appendix 3.

The data were transformed to make the attributes more normally distributed, in order to improve the efficiency of the cluster assignment. We used the inverse hyperbolic sine transformation in order to do this. As with the variable selection, a number of different transformation options were evaluated. Prior to clustering, the input data were standardised onto a scale ranging from 1 through to 0. Clustering was then performed, using similar procedures to the 2001 OAC: *k*-means was used to create the first most aggregate level, and was then used to create the further levels of disaggregation, forming a nested hierarchical structure. LOAC differs from OAC in that the clustering was terminated after two levels comprising 8 Super Groups and 19

Groups, because the London data comprise far fewer areas than the entire UK. We have, however, provided a file of sub-group assignments in case users wish to make use of them.

## Results

The allocations of OAs within each LOAC Super Group and Group are shown in Table 1 and cross tabulated with London Boroughs in Table 2. The index scores, also shown in Table 2, provide an indication of dissimilarities in Super Group assignments between each Borough and the London average. An index score of 100 denotes the London average, 200 double that average, 50 one half of it, and so on. The index scores are coloured green where they are less than 80, red when over 120 and yellow if over 200.

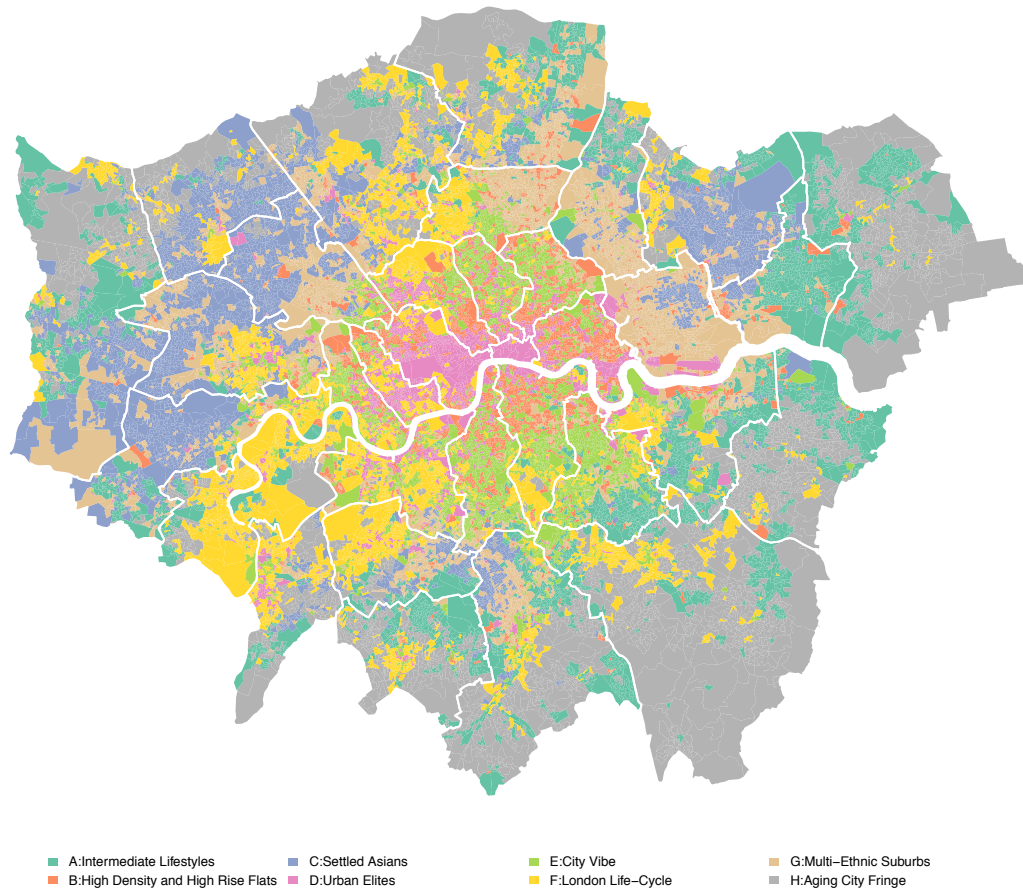
**Table 1: Output Area Frequency within LOAC Super Groups and Groups**

Super Group	Group	OA Freq.
	A1	1929
	A2	1312
<b>A</b>		<b>3241</b>
	B1	1409
	B2	604
	B3	1125
<b>B</b>		<b>3138</b>
	C1	996
	C2	786
	C3	479
	C4	652
<b>C</b>		<b>2913</b>
	D1	1128
	D2	1248
<b>D</b>		<b>2376</b>
	E1	1864
	E2	1659
<b>E</b>		<b>3523</b>
	F1	1536
	F2	1688
<b>F</b>		<b>3224</b>
	G1	1774
	G2	1935
<b>G</b>		<b>3709</b>
	H1	1296
	H2	1633
<b>H</b>		<b>2929</b>

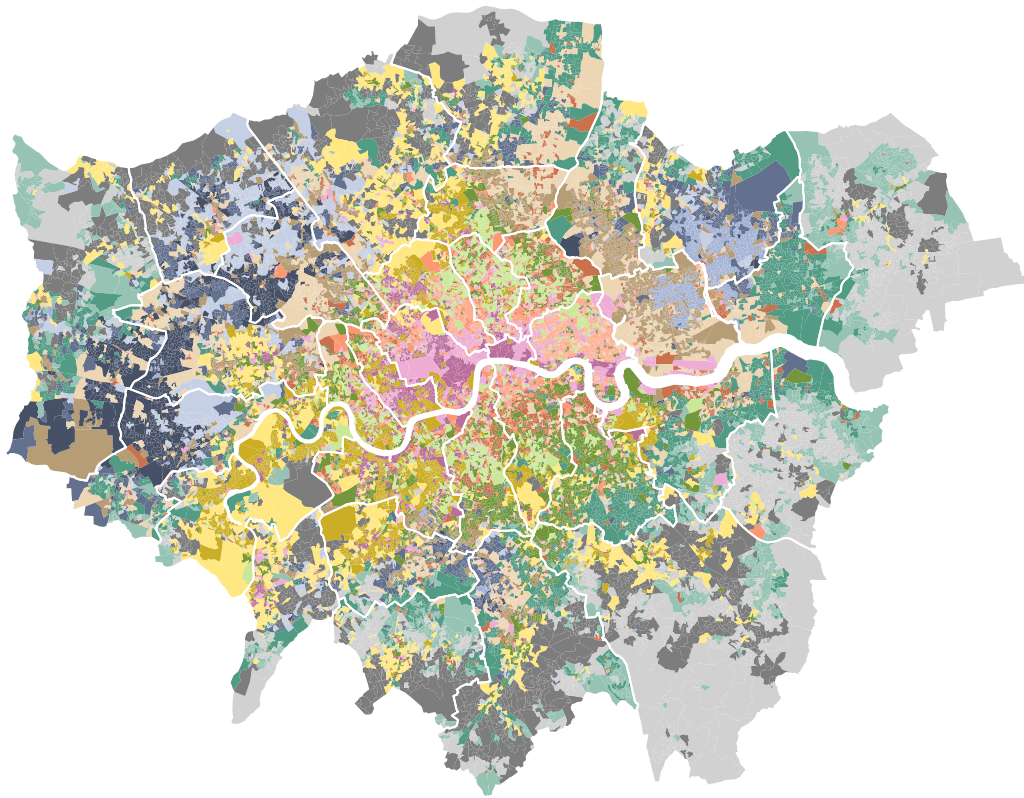
Table 2: Output Areas assigned to each Super Group according to London Borough, and associated index scores

	Count of OA								Index Score (OA)							
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
Barking and Dagenham	338	55	63	2	0	0	88	7	472	79	98	4	0	0	107	11
Barnet	79	37	160	35	47	275	213	190	59	29	133	36	32	206	139	157
Bexley	262	19	7	0	11	33	6	390	278	21	8	0	11	35	6	458
Brent	1	58	350	29	94	10	277	10	1	56	363	37	81	9	226	10
Bromley	240	12	0	8	72	185	9	494	182	9	0	8	50	141	6	414
Camden	1	242	0	215	164	123	3	1	1	258	0	303	156	128	3	1
City of London	0	4	0	26	0	1	0	0	0	103	0	884	0	25	0	0
Croydon	290	31	144	18	93	78	227	251	198	22	109	17	58	54	135	190
Ealing	15	40	336	29	92	183	252	9	12	33	302	32	68	149	178	8
Enfield	208	58	82	5	24	130	283	115	178	51	78	6	19	112	211	109
Greenwich	280	97	19	48	89	88	133	55	268	96	20	63	78	85	111	58
Hackney	3	292	0	82	283	15	74	0	3	311	0	115	269	16	67	0
Hammersmith and Fulham	3	114	0	141	252	92	23	0	4	146	0	238	287	114	25	0
Haringey	17	87	4	42	153	128	318	4	17	92	5	59	144	132	285	5
Harrow	18	4	366	6	2	51	75	120	22	5	490	10	2	62	79	160
Havering	307	9	0	3	5	19	3	408	315	10	0	4	5	20	3	463
Hillingdon	193	5	231	1	6	58	87	208	189	5	252	1	5	57	74	225
Hounslow	104	24	288	28	42	93	124	11	113	27	347	41	42	101	117	13
Islington	0	217	0	113	339	27	1	0	0	249	0	171	346	30	1	0
Kensington and Chelsea	1	120	0	301	79	130	0	0	1	152	0	503	89	160	0	0
Kingston upon Thames	50	10	48	50	25	158	25	134	77	16	83	105	36	246	34	229
Lambeth	23	258	18	84	460	68	52	3	18	213	16	92	339	55	36	3
Lewisham	211	119	2	28	374	63	83	7	184	107	2	33	300	55	63	7
Merton	76	9	102	33	36	204	133	50	91	11	136	54	40	247	140	67
Newham	3	60	177	47	3	0	520	0	3	59	188	61	3	0	434	0
Redbridge	81	17	407	17	6	81	86	81	81	17	451	23	5	81	75	89
Richmond upon Thames	66	6	10	23	25	385	5	95	83	8	14	39	29	486	5	132
Southwark	25	359	0	114	286	66	39	4	22	321	0	135	228	57	29	4
Sutton	211	19	7	10	21	112	9	227	265	25	10	17	24	141	10	315
Tower Hamlets	6	394	0	209	102	3	34	0	6	421	0	295	97	3	31	0
Waltham Forest	114	26	69	3	25	17	429	49	120	28	81	4	24	18	396	57
Wandsworth	13	119	22	192	246	291	94	5	10	97	19	206	178	230	65	4
Westminster	2	217	1	434	67	57	4	1	2	221	1	584	61	57	3	1
	3241	3138	2913	2376	3523	3224	3709	2929								

The clusters making up the typology were given names and short descriptions. These were derived using “grand index” tables that provide a descriptive summary of the cluster attributes. The grand index tables can be found in Appendix 4, and the descriptions and cluster names in Appendix 1. The Super Groups can be seen in Figure 1 and the Groups in Figure 2. Furthermore, two Atlases have been created containing maps for each of London Borough.



**Figure 1: LOAC Super Groups**



- A1: Struggling suburbs
  - A2: Suburban localities
  - B1: Disadvantaged diaspora
  - B2: Bangladeshi enclaves
- B3: Students and minority mix
  - C1: Asian owner occupiers
  - C2: Transport service workers
  - C3: East End Asians
- C4: Elderly Asians
  - D1: Educational advantage
  - D2: City central
  - E1: City and student fringe
- E2: Graduation occupation
  - F1: City enclaves
  - F2: Affluent suburbs
  - G1: Affordable transitions
- G2: Public sector and service employees
  - H1: Detached retirement
  - H2: Not quite Home-Counities

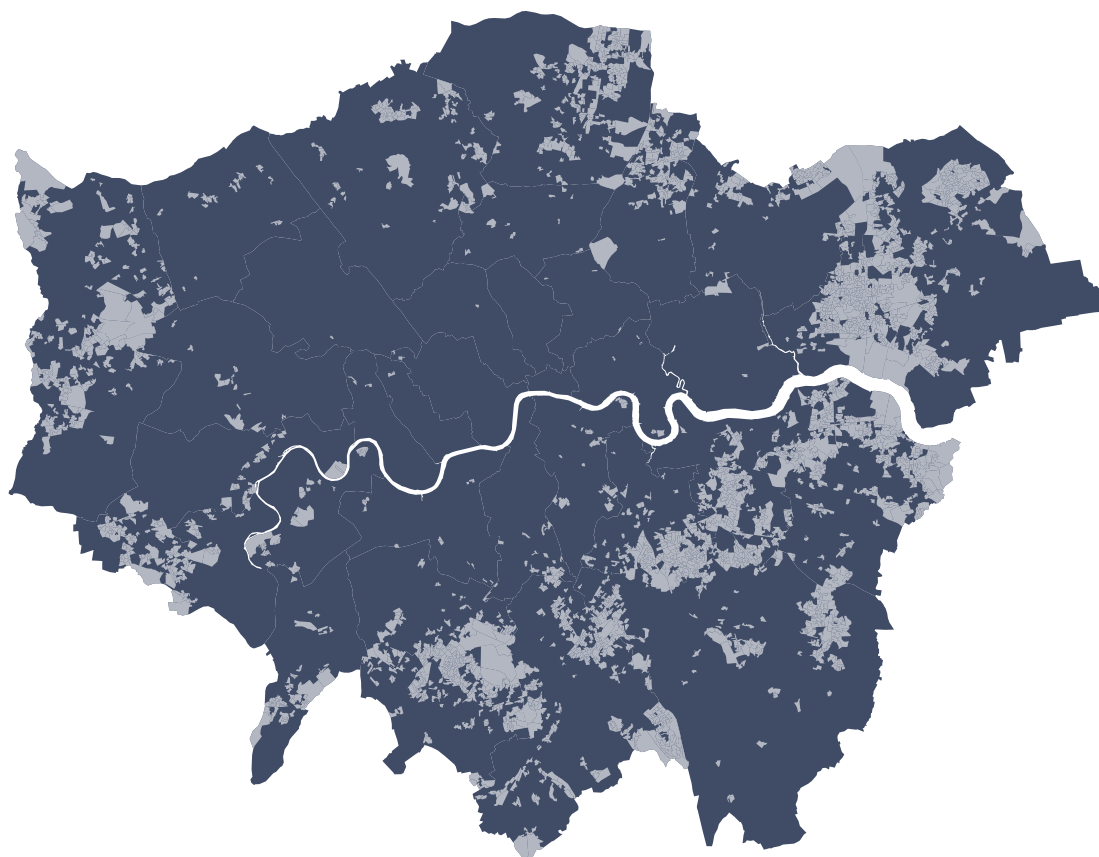
**Figure 2: Groups in London**

# Appendix 1: London OAC (LOAC): Super-Groups and Groups

## Hierarchy

Super Group	Group
A: Intermediate Lifestyles	A1: Struggling suburbs
	A2: Suburban localities
B: High Density and High Rise Flats	B1: Disadvantaged diaspora
	B2: Bangladeshi enclaves
	B3: Students and minority mix
C: Settled Asians	C1: Asian owner occupiers
	C2: Transport service workers
	C3: East End Asians
	C4: Elderly Asians
D: Urban Elites	D1: Educational advantage
	D2: City central
E: City Vibe	E1: City and student fringe
	E2: Graduation occupation
F: London Life-Cycle	F1: City enclaves
	F2: Affluent suburbs
G: Multi-Ethnic Suburbs	G1: Affordable transitions
	G2: Public sector and service employees
H: Ageing City Fringe	H1: Detached retirement
	H2: Not quite Home Counties

## A Intermediate Lifestyles



Although exhibiting no over-arching discriminating characteristics, households in this Super-Group are predominantly in later stages in life-cycle, and are predominantly White and born in the UK. Rather few households have dependent children and most live in single family terraced or semi detached properties. Households that rent their properties do so in the social rented sector. Employment levels are average for London, and are split between full and part time working in a range of intermediate occupations. Levels of highest qualifications are below the London average.

	Mean	Median	Range	London Mean
Whole house or bungalow: terrace or end-terrace	41.1	40.7	94.7	23.6
Use of private transport	29.9	29.4	50.2	20.3
Employment: Manufacturing	4.2	3.9	14.5	3.2
Employment: Transport and storage	7.3	6.8	28.6	5.1
Employment: Mining, quarrying and construction	9.6	9.4	25.3	6.7
Employment: Energy, water and air conditioning supply	1.1	0.9	8.6	0.6

## A1 Struggling suburbs

Populated by above average numbers of Black residents, these neighbourhoods also have high unemployment by London standards. Above average levels of housing are provided by the social rented sector – often in terraces. Employment is found across a range of blue-collar occupations that are found within the Greater London area.

	Mean	Median	Range	London Mean
Black/African/Caribbean/Black British	18.5	16.8	70.7	13
Mixed/multiple ethnic group	5.5	5.2	16.5	5
Owned or Shared Ownership	52	51.6	93.5	50.1
Social rented	32.8	32.4	94.1	24.1

## A2 Suburban localities

This group is predominantly comprised of White residents living in neighbourhoods that are part of a local labour market that may extend outside the Greater London area. Semi-detached housing is quite common and is predominantly owner-occupied. Households are heavily reliant upon private transport.

	Mean	Median	Range	London Mean
Black/African/Caribbean/Black British	7.2	6.1	42.9	13
Mixed/multiple ethnic group	3.4	3.2	13.2	5
Owned or Shared Ownership	60.1	62.4	93	50.1
Social rented	27.9	25.6	95.6	24.1

## B High Density and High Rise Flats



Concentrations of this Super Group are found in densely populated areas of flats. Many families have children of school age and many residents are of Bangladeshi origins, along with high numbers of households describing themselves as Black or as coming from Mixed or Other ethnic groups. There is a high incidence of households in which the main spoken language is not English. Levels of highest qualifications are below the London average, although some residents are full-time students living in shared accommodation. Levels of unemployment and part-time working are above the London average, while many of those in employment work in administration, or in accommodation and food services industries.

	Mean	Median	Range	London Mean
Asian/Asian British: Bangladeshi	8.5	2.2	90.1	2.4
Social rented	64.7	67	97.4	24.1
Flats	93.5	96	56.5	50.6

## B1 Disadvantaged diaspora

These neighbourhoods are characterised by high numbers of Black residents, and of families with young children. There is high incidence of divorce. Employment is often found in transport, health care support, social work, administration and support services.

	Mean	Median	Range	London Mean
Black/African/Caribbean/Black British	36.8	37.6	72.7	13
Schoolchildren and ft. students: Age 16+	12.5	12.5	36.9	10.1
Lives in a communal establishment	0.4	0	64.3	0.9
Asian/Asian British: Bangladeshi	2	1.2	21.6	2.4

## B2 Bangladeshi enclaves

These neighbourhoods have exceptionally high concentrations of residents of Bangladeshi origin; and also are areas characterised by particularly low levels of use of English as a first language. Families generally have a younger age structure, and a prevalent source of employment is in the accommodation and food services industry. The areas also have higher student populations than are typical for London, and residents who use bicycles to get to and from work or study.

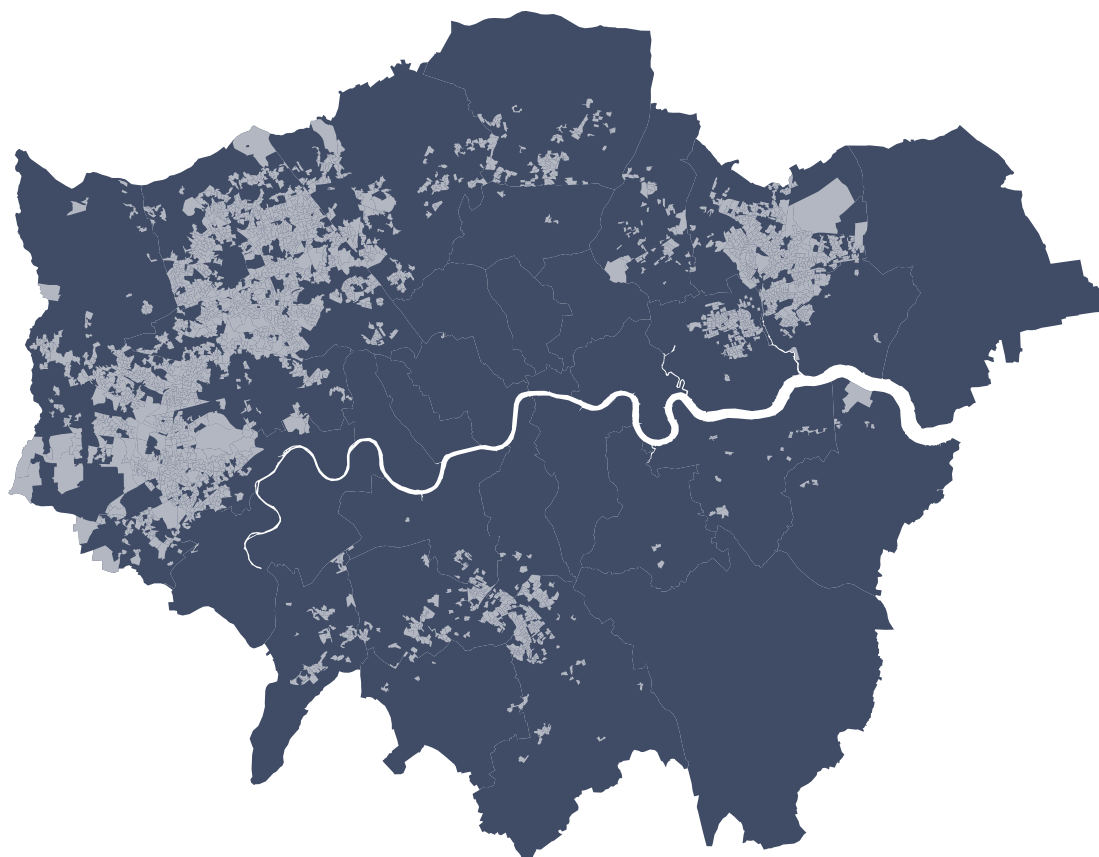
	Mean	Median	Range	London Mean
Black/African/Caribbean/Black British	12.5	11	49.7	13
Schoolchildren and ft. students: Age 16+	15.9	14.7	71.7	10.1
Lives in a communal establishment	1.1	0	52.5	0.9
Asian/Asian British: Bangladeshi	34.1	31	86.5	2.4

## B3 Students and minority mix

These ethnically diverse areas also house some students in communal establishments. Rates of divorce are higher than the London average.

	Mean	Median	Range	London Mean
Black/African/Caribbean/Black British	20.9	19	66.8	13
Schoolchildren and ft. students: Age 16+	12.7	11.4	81.8	10.1
Lives in a communal establishment	1.5	0	62.5	0.9
Asian/Asian British: Bangladeshi	2.8	1.9	19.5	2.4

## C Settled Asians



This Super Group lives in traditional single-family houses, above average numbers of which are owner-occupied. Although drawn from the full age range of London residents, the main language spoken in many households is not English. Those in employment have occupations drawn from a wide range of non-professional sectors. Members of this Super Group identify themselves with their Asian origins, although many are second or subsequent generation British residents.

	Mean	Median	Range	London Mean
Asian/Asian British: Indian	22.1	19.6	72.6	5.9
Asian/Asian British: Pakistani	8.2	6.2	45.8	2.4
Main language is not English and cannot speak English well or at all	6.9	6.3	22.9	3.8

## C1 Asian owner occupiers

These neighbourhoods are characterised by a very high incidence of semi-detached and terraced houses, by average levels of full- and part-time employment, and employment in a range of blue-collar occupations.

	Mean	Median	Range	London Mean
Asian/Asian British: Bangladeshi	2.3	1	34.2	2.4
Whole house or bungalow: Semi-detached	32	26.9	85.9	19.3
Occupancy room rating -1 or less	13.2	12.8	39.4	21.1
Age 65 to 89	12	11.8	28.5	10.8
Age 90 and over	0.5	0.3	15.2	0.5

## C2 Transport service workers

Principally but not exclusively occurring in the environs of Heathrow Airport, employment in these neighbourhoods is focused on catering, manufacturing and other airport-related services, as well as other local services. Young families typically live in semi-detached houses and there is a particularly high incidence of households in which English is not the first language.

	Mean	Median	Range	London Mean
Asian/Asian British: Bangladeshi	0.8	0.5	8	2.4
Whole house or bungalow: Semi-detached	36.2	32.6	91.7	19.3
Occupancy room rating -1 or less	26.1	25.2	53.3	21.1
Age 65 to 89	10	9.5	28.6	10.8
Age 90 and over	0.4	0.2	10.7	0.5

## C3 East End Asians

With large concentrations in the environs of Ilford, these predominantly Asian neighbourhoods have fewer residents from post 2001 EU accession countries than the other groups in this Super Group. Many households comprise young families living in privately rented terraced houses. There is a high incidence of part time employment relative to the London average.

	Mean	Median	Range	London Mean
Asian/Asian British: Bangladeshi	9.9	8.9	45.2	2.4
Whole house or bungalow: Semi-detached	16.3	13.8	69	19.3
Occupancy room rating -1 or less	26.7	25.7	55.8	21.1
Age 65 to 89	8.2	7.8	26.1	10.8
Age 90 and over	0.3	0.2	2.6	0.5

## C4 Elderly Asians

The numbers of elderly individuals are above the London average in these neighbourhoods, and some are resident in communal establishments. Detached or semi-detached houses are much more common than the London average.

	Mean	Median	Range	London Mean
Asian/Asian British: Bangladeshi	0.9	0.3	12.1	2.4
Whole house or bungalow: Semi-detached	59.4	64.6	97.3	19.3
Occupancy room rating -1 or less	14.2	13.4	38.3	21.1
Age 65 to 89	13.9	13.3	34	10.8
Age 90 and over	0.7	0.5	7.7	0.5

## D Urban Elites



This Super Group comprises young professionals working in the science, technology, finance and insurance sectors. Additionally, large numbers of students rent rooms in centrally located communal establishments. Most others rent privately owned flats, large numbers of which are found in central locations. Residents are disproportionately drawn from pre 2001 EU countries, and there is also high representation of households from Chinese, Arab and other minority backgrounds.

	Mean	Median	Range	London Mean
Full-time student household	1.9	1	46.8	0.7
Other EU: Member countries in March 2001	11.5	10.6	40.3	4.4
Private rented	50	49.6	93.4	24.5

### D1 Educational advantage

Student lifestyles characterise this Group, with residents living in centrally located communal establishments at high residential densities. Many individuals have origins in emerging economies of the Middle East and China, Levels of overcrowding are high.

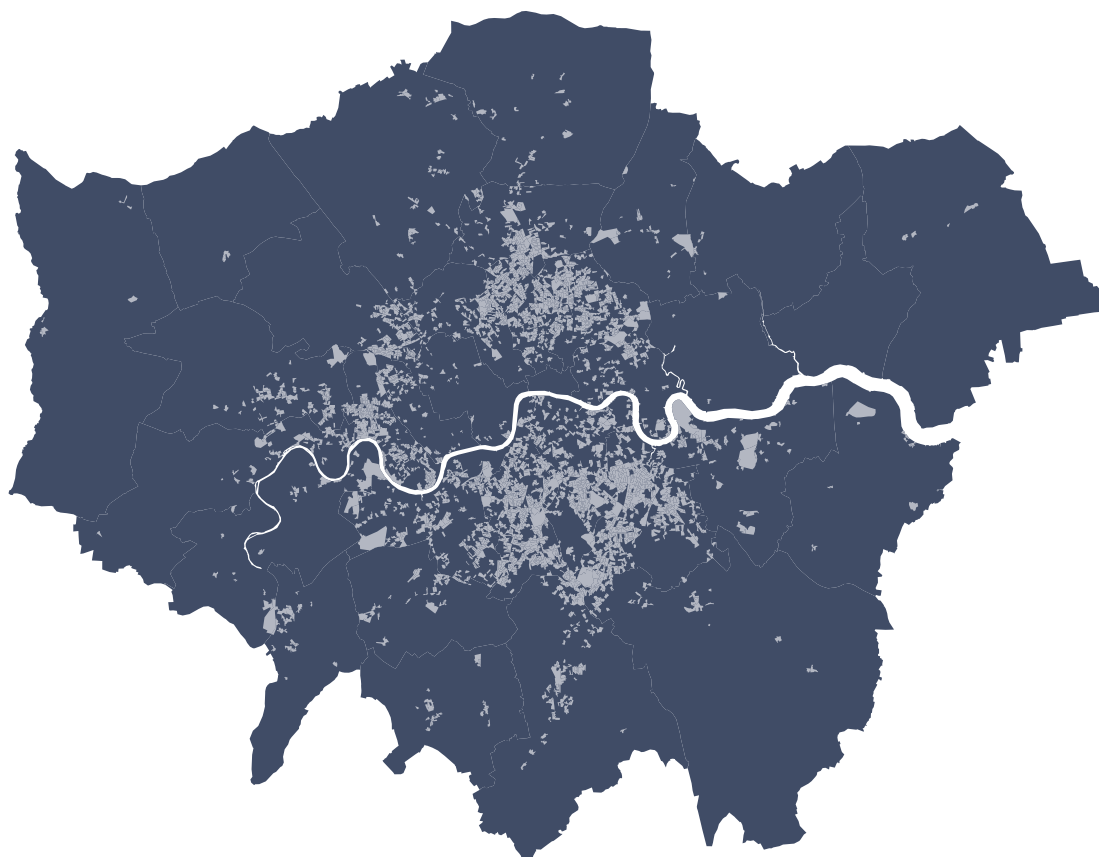
	Mean	Median	Range	London Mean
Lives in a communal establishment	4.2	0	91.5	0.9
Accommodation and food service activities	7.3	6.3	32.4	6.3
Schoolchildren and full-time students: Age 16 and over	15.9	11.4	95.9	10.1

## D2 City central

Many of the residents of these neighbourhoods are employed in the financial, insurance and real estate industries, or are information and communications industry professionals engaged in a range of scientific and technical activities. Residents are more likely than average to be White.

	Mean	Median	Range	London Mean
Lives in a communal establishment	0.7	0	76.7	0.9
Accommodation and food service activities	3.8	3.3	34.9	6.3
Schoolchildren and full-time students: age 16 and over	7.2	6.4	43	10.1

## E City Vibe



There are many young, single professionals in this Super Group, living in Zone 2 of the London travel network. Compared to the London average, few individuals originate from the Indian sub-continent, but Mixed ethnic groups are well represented, as are migrants from pre 2001 EU countries. A large number of households comprise full time students in shared or communal establishments. Individuals rent within the private sector, are well qualified and are employed in a range of professional, scientific and technical occupations.

	Mean	Median	Range	London Mean
Other EU: Member countries in March 2001	6	5.5	22.6	4.4
Travel: on foot, Bicycle or Other	12.7	12	58.6	8.9
Employment: information and communication, and professional, scientific and technical activities	24.2	24	45.4	17.2

### E1 City and student fringe

Many members of this Group live in communal establishments, located in some of London's less fashionable central locations. Employment is typically in accommodation and food services. Black British residents are much in evidence, and

citizens of post 2001 EU countries are also well represented relative to the London average.

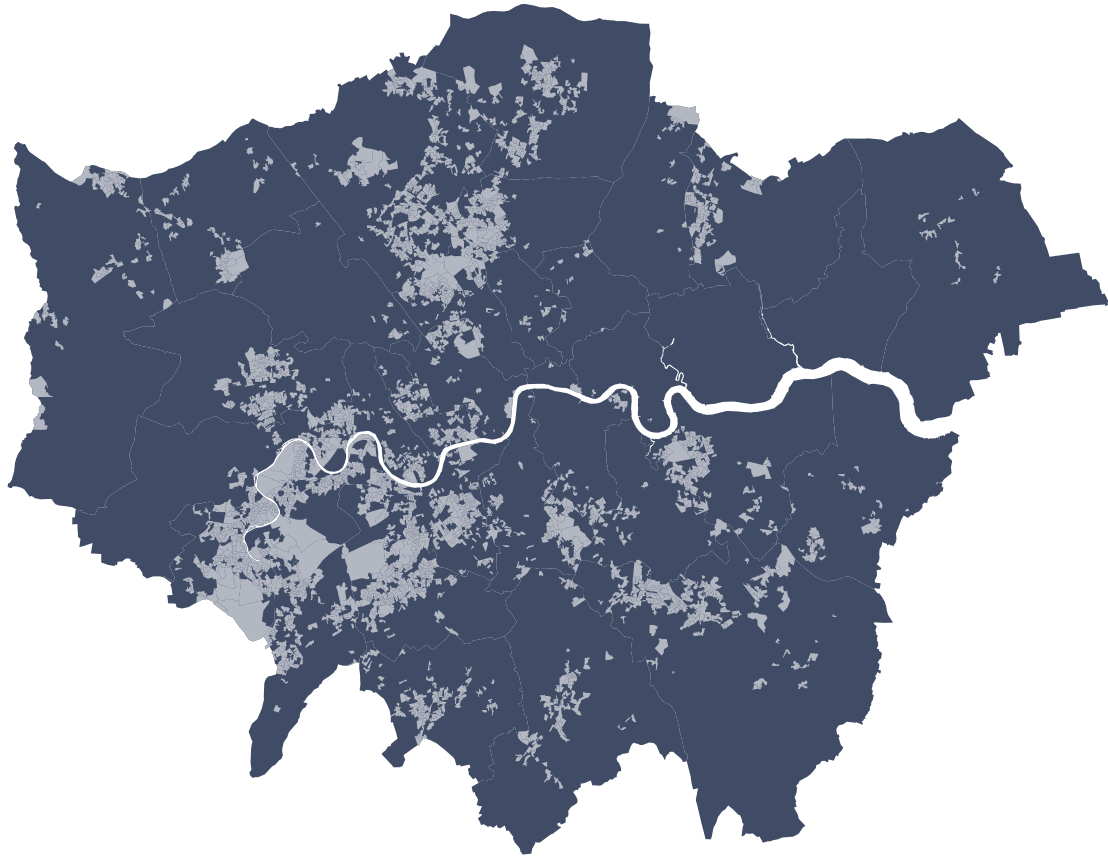
	Mean	Median	Range	London Mean
Lives in a communal establishment	1.4	0	80.7	0.9
Other EU: Accession countries April 2001 to March 2011	5.5	4.4	26.3	4.4
Accommodation and food service activities	7.4	6.8	25.2	6.3
Employment in financial, insurance and real estate activities	7.7	7.2	24.8	9.6

## E2 Graduation occupation

The residents of these areas are likely to be recent graduates who are employed in the communications, scientific and technical sectors. Pre 2001 EU countries are well represented, and travel to work on foot or by bicycle is more common than average for London.

	Mean	Median	Range	London Mean
Lives in a communal establishment	0.8	0	83.3	0.9
Other EU: Accession countries April 2001 to March 2011	2.5	2.3	20.5	4.4
Accommodation and food service activities	5.2	4.8	21.9	6.3
Employment: financial, insurance and real estate activities	11.2	10.2	33.9	9.6

## F London Life-Cycle



Predominantly White in ethnic composition (including individuals from other pre 2001 EU countries), these households cover the full family life-cycle age spectrum – meaning that, over-all, fewer households than the London average include dependent children or students. Residents are highly qualified, employment rates are high and employment is concentrated in the technical, scientific, finance, insurance and real estate industries.

	Mean	Median	Range	London Mean
Highest level of qualification: Level 4 qualifications and above	54.9	56.3	72.2	38
Employment: information and communication, and professional, scientific and technical activities	25.5	25.6	44.3	17.2
No children household	18.9	18.5	40.9	13.7

### F1 City enclaves

These neighbourhoods have the youngest demographic structure of this Super Group. Residents of overseas EU countries are much in evidence, although they are mainly drawn from pre-2001 accession states. Their typically central locations makes

these areas more suitable for travel to work by foot or bicycle. Employment in finance, insurance and real estate activities is common.

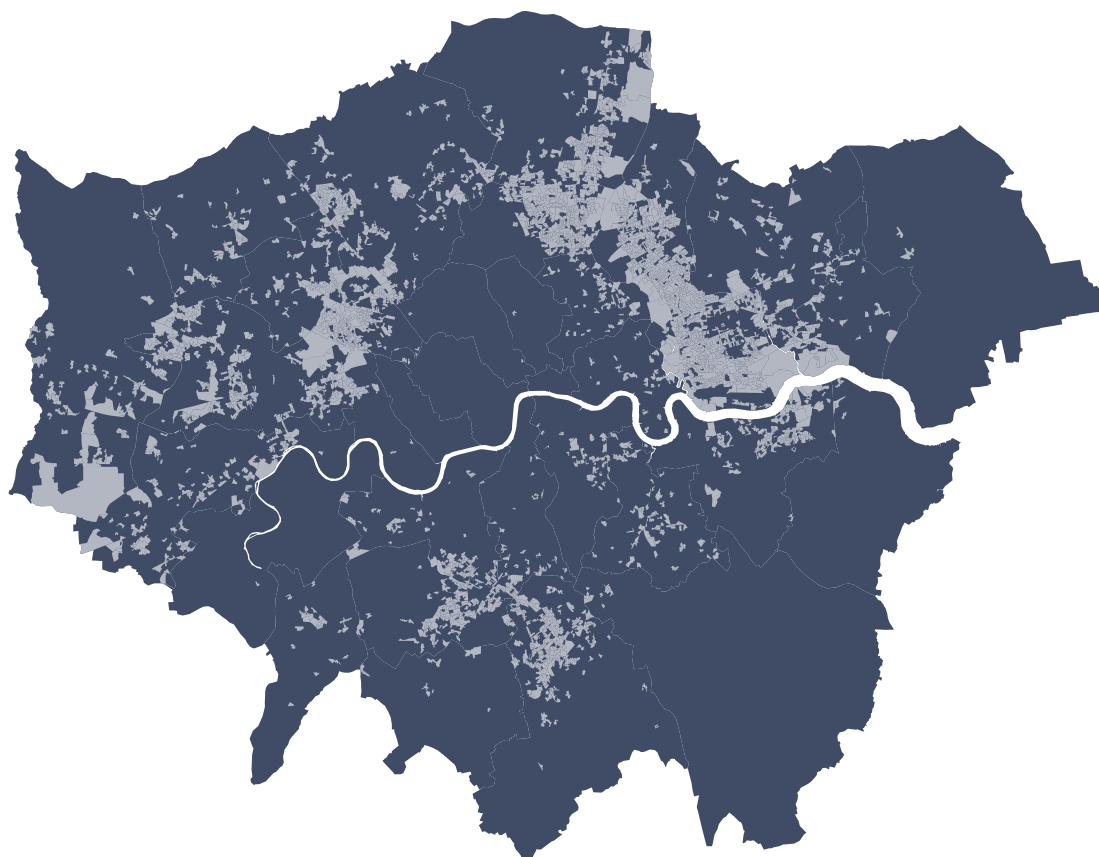
	Mean	Median	Range	London Mean
Lives in a communal establishment	0.5	0	56	0.9
Whole house or bungalow: Detached	3.7	2.2	55.6	6.4
Use of private transport	16.5	15.3	36.8	20.3

## F2 Affluent suburbs

Many individuals in this group are in middle age or older. Semi-detached and detached housing in suburban locations is common, with semi-detached housing being particularly common relative to the London average. Some individuals are resident in retirement homes.

	Mean	Median	Range	London Mean
Lives in a communal establishment	1.5	0	84.6	0.9
Whole house or bungalow: Detached	10.6	6.3	73.3	6.4
Use of private transport	24.9	24.7	45.3	20.3

## G Multi-Ethnic Suburbs



Members of this Super Group are drawn from a wide range of non-White ethnic groups and White groups are less represented than average for London. Citizens of countries that joined the EU post 2001 are well represented. Many households have young children or children of school age, and the over 65s are not much in evidence. There is above average incidence of family housing in overcrowded terraces, much of it rented within the social housing sector. Levels of unemployment are high. Employment is mainly found in blue collar occupations.

	Mean	Median	Range	London Mean
Other EU: Accession countries April 2001 to March 2011	8.4	7.2	50.5	4.4
Asian/Asian British: Pakistani	4.9	3.2	42	2.4
Black/African/Caribbean/Black British	22.6	21.2	69.5	13

### G1 Affordable transitions

These neighbourhoods house large numbers of recent migrants from the EU, as well as students. Some of the more established and long-term residents have origins in the Indian sub-continent. Much of the housing is provided in the private rental sector.

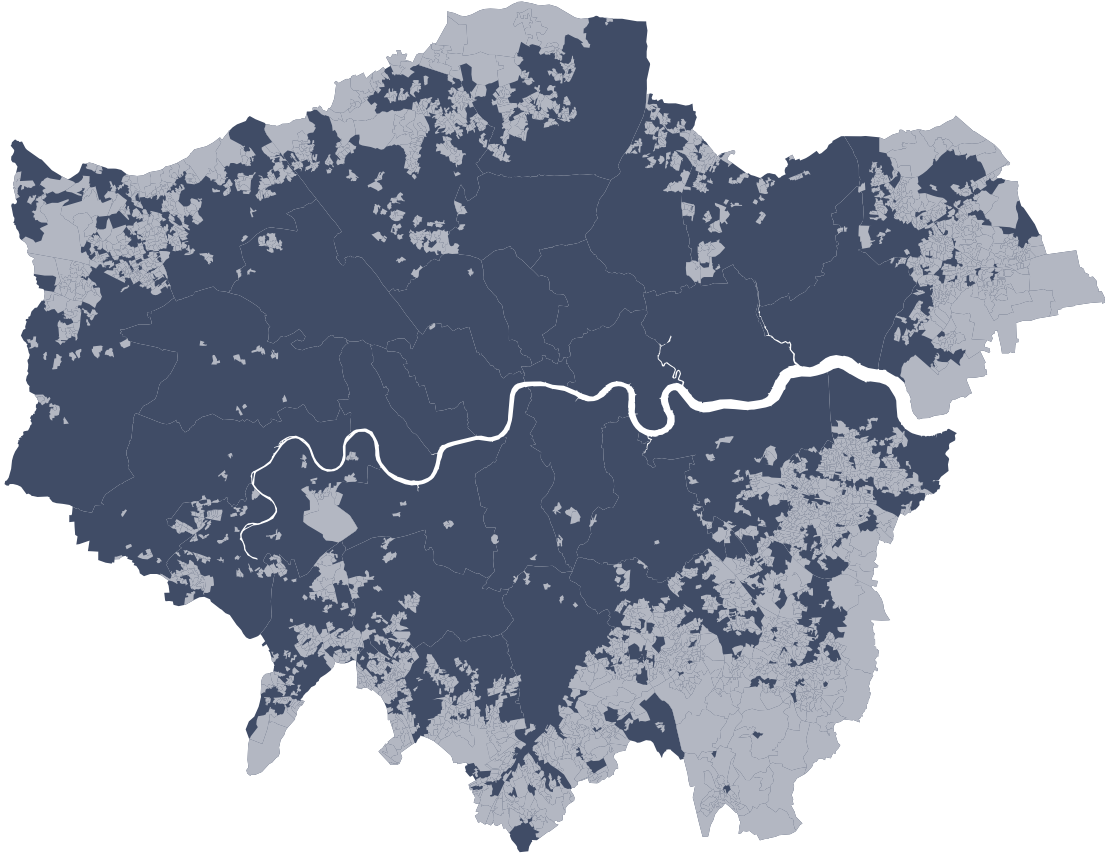
	Mean	Median	Range	London Mean
Schoolchildren and full-time students: Age 16 and over	13.2	12.2	87.1	10.1
Social rented	18.6	15.6	67.9	24.1
Asian/Asian British: Pakistani	6.7	4.8	42	2.4

## G2 Public sector and service employees

Many households in this Group rent within the social housing sector. Unemployment is higher than the London average and most employment is found in services such as transport and health care.

	Mean	Median	Range	London Mean
Schoolchildren and full-time students: Age 16 and over	12.7	12.3	57.6	10.1
Social rented	45.8	46.2	91.9	24.1
Asian/Asian British: Pakistani	3.2	2.1	25.8	2.4

## H Ageing City Fringe



Many of the residents in this Super Group are over 45, and many are above state pensionable age. There are high levels of marriage and established White residents are very much in evidence. By contrast, representation of ethnic minorities and EU migrants is very low, relative to the London average. Much of the dwelling stock comprises semi-detached and detached houses, occupied at low residential densities. Levels of qualifications are low, as might be expected for these age cohorts. Private vehicle ownership is high, with some households possessing two or more vehicles. Levels of unemployment are very low. Employment is drawn from a range of sectors and this is the only Super Group in which agriculture is an important source of employment.

	Mean	Median	Range	London Mean
Whole house or bungalow: detached	24	12.9	97.3	6.4
Two or more cars or vans in household	44.9	43.9	76.4	18.3
Age 65 to 89	18.2	17.2	66.9	10.8

## H1 Detached retirement

These neighbourhoods have much higher levels of elderly and very elderly residents than the London average. Many live in detached houses. Although predominantly White British, there are also significant numbers of Indian residents.

	Mean	Median	Range	London Mean
Whole house or bungalow: Terrace and end-terrace	4.3	1.8	53.8	23.6
Lives in a communal establishment	1	0	71.3	0.9
Asian/Asian British: Indian	8.6	5.9	54.5	5.9
Whole house or bungalow: Semi-detached	46.4	45.5	98.4	19.3

## H2 Not quite Home Counties

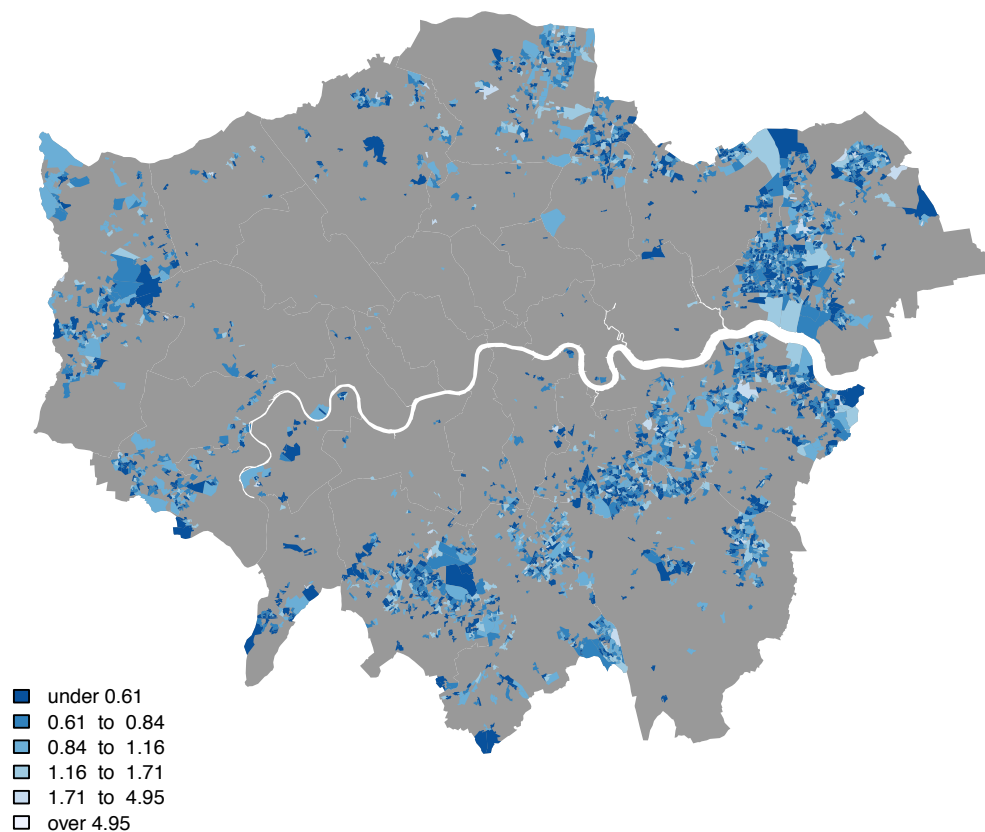
This group is found along the borders of Greater London. Employment is in primary industry and public administration. Semi-detached properties are more common than the London average.

	Mean	Median	Range	London Mean
Whole house or bungalow: Terrace and end-terrace	28.7	20.2	93.8	23.6
Lives in a communal establishment	0.4	0	32	0.9
Asian/Asian British: Indian	2.5	1.8	24.2	5.9
Whole house or bungalow: Semi-detached	53.5	53.8	98.2	19.3

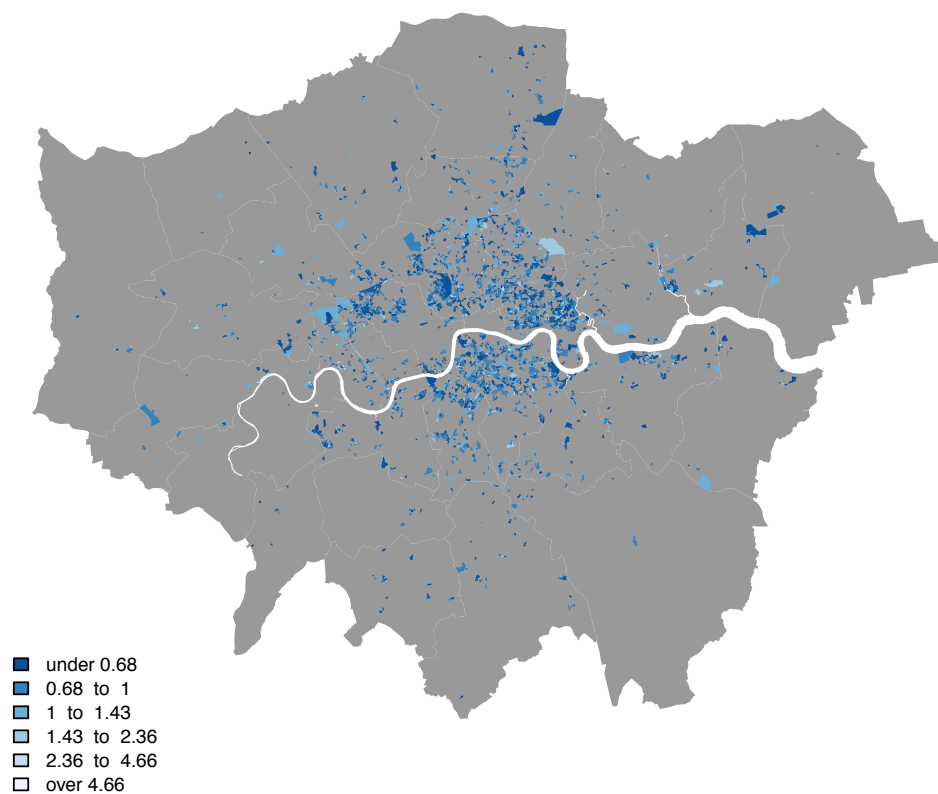
## Appendix 2: London OAC (LOAC): Super-Group Cluster Goodness of Fit Maps

The following maps illustrate how well areas are allocated to their assigned clusters, with the darker colours indicating a better fit.

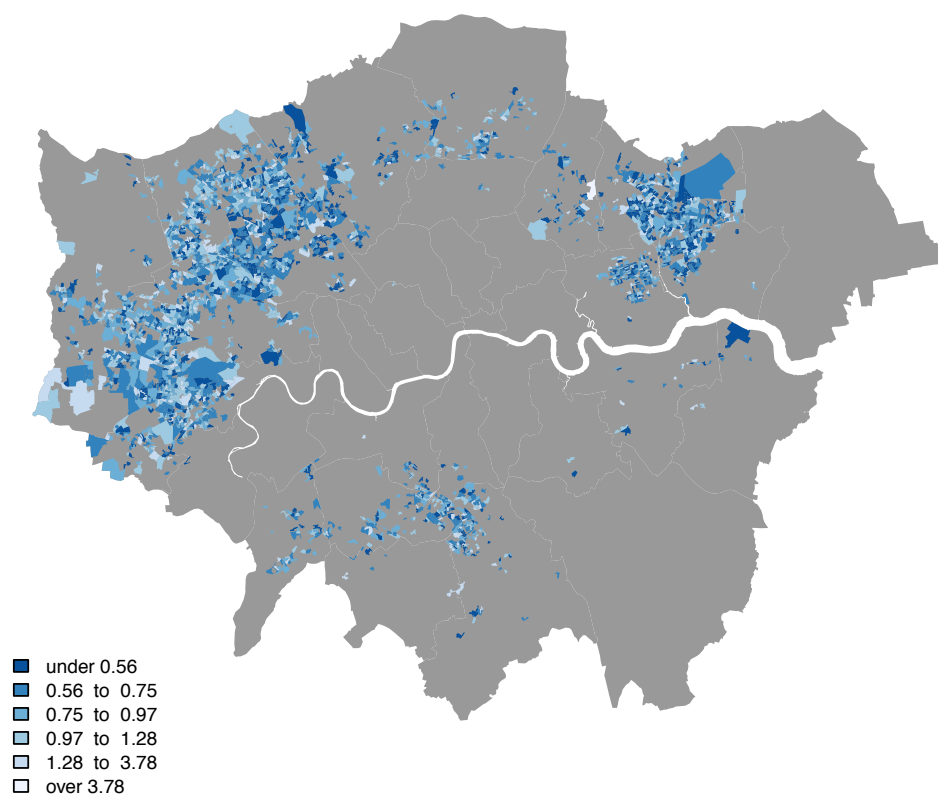
### A Intermediate Lifestyles



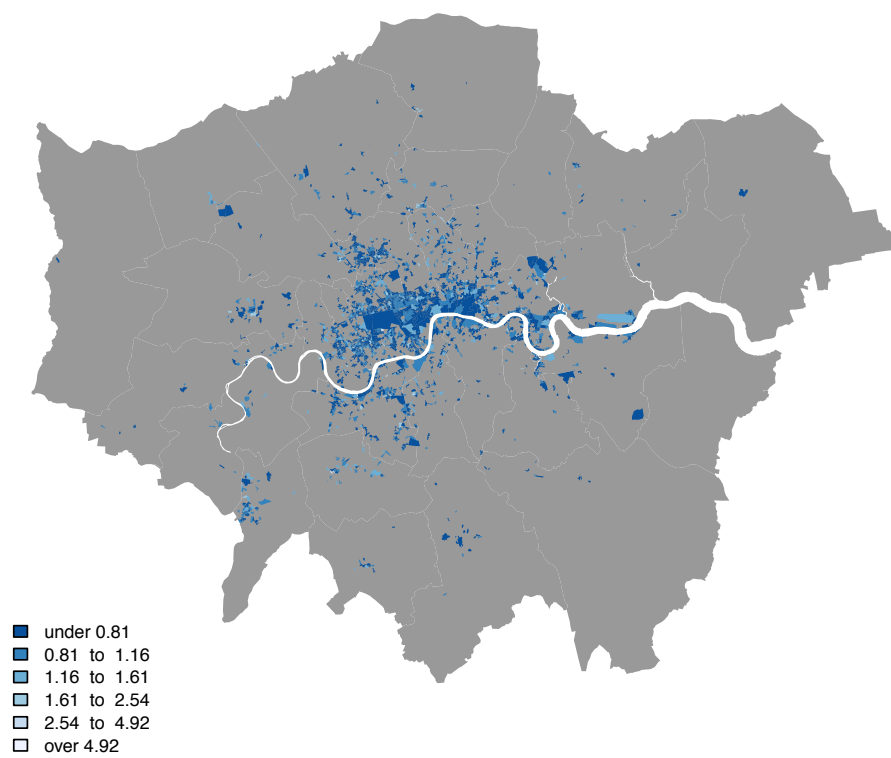
## B High Density and High Rise Flats



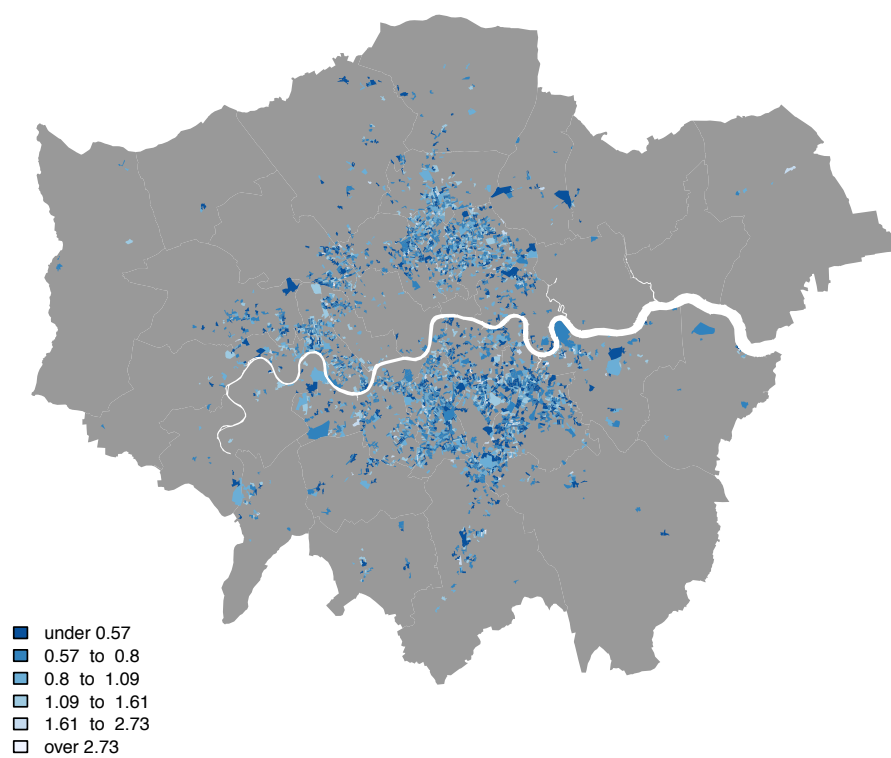
## C Settled Asians



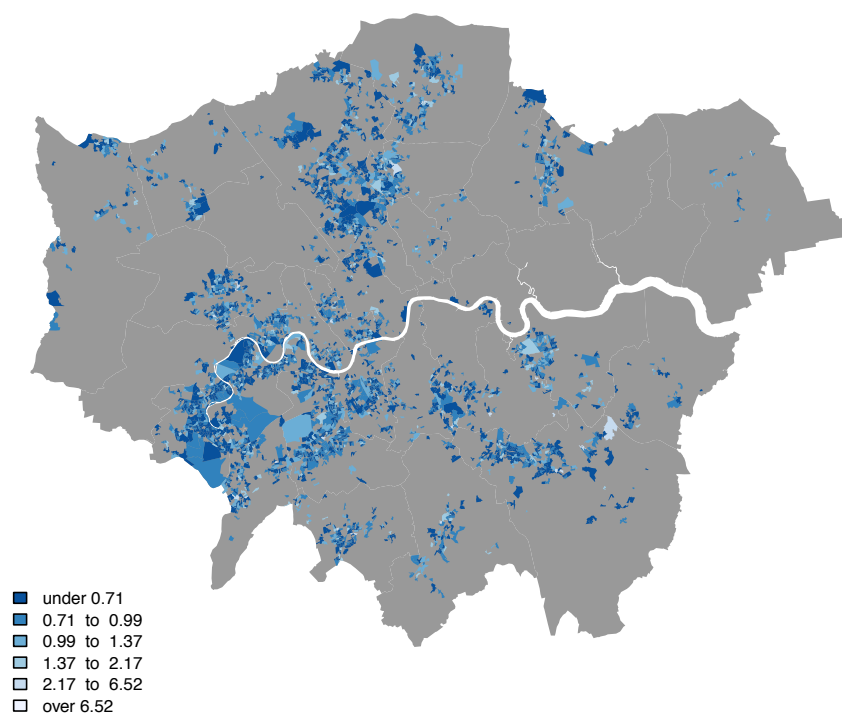
## D Urban Elites



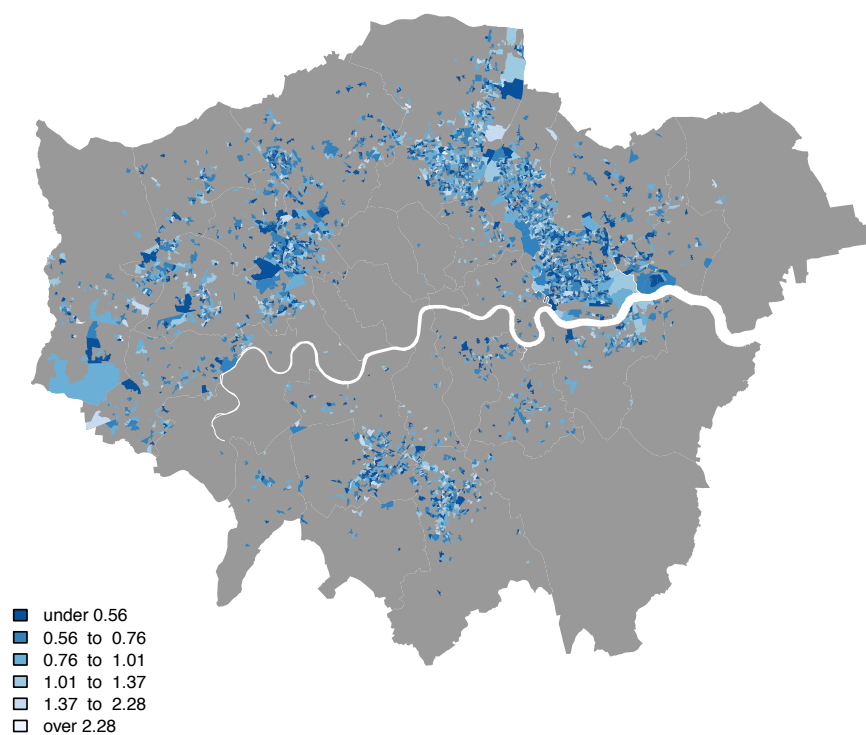
## E City Vibe



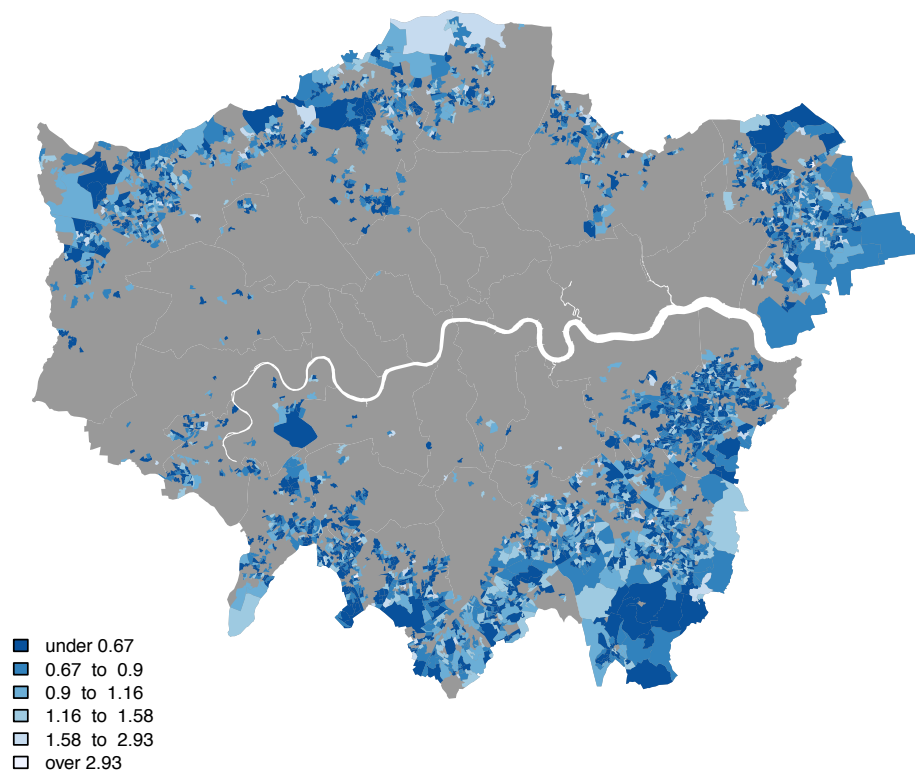
## F London Life-Cycle



## G Multi-Ethnic Suburbs



# H Ageing City Fringe



## Appendix 3: Variable Specification

Variable	Denominator	Domain	Variable Description	Numerators
k001	KS102EW0001	Demographic	Age 0 to 4	KS102EW0002
k002	KS102EW0001	Demographic	Age 5 to 14	KS102EW0003, KS102EW0004, KS102EW0005
k003	KS102EW0001	Demographic	Age 25 to 44	KS102EW0010, KS102EW0011
k004	KS102EW0001	Demographic	Age 45 to 64	KS102EW0012, KS102EW0013
k005	KS102EW0001	Demographic	Age 65 to 89	KS102EW0014, KS102EW0015, KS102EW0016
k006	KS102EW0001	Demographic	Age 90 and over	KS102EW0017
k007		Demographic	Density (number of persons per hectare)	KS101EW0008
k008	KS101EW0001	Demographic	Lives in a communal establishment	KS101EW0005
k009	KS103EW0001	Demographic	Single	KS103EW0002
k010	KS103EW0001	Demographic	Married or in a registered same-sex civil partnership	KS103EW0003, KS103EW0004
k011	KS103EW0001	Demographic	Divorced or Separated	KS103EW0005, KS103EW0006
k012	KS201EW0001	Demographic	White	KS201EW0002, KS201EW0003, KS201EW0004, KS201EW0005
k013	KS201EW0001	Demographic	Mixed/multiple ethnic group	KS201EW0006, KS201EW0007, KS201EW0008, KS201EW0009
k014	KS201EW0001	Demographic	Asian/Asian British: Indian	KS201EW0010
k015	KS201EW0001	Demographic	Asian/Asian British: Pakistani	KS201EW0011
k016	KS201EW0001	Demographic	Asian/Asian British: Bangladeshi	KS201EW0012
k017	KS201EW0001	Demographic	Asian/Asian British: Chinese and Other	KS201EW0013, KS201EW0014
k018	KS201EW0001	Demographic	Black/African/Caribbean/Black British	KS201EW0015, KS201EW0016, KS201EW0017

<b>k019</b>	KS201EW0001	Demographic	Arab or other ethnic groups	KS201EW0018,KS201EW0019
<b>k020</b>	KS204EW0001	Demographic	United Kingdom and Ireland	KS204EW0002, KS204EW0003, KS204EW0004, KS204EW0005, KS204EW0006, KS204EW0007
<b>k021</b>	KS204EW0001	Demographic	Other EU: Member countries in March 2001	KS204EW0008
<b>k022</b>	KS204EW0001	Demographic	Other EU: Accession countries April 2001 to March 2011	KS204EW0009
<b>k023</b>	QS205EW0001	Demographic	Main language is not English and cannot speak English well or at all	QS205EW0005, QS205EW0006
<b>k024</b>	KS105EW0001	Household Composition	No children household	KS105EW0005, KS105EW0008
<b>k025</b>	KS105EW0001	Household Composition	Non-dependent children household	KS105EW0007, KS105EW0010, KS105EW0012
<b>k026</b>	KS105EW0001	Household Composition	Full-time student household	KS105EW0014
<b>k027</b>	KS401EW0005	Housing	Whole house or bungalow: Detached	KS401EW0008
<b>k028</b>	KS401EW0005	Housing	Whole house or bungalow: Semi-detached	KS401EW0009
<b>k029</b>	KS401EW0005	Housing	Whole house or bungalow: Terrace and end-terrace	KS401EW0010
<b>k030</b>	KS401EW0005	Housing	Flats	KS401EW0011, KS401EW0012, KS401EW0013
<b>k031</b>	KS402EW0001	Housing	Owned or Shared Ownership	KS402EW0002, KS402EW0003, KS402EW0004
<b>k032</b>	KS402EW0001	Housing	Social rented	KS402EW0005, KS402EW0006
<b>k033</b>	KS402EW0001	Housing	Private rented	KS402EW0007, KS402EW0008
<b>k034</b>	QS408EW0001	Housing	Occupancy room rating -1 or less	QS408EW0005, QS408EW0006
<b>k035</b>		Socio-Economic	Day-to-day activities limited a lot or a little Standardised Illness Ratio	KS301EW0002, KS301EW0003, KS301EW0005, KS301EW0006
<b>k036</b>	KS301EW0001	Socio-Economic	Provides unpaid care	KS301EW0014, KS301EW0015, KS301EW0016
<b>k037</b>	KS501EW0001	Socio-Economic	Highest level of qualification: Level 1, Level 2 or Apprenticeship	KS501EW0003, KS501EW0004, KS501EW0005
<b>k038</b>	KS501EW0001	Socio-Economic	Highest level of qualification: Level 3	KS501EW0006

			qualifications	
<b>k039</b>	KS501EW0001	Socio-Economic	Highest level of qualification: Level 4 qualifications and above	KS501EW0007
<b>k040</b>	KS501EW0001	Socio-Economic	Schoolchildren and full-time students: Age 16 and over	KS501EW0009, KS501EW0010
<b>k041</b>	KS404EW0001	Socio-Economic	2 or more cars or vans in household	KS404EW0004, KS404EW0005, KS404EW0006
<b>k042</b>	QS701EW0001	Socio-Economic	Public Transport	QS701EW0003, QS701EW0004, QS701EW0005, QS701EW0006
<b>k043</b>	QS701EW0001	Socio-Economic	Private Transport	QS701EW0007, QS701EW0008, QS701EW0009
<b>k044</b>	QS701EW0001	Socio-Economic	On foot, Bicycle or Other	QS701EW0010, QS701EW0011, QS701EW0012
<b>k045</b>	KS601EW0001	Employment	Unemployed	KS601EW0005
<b>k046</b>	KS604EW0001	Employment	Part-time	KS604EW0002, KS604EW0003
<b>k047</b>	KS604EW0001	Employment	Full-time	KS604EW0004, KS604EW0005
<b>k048</b>	KS605EW0001	Employment	Agriculture, forestry and fishing	KS605EW0002
<b>k049</b>	KS605EW0001	Employment	Mining, quarrying and construction	KS605EW0003, KS605EW0007
<b>k050</b>	KS605EW0001	Employment	Manufacturing	KS605EW0004
<b>k051</b>	KS605EW0001	Employment	Energy, water and air conditioning supply	KS605EW0005, KS605EW0006
<b>k052</b>	KS605EW0001	Employment	Wholesale and retail trade; repair of motor vehicles and motor cycles	KS605EW0008
<b>k053</b>	KS605EW0001	Employment	Transport and storage	KS605EW0009
<b>k054</b>	KS605EW0001	Employment	Accommodation and food service activities	KS605EW0010
<b>k055</b>	KS605EW0001	Employment	Information and communication and professional, scientific and technical activities	KS605EW0011, KS605EW0014
<b>k056</b>	KS605EW0001	Employment	Financial, insurance and real estate activities	KS605EW0012, KS605EW0013
<b>k057</b>	KS605EW0001	Employment	Administrative and support service activities	KS605EW0015

<b>k058</b>	KS605EW0001	Employment	Public administration and defence; compulsory social security	KS605EW0016
<b>k059</b>	KS605EW0001	Employment	Education	KS605EW0017
<b>k060</b>	KS605EW0001	Employment	Human health and social work activities	KS605EW0018

Appendix 4: Grand Index (Super Groups)

A	B	C	D	E	F	G	H	SubDomain	Domain	VariableDescription
107	117	98	71	93	104	120	74	Population Age	Demographic	Age 0 to 4
120	121	110	39	75	88	115	106	Population Age	Demographic	Age 5 to 14
82	99	90	152	124	104	102	64	Population Age	Demographic	Age 25 to 44
109	86	105	70	90	109	88	137	Population Age	Demographic	Age 45 to 64
115	79	104	61	79	116	74	169	Population Age	Demographic	Age 65 to 89
127	73	85	65	77	156	65	157	Population Age	Demographic	Age 90 and over
45	92	63	329	130	106	68	62	Population Structure	Demographic	Lives in a communal establishment
88	117	80	139	129	90	104	63	Marital and Civil Partnership Status	Demographic	Single
102	72	127	70	72	114	93	144	Marital and Civil Partnership Status	Demographic	Married or in a registered same-sex civil partnership
125	137	76	78	101	89	118	72	Marital and Civil Partnership Status	Demographic	Divorced or Separated
118	72	59	116	110	135	73	138	Ethnicity	Demographic	White
95	132	75	100	130	86	121	54	Ethnicity	Demographic	Mixed/multiple ethnic group
41	30	348	72	34	55	98	82	Ethnicity	Demographic	Asian/Asian British: Indian
45	39	310	41	32	34	183	39	Ethnicity	Demographic	Asian/Asian British: Pakistani
34	353	111	47	58	13	141	15	Ethnicity	Demographic	Asian/Asian British: Bangladeshi
63	88	185	135	70	69	125	59	Ethnicity	Demographic	Asian/Asian British: Chinese and Other
107	199	77	38	115	26	170	23	Ethnicity	Demographic	Black/African/Caribbean/Black British
51	158	121	145	91	67	132	38	Ethnicity	Demographic	Arab or other ethnic groups
122	89	81	80	102	111	84	131	Region of Birth	Demographic	United Kingdom and Ireland
41	114	60	267	144	125	78	40	Region of Birth	Demographic	Other EU: Member countries in March 2001
69	75	136	93	91	76	187	38	Region of Birth	Demographic	Other EU: Accession countries April 2001 to March 2011
52	162	174	57	73	37	176	23	Proficiency in English	Demographic	Main language is not English and cannot speak English well or at all
85	58	72	155	117	137	71	117	Household Type	Household Composition	No children household
130	88	153	30	69	76	102	154	Household Type	Household Composition	Non-dependent children household
22	153	93	255	120	52	111	11	Household Type	Household Composition	Full-time student household
73	14	124	12	35	117	77	385	Housing Type	Housing	Whole house or bungalow: Detached
147	9	197	8	36	96	70	269	Housing Type	Housing	Whole house or bungalow: Semi-detached
178	17	150	23	93	119	128	78	Housing Type	Housing	Whole house or bungalow: Terrace and end-terrace
52	179	41	177	134	91	101	15	Housing Type	Housing	Flats
112	33	134	74	78	131	74	180	Housing Ownership	Housing	Owned or Shared Ownership
127	267	34	45	118	27	134	11	Housing Ownership	Housing	Social rented
52	72	97	201	125	109	119	30	Housing Ownership	Housing	Private rented
64	163	89	153	116	53	138	16	Housing Crowding	Housing	Occupancy room rating -1 or less
114	94	114	58	86	94	93	133	Population Health and Care	Socio-Economic	Provides unpaid care
138	103	105	47	76	75	106	136	Population Education	Socio-Economic	Highest level of qualification: Level 1, Level 2 or Apprenticeship
100	100	100	99	98	95	97	112	Population Education	Socio-Economic	Highest level of qualification: Level 3 qualifications
60	76	83	164	128	145	77	87	Population Education	Socio-Economic	Highest level of qualification: Level 4 qualifications and above
81	129	119	124	92	64	124	66	Population Education	Socio-Economic	Schoolchildren and full-time students: Age 16 and over
125	22	163	36	45	121	64	250	Vehicle Availability	Socio-Economic	2 or more cars or vans in household
75	99	85	133	126	110	103	70	Travel-to-Work	Socio-Economic	Public Transport
149	47	132	43	58	103	87	177	Travel-to-Work	Socio-Economic	Private Transport
68	121	64	185	145	111	74	57	Travel-to-Work	Socio-Economic	On foot, Bicycle or Other
115	161	95	64	100	57	134	54	Population Employment	Employment	Unemployed
109	123	114	57	83	82	119	111	Employment Hours	Employment	Part-time
97	92	95	115	106	106	93	96	Employment Hours	Employment	Full-time
113	91	88	91	80	100	92	149	Industry Sector	Employment	Agriculture, forestry and fishing
144	73	123	47	67	75	125	139	Industry Sector	Employment	Mining, quarrying and construction
130	70	140	69	70	88	99	129	Industry Sector	Employment	Manufacturing
181	87	91	64	70	76	109	127	Industry Sector	Employment	Energy, water and air conditioning supply
117	105	137	66	79	74	117	103	Industry Sector	Employment	Wholesale and retail trade; repair of motor vehicles and motor cycles
145	112	160	41	62	56	126	96	Industry Sector	Employment	Transport and storage
79	168	110	88	103	57	150	47	Industry Sector	Employment	Accommodation and food service activities
56	80	68	163	138	144	63	86	Industry Sector	Employment	Information and communication and professional, scientific and technical activities
70	71	69	200	96	136	58	115	Industry Sector	Employment	Financial, insurance and real estate activities
104	132	107	75	94	79	134	74	Industry Sector	Employment	Administrative and support service activities
125	91	96	72	96	96	92	130	Industry Sector	Employment	Public administration and defence; compulsory social security
104	99	90	72	107	110	96	118	Industry Sector	Employment	Education
120	115	95	73	95	90	112	99	Industry Sector	Employment	Human health and social work activities

Appendix 4: Grand Index (Groups)

A1	A2	B1	B2	B3	C1	C2	C3	C4	D1	D2	E1	E2	F1	F2	G1	G2	H1	H2	SubDomain	Domain	VariableDescription
114	98	134	114	96	95	102	114	84	68	75	102	81	113	96	120	121	71	76	Population Age	Demographic	Age 0 to 4
126	110	135	130	97	112	107	121	99	37	40	82	68	88	88	97	132	108	104	Population Age	Demographic	Age 5 to 14
83	80	93	99	108	85	96	96	85	152	151	118	131	110	98	115	90	60	68	Population Age	Demographic	Age 25 to 44
106	114	91	72	89	113	100	88	113	59	83	90	89	108	110	82	93	140	135	Population Age	Demographic	Age 45 to 64
102	136	75	72	87	113	94	76	129	41	81	79	78	104	127	66	83	177	163	Population Age	Demographic	Age 65 to 89
103	166	67	56	90	69	55	123	36	96	88	65	113	193	57	71	184	135	Population Age	Demographic	Age 90 and over	
40	52	34	112	156	26	45	68	135	575	69	168	84	50	156	81	55	98	32	Population Structure	Demographic	Lives in a communal establishment
91	84	110	115	126	80	79	86	77	150	127	123	135	92	88	106	101	58	66	Marital and Civil Partnership Status	Demographic	Single
101	104	73	84	64	126	128	125	132	61	81	75	67	115	112	96	90	152	136	Marital and Civil Partnership Status	Demographic	Married or in a registered same-sex civil partnership
125	126	159	101	131	82	78	69	67	74	82	107	93	83	94	103	133	59	84	Marital and Civil Partnership Status	Demographic	Divorced or Separated
105	137	66	61	88	79	44	32	71	103	129	102	120	143	128	74	71	128	146	Ethnicity	Demographic	White
111	70	147	89	141	90	65	61	76	109	90	139	120	83	88	111	131	60	49	Ethnicity	Demographic	Mixed/multiple ethnic group
46	33	28	29	31	211	477	374	358	90	54	42	25	30	77	123	74	133	39	Ethnicity	Demographic	Asian/Asian British: Indian
57	25	43	39	35	209	291	681	177	53	28	41	22	25	43	250	119	59	23	Ethnicity	Demographic	Asian/Asian British: Pakistani
45	17	77	1308	105	90	31	372	32	75	17	37	82	9	16	153	129	17	14	Ethnicity	Demographic	Asian/Asian British: Bangladeshi
74	44	86	74	101	164	226	163	181	168	101	79	59	50	86	138	112	79	42	Ethnicity	Demographic	Asian/Asian British: Chinese and Other
140	55	281	92	161	90	79	78	54	54	23	140	85	19	32	133	205	21	24	Ethnicity	Demographic	Black/African/Caribbean/Black British
65	28	155	107	196	102	138	95	149	168	120	97	84	48	84	128	136	54	24	Ethnicity	Demographic	Arab or other ethnic groups
115	133	89	89	89	94	69	73	84	75	85	100	105	112	111	77	91	124	138	Region of Birth	Demographic	United Kingdom and Ireland
48	31	89	100	157	67	55	44	69	252	282	124	169	157	96	91	66	52	30	Region of Birth	Demographic	Other EU: Member countries in March 2001
84	44	76	56	86	144	141	96	148	113	70	120	56	50	98	244	132	47	30	Region of Birth	Demographic	Other EU: Accession countries April 2001 to March 2011
68	26	150	242	125	125	229	219	138	75	37	87	58	23	48	189	165	30	17	Proficiency in English	Demographic	Main language is not English and cannot speak English well or at all
78	95	45	59	74	84	61	54	82	145	164	107	129	150	127	85	56	116	118	Household Type	Household Composition	No children household
132	128	95	90	78	157	156	132	159	28	32	74	63	66	84	84	119	155	153	Household Type	Household Composition	Non-dependent children household
28	13	55	302	193	59	84	200	77	389	125	107	136	43	60	173	51	14	9	Household Type	Household Composition	Full-time student household
70	78	16	17	11	88	102	129	200	11	13	45	24	59	168	75	80	660	167	Housing Type	Housing	Whole house or bungalow: Detached
130	171	11	9	5	173	193	88	317	6	10	46	25	74	116	63	78	248	286	Housing Type	Housing	Whole house or bungalow: Semi-detached
198	148	20	23	11	214	131	224	23	15	32	95	91	167	77	125	130	19	125	Housing Type	Housing	Whole house or bungalow: Terrace and end-terrace
50	56	177	176	183	25	53	46	45	182	172	128	140	85	96	105	97	16	14	Housing Type	Housing	Flats
105	122	27	36	39	148	116	116	145	60	87	81	76	130	131	82	66	181	179	Housing Ownership	Housing	Owned or Shared Ownership
136	115	301	251	233	26	55	35	19	62	28	114	123	28	26	77	189	9	13	Housing Ownership	Housing	Social rented
57	45	50	82	93	76	111	131	89	214	189	126	125	109	109	158	81	30	29	Housing Ownership	Housing	Private rented
74	49	155	174	167	61	121	124	66	194	113	115	117	47	58	145	131	15	16	Housing Ownership	Housing	Occupancy room rating -1 or less
112	118	91	105	91	114	112	111	120	53	63	86	85	86	101	86	101	136	130	Population Health and Care	Socio-Economic	Provides unpaid care
133	146	118	96	90	115	103	101	98	50	43	86	65	59	89	94	118	117	152	Population Education	Socio-Economic	Highest level of qualification: Level 1, Level 2 or Apprenticeship
99	103	96	107	102	105	101	99	105	120	92	86	103	96	97	108	115	108	115	Population Education	Socio-Economic	Highest level of qualification: Level 3 qualifications
62	56	63	74	93	83	74	83	96	151	177	114	144	167	127	90	63	108	69	Population Education	Socio-Economic	Highest level of qualification: Level 4 qualifications and above
91	65	119	154	126	99	119	164	110	177	68	97	86	55	72	128	120	73	61	Population Education	Socio-Economic	Schoolchildren and full-time students: Age 16 and over
113	142	25	22	19	170	148	115	203	25	47	50	40	106	134	61	66	284	223	Vehicle Availability	Socio-Economic	2 or more cars or vans in household
79	69	99	89	106	86	84	93	81	128	139	122	130	121	101	117	89	69	71	Travel-to-Work	Socio-Economic	Public Transport
136	169	57	38	39	144	134	90	146	36	49	68	47	81	122	81	92	168	185	Travel-to-Work	Socio-Economic	Private Transport
69	66	88	139	150	65	67	64	58	185	184	119	174	132	92	78	70	53	61	Travel-to-Work	Socio-Economic	On foot, Bicycle or Other
124	102	183	158	136	88	103	115	80	74	54	110	90	48	65	119	149	50	58	Population Employment	Employment	Unemployed
112	105	134	137	105	109	112	138	109	65	50	92	73	74	90	112	127	114	110	Employment Hours	Employment	Part-time
96	98	88	87	98	97	96	87	97	112	117	103	109	103	90	96	91	95	97	Employment Hours	Employment	Full-time
96	139	91	89	91	85	83	130	69	77	105	86	74	113	89	85	102	121	172	Industry Sector	Employment	Agriculture, forestry and fishing
135	157	88	53	67	130	124	104	125	49	44	80	53	57	92	132	117	116	158	Industry Sector	Employment	Mining, quarrying and construction
121	143	79	72	60	126	181	118	125	66	72	75	65	79	97	95	105	118	137	Industry Sector	Employment	Manufacturing
165	206	106	69	74	103	96	63	88	58	70	74	65	68	83	96	125	93	154	Industry Sector	Employment	Energy, water and air conditioning supply
117	117	114	109	94	125	145	154	132	72	60	85	72	63	85	112	124	102	104	Industry Sector	Employment	Wholesale and retail trade; repair of motor vehicles and motor cycles
150	139	136	107	89	142	220	142	125	47	34	74	50	41	69	110	145	77	111	Industry Sector	Employment	Transport and storage
87	68	157	214	156	87	142	132	89	116	61	120	84	49	66	163	135	47	47	Industry Sector	Employment	Accommodation and food service activities
55	58	55	86	103	71	56	61	85	153	173	116	163	168	122	73	53	102	73	Industry Sector	Employment	Information and communication and professional, scientific and technical activities
65	78	52	86	85	74	49	76	83	170	229	79	115	162	112	61	54	126	106	Industry Sector	Employment	Financial, insurance and real estate activities
110	96	163	100	116	95	131	111	92	79	70	104	84	75	83	134	133	71	77	Industry Sector	Employment	Administrative and support service activities
122	129	97	79	91	114	79	104	88	72	73	102	91	85	106	87	99	110	145	Industry Sector	Employment	Public administration and defence; compulsory social security
106	101	95	112	96	104	67	97	96	76	68	112	101	101	119	94	98	119	117	Industry Sector	Employment	Education
126	111	134	93	107	104	85	94	96	82	63	104	86	81	99	102	124	102	97	Industry Sector	Employment	Human health and social work activities