Appendix to Chapter 1

Appendix 1.1: London's industrial specialisations

An index of specialisation is a calculation which looks at the relative importance of a sector based on the number of jobs in one area as compared to another geographic area. For this analysis London is compared to the rest of Great Britain. Any score over 1 indicates that London is more specialised in terms of jobs than the rest of Great Britain; a score less than one indicate the opposite.

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
A,B,D,E: Primary and Utilities	28,700	0.6%	535,400	5.1%	**0.26**
C : Manufacturing	113,300	2.4%	2,241,200	4.8%	**0.25**
F : Construction	144,800	3.1%	1,102,100	11.6%	**0.64**
G : Wholesale and retail trade	594,700	12.6%	3,815,600	13.5%	**0.76**
H : Transportation and storage	227,300	4.8%	1,025,000	18.2%	**1.09**
I : Accommodation and food service activities	358,000	7.6%	1,614,600	18.1%	**1.09**
J : Information and communication	372,800	7.9%	769,700	32.6%	**2.38**
K : Financial and insurance activities	351,900	7.4%	681,400	34.1%	**2.53**
L : Real estate activities	107,600	2.3%	345,900	23.7%	**1.53**
M : Professional, scientific and technical activities	613,900	13.0%	1,638,900	27.3%	**1.84**
N : Administrative and support service activities	490,600	10.4%	1,942,300	20.2%	**1.24**
O : Public administration and defence	220,000	4.6%	1,064,600	17.1%	**1.01**
P : Education	385,700	8.1%	2,191,800	15.0%	**0.86**
Q : Human health and social work activities	483,700	10.2%	3,257,700	12.9%	**0.73**
R : Arts, entertainment and recreation	125,200	2.6%	558,100	18.3%	**1.10**
S : Other service activities	114,600	2.4%	433,700	20.9%	1.30

Detailed Index of Specialisation calculations

The following tables provide more detailed information on particular specialisms for London, broken down further to industry division, group and class (up to 4 digit SIC2007 level). Here sectors which have component sub-sectors with an index of specialisation score of above 1.4 and employment over 4,000 are included. Within the tables, the bold row are data for the 1 digit SIC section, the blue rows are for 2 digit SIC divisions, the orange rows are for 3 digit SIC groups, and the unshaded rows are for 4 digit SIC classes.

Manufacturing

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
C : Manufacturing	**113,300**	**2.4%**	**2,241,200**	**4.8%**	**0.25**
14 : Manufacture of wearing apparel	7,900	0.2%	24,600	24.3%	1.58

Construction

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
F : Construction	**144,800**	**3.1%**	**1,102,100**	**11.6%**	**0.64**
41.1 : Development of building projects	21,500	0.5%	52,900	28.9%	1.99

Wholesale and retail trade

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
G : Wholesale and retail trade	**594,700**	**12.6%**	**3,815,600**	**13.5%**	**0.76**
46.34 : Wholesale of beverages	9,300	0.2%	21,500	30.2%	2.12
46.42 : Wholesale of clothing and footwear	12,200	0.3%	30,900	28.3%	1.94
46.45 : Wholesale of perfume and cosmetics	11,000	0.2%	19,600	35.9%	2.75
47.29 : Other retail sale of food in specialised stores	7,100	0.2%	21,300	25.0%	1.64
47.4 : Retail sale of information and communication equipment in specialised stores	11,700	0.2%	38,700	23.2%	1.48
47.42 : Retail sale of telecommunications equipment in specialised stores	6,600	0.1%	20,900	24.0%	1.55

Transportation and storage

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
H : Transportation and storage	**227,300**	**4.8%**	**1,025,000**	**18.2%**	**1.09**
49.1 : Passenger rail transport, interurban	11,600	0.2%	35,200	24.8%	1.62
49.3 : Other passenger land transport	68,200	1.4%	160,500	29.8%	2.08
49.31 : Urban and suburban passenger land transport	55,200	1.2%	81,300	40.4%	3.33
50 : Water transport	4,100	0.1%	13,600	23.2%	1.48
51 : Air transport	37,200	0.8%	35,100	51.5%	5.20
51.1 : Passenger air transport	36,900	0.8%	32,800	52.9%	5.52
52.2 : Support activities for transportation	49,600	1.0%	169,500	22.6%	1.44
52.23 : Service activities incidental to air transportation	15,000	0.3%	33,200	31.1%	2.22
52.29 : Other transportation support activities	15,600	0.3%	48,500	24.3%	1.58

Accommodation and food

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
I : Accommodation and food service activities	**358,000**	**7.6%**	**1,614,600**	**18.1%**	**1.09**
56.2 : Event catering and other food service activities	64,800	1.4%	177,800	26.7%	1.79
56.21 : Event catering activities	33,100	0.7%	87,900	27.4%	1.85
56.29 : Other food service activities	31,800	0.7%	89,800	26.2%	1.74

Information and communication

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
J : Information and communication	**372,800**	**7.9%**	**769,700**	**32.6%**	**2.38**
58 : Publishing activities	53,900	1.1%	78,100	40.8%	3.39
58.1 : Publishing of books, periodicals and other publishing activities	49,700	1.1%	70,600	41.3%	3.45
58.11 : Book publishing	11,000	0.2%	13,400	45.1%	4.03
58.13 : Publishing of newspapers	13,300	0.3%	25,900	33.9%	2.52
58.14 : Publishing of journals and periodicals	19,800	0.4%	19,400	50.5%	5.01
58.19 : Other publishing activities	5,500	0.1%	11,300	32.7%	2.39
58.2 : Software publishing	4,100	0.1%	7,600	35.0%	2.65
59 : Motion picture, video and television programme production, sound recording and music publishing activities	58,400	1.2%	40,500	59.0%	7.07
59.1 : Motion picture, video and television programme activities	52,700	1.1%	38,100	58.0%	6.79
59.11 : Motion picture, video and television programme production activities	35,900	0.8%	20,300	63.9%	8.68
59.12 : Motion picture, video and television programme post-production activities	8,600	0.2%	2,700	76.1%	15.63
59.13 : Motion picture, video and television programme distribution activities	4,500	0.1%	900	83.3%	24.53
59.2 : Sound recording and music publishing activities	5,700	0.1%	2,400	70.4%	11.65
60 : Programming and broadcasting activities	29,400	0.6%	10,100	74.4%	14.28
60.1 : Radio broadcasting	7,300	0.2%	4,500	61.9%	7.96
60.2 : Television programming and broadcasting activities	22,100	0.5%	5,600	79.8%	19.36
61 : Telecommunications	46,000	1.0%	153,300	23.1%	1.47
61.2 : Wireless telecommunications activities	5,100	0.1%	11,100	31.5%	2.25
61.9 : Other telecommunications activities	37,500	0.8%	129,200	22.5%	1.42
62 : Computer programming, consultancy and related activities	160,700	3.4%	444,200	26.6%	1.77
62.0 : Computer programming, consultancy and related activities	160,700	3.4%	444,200	26.6%	1.77
62.01 : Computer programming activities	39,900	0.8%	107,800	27.0%	1.82
62.02 : Computer consultancy activities	88,500	1.9%	244,800	26.6%	1.77
62.09 : Other information technology and computer service activities	31,900	0.7%	90,200	26.1%	1.73
63 : Information service activities	24,600	0.5%	43,300	36.2%	2.79
63.1 : Data processing, hosting and related activities; web portals	14,000	0.3%	36,100	27.9%	1.90
63.11 : Data processing, hosting and related activities	9,600	0.2%	33,100	22.5%	1.42
63.12 : Web portals	4,400	0.1%	3,000	59.5%	7.20
63.9 : Other information service activities	10,600	0.2%	7,200	59.6%	7.22
63.91 : News agency activities	7,700	0.2%	1,800	81.1%	20.99

Financial and insurance activities

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
K : Financial and insurance activities	**351,900**	**7.4%**	**681,400**	**34.1%**	**2.53**
64 : Financial service activities, except insurance and pension funding	169,300	3.6%	339,800	33.3%	2.44
64.1 : Monetary intermediation	143,800	3.0%	260,600	35.6%	2.71
64.19 : Other monetary intermediation	140,300	3.0%	260,400	35.0%	2.64
64.3 : Trusts, funds and similar financial entities	6,900	0.1%	5,800	54.3%	5.84
64.99 : Other financial service activities, except insurance and pension funding, n.e.c.	13,200	0.3%	29,400	31.0%	2.20
66 : Activities auxiliary to financial services and insurance activities	164,100	3.5%	260,800	38.6%	3.09
66.1 : Activities auxiliary to financial services, except insurance and pension funding	75,300	1.6%	103,600	42.1%	3.57
66.12 : Security and commodity contracts brokerage	25,500	0.5%	13,700	65.1%	9.13
66.19 : Other activities auxiliary to financial services, except insurance and pension funding	46,000	1.0%	89,200	34.0%	2.53
66.2 : Activities auxiliary to insurance and pension funding	60,600	1.3%	145,700	29.4%	2.04
66.22 : Activities of insurance agents and brokers	32,500	0.7%	76,700	29.8%	2.08
66.29 : Other activities auxiliary to insurance and pension funding	24,700	0.5%	56,700	30.3%	2.14
66.3 : Fund management activities	28,200	0.6%	11,500	71.0%	12.03

Real estate activities

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
L : Real estate activities	**107,600**	**2.3%**	**345,900**	**23.7%**	**1.53**
68 : Real estate activities	107,600	2.3%	345,900	23.7%	1.53
68.3 : Real estate activities on a fee or contract basis	66,500	1.4%	167,500	28.4%	1.95
68.31 : Real estate agencies	38,300	0.8%	105,900	26.6%	1.77
68.32 : Management of real estate on a fee or contract basis	28,200	0.6%	61,600	31.4%	2.25

Professional, scientific and technical activities

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
M : Professional, scientific and technical activities	**613,900**	**13.0%**	**1,638,900**	**27.3%**	**1.84**
69 : Legal and accounting activities	173,400	3.7%	385,000	31.1%	2.21
69.1 : Legal activities	86,400	1.8%	179,100	32.5%	2.37
69.2 : Accounting, bookkeeping and auditing activities; tax consultancy	87,000	1.8%	205,900	29.7%	2.07
70 : Activities of head offices; management consultancy activities	221,700	4.7%	494,400	31.0%	2.20
70.1 : Activities of head offices	75,100	1.6%	184,200	29.0%	2.00
70.2 : Management consultancy activities	146,700	3.1%	310,200	32.1%	2.32
70.21 : Public relations and communication activities	11,500	0.2%	8,200	58.4%	6.88
70.22 : Business and other management consultancy activities	135,100	2.9%	302,100	30.9%	2.19
71.11 : Architectural activities	23,500	0.5%	47,000	33.3%	2.45
73 : Advertising and market research	69,700	1.5%	86,100	44.7%	3.97
73.1 : Advertising	49,900	1.1%	57,500	46.5%	4.26
73.11 : Advertising agencies	42,400	0.9%	50,300	45.7%	4.14
73.12 : Media representation	7,500	0.2%	7,200	51.0%	5.11
73.2 : Market research and public opinion polling	19,800	0.4%	28,600	40.9%	3.40
74 : Other professional, scientific and technical activities	48,700	1.0%	119,400	29.0%	2.00
74.1 : Specialised design activities	17,300	0.4%	30,500	36.2%	2.78
74.2 : Photographic activities	5,600	0.1%	11,800	32.2%	2.33
74.9 : Other professional, scientific and technical activities n.e.c.	24,600	0.5%	74,200	24.9%	1.63

Administrative and support service activities

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
N : Administrative and support service activities	**490,600**	**10.4%**	**1,942,300**	**20.2%**	**1.24**
78.1 : Activities of employment placement agencies	32,700	0.7%	101,300	24.4%	1.58
79 : Travel agency, tour operator and other reservation service and related activities	26,300	0.6%	66,700	28.3%	1.93
79.1 : Travel agency and tour operator activities	23,900	0.5%	59,900	28.5%	1.96
79.11 : Travel agency activities	15,300	0.3%	40,100	27.6%	1.87
79.12 : Tour operator activities	8,600	0.2%	19,800	30.3%	2.13
80 : Security and investigation activities	55,700	1.2%	135,600	29.1%	2.02
80.1 : Private security activities	54,000	1.1%	125,800	30.0%	2.11
81.2 : Cleaning activities	105,200	2.2%	351,400	23.0%	1.47
81.21 : General cleaning of buildings	93,100	2.0%	292,300	24.2%	1.56
82.1 : Office administrative and support activities	9,200	0.2%	24,000	27.7%	1.88
82.11 : Combined office administrative service activities	5,800	0.1%	14,400	28.7%	1.98
82.3 : Organisation of conventions and trade shows	7,700	0.2%	12,900	37.4%	2.93
82.9 : Business support service activities n.e.c.	64,800	1.4%	204,400	24.1%	1.56
82.99 : Other business support service activities n.e.c.	60,800	1.3%	168,000	26.6%	1.78

Education

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
P : Education	**385,700**	**8.1%**	**2,191,800**	**15.0%**	**0.86**
85.6 : Educational support activities	7,800	0.2%	12,100	39.2%	3.16

Arts, entertainment and recreation

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
R : Arts, entertainment and recreation	**125,200**	**2.6%**	**558,100**	**18.3%**	**1.10**
90 : Creative, arts and entertainment activities	35,000	0.7%	51,400	40.5%	3.34
90.0 : Creative, arts and entertainment activities	35,000	0.7%	51,400	40.5%	3.34
90.01 : Performing arts	16,400	0.3%	25,800	38.9%	3.12
90.03 : Artistic creation	10,800	0.2%	13,500	44.4%	3.92
90.04 : Operation of arts facilities	4,600	0.1%	8,600	34.8%	2.62
91.02 : Museum activities	8,500	0.2%	18,300	31.7%	2.28
93.13 : Fitness facilities	10,200	0.2%	30,700	24.9%	1.63

Other service activities

Sector	London – employee jobs	Share of total London employee jobs	Rest of GB employee jobs	London's share of total GB employee jobs	Index of Specialisation
S : Other service activities	**114,600**	**2.4%**	**433,700**	**20.9%**	**1.30**
94 : Activities of membership organisations	65,200	1.4%	168,500	27.9%	1.90
94.1 : Activities of business, employers and professional membership organisations	23,900	0.5%	19,900	54.6%	5.89
94.11 : Activities of business and employers membership organisations	7,800	0.2%	6,300	55.3%	6.07
94.12 : Activities of professional membership organisations	16,100	0.3%	13,500	54.4%	5.85
94.91 : Activities of religious organisations	16,300	0.3%	46,000	26.2%	1.74

Appendices to Chapter 2

Appendix 2.1: Development Areas

This section of the Appendix to Chapter 2 examines other geographies of interest in London, this time in terms of areas that have been highlighted for future development and uses Census data to illustrate the population and employment concentration that stood in these areas at the time of the 2011 Census. It should however be noted that **the scale used in each map is not necessarily consistent across the various maps** in order to better highlight variations in employment and population densities in each individual development area.

A1: Bexley Riverside

In 2011 it can be seen from Maps A1 and A2 that both employment and population where both relatively dispersed in the Bexley Riverside area.

Map A1: Employment density in 2011 in Bexley Riverside (workers per hectare)[1]
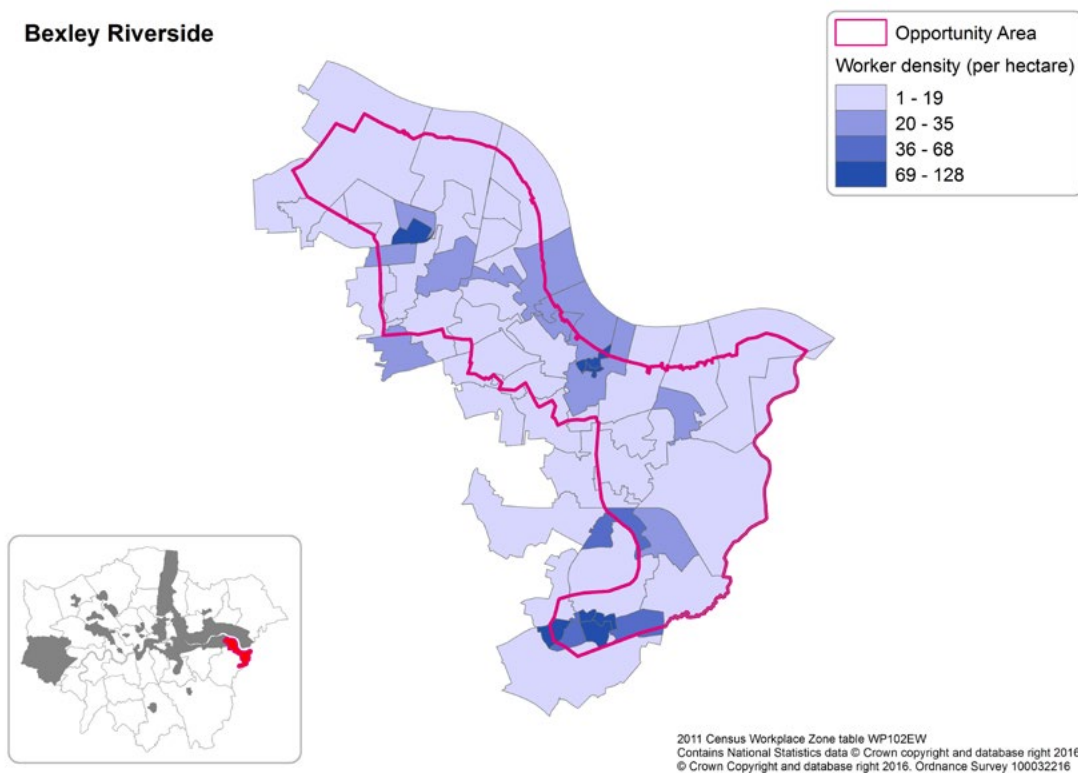
Source: Census and GLA Intelligence Unit analysis

Map A2: Population density in 2011 in Bexley Riverside (residents per hectare)
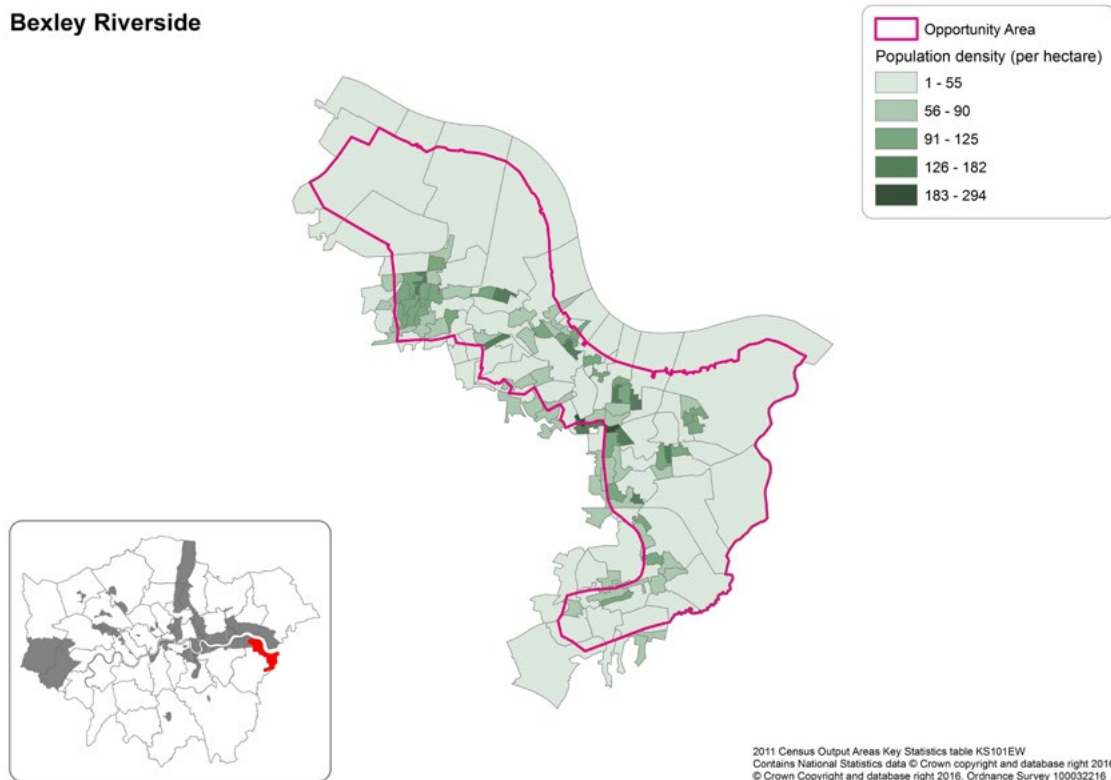
Source: Census and GLA Intelligence Unit analysis

A2: Bromley

In 2011 it can be seen from Map A3 that employment was quite concentrated in the Bromley area while Map A4 shows that population density was relatively low.

Map A3: Employment density in 2011 in Bromley (workers per hectare)
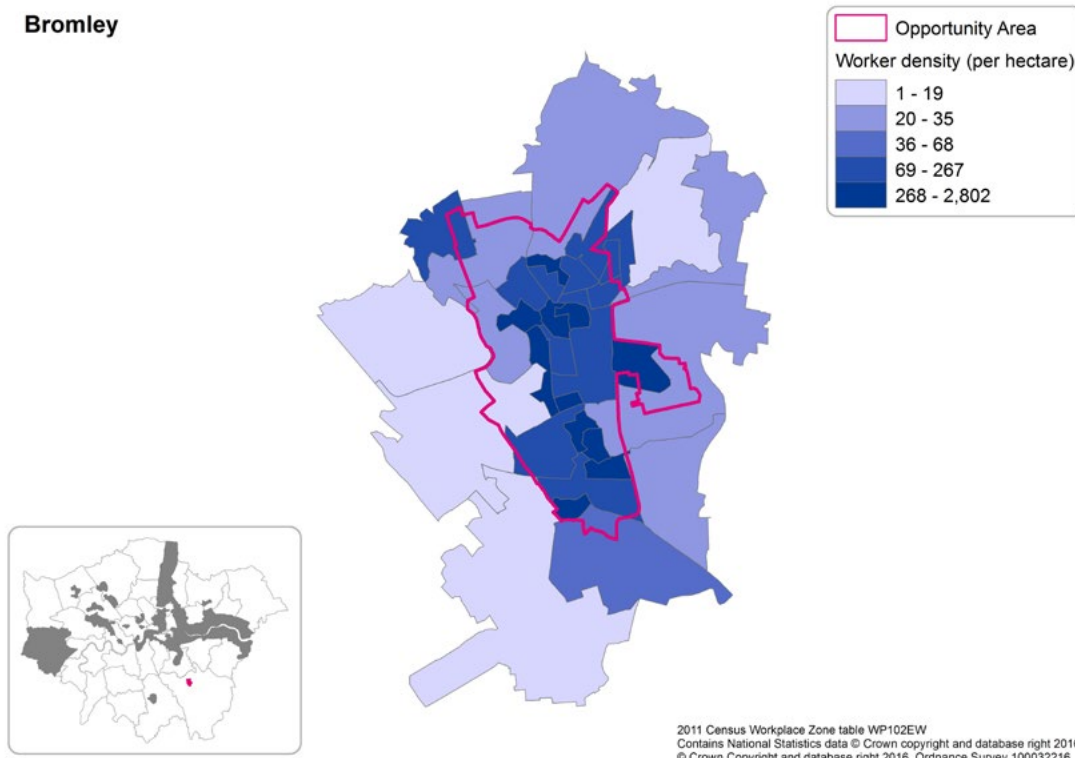
Source: Census and GLA Intelligence Unit analysis

Map A4: Population density in 2011 in Bromley (residents per hectare)
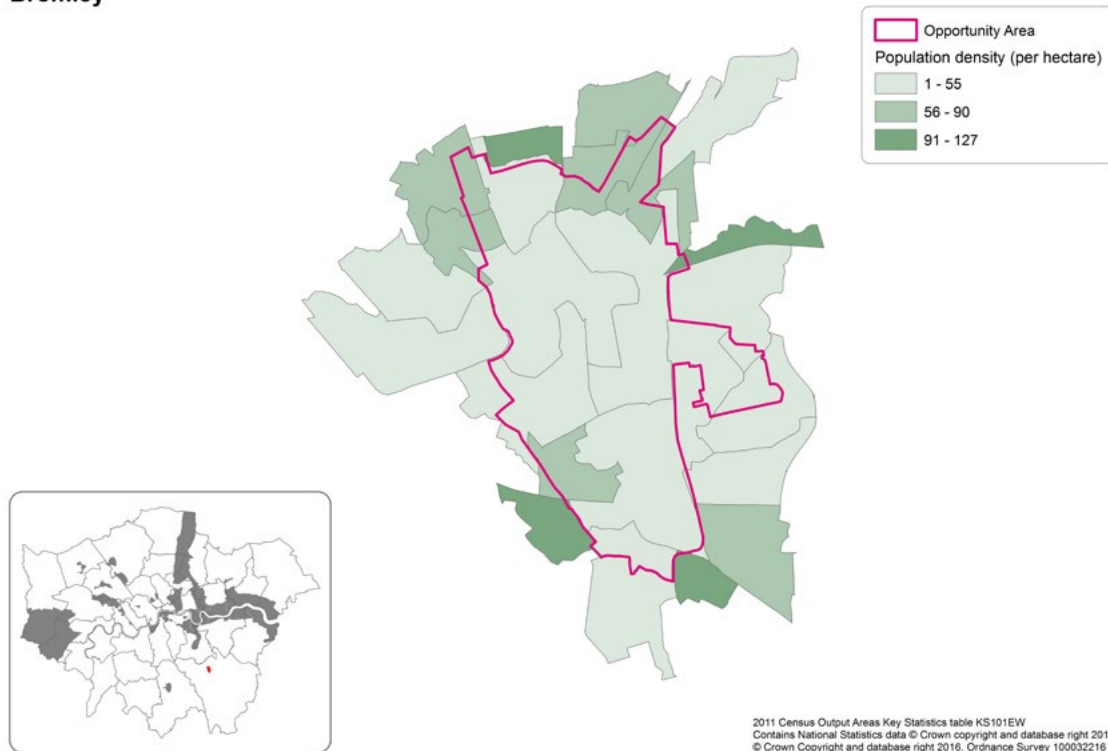
Source: Census and GLA Intelligence Unit analysis

A3: Canada Water

In 2011 it can be seen from Map A5 that employment was more concentrated in the middle of the Canada Water area while Map A6 shows that population was concentrated to the north of this geography.

Map A5: Employment density in 2011 in Canada Water (workers per hectare)
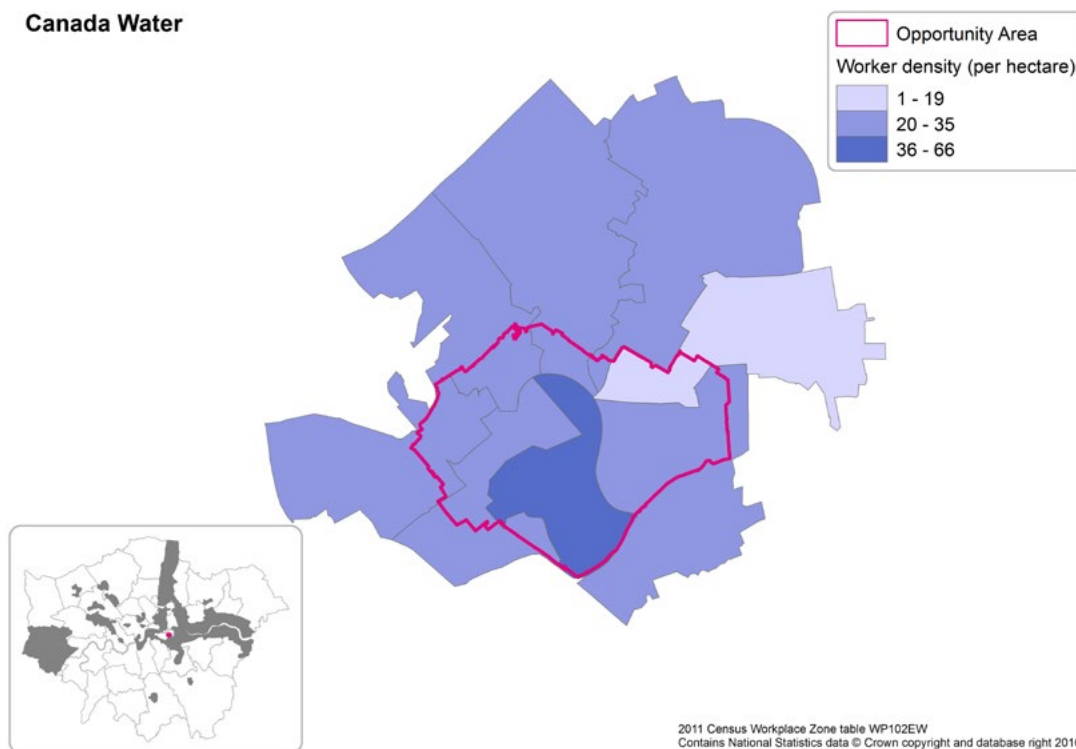
Source: Census and GLA Intelligence Unit analysis

Map A6: Population density in 2011 in Canada Water (residents per hectare)
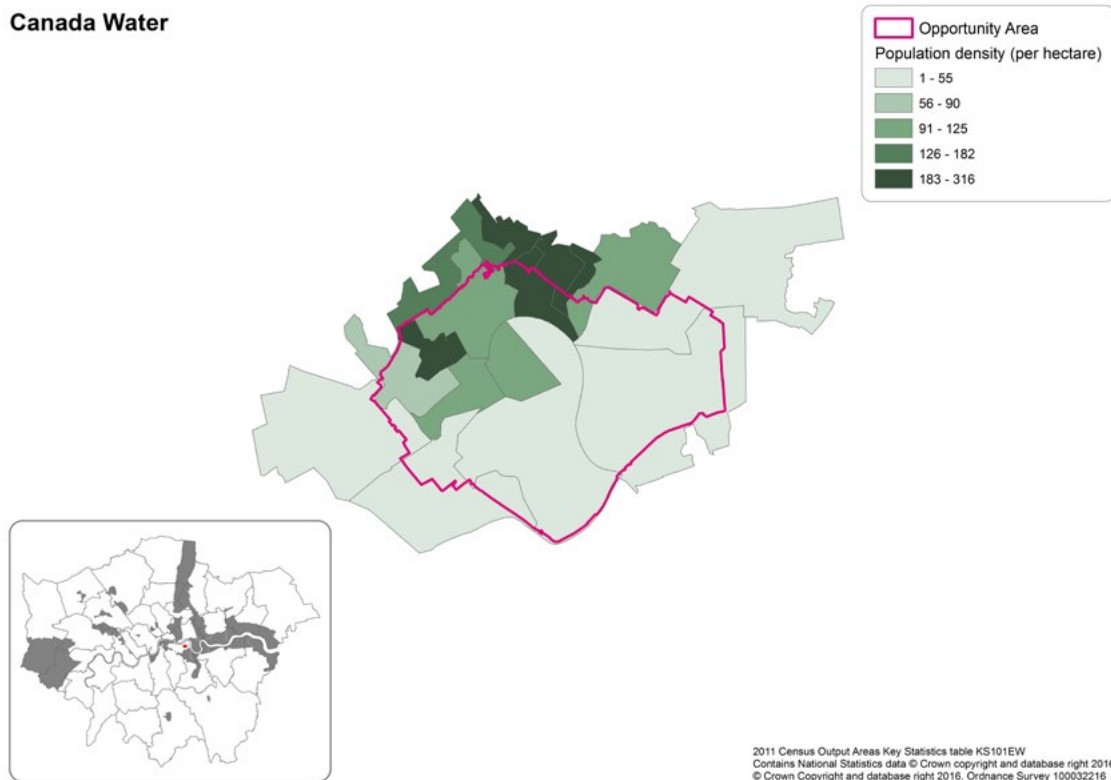
Source: Census and GLA Intelligence Unit analysis

A4: Charlton Riverside

Map A7 shows that in 2011 employment was relatively evenly distributed in the Charlton Riverside area while Map A8 shows that the population was relatively low apart from along its southern fringe.

Map A7: Employment density in 2011 in Charlton Riverside (workers per hectare)

Source: Census and GLA Intelligence Unit analysis

Map A8: Population density in 2011 in Charlton Riverside (residents per hectare)

Charlton Riverside

Opportunity Area

Population density (per hectare)

1 - 55
56 - 90
91 - 125
126 - 182
183 - 410

2011 Census Output Areas Key Statistics table KS101EW
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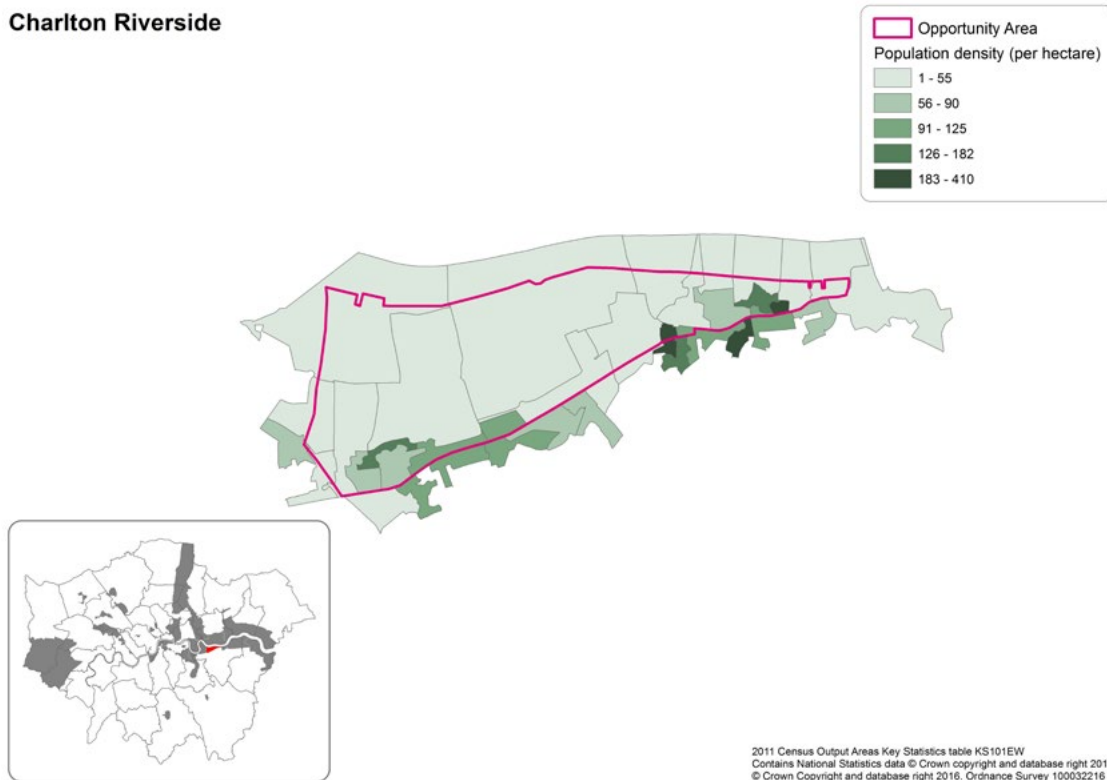
Source: Census and GLA Intelligence Unit analysis

A5: The City Fringe/Tech City

Map A9 shows that in 2011 employment was heavily distributed throughout the City Fringe/Tech City area, while Map A10 shows that this also generally holds for population too.

Map A9: Employment density in 2011 in the City Fringe/Tech City (workers per hectare)

City Fringe/ Tech City

Opportunity Area

Worker density (per hectare)

1 - 19
20 - 35
36 - 68
69 - 267
268 - 9,004

2011 Census Workplace Zone table WP102EW
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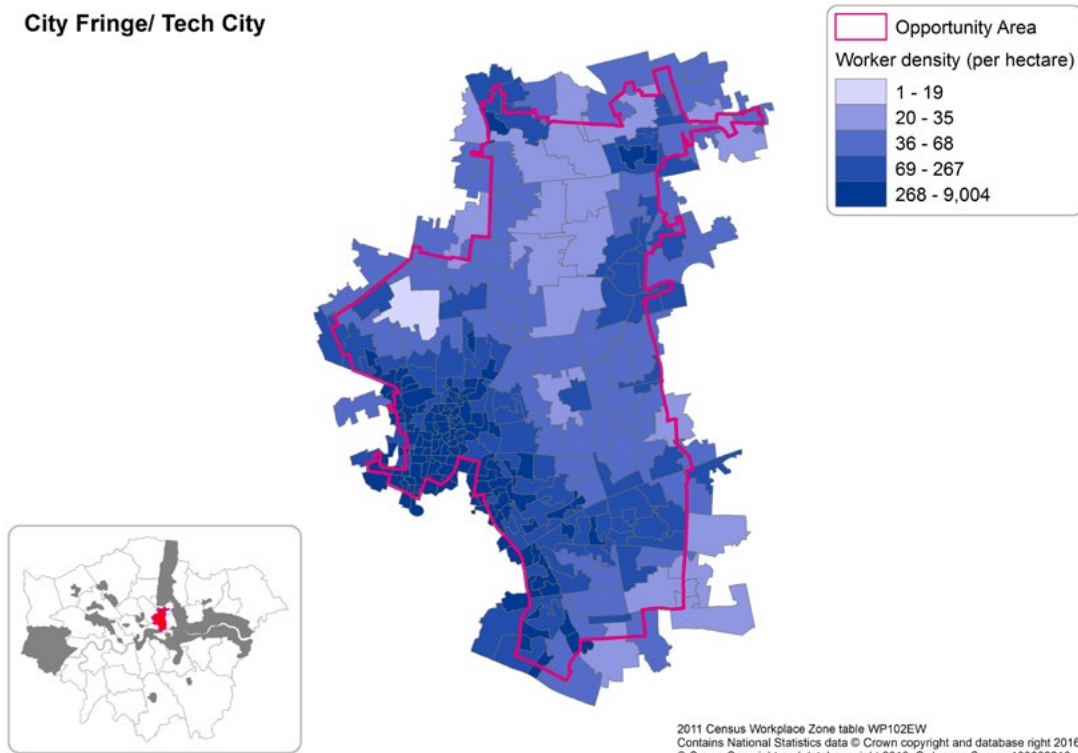
Source: Census and GLA Intelligence Unit analysis

Map A10: Population density in 2011 in the City Fringe/Tech City (residents per hectare)
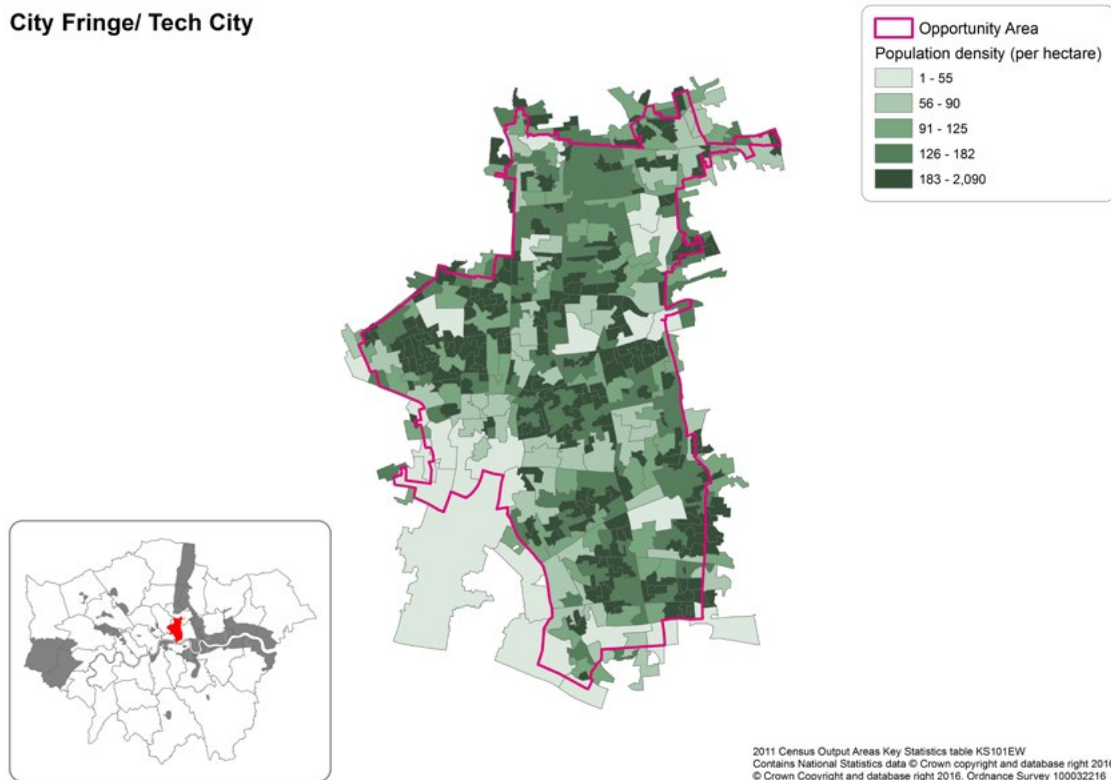
Source: Census and GLA Intelligence Unit analysis

A6: Colindale/Burnt Oak

Map A11 shows that in 2011 the Colindale/Burnt Oak area had employment that was more concentrated in the north and south ends of this geography, while Map A12 shows that population was more concentrated in the centre and north.

Map A11: Employment density in 2011 in Colindale/Burnt Oak (workers per hectare)
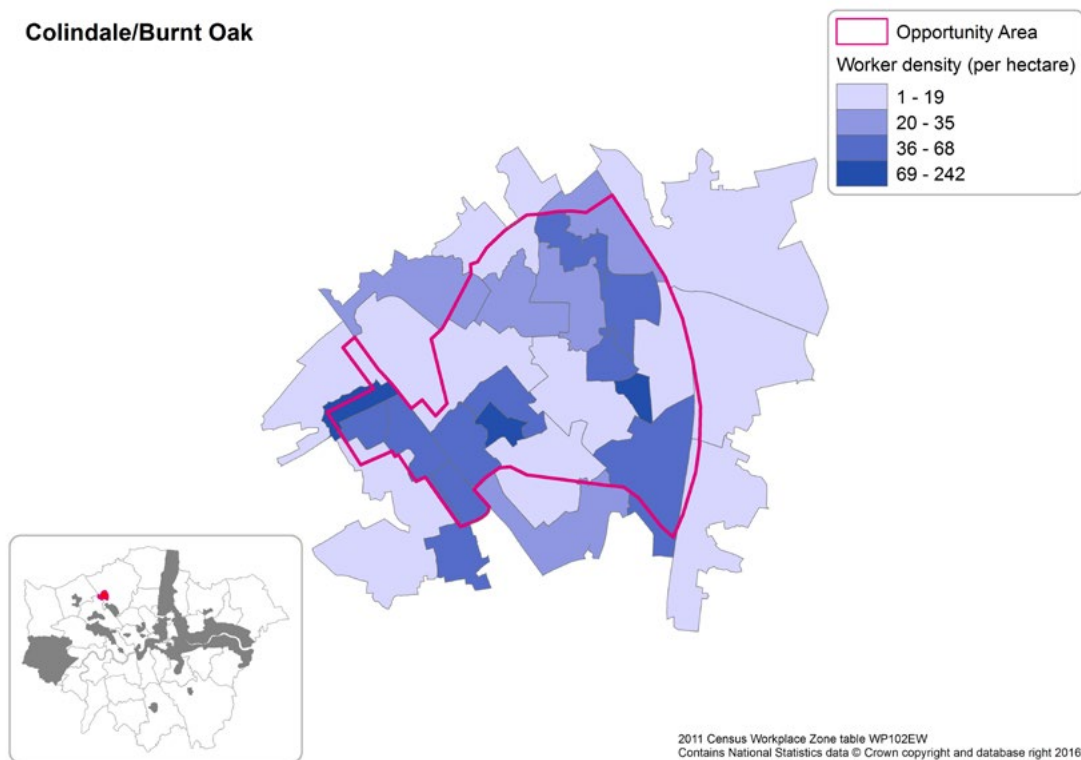
Source: Census and GLA Intelligence Unit analysis

Map A12: Population density in 2011 in Colindale/Burnt Oak (residents per hectare)
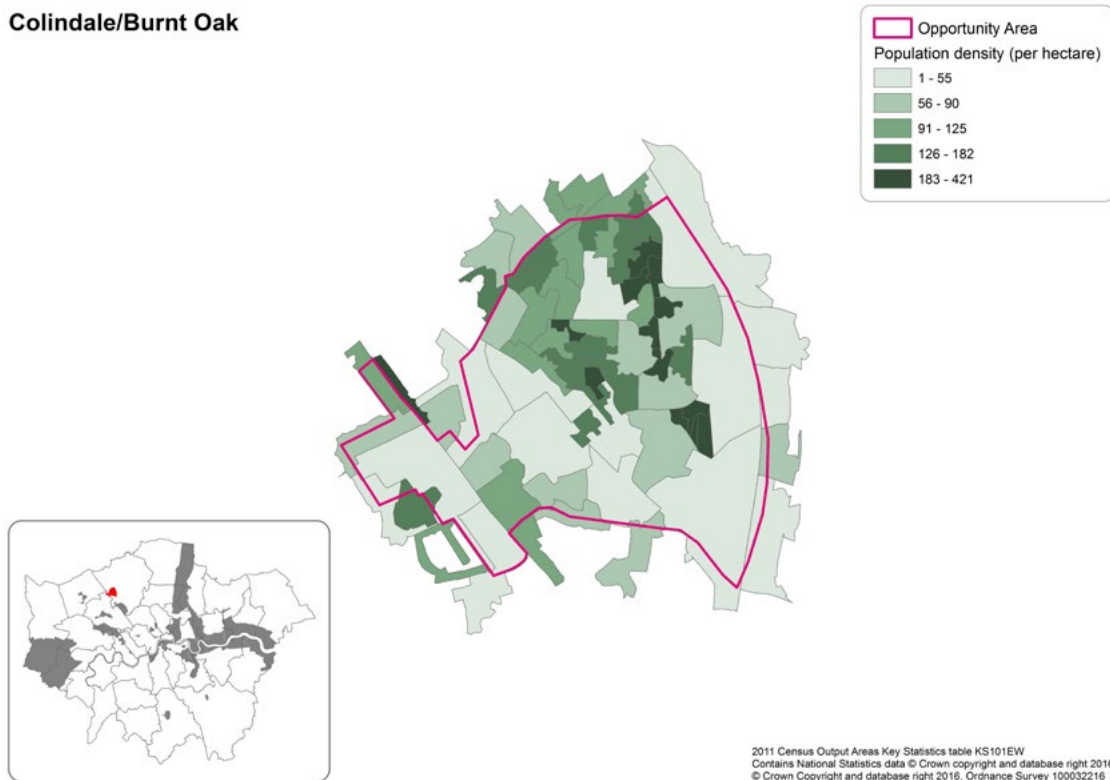
Source: Census and GLA Intelligence Unit analysis

A7: Cricklewood/Brent Cross

Map A13 shows that in 2011 the Cricklewood/Brent Cross area had employment that was more concentrated in the north and centre of this geography, while Map A14 shows that population was more concentrated in the northern and southern ends.

Map A13: Employment density in 2011 in Cricklewood/Brent Cross (workers per hectare)
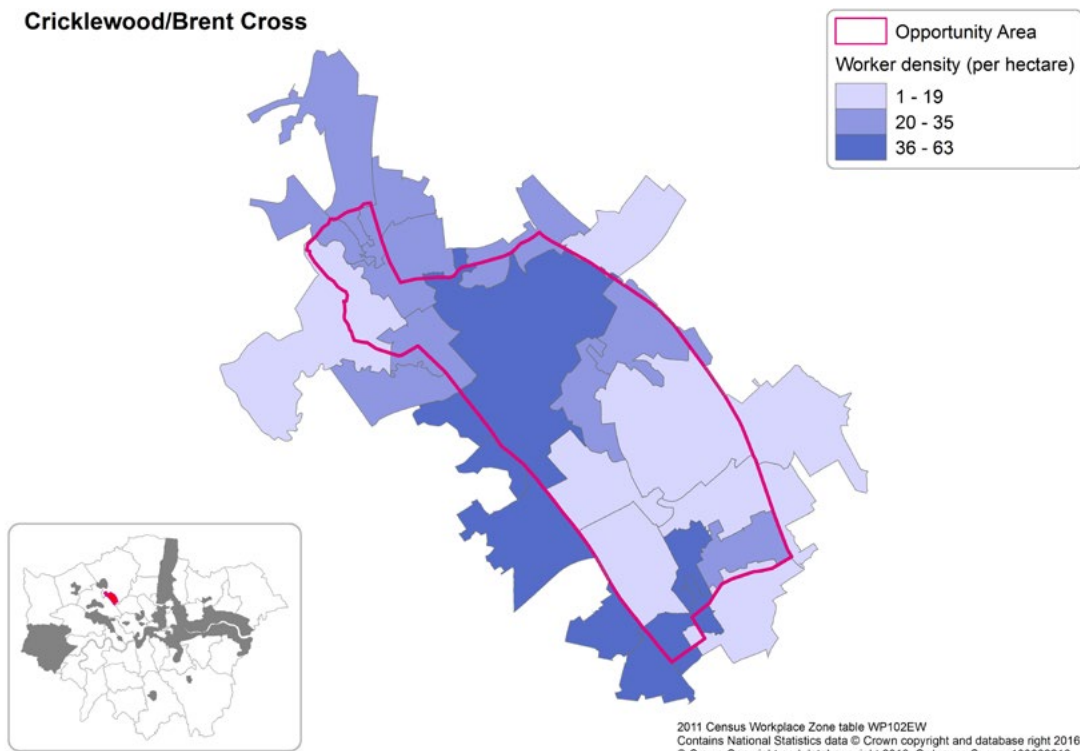
Source: Census and GLA Intelligence Unit analysis

Map A14: Population density in 2011 in Cricklewood/Brent Cross (residents per hectare)
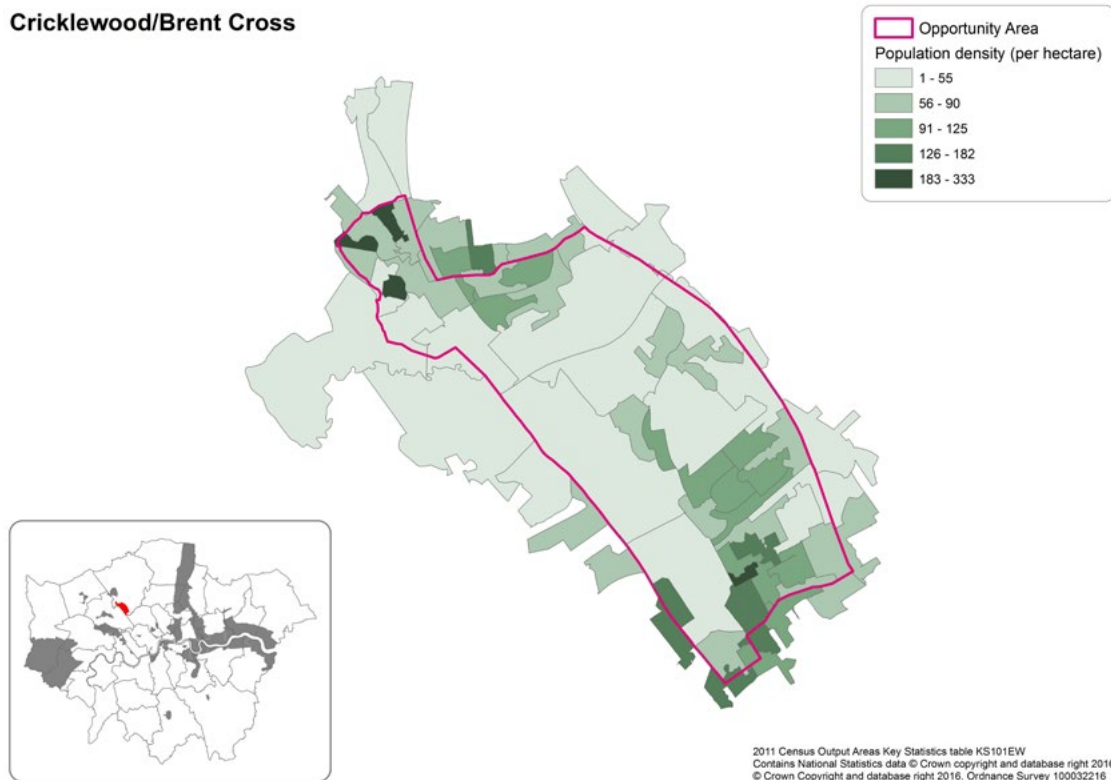
Source: Census and GLA Intelligence Unit analysis

A8: Croydon

Map A15 shows that employment in the Croydon area in 2011 had a stronger concentration north to south within the central section of the area, while Map A16 shows that population was more clustered around the edge of this geography.

Map A15: Employment density in 2011 in Croydon (workers per hectare)
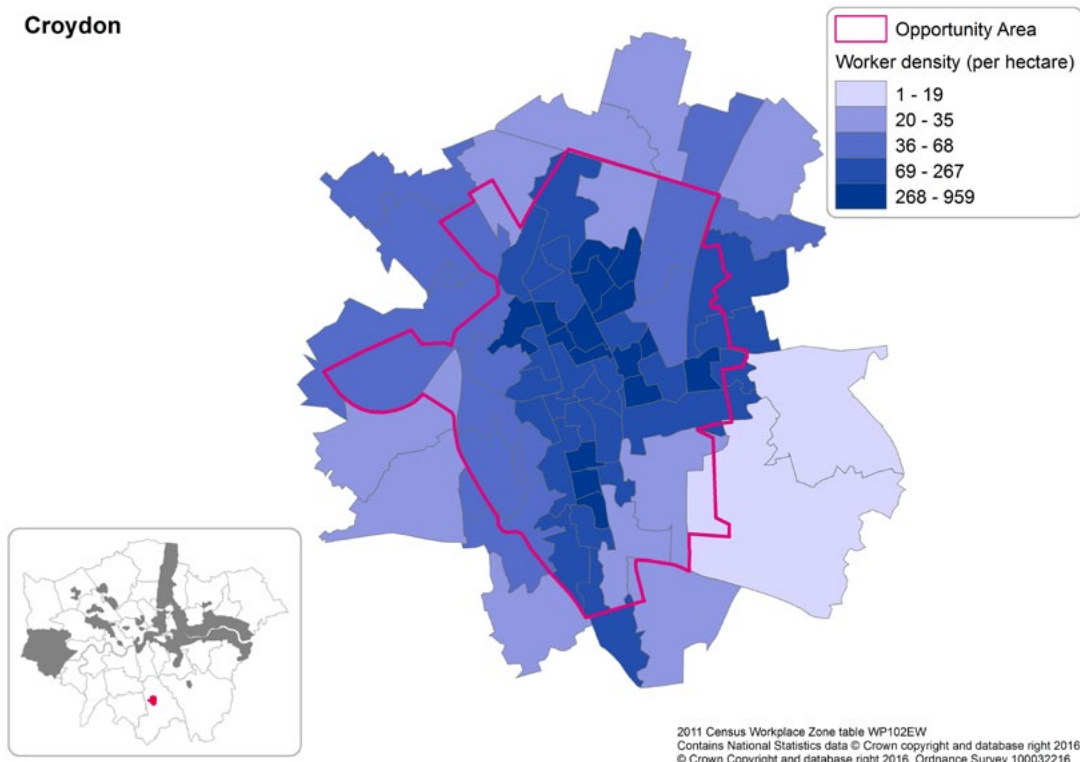
Source: Census and GLA Intelligence Unit analysis

Map A16: Population density in 2011 in Croydon (residents per hectare)
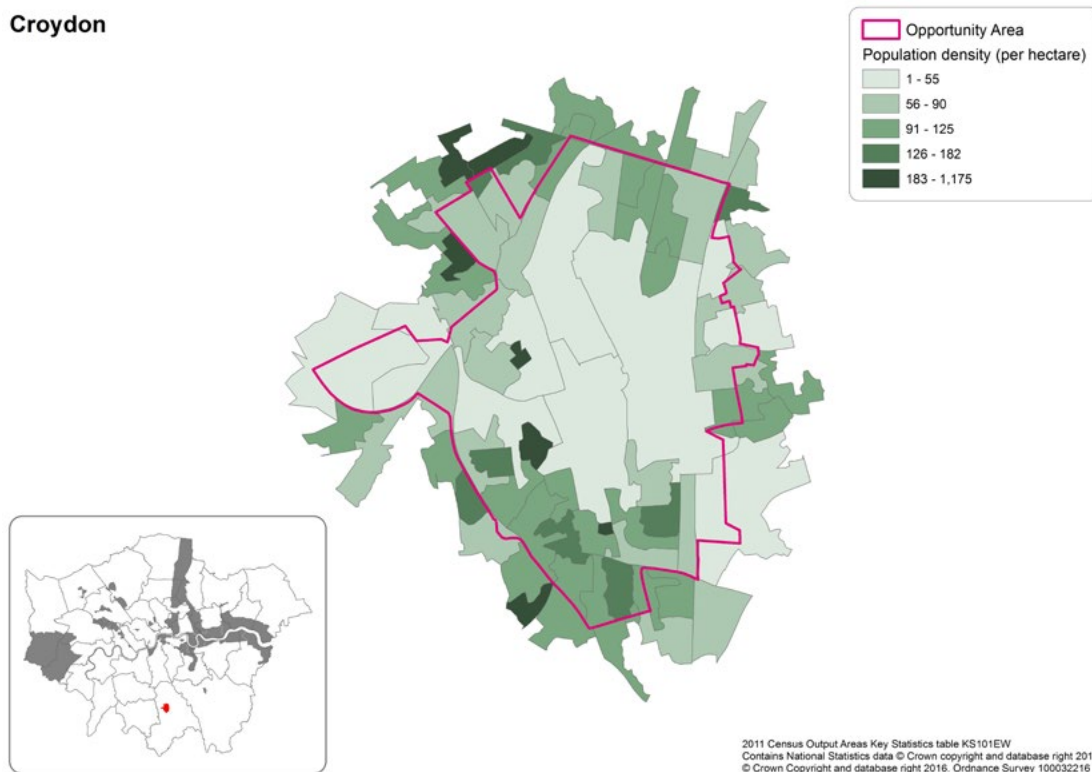
Source: Census and GLA Intelligence Unit analysis

A9: Deptford Creek/Greenwich Riverside

In 2011 Map A17 shows that employment in the Deptford Creek/Greenwich Riverside area was slightly more concentrated in the east of the geography, while Map A18 shows that population was generally spread across the area although with patches of low population density.

Map A17: Employment density in 2011 in Deptford Creek/Greenwich Riverside (workers per hectare)
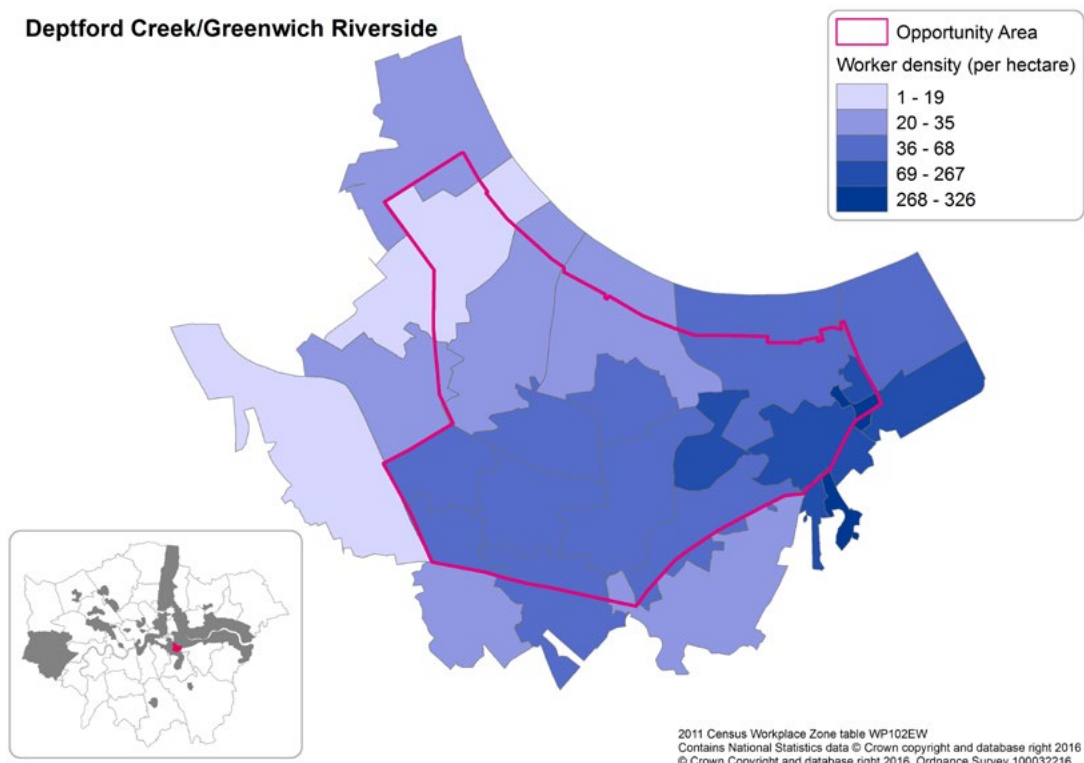
Source: Census and GLA Intelligence Unit analysis

Map A18: Population density in 2011 in Deptford Creek/Greenwich Riverside (residents per hectare)
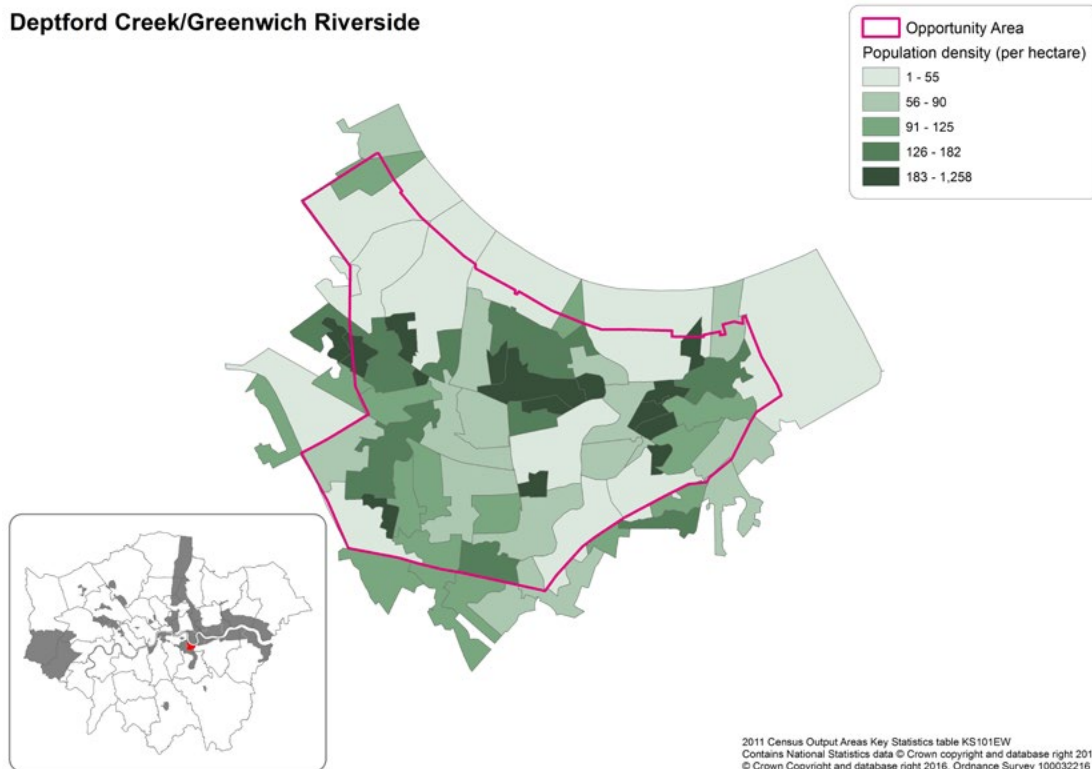
Source: Census and GLA Intelligence Unit analysis

A10: Earls Court and West Kensington

In 2011 Map A19 shows that employment in the Earls Court and West Kensington area was quite evenly distributed but stronger in the centre of the area, however Map A20 shows that population was more concentrated to the west of the geography.

Map A19: Employment density in 2011 in Earls Court and West Kensington (workers per hectare)
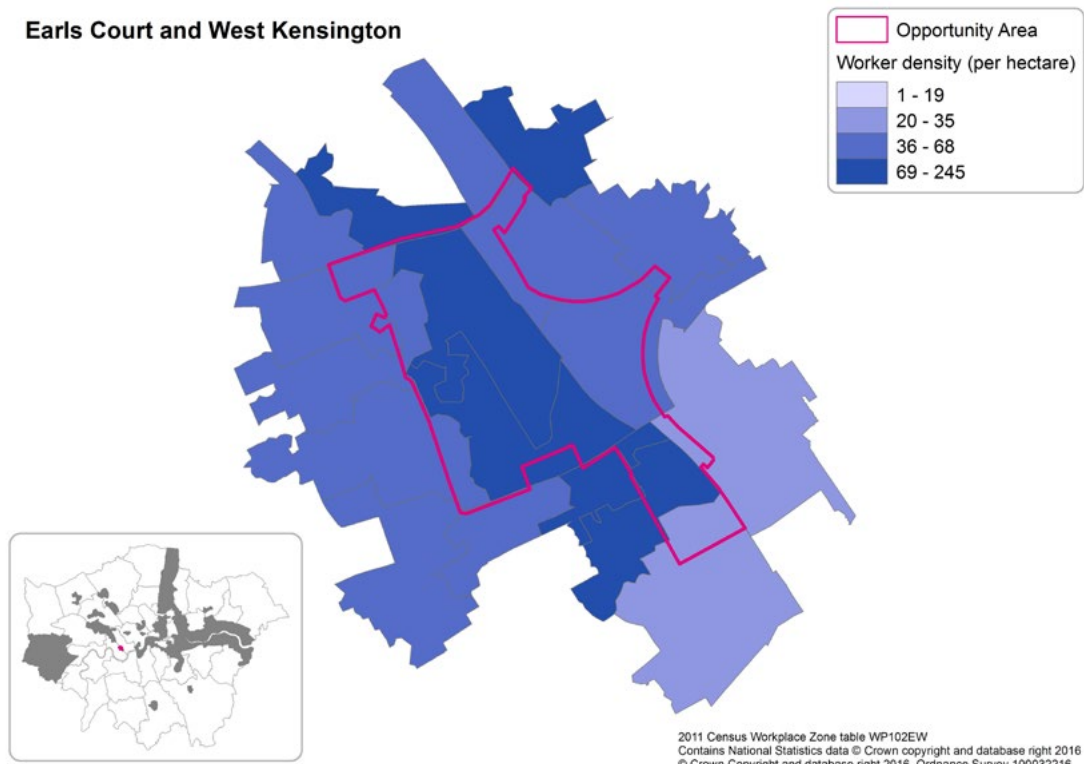
Source: Census and GLA Intelligence Unit analysis

Map A20: Population density in 2011 in Earls Court and West Kensington (residents per hectare)
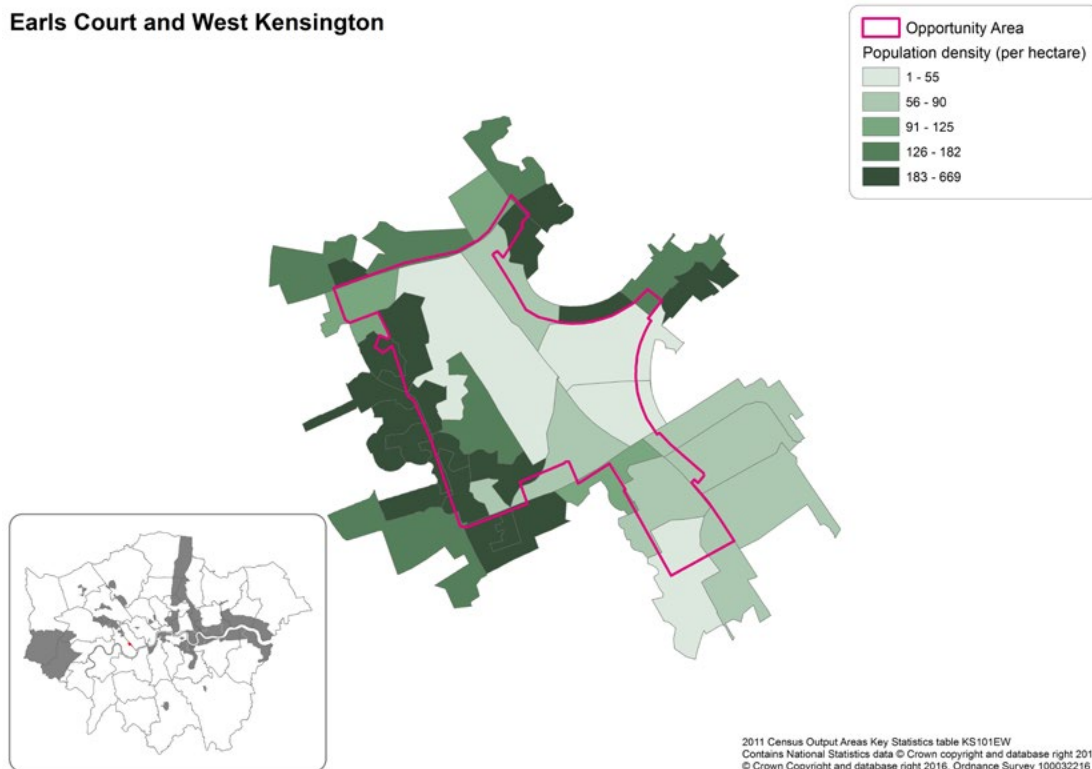
Source: Census and GLA Intelligence Unit analysis

A11: The Elephant and Castle

Map A21 shows that employment in the Elephant and Castle area in 2011 was quite evenly distributed but with higher concentrations in the central north and to an extent central and central south areas, while for population Map A22 shows the central, north central, and north west parts of the area had lower population densities than elsewhere in this geography.

Map A21: Employment density in 2011 in the Elephant and Castle (workers per hectare)
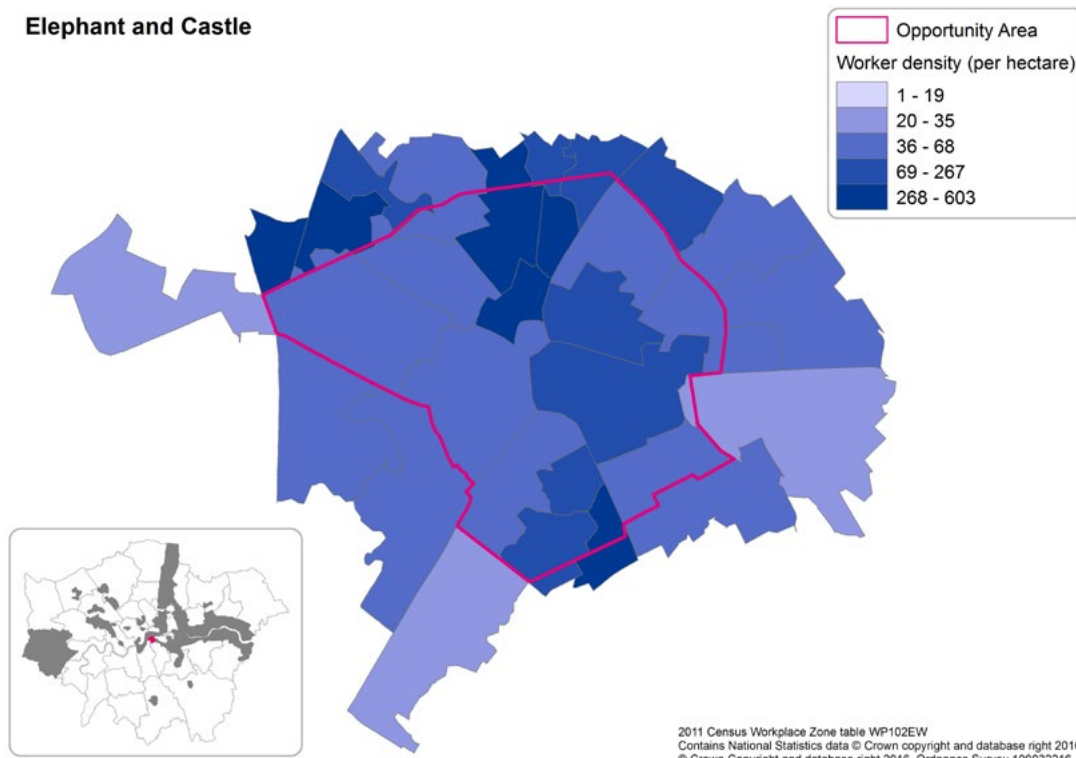
Source: Census and GLA Intelligence Unit analysis

Map A22: Population density in 2011 in the Elephant and Castle (residents per hectare)
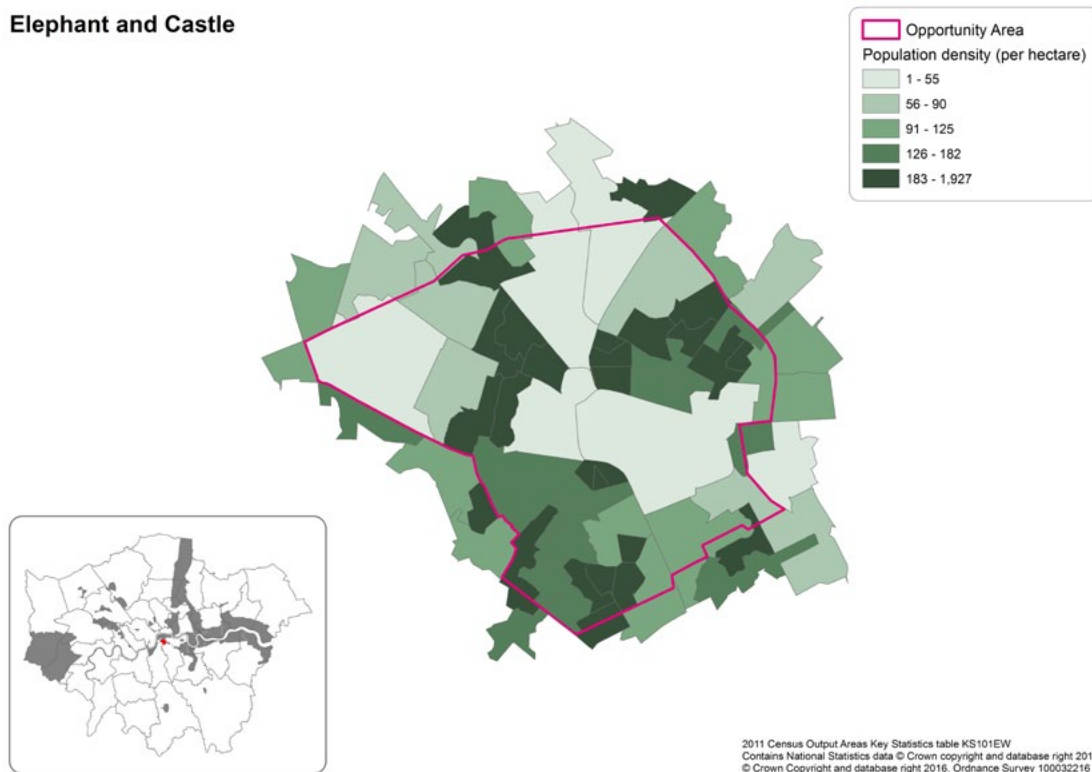
Source: Census and GLA Intelligence Unit analysis

A12: Euston

In 2011 Map A23 shows that employment density in the Euston area was strongest in the south of the area, while Map A24 shows that population density was generally strongest in the west and east central areas of this geography.

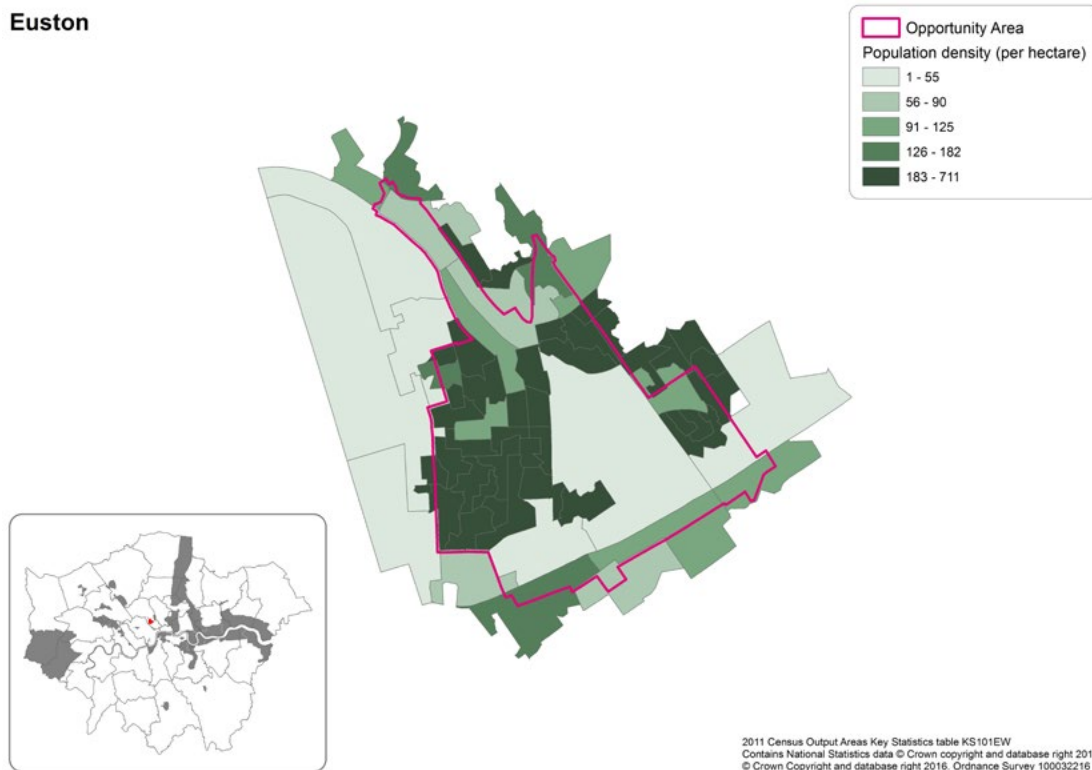**Map A23: Employment density in 2011 in Euston (workers per hectare)**
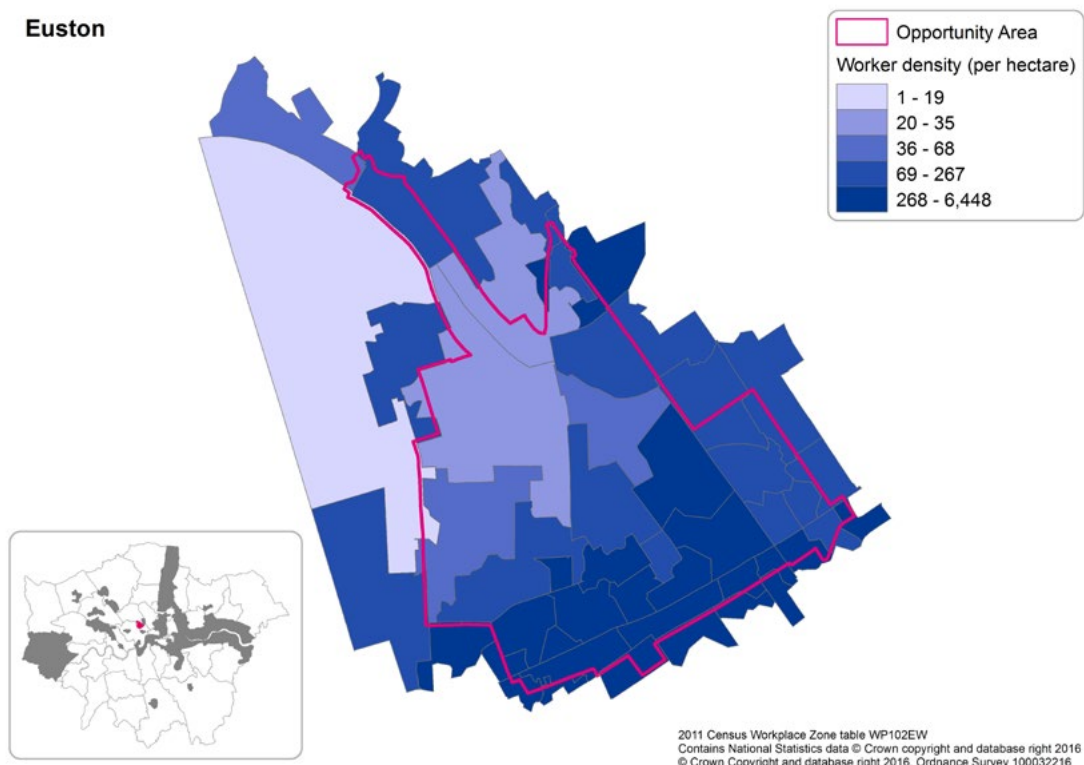
Source: Census and GLA Intelligence Unit analysis

Map A24: Population density in 2011 in Euston (residents per hectare)

Source: Census and GLA Intelligence Unit analysis

A13: The Greenwich Peninsular

In 2011 Map A25 shows that employment density in the Greenwich Peninsular area was generally higher in the north of the area and around its south eastern and western fringes, while Map A26 shows that population density was generally higher in the south of this geography with a further area also showing in its mid-east area as well.

Map A25: Employment density in 2011 in the Greenwich Peninsular (workers per hectare)
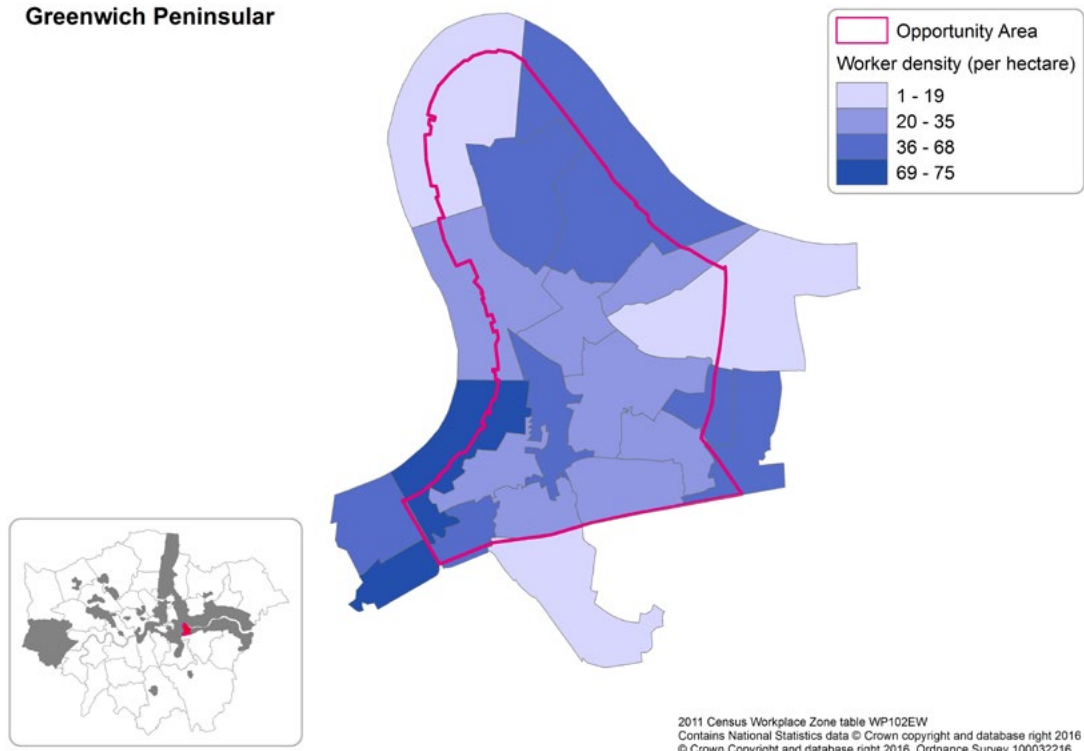
Source: Census and GLA Intelligence Unit analysis

Map A26: Population density in 2011 in the Greenwich Peninsular (residents per hectare)
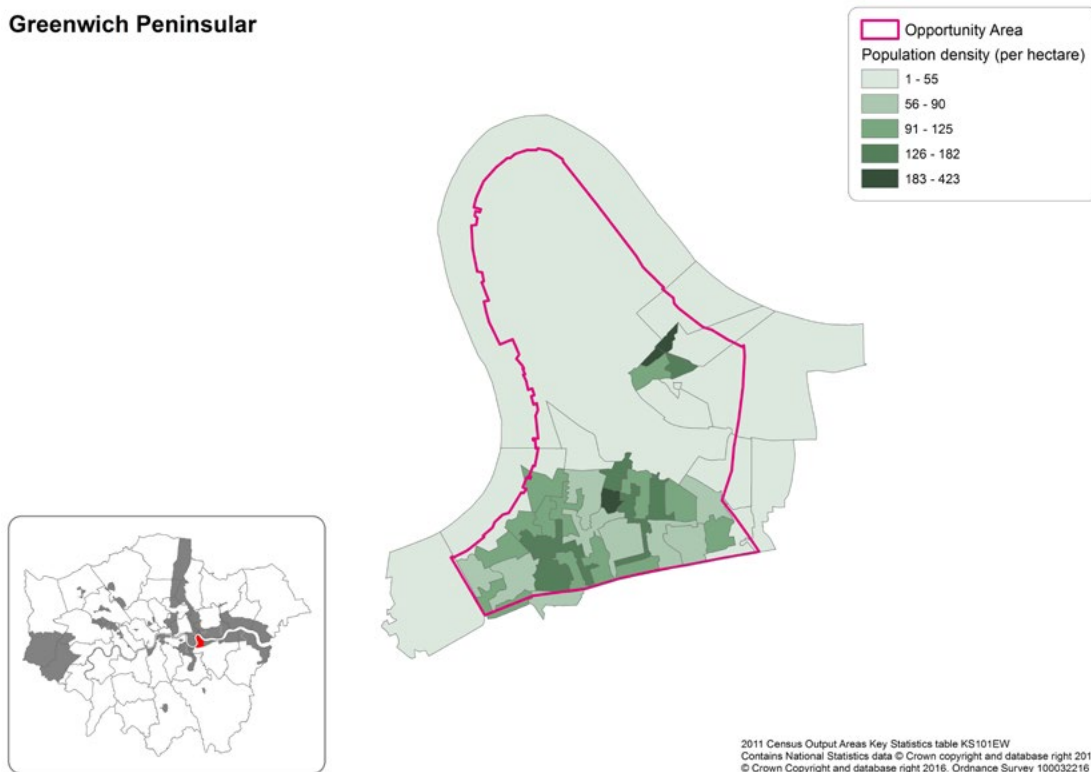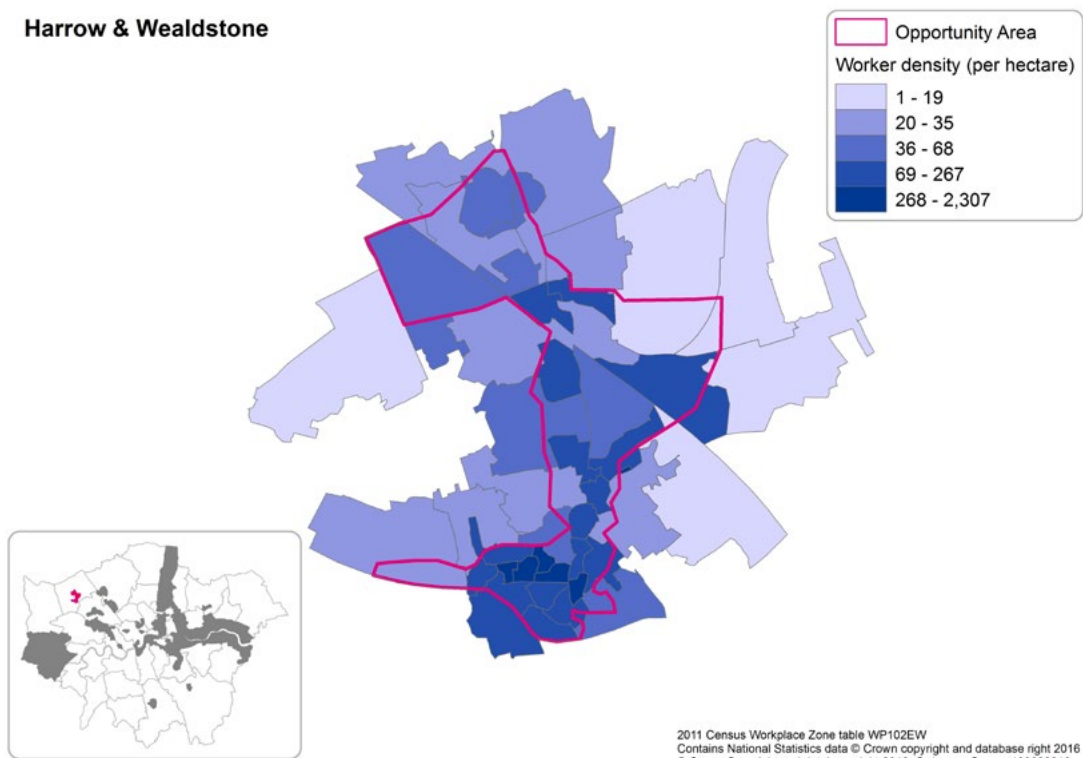

Source: Census and GLA Intelligence Unit analysis

A14: Harrow and Wealdstone

In 2011 Map A27 shows that employment density in the Harrow and Wealdstone area was fairly evenly distributed but slightly higher in the south of the geography, while Map A28 shows that population density was generally higher in the north of this geography.

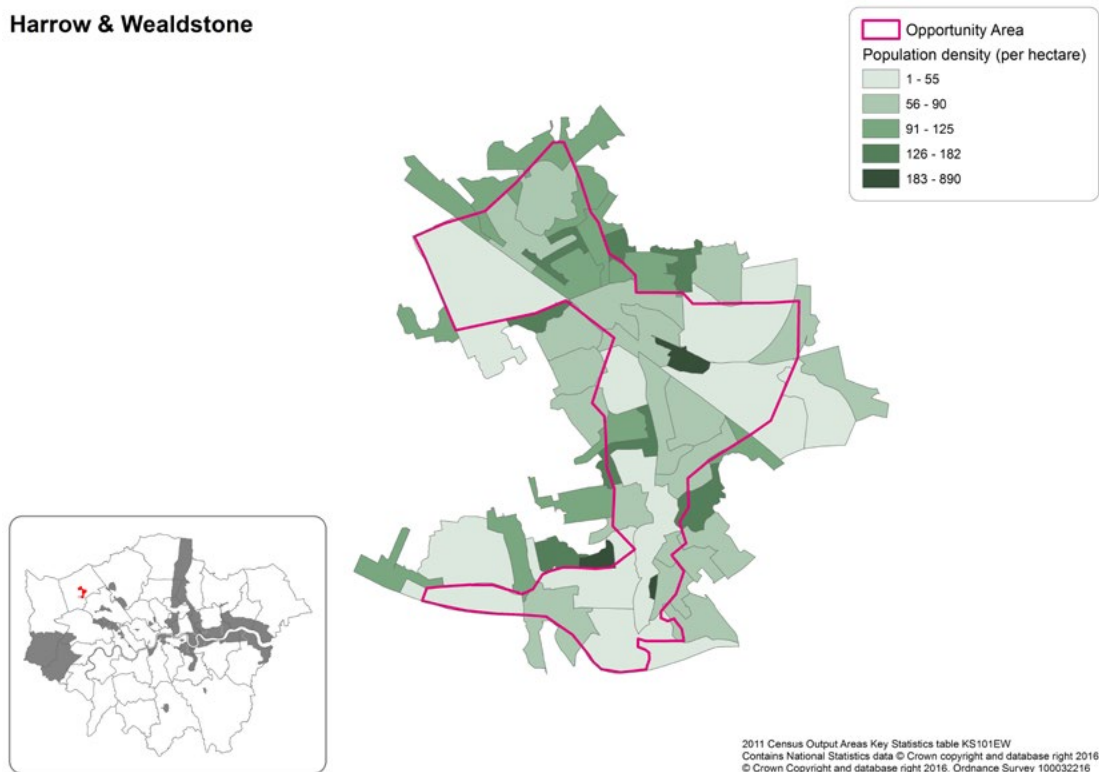**Map A27: Employment density in 2011 in Harrow and Wealdstone (workers per hectare)**

Source: Census and GLA Intelligence Unit analysis

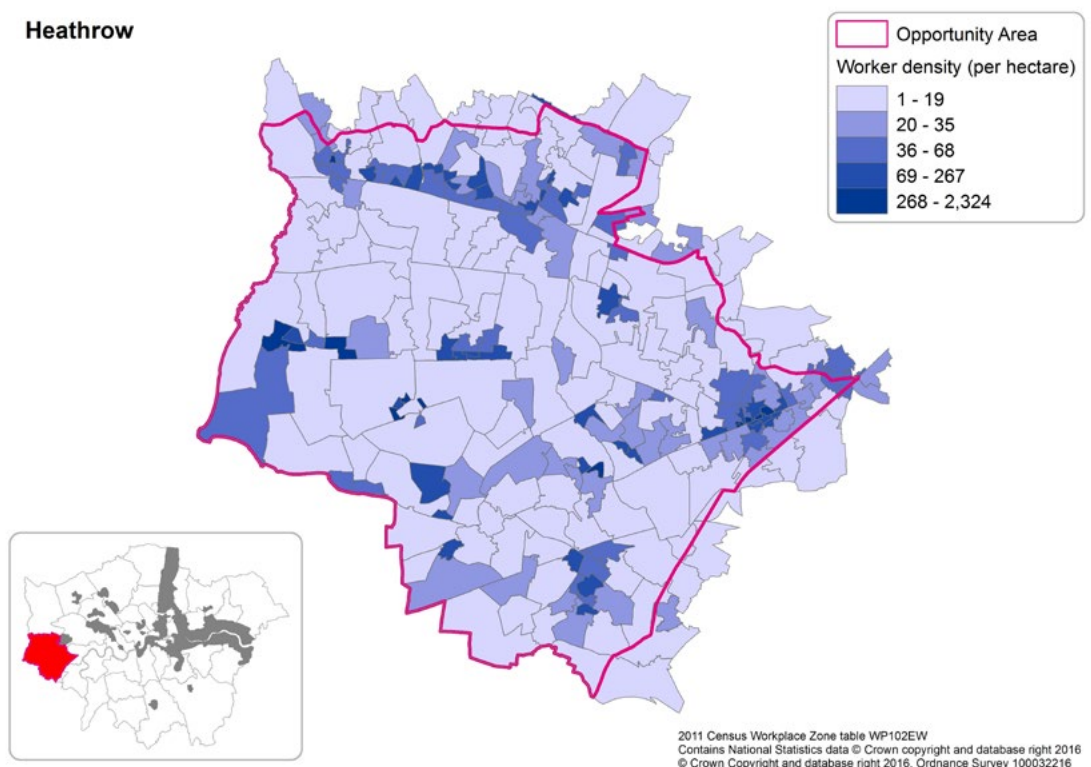**Map A28: Population density in 2011 in Harrow and Wealdstone (residents per hectare)**

Source: Census and GLA Intelligence Unit analysis

A15: Heathrow

In 2011 Map A29 shows that employment density in the Heathrow area was scattered across the geography, while Map A30 shows that population density was concentrated around the northern, eastern and south eastern edges of this geography.

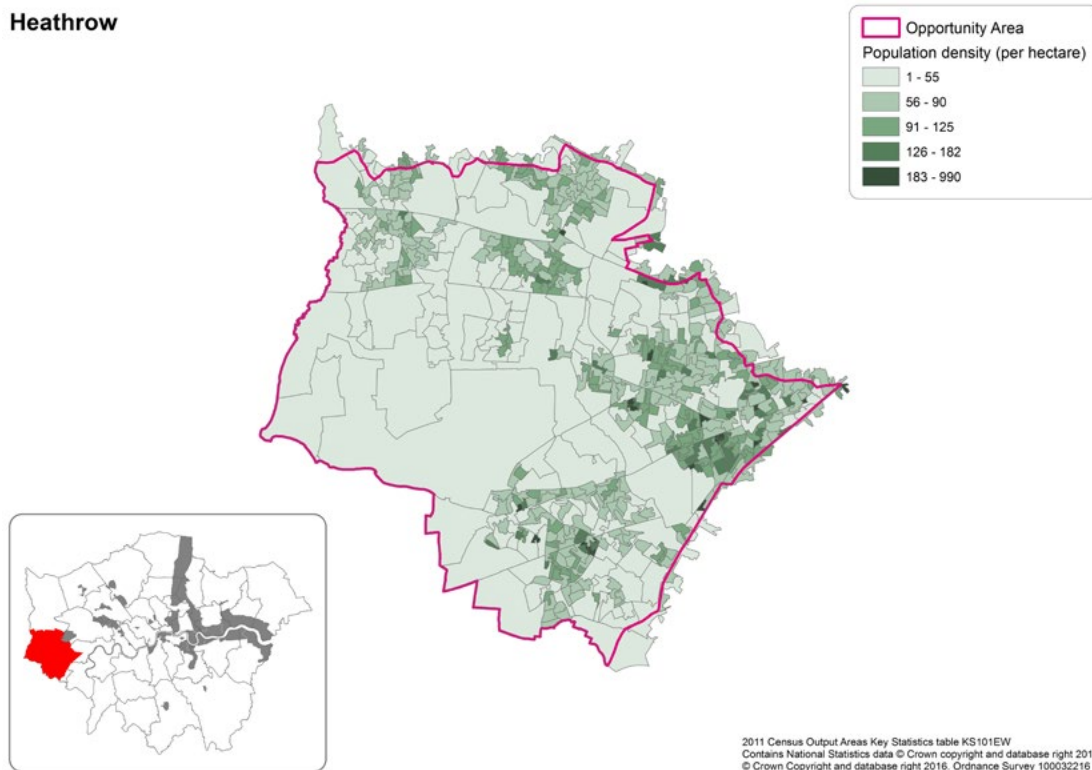**Map A29: Employment density in 2011 in Heathrow (workers per hectare)**

Source: Census and GLA Intelligence Unit analysis

Map A30: Population density in 2011 in Heathrow (residents per hectare)
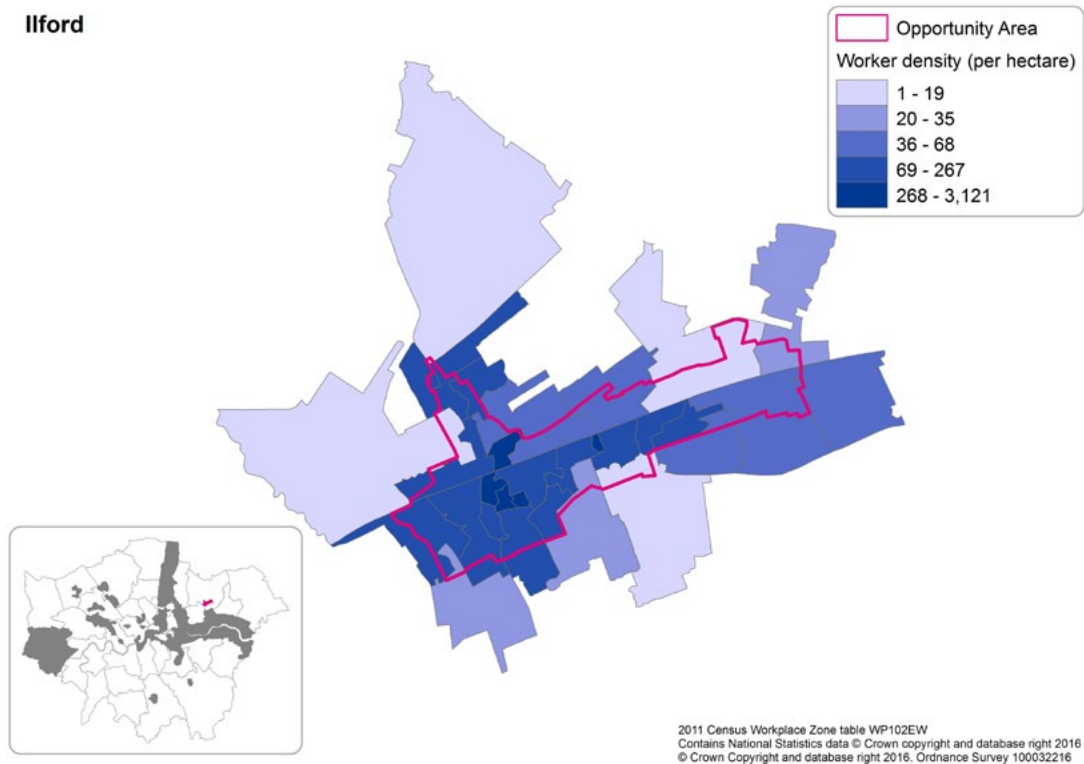

Source: Census and GLA Intelligence Unit analysis

A16: Ilford

Map A31 shows that in the Ilford area in 2011 employment was fairly evenly distributed, while Map A32 shows that the population density was generally higher around the edges of this geography.

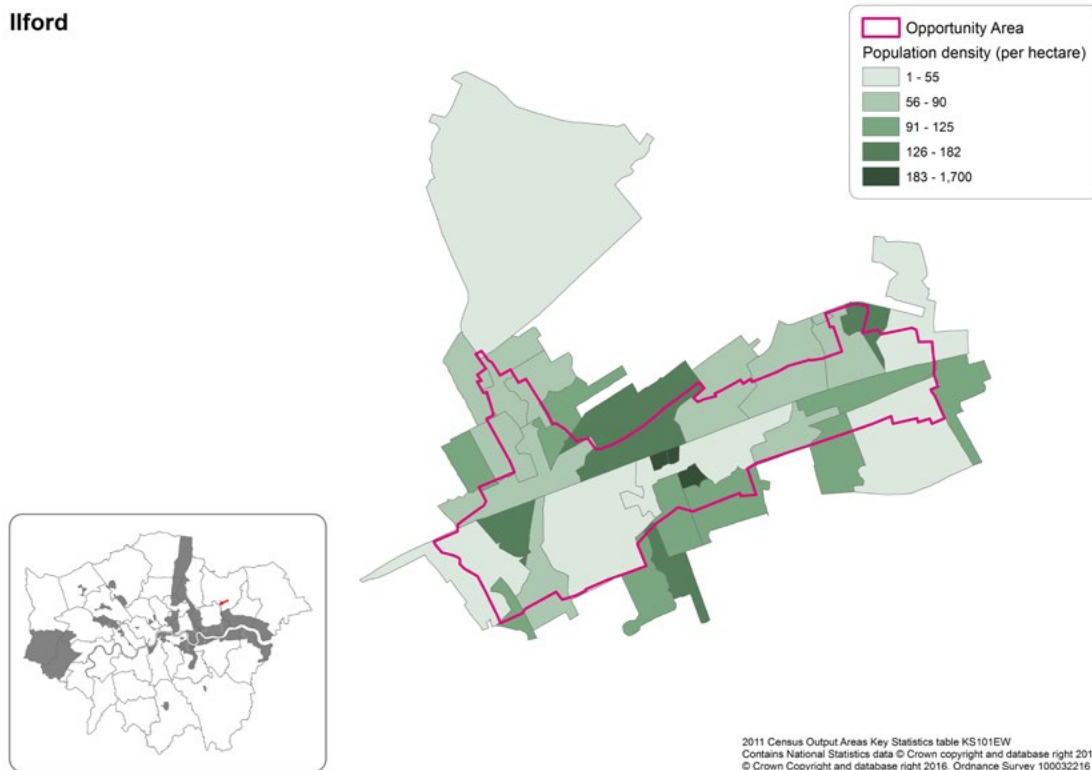**Map A31: Employment density in 2011 in Ilford (workers per hectare)**

Source: Census and GLA Intelligence Unit analysis

Map A32: Population density in 2011 in Ilford (residents per hectare)

Ilford

Source: Census and GLA Intelligence Unit analysis

A17: The Isle of Dogs

Map A33 shows that in the Isle of Dogs area in 2011 employment was very highly concentrated in the north central part of this geography, while Map A34 shows that the population density of this area was generally higher its northern edge and in the southern part of this geography.

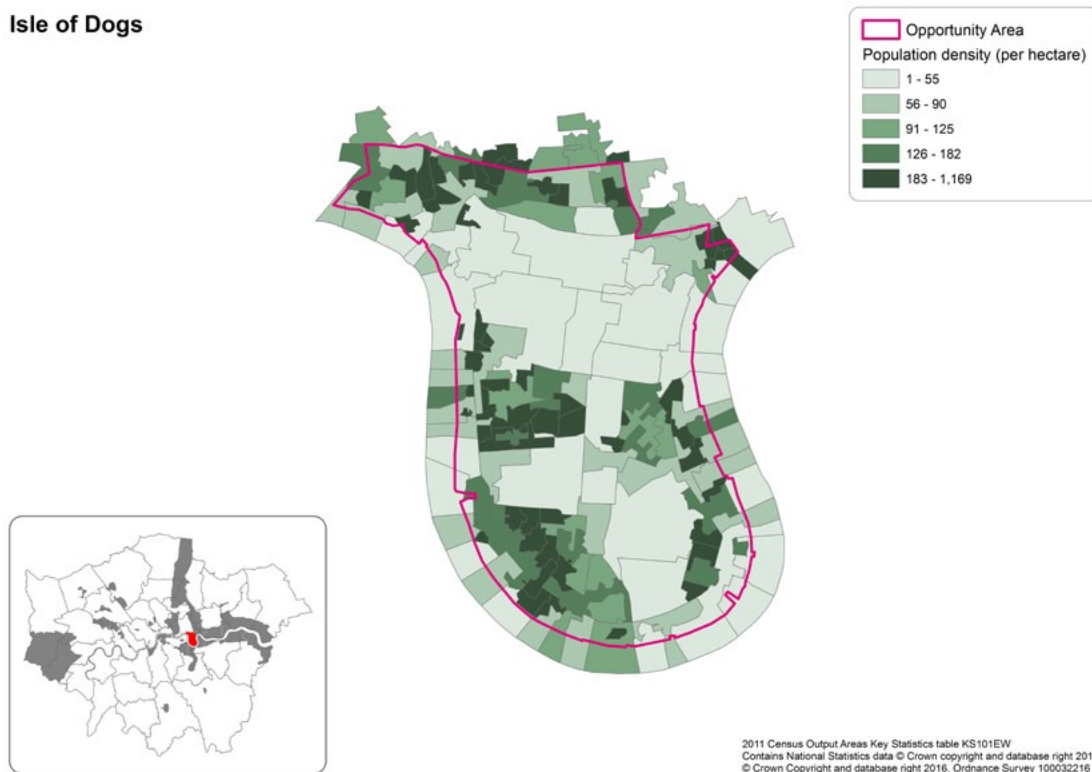## Map A33: Employment density in 2011 in the Isle of Dogs (workers per hectare)

Isle of Dogs
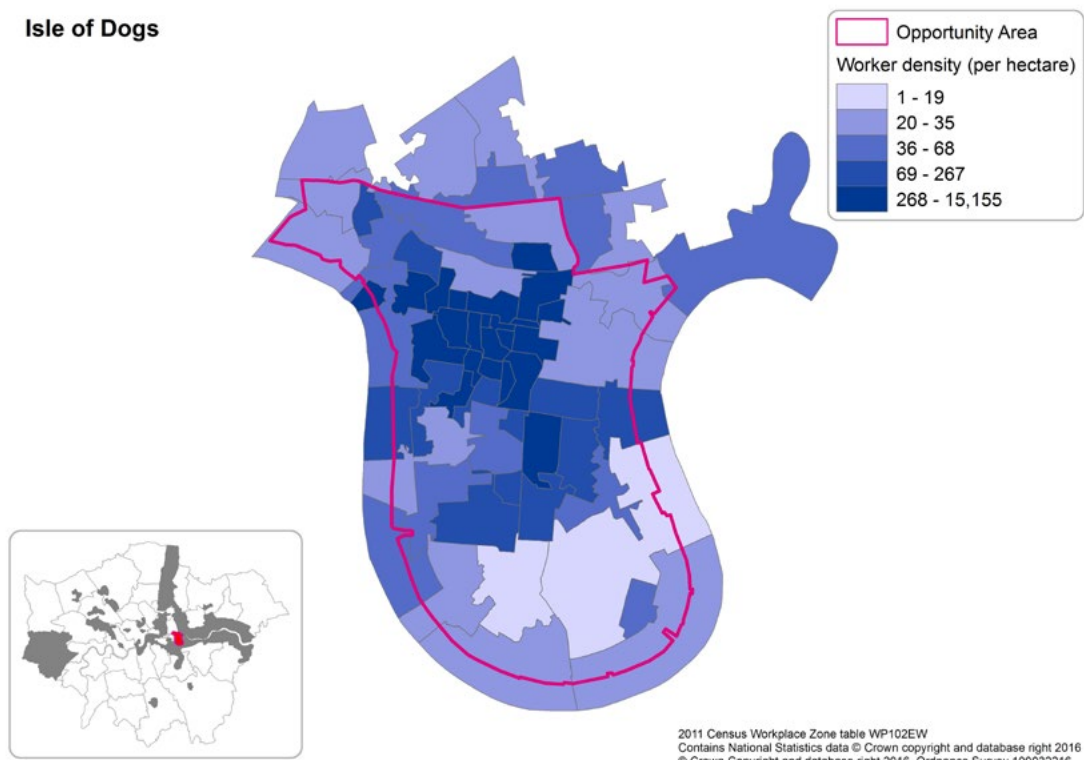
Source: Census and GLA Intelligence Unit analysis

Map A34: Population density in 2011 in the Isle of Dogs (residents per hectare)

Source: Census and GLA Intelligence Unit analysis
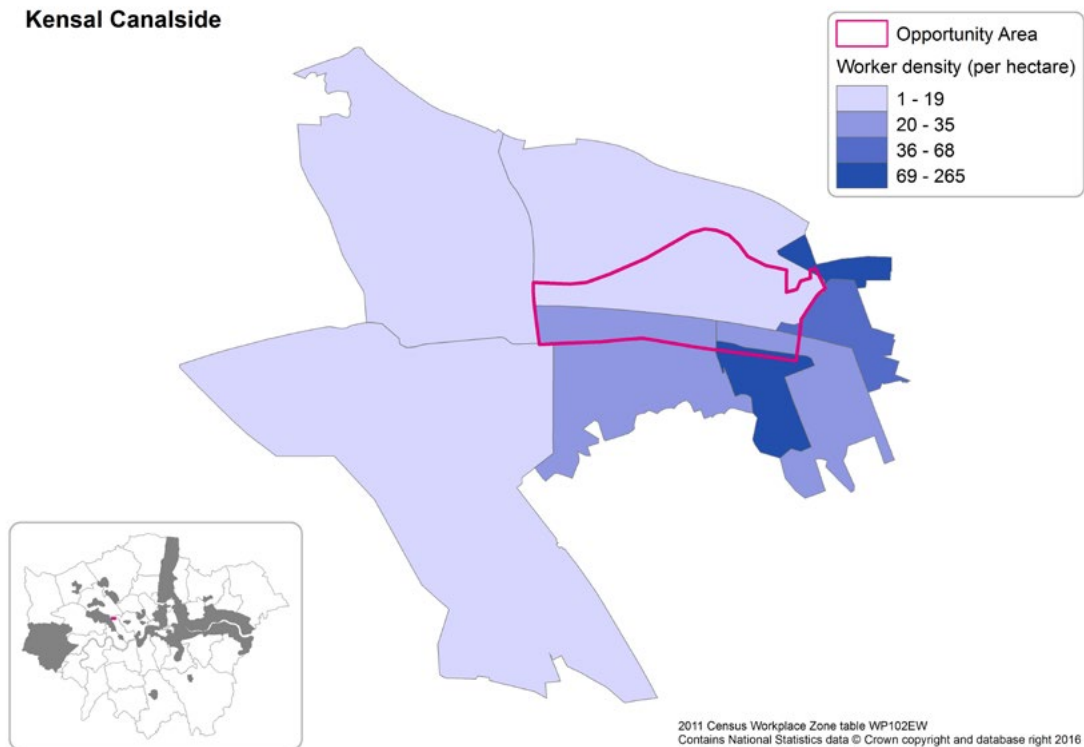
A18: Kensal Canalside

In 2011 Map A35 shows that the employment density in Kensal Canalside area was relatively low, while Map A36 shows that the population density was also generally low although slightly higher along its southern edge.

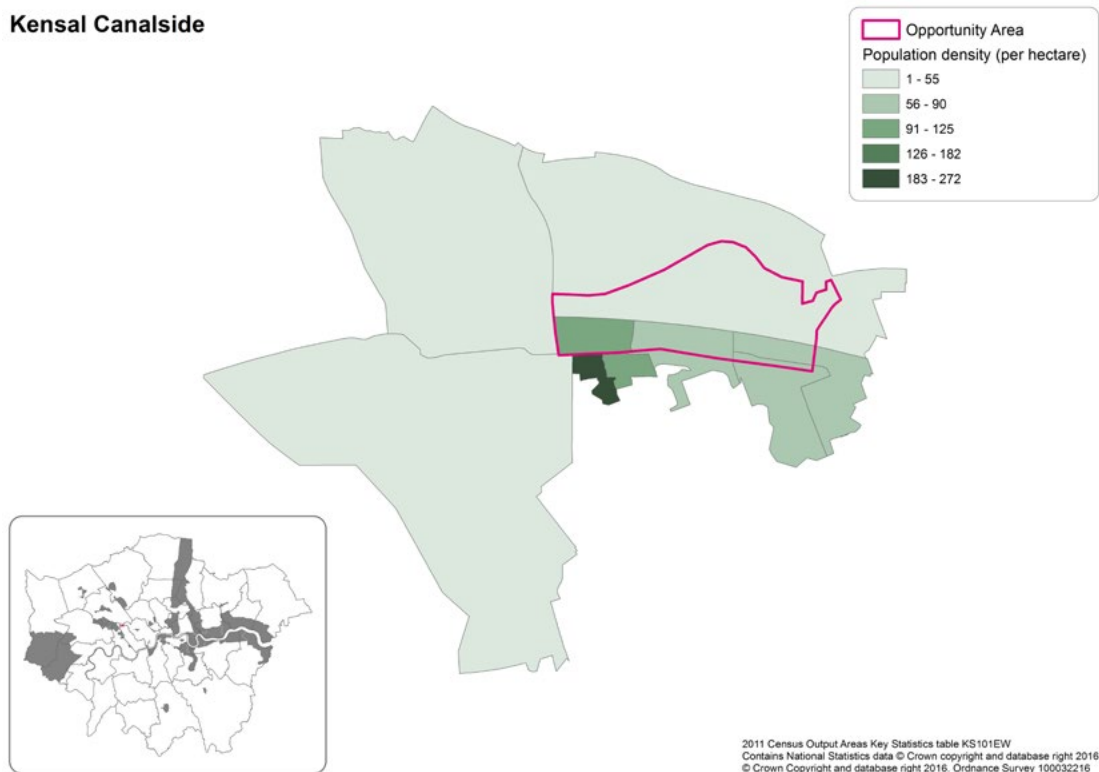**Map A35: Employment density in 2011 in Kensal Canalside (workers per hectare)**

Source: Census and GLA Intelligence Unit analysis

Map A36: Population density in 2011 in Kensal Canalside (residents per hectare)

Kensal Canalside

Opportunity Area
Population density (per hectare)
1 - 55
56 - 90
91 - 125
126 - 182
183 - 272

2011 Census Output Areas Key Statistics table KS101EW
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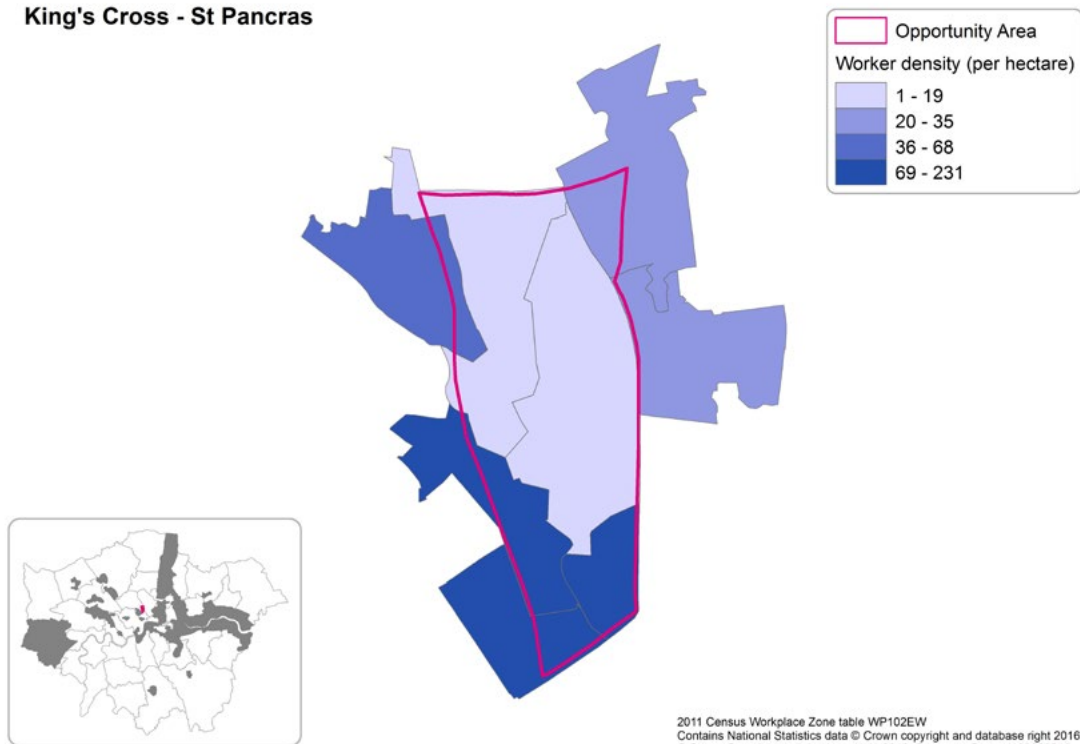© Crown Copyright and database right 2016. Ordnance Survey 100032216

Source: Census and GLA Intelligence Unit analysis

A19: King's Cross – St Pancras

In 2011 as shown by Map A37 employment density was highest in the south of the King's Cross – St Pancras area, while Map A38 shows that the population density of this geography was low.

Map A37: Employment density in 2011 in King's Cross – St Pancras (workers per hectare)

King's Cross - St Pancras

Opportunity Area
Worker density (per hectare)
1 - 19
20 - 35
36 - 68
69 - 231

2011 Census Workplace Zone table WP102EW
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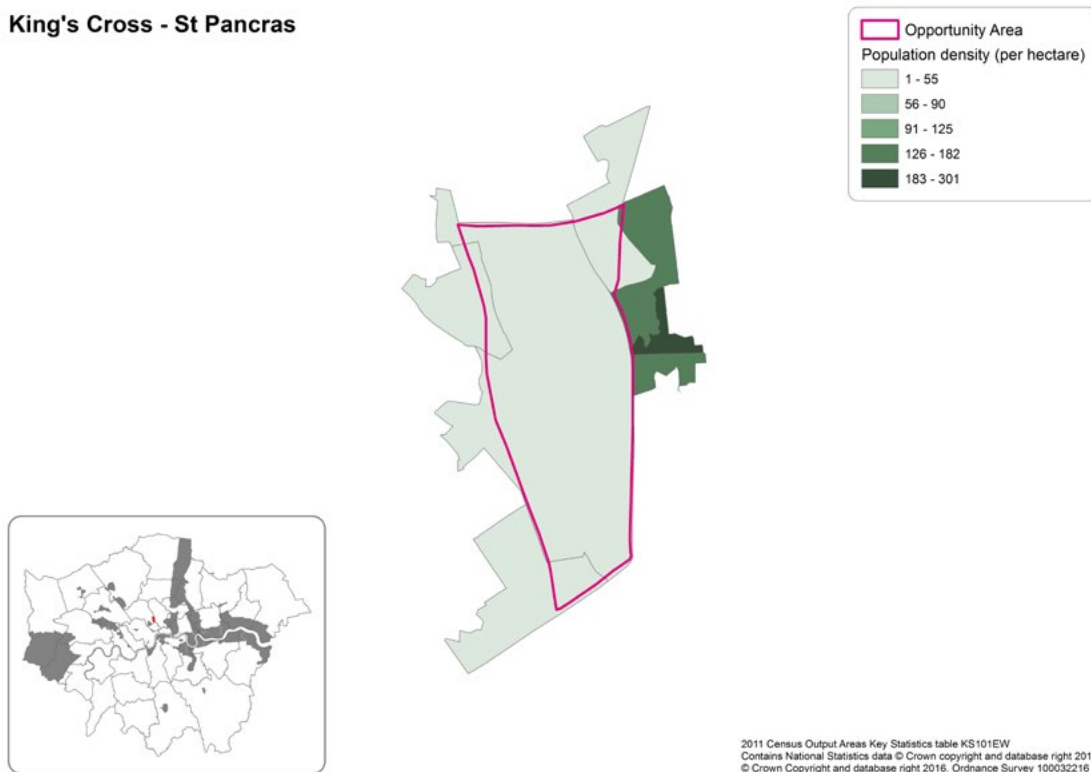© Crown Copyright and database right 2016. Ordnance Survey 100032216

Source: Census and GLA Intelligence Unit analysis

Map A38: Population density in 2011 in King's Cross – St Pancras (residents per hectare)

Source: Census and GLA Intelligence Unit analysis

A20: Lewisham, Catford and New Cross

Map A39 shows that in 2011 the employment density in the Lewisham, Catford & New Cross area was slightly higher in the middle and south of this geography, while Map A40 shows that the population density of this area was generally more evenly distributed but lower in the south western part of this area.

Map A39: Employment density in 2011 in Lewisham, Catford and New Cross (workers per hectare)

Source: Census and GLA Intelligence Unit analysis

Map A40: Population density in 2011 in Lewisham, Catford and New Cross (residents per hectare)
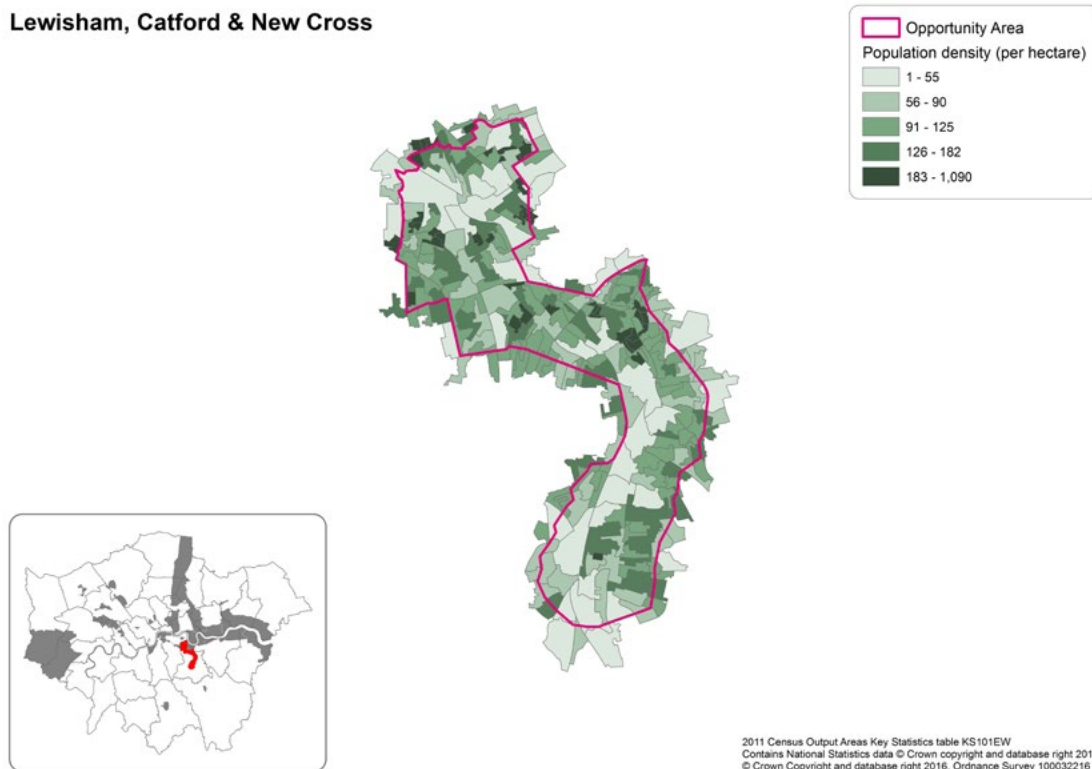

Lewisham, Catford & New Cross

Opportunity Area
Population density (per hectare)
1 - 55
56 - 90
91 - 125
126 - 182
183 - 1,090

2011 Census Output Areas Key Statistics table KS101EW
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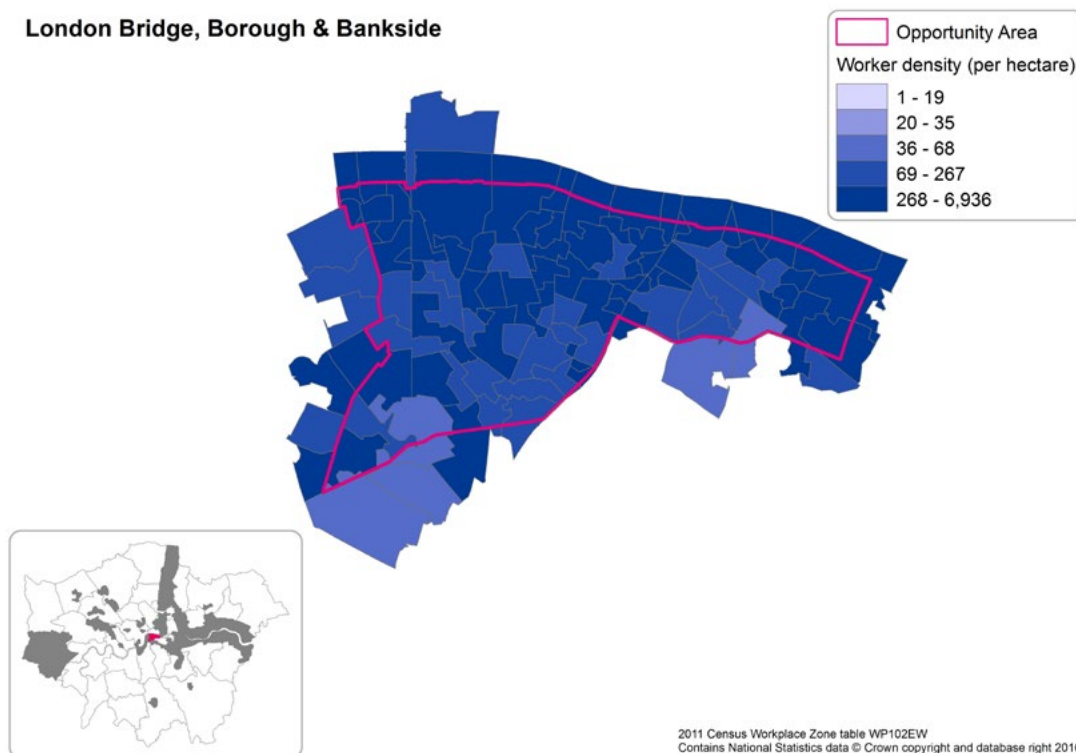© Crown Copyright and database right 2016. Ordnance Survey 100032216

Source: Census and GLA Intelligence Unit analysis

A21: London Bridge, Borough and Bankside

In 2011 Map A41 shows that employment density was quite high across all of the London Bridge, Borough and Bankside area, while Map A42 shows that population density was generally highest in the south of this area with the exception of one area in the north east of the geography.

Map A41: Employment density in 2011 in London Bridge, Borough and Bankside (workers per hectare)

London Bridge, Borough & Bankside

Opportunity Area
Worker density (per hectare)
1 - 19
20 - 35
36 - 68
69 - 267
268 - 6,936

2011 Census Workplace Zone table WP102EW
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Source: Census and GLA Intelligence Unit analysis

Map A42: Population density in 2011 in London Bridge, Borough and Bankside (residents per hectare)

Source: Census and GLA Intelligence Unit analysis

A22: London Riverside

Map A43 shows that in 2011 London Riverside had a relatively low employment density although with a higher density to its east and in its centre, while Map A44 shows that its population per hectare was more concentrated to its north west and along its northern fringe.

Map A43: Employment density in 2011 in London Riverside (Barking) (workers per hectare)

Source: Census and GLA Intelligence Unit analysis

Map A44: Population density in 2011 in London Riverside (Barking) (residents per hectare)
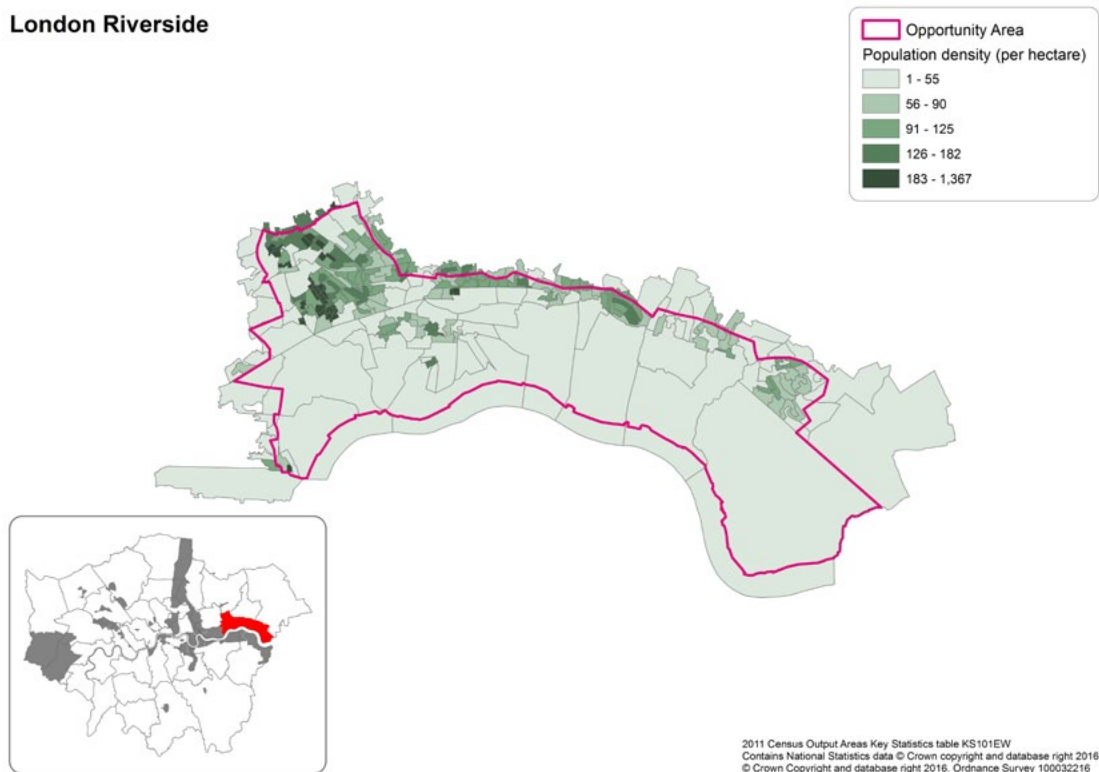
Source: Census and GLA Intelligence Unit analysis

A23: The Lower Lea Valley

In 2011 employment was most densely concentrated around the edges of the Lower Lea Valley area as shown by Map A45, while this also held for population as shown by Map A46.

Map A45: Employment density in 2011 in the Lower Lea Valley (workers per hectare)
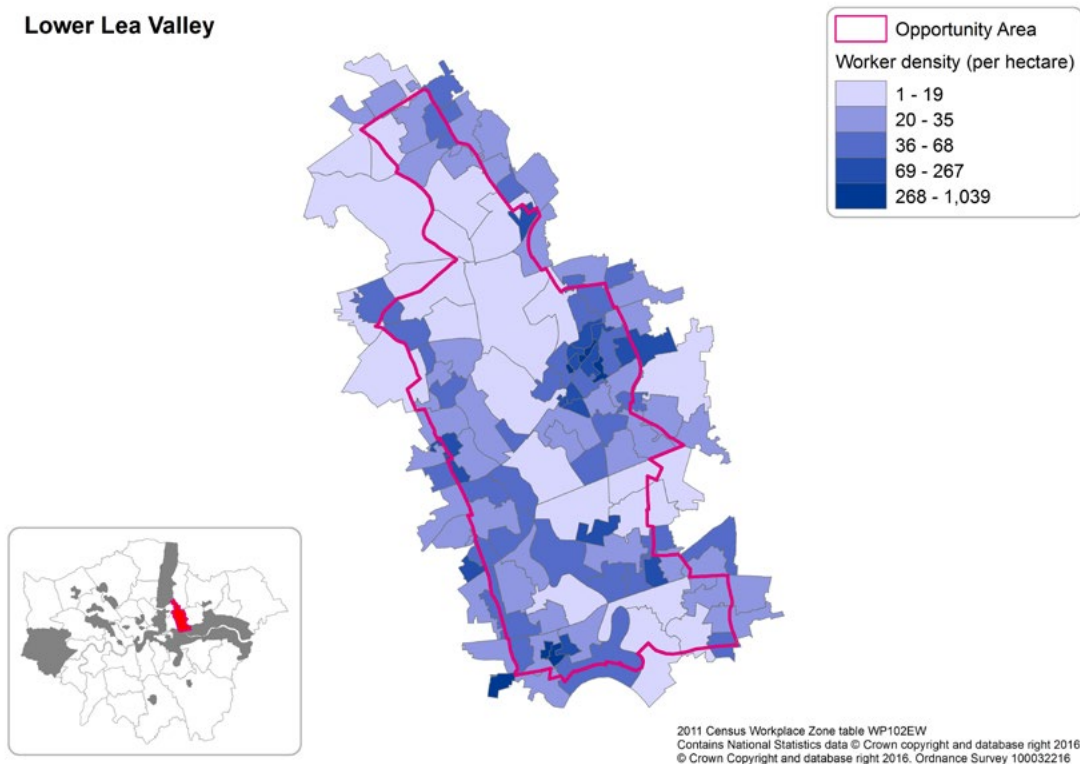
Source: Census and GLA Intelligence Unit analysis

Map A46: Population density in 2011 in the Lower Lea Valley (residents per hectare)
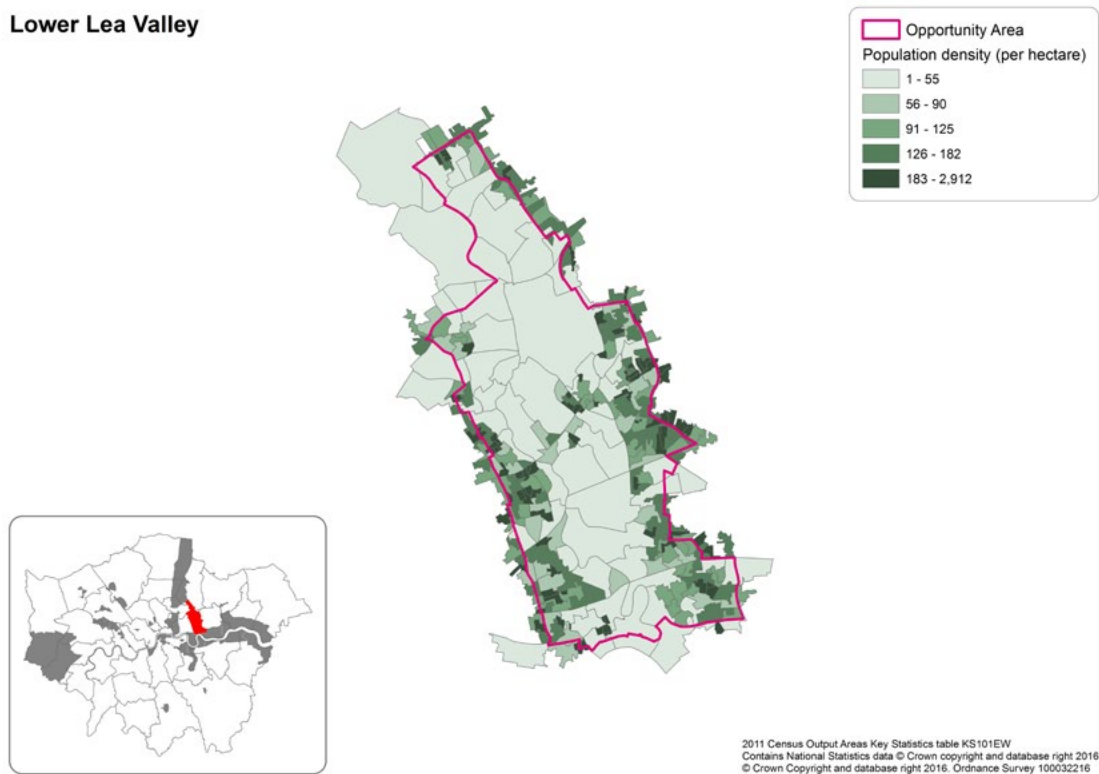
Source: Census and GLA Intelligence Unit analysis

A24: The Old Kent Road

Map A47 shows that in 2011 employment density was highest in the middle part of the Old Kent Road area, while Map A48 shows that the population density of this geography was highest in its north, central and bottom south parts.

Map A47: Employment density in 2011 in the Old Kent Road (workers per hectare)
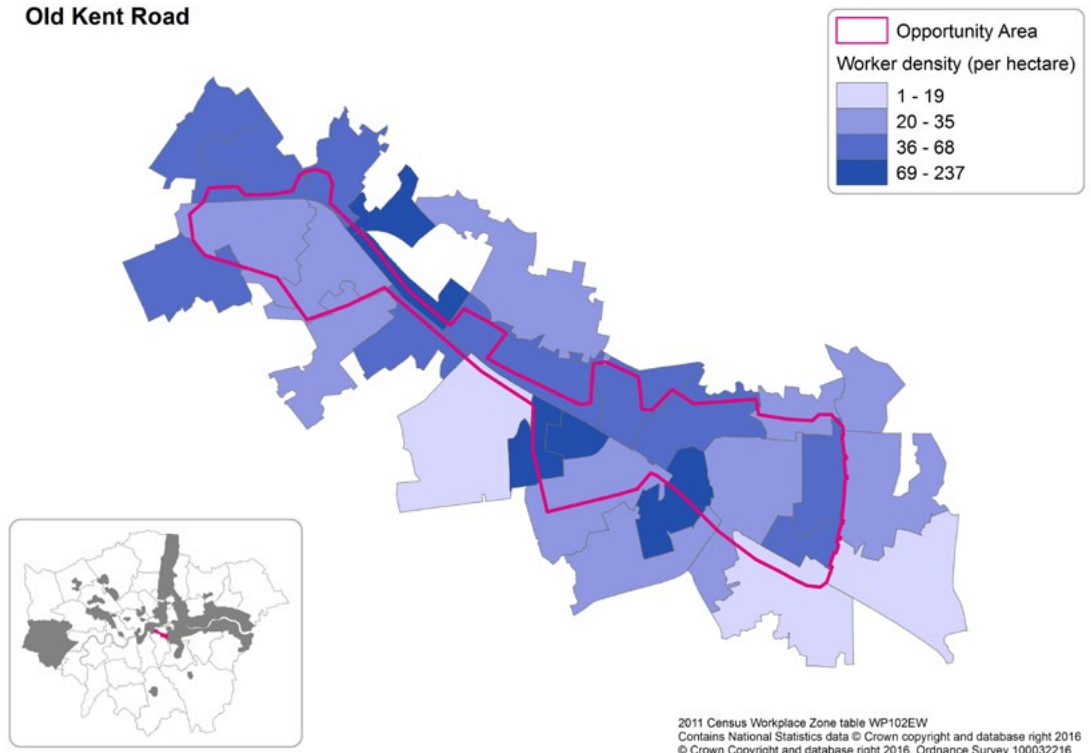
Source: Census and GLA Intelligence Unit analysis

Map A48: Population density in 2011 in the Old Kent Road (residents per hectare)

Source: Census and GLA Intelligence Unit analysis

A25: Old Oak Common

In 2011 it can be seen from Maps A49 and A50 that both employment and population where both relatively low in Old Oak Common, although with a slightly more heavy concentration of employment in its north eastern and south eastern and western corners.

Map A49: Employment density in 2011 in Old Oak Common (workers per hectare)

Source: Census and GLA Intelligence Unit analysis

Map A50: Population density in 2011 in Old Oak Common (residents per hectare)
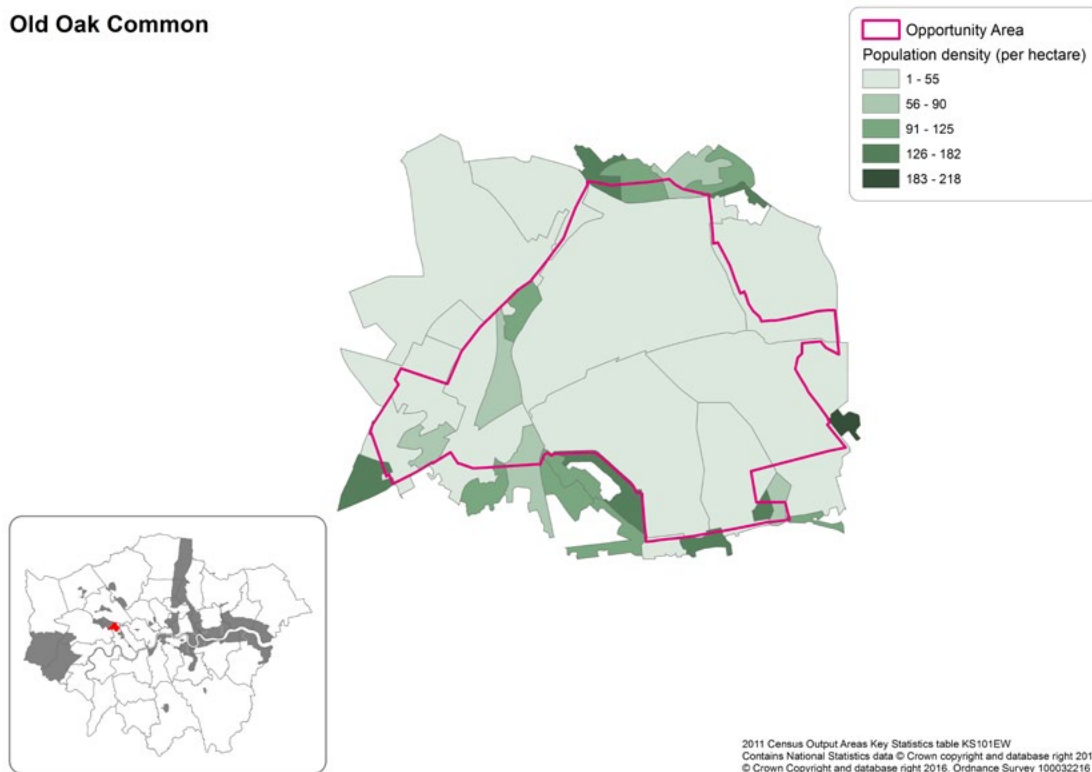
Source: Census and GLA Intelligence Unit analysis

A26: Paddington

Map A51 shows that in 2011 the employment density in the Paddington area was generally quite high, while Map A52 shows that the population density was generally on the whole quite low with the exception of an area to the north east of this geography.

Map A51: Employment density in 2011 in Paddington (workers per hectare)
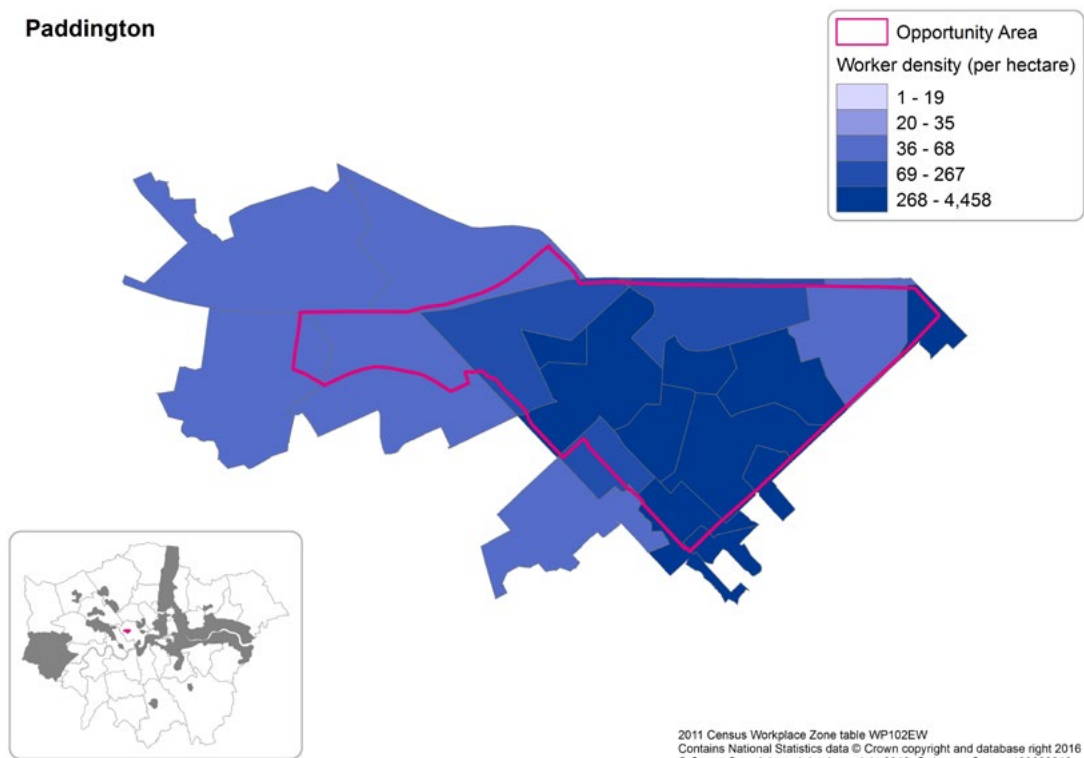
Source: Census and GLA Intelligence Unit analysis

Map A52: Population density in 2011 in Paddington (residents per hectare)
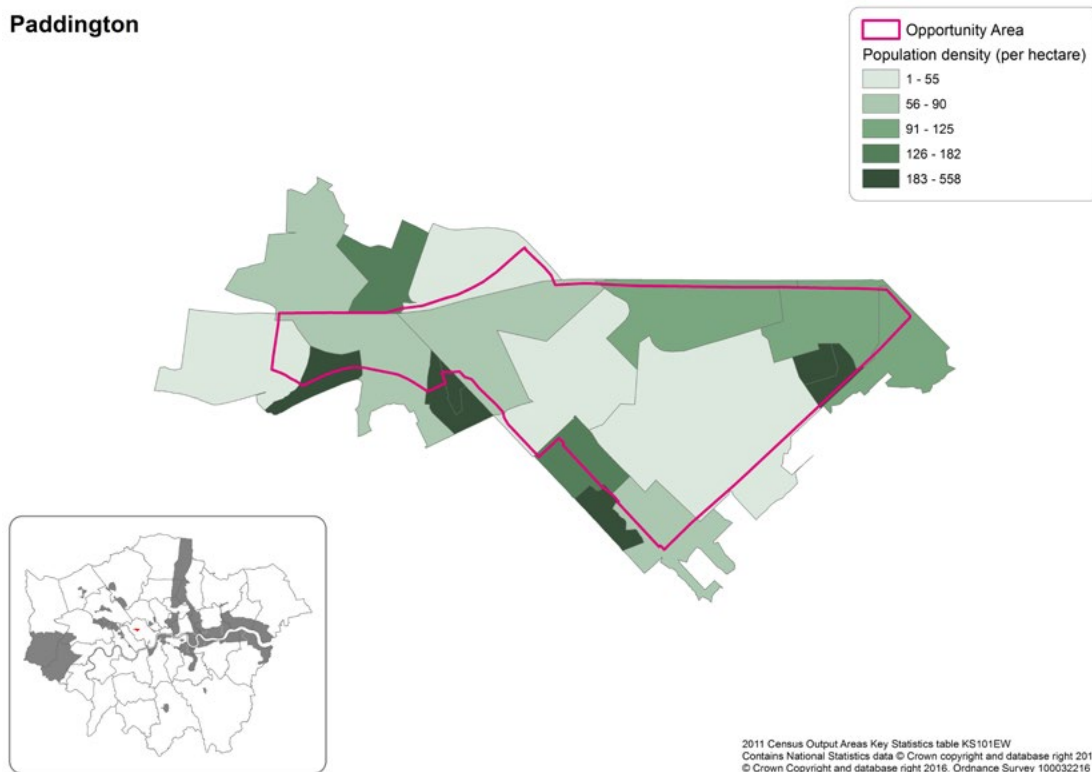
Source: Census and GLA Intelligence Unit analysis

A27: Park Royal

In 2011 Map A53 shows that employment density in the Park Royal area was generally high, while the population density was on the whole quite low.

Map A53: Employment density in 2011 in Park Royal (workers per hectare)
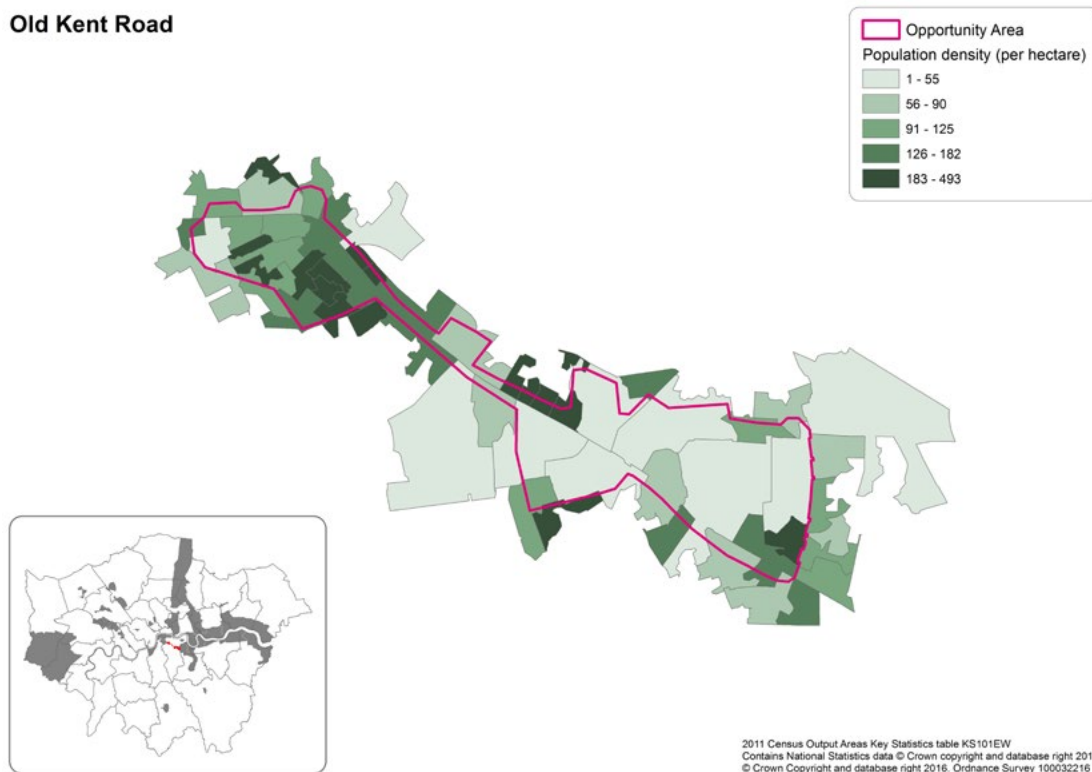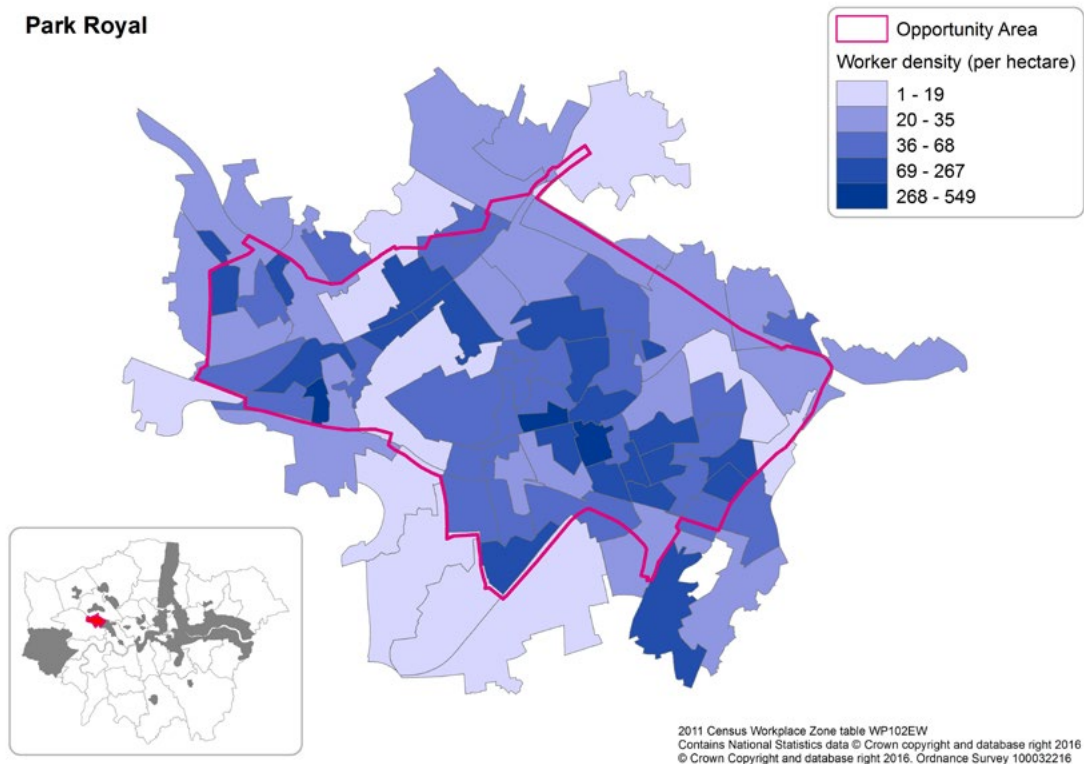

Source: Census and GLA Intelligence Unit analysis

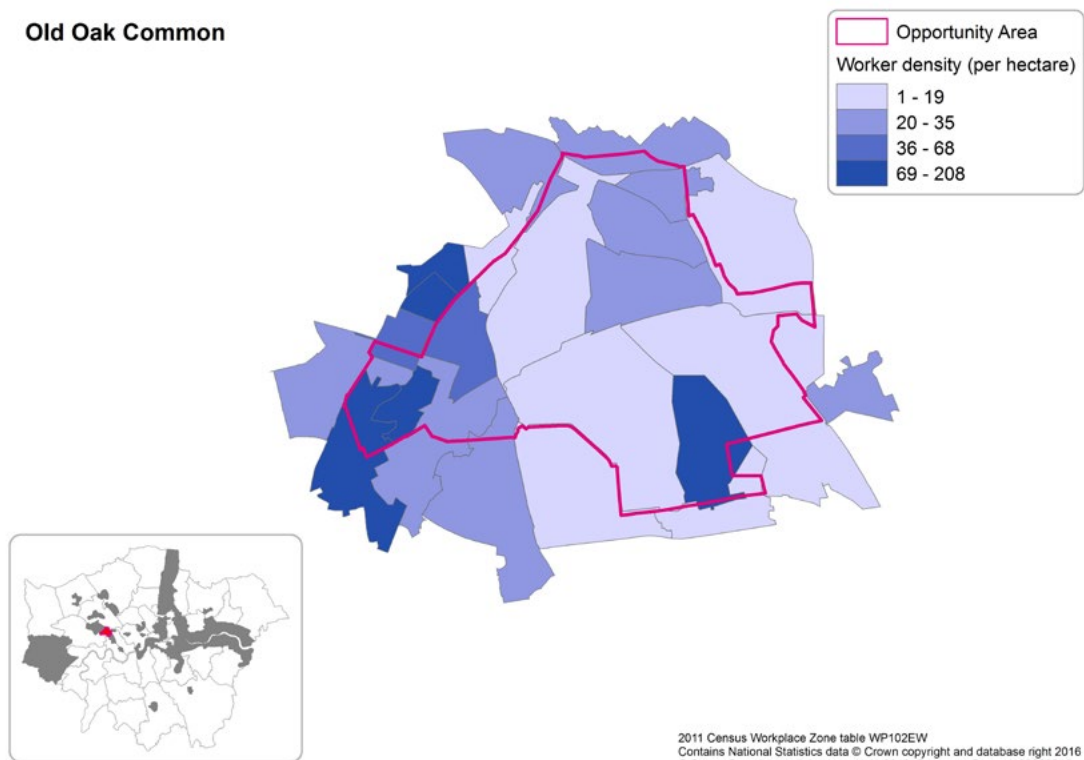**Map A54: Population density in 2011 in Park Royal (residents per hectare)**
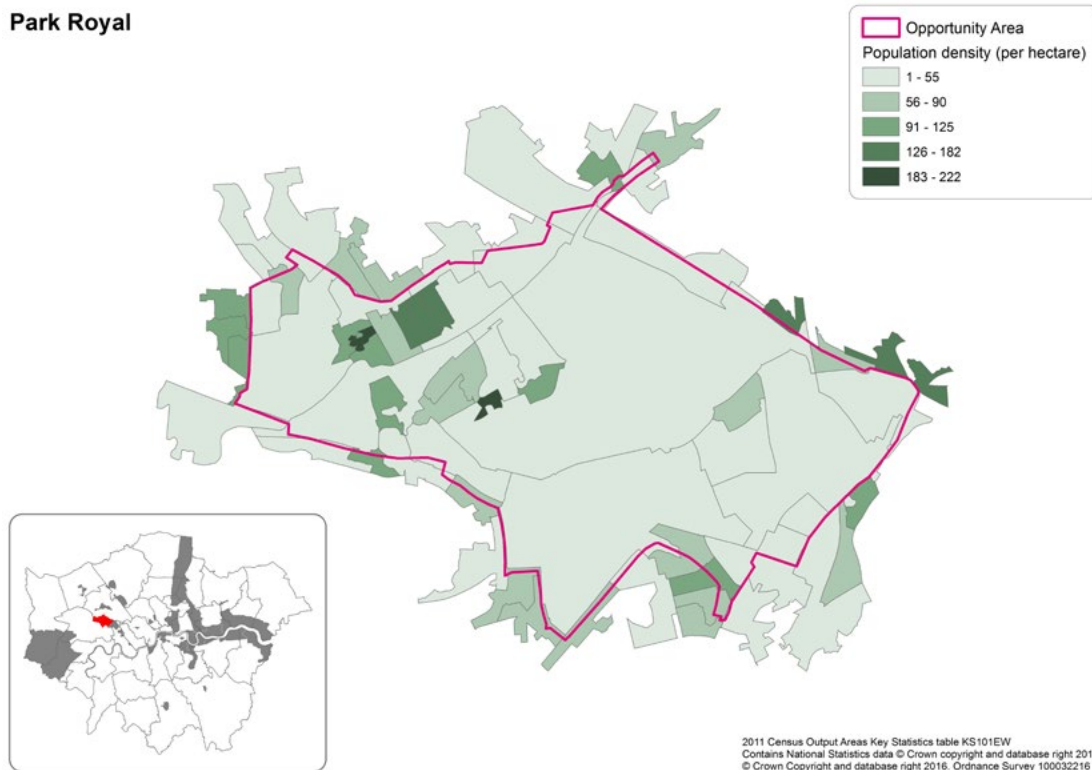
Source: Census and GLA Intelligence Unit analysis

A28: The Royal Docks and Beckton Waterfront

It can be seen from Map A55 that employment in the Royal Docks and Beckton Waterfront area in 2011 was generally more concentrated around its edge, while for population (Map A56) the situation is similar in the centre of the area with relatively little population but more varied around the edges.

Map A55: Employment density in 2011 in the Royal Docks and Beckton Waterfront (workers per hectare)
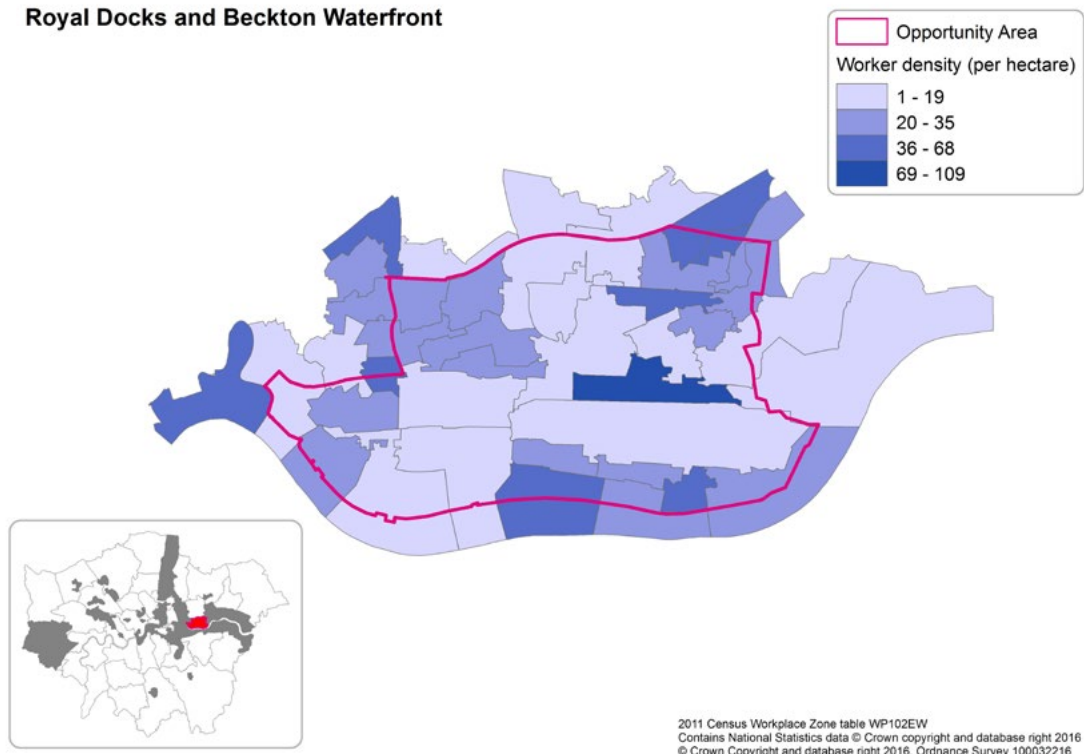
Source: Census and GLA Intelligence Unit analysis

Map A56: Population density in 2011 in the Royal Docks and Beckton Waterfront (residents per hectare)
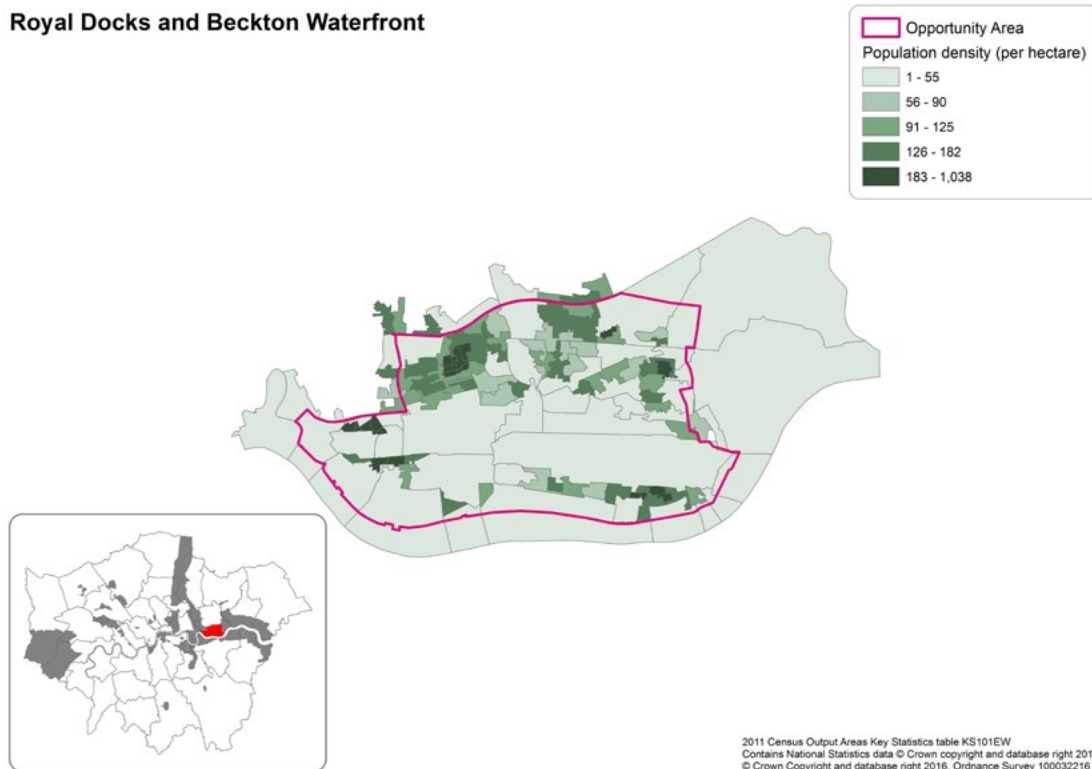
Source: Census and GLA Intelligence Unit analysis

A29: Southall

In 2011 Map A57 shows that employment was most densely concentrated in the south and central parts of the Southall area, while Map A58 shows that population was lowest in a central band of this geography.

Map A57: Employment density in 2011 in Southall (workers per hectare)
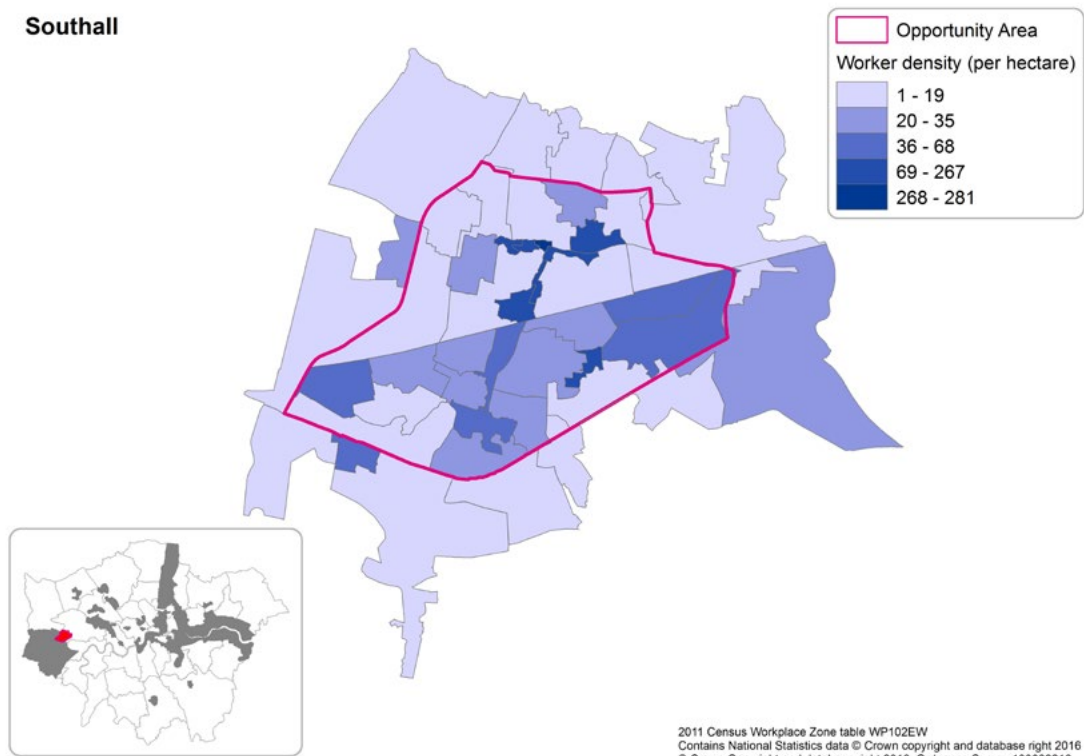
Source: Census and GLA Intelligence Unit analysis

Map A58: Population density in 2011 in Southall (residents per hectare)

Source: Census and GLA Intelligence Unit analysis

A30: Thamesmead and Abbey Wood

Map A59 shows that in 2011 employment density was relatively low in the Thamesmead and Abbey Wood area, while Map A60 shows that population density was higher in the north east and south east and south west parts of this geography.

Map A59: Employment density in 2011 in the Thamesmead and Abbey Wood (workers per hectare)

Source: Census and GLA Intelligence Unit analysis

Map A60: Population density in 2011 in Thamesmead and Abbey Wood (residents per hectare)
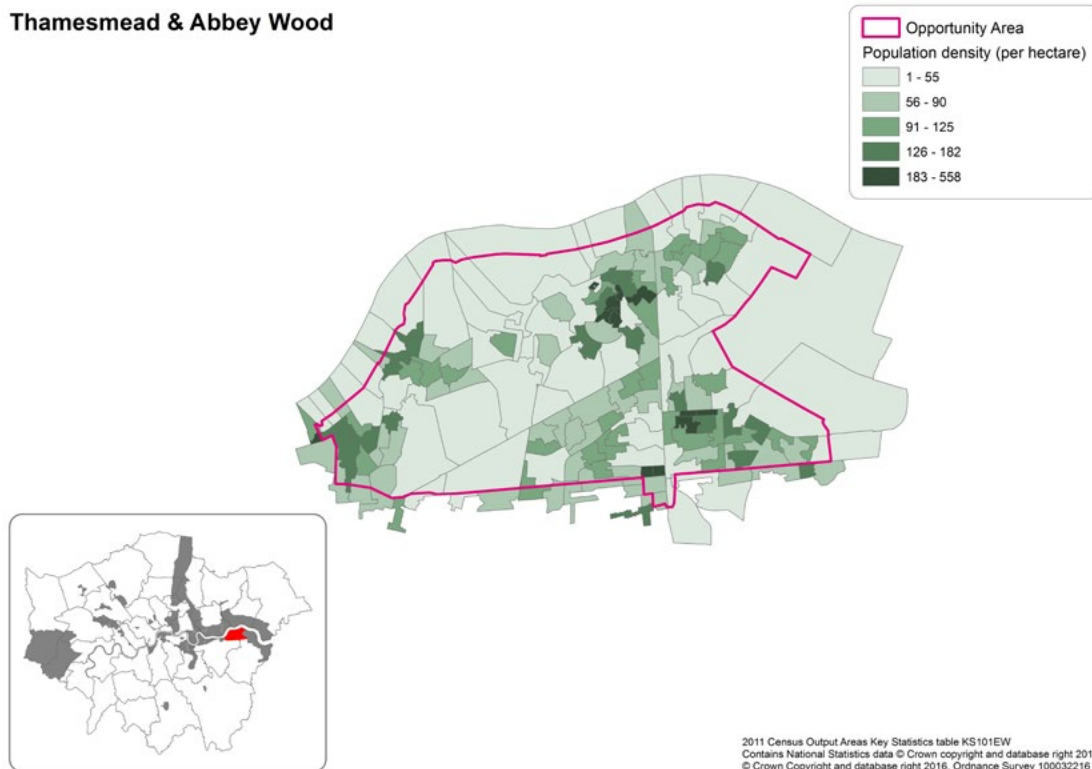
Source: Census and GLA Intelligence Unit analysis

A31: Tottenham Court Road

As shown by Map A61 employment was heavily concentrated across all of the Tottenham Court Road area in 2011, while Map A62 shows that this was not the case for population with it being greatest on the geographies eastern edge.

Map A61: Employment density in 2011 in the Tottenham Court Road (workers per hectare)
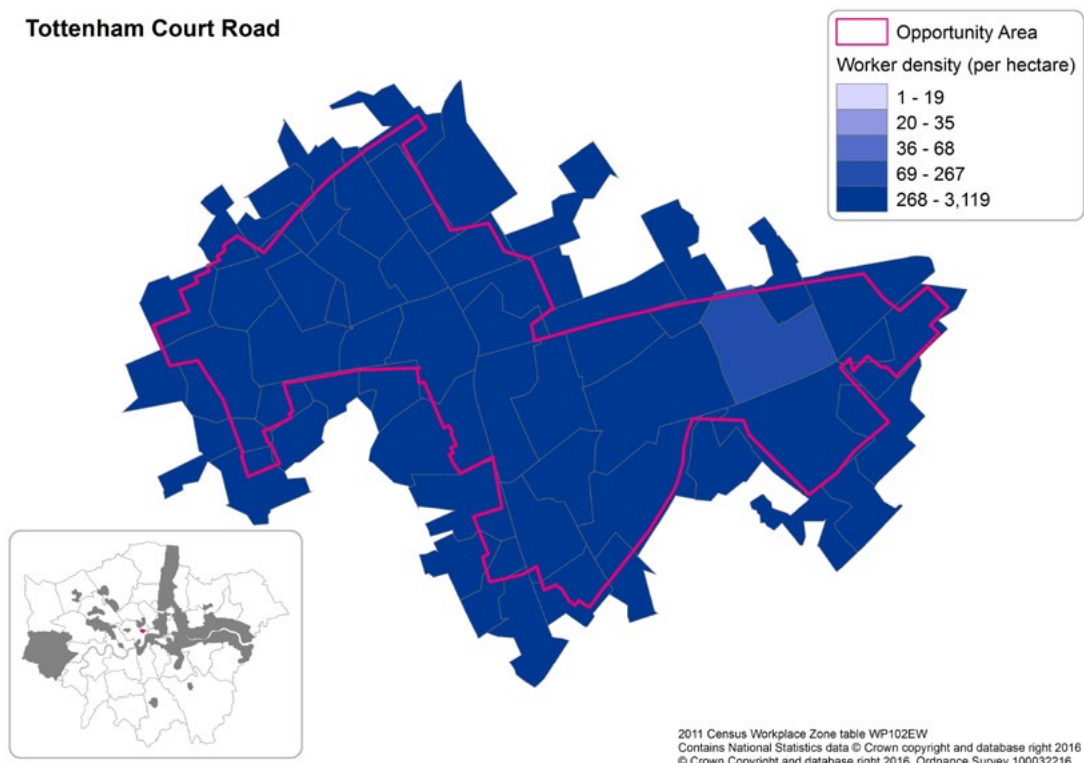
Source: Census and GLA Intelligence Unit analysis

Map A62: Population density in 2011 in Tottenham Court Road (residents per hectare)
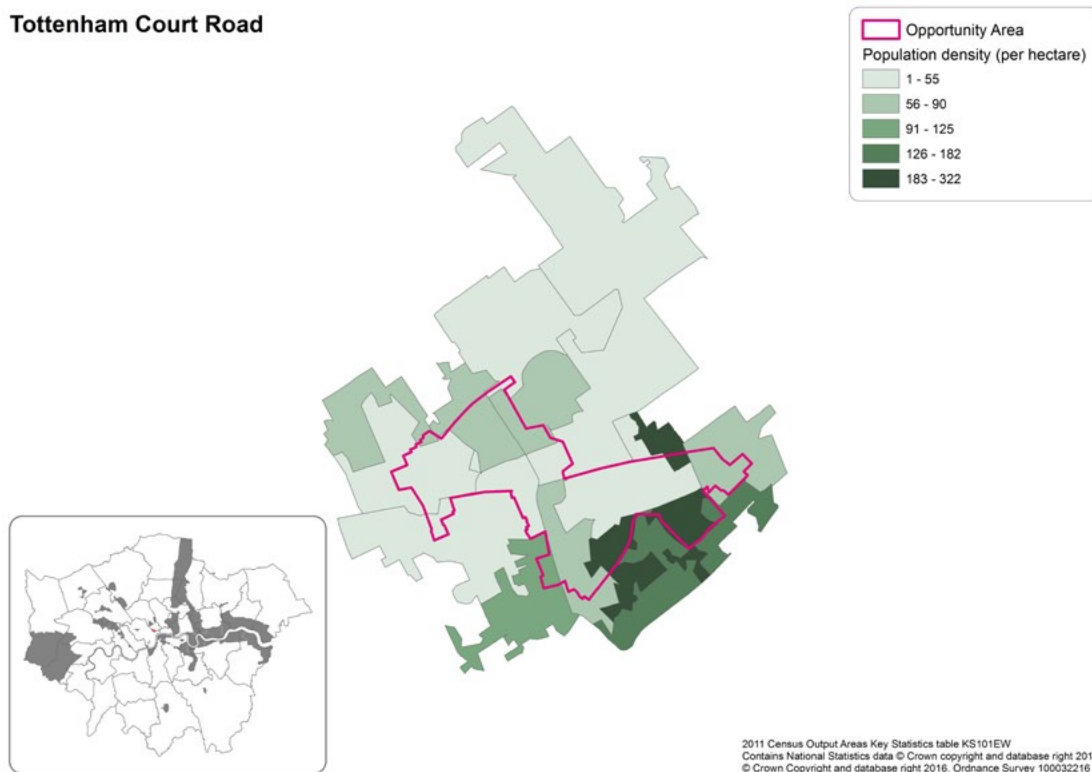
Source: Census and GLA Intelligence Unit analysis

A32: The Upper Lee Valley

Map A63 shows a vein of moderately concentrated employment running through the Upper Lee Valley area in 2011, while Map A64 shows a generally similar population density pattern, with the population density being more intense on the eastern and bottom western edge of the area.

Map A63: Employment density in 2011 in the Upper Lee Valley (workers per hectare)
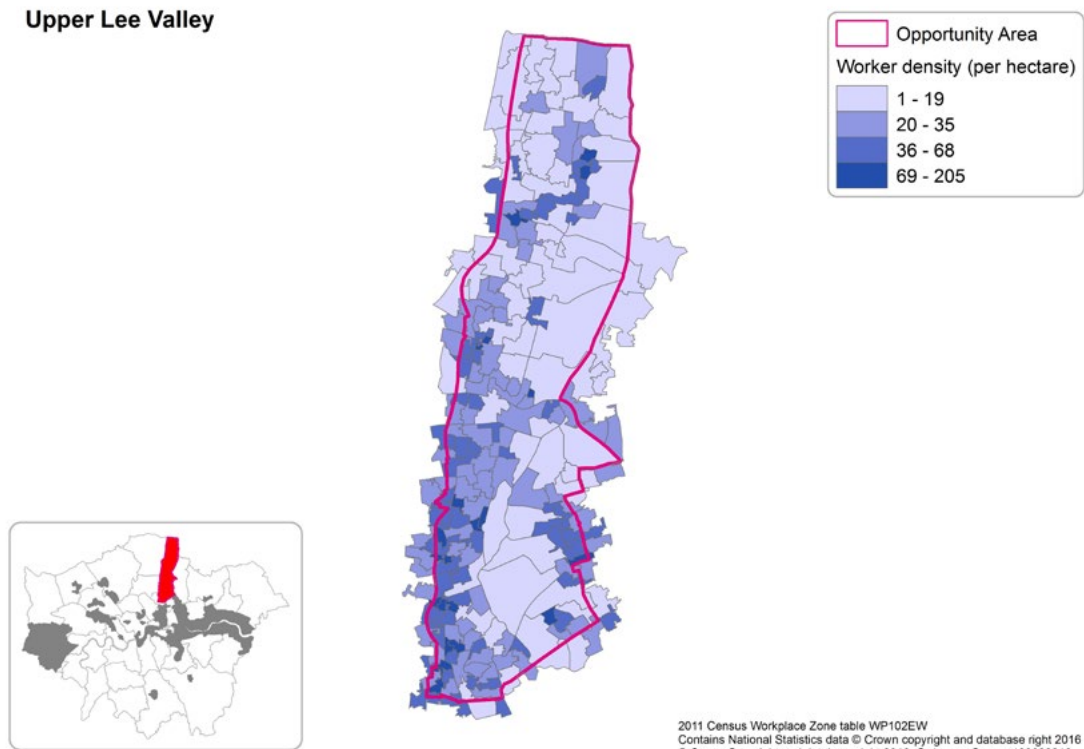
Source: Census and GLA Intelligence Unit analysis

Map A64: Population density in 2011 in the Upper Lee Valley (residents per hectare)
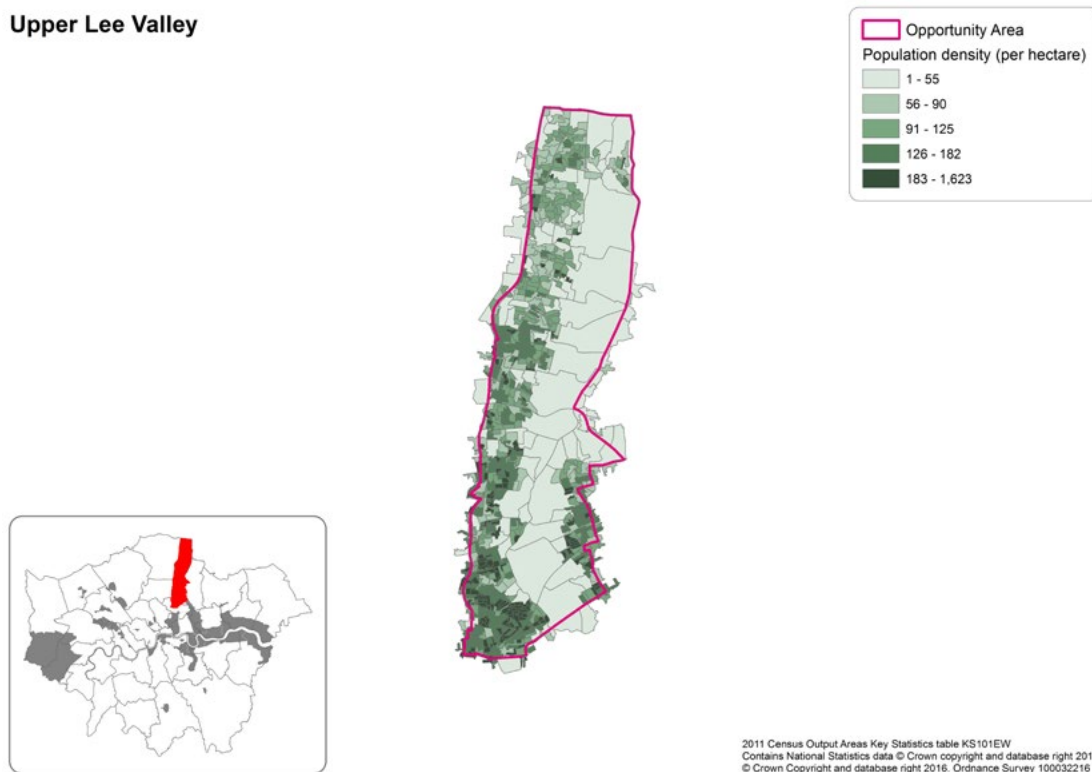
Source: Census and GLA Intelligence Unit analysis

A33: Vauxhall, Nine Elms & Battersea

Map A65 shows that in 2011 employment density was moderately high across the Vauxhall, Nine Elms & Battersea area, while population density was relatively low apart from in the eastern fringe and south eastern part of the geography.

Map A65: Employment density in 2011 in Vauxhall, Nine Elms & Battersea (workers per hectare)
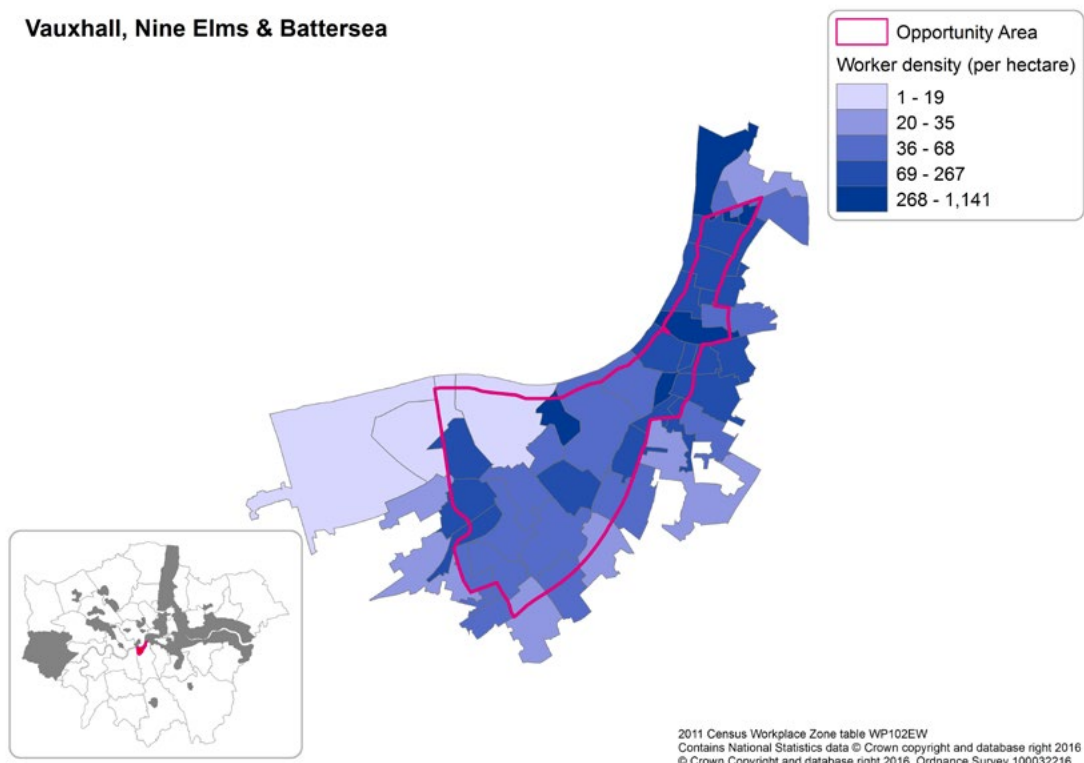
Source: Census and GLA Intelligence Unit analysis

Map A66: Population density in 2011 in Vauxhall, Nine Elms & Battersea (residents per hectare)
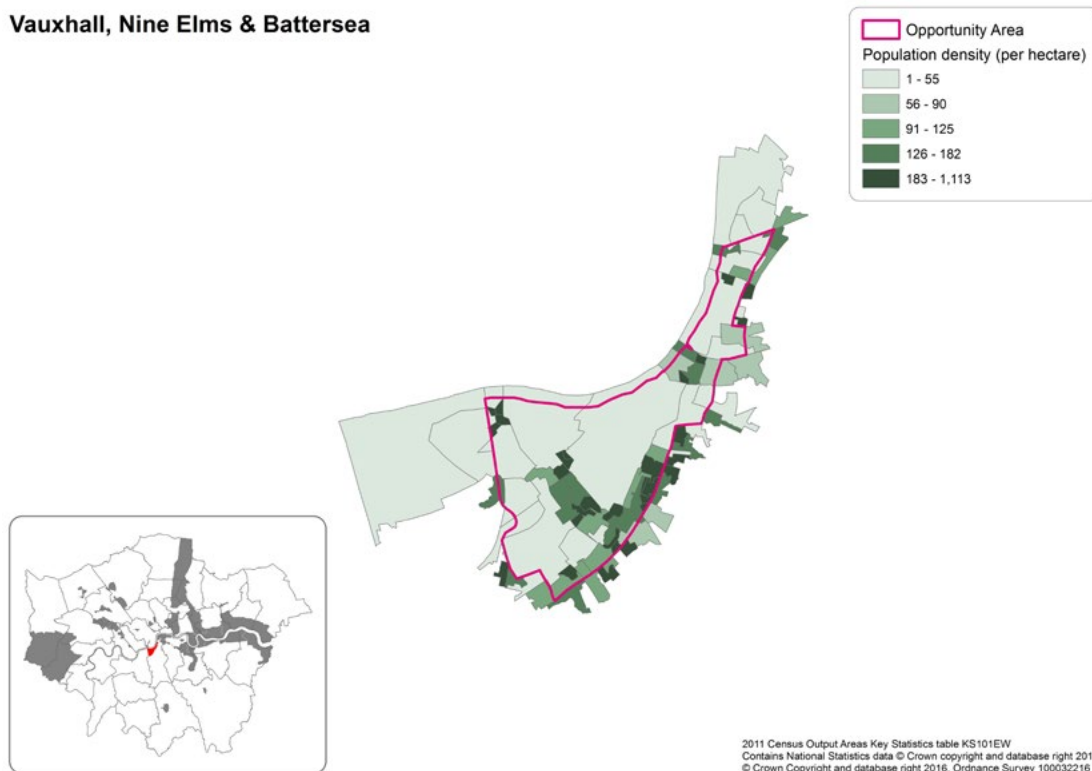
Source: Census and GLA Intelligence Unit analysis

A34: Victoria

In 2011 as shown by Map A67 employment density was relatively high in the Victoria area especially in its northern section, while Map A68 shows that population was most concentrated in the south and mid-east of the area.

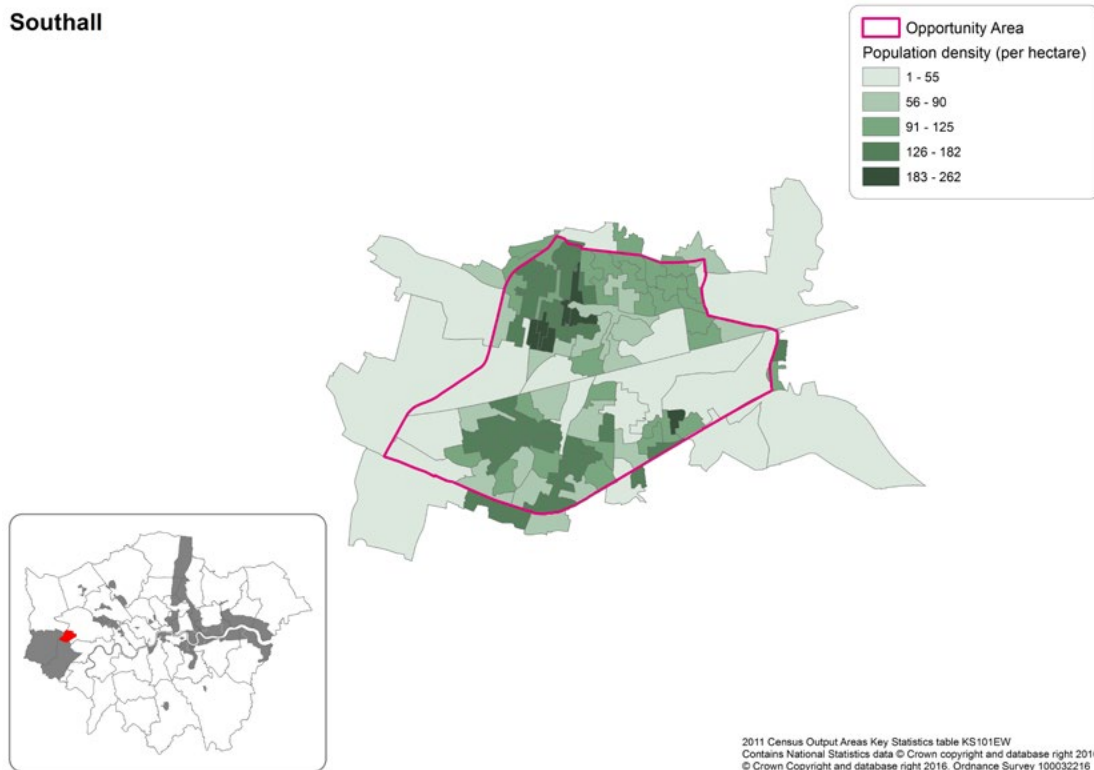**Map A67: Employment density in 2011 in Victoria (workers per hectare)**
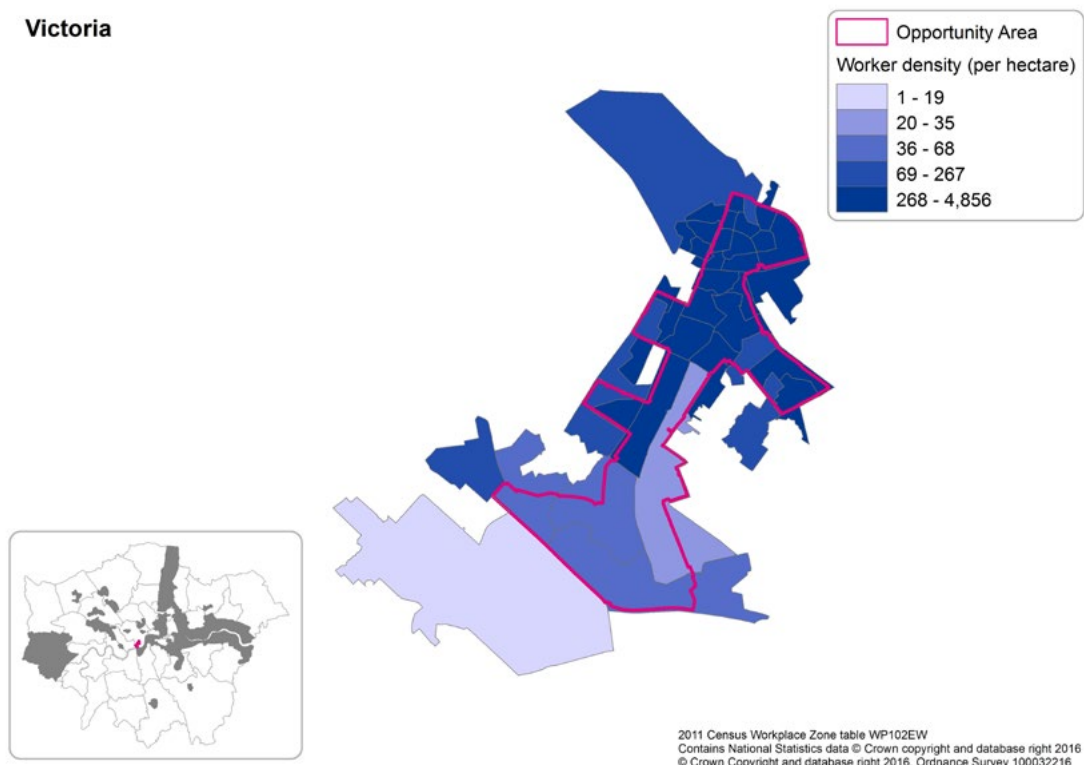
Source: Census and GLA Intelligence Unit analysis

Map A68: Population density in 2011 in Victoria (residents per hectare)
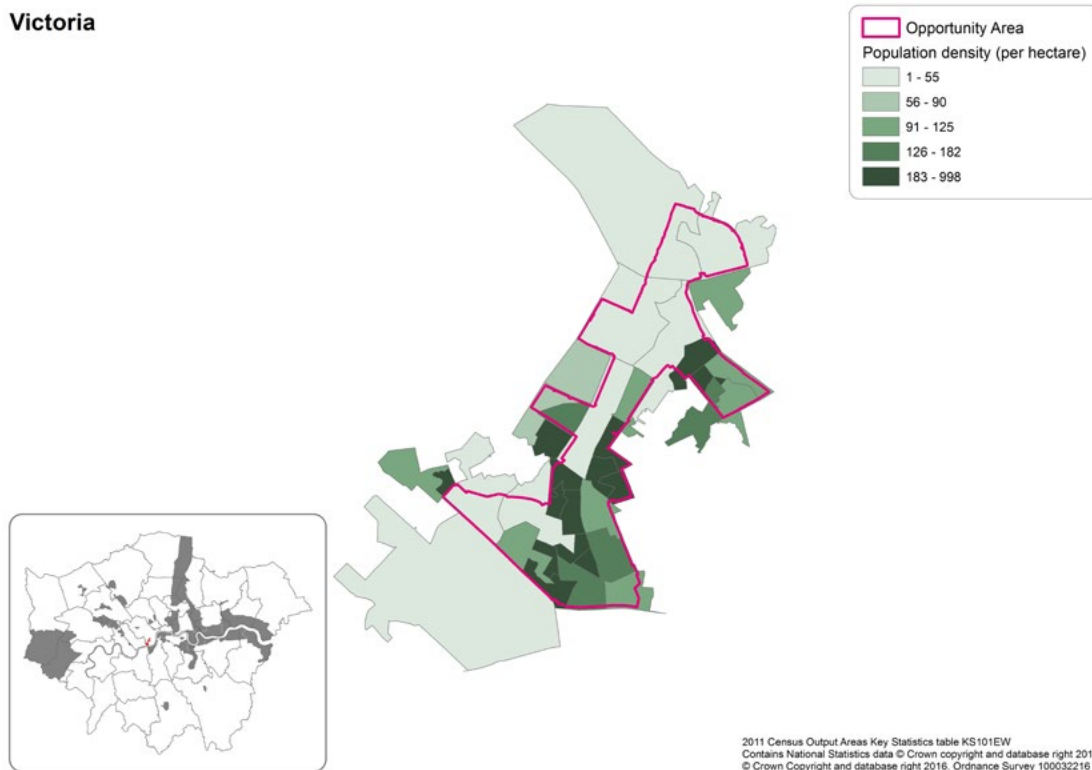
Source: Census and GLA Intelligence Unit analysis

A35: Waterloo

In 2011 as shown by Map A69 employment density was relatively high in the Waterloo area, while Map A70 shows that population was generally low apart from at its eastern end and a couple of points at its mid-west.

Map A69: Employment density in 2011 in Waterloo (workers per hectare)
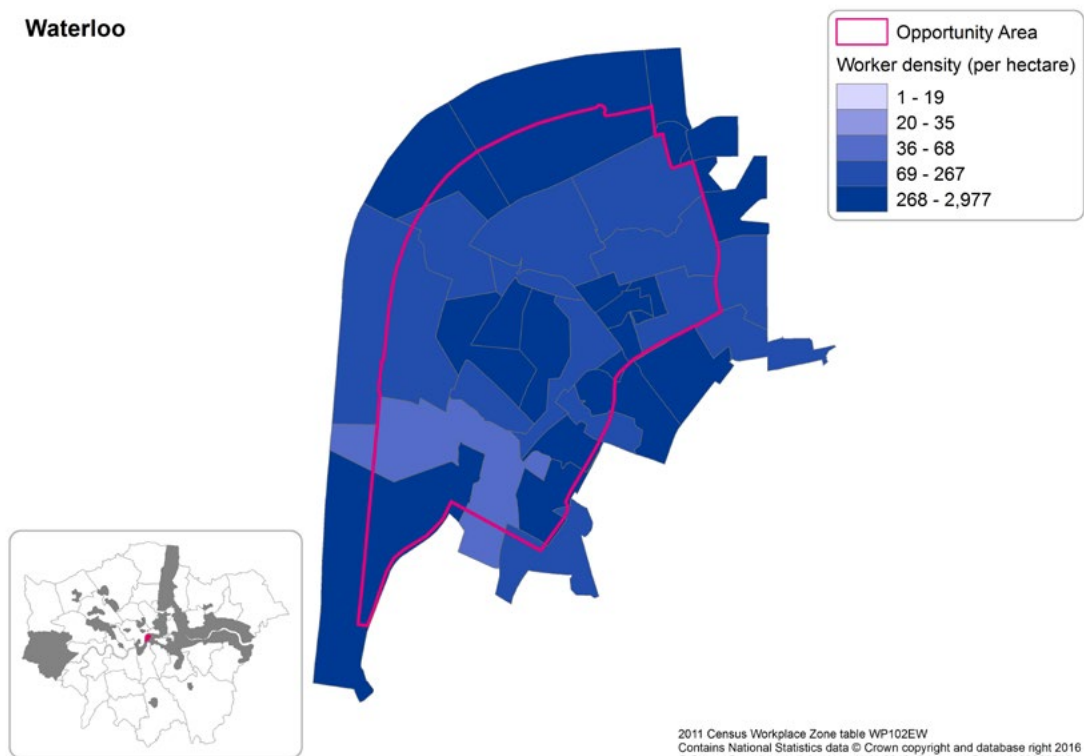
Source: Census and GLA Intelligence Unit analysis

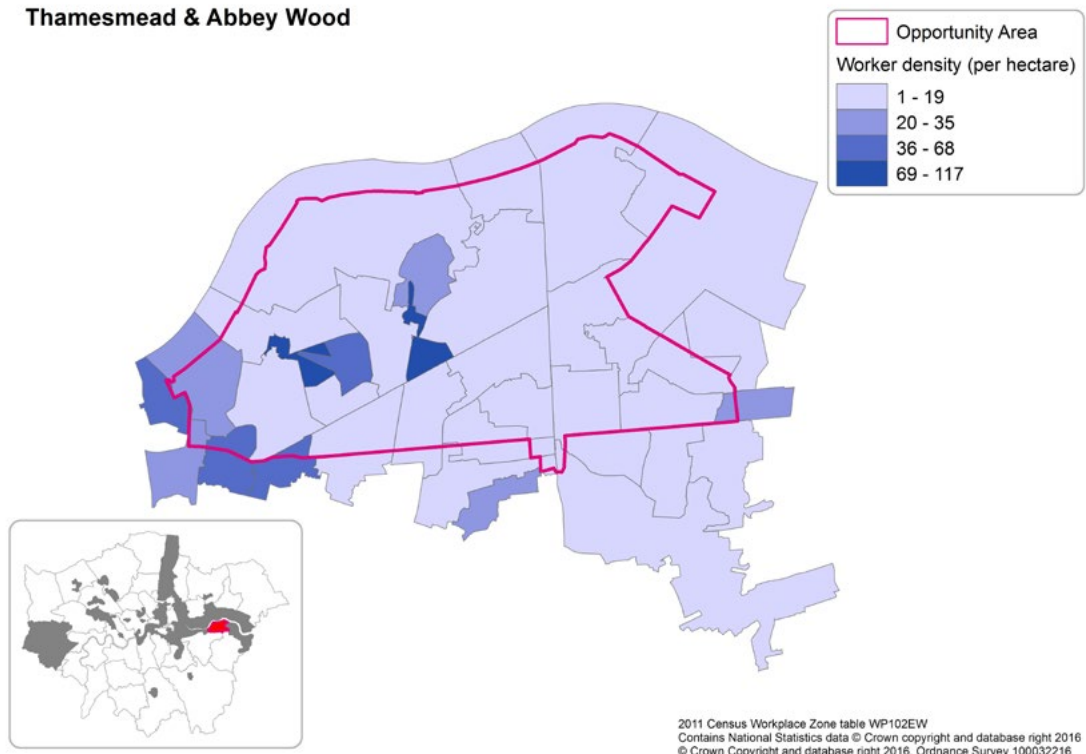**Map A70: Population density in 2011 in Waterloo (residents per hectare)**
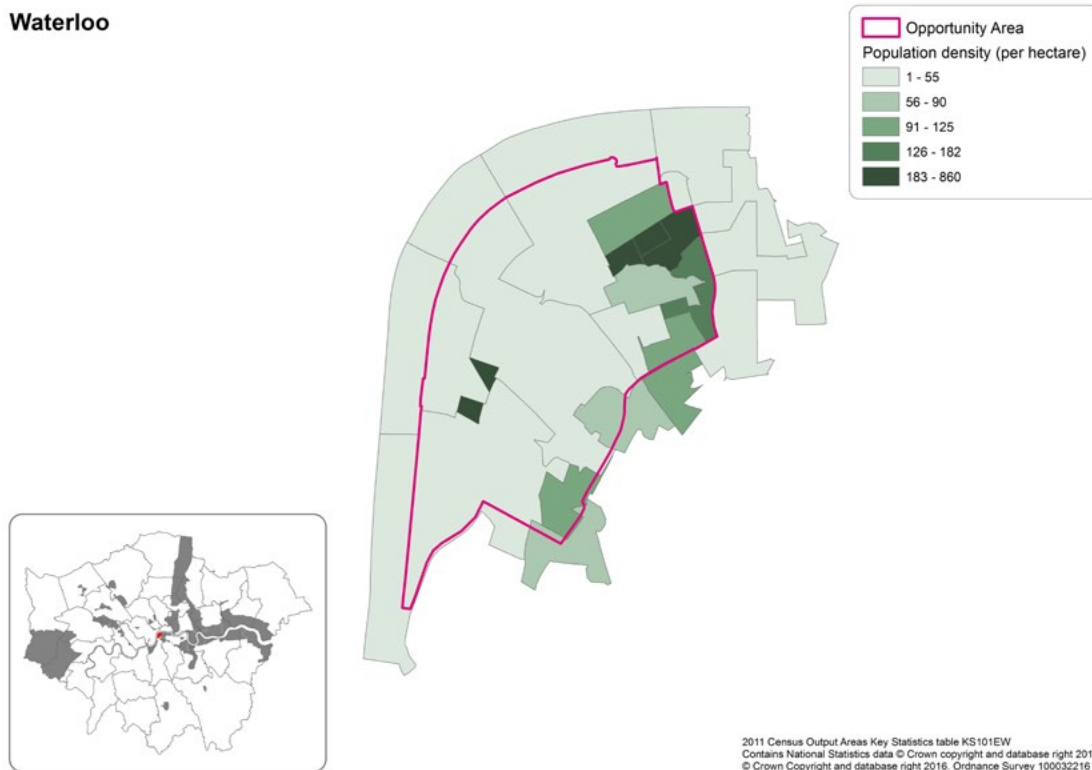
Source: Census and GLA Intelligence Unit analysis

A36: Wembley

In 2011 as shown by Map A71 employment density was relatively evenly spread in the Wembley area, while Map A70 shows that population was generally low apart from at its western end.

Map A71: Employment density in 2011 in Wembley (workers per hectare)
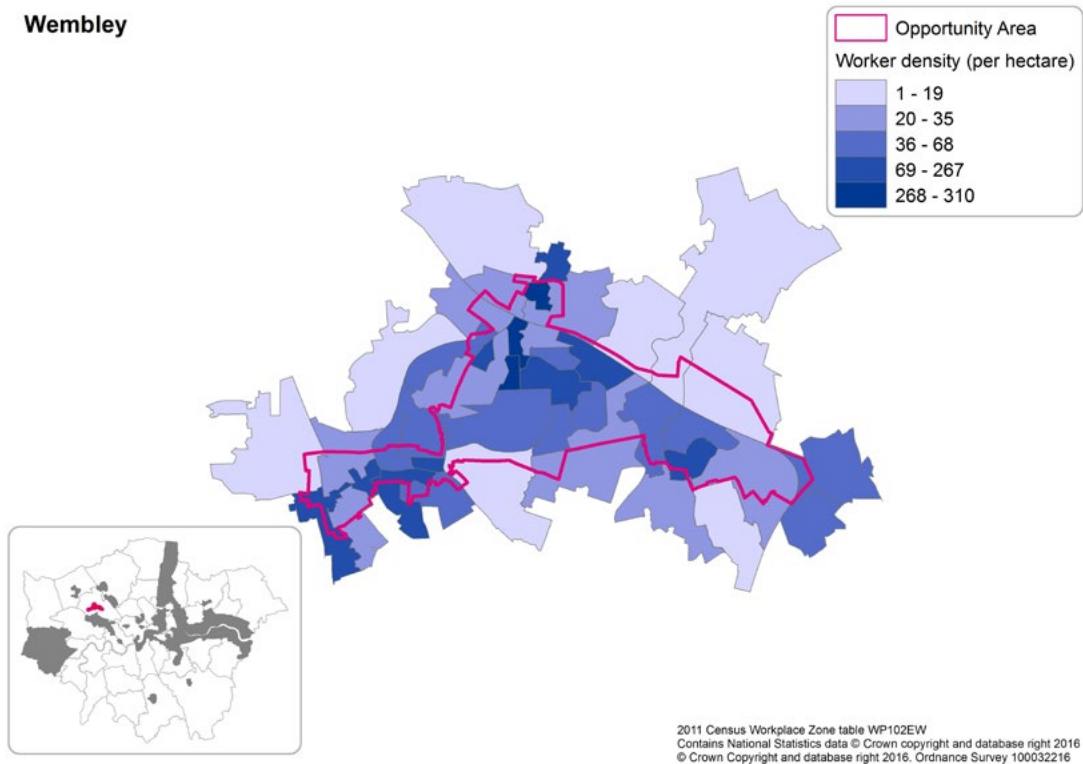
Source: Census and GLA Intelligence Unit analysis

Map A72: Population density in 2011 in Wembley (residents per hectare)
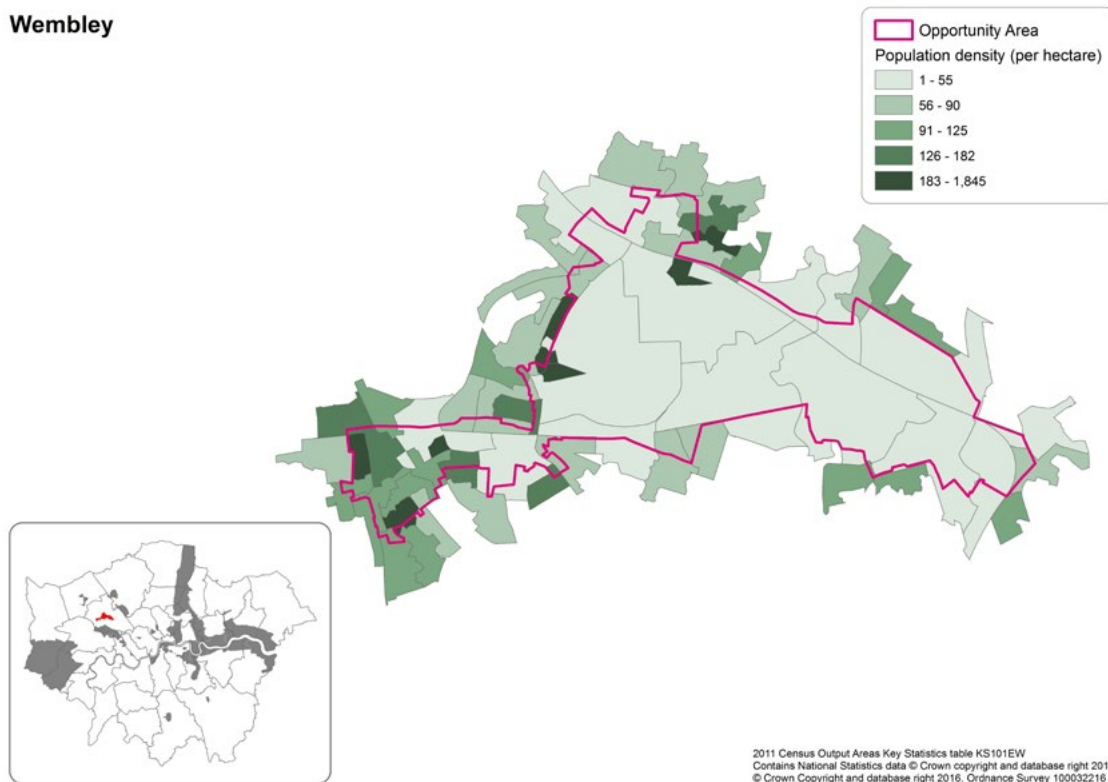
Source: Census and GLA Intelligence Unit analysis

A37: White City

In 2011 Map A73 shows that employment density was relatively high in the White City area, while Map A74 shows that population was more concentrated around its western and southern edges.

Map A73: Employment density in 2011 in White city (workers per hectare)
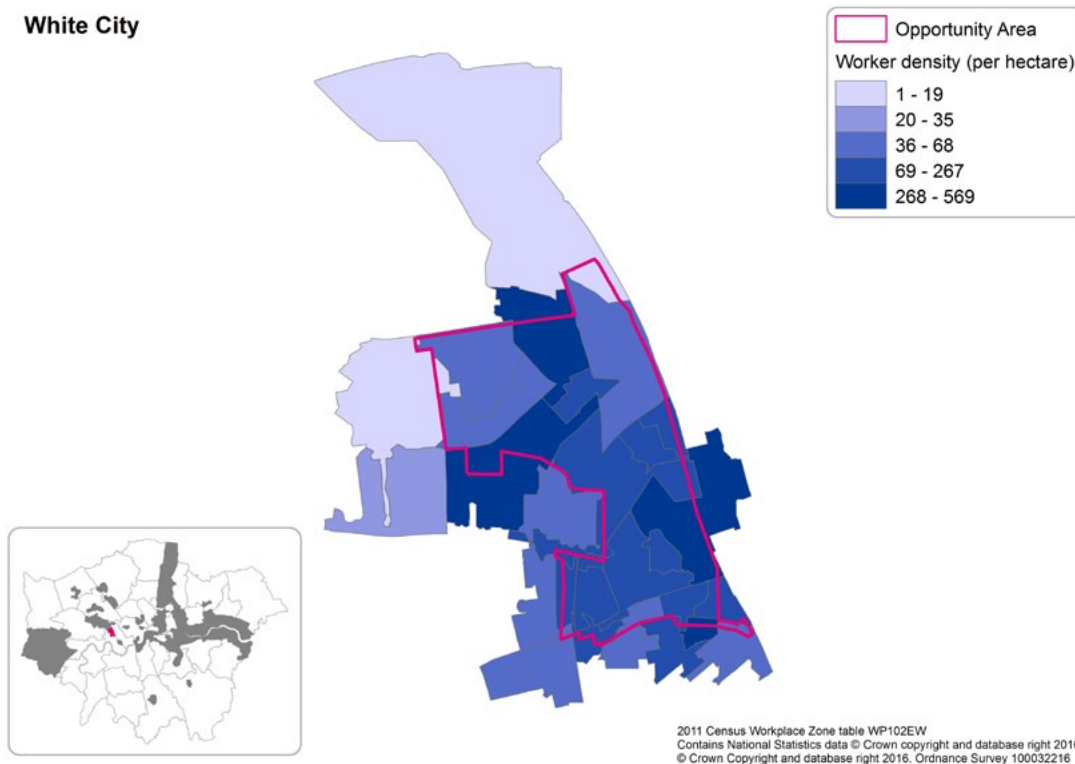
Source: Census and GLA Intelligence Unit analysis

Map A74: Population density in 2011 in White City (residents per hectare)
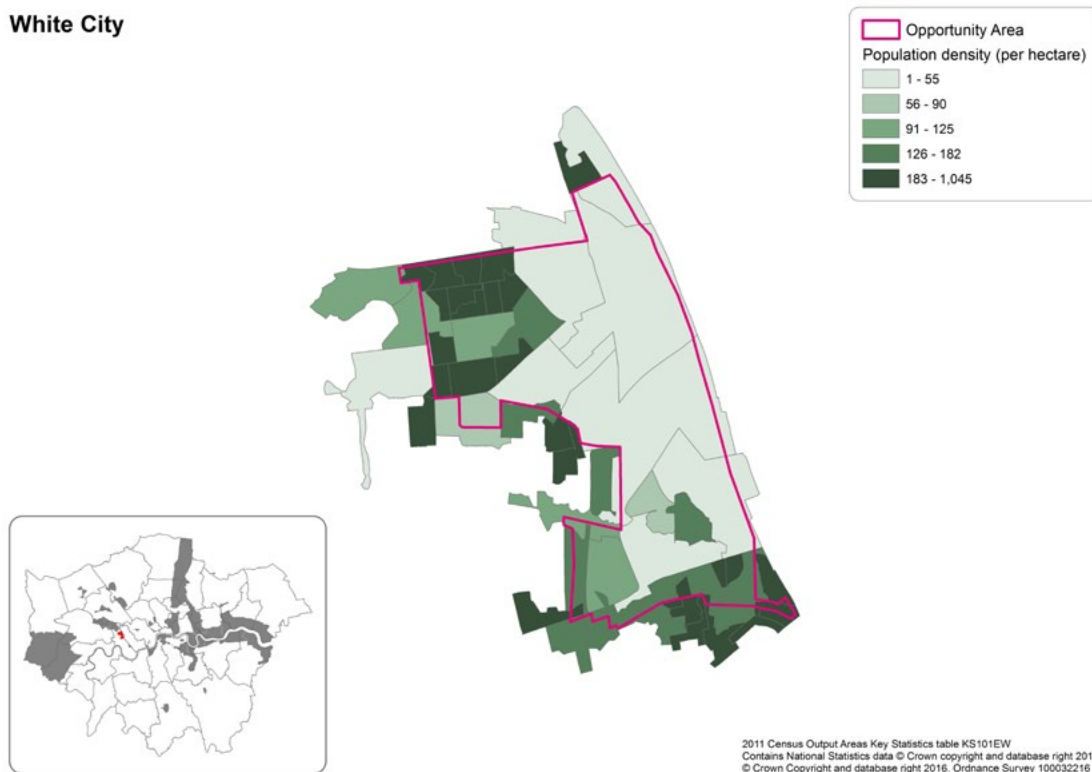
Source: Census and GLA Intelligence Unit analysis

A38: Woolwich

Map A75 shows that in 2011 employment density was relatively constant in the Woolwich area, while Map A76 shows that population was generally low apart from in a few scattered areas and its north eastern corner.

Map A75: Employment density in 2011 in Woolwich (workers per hectare)
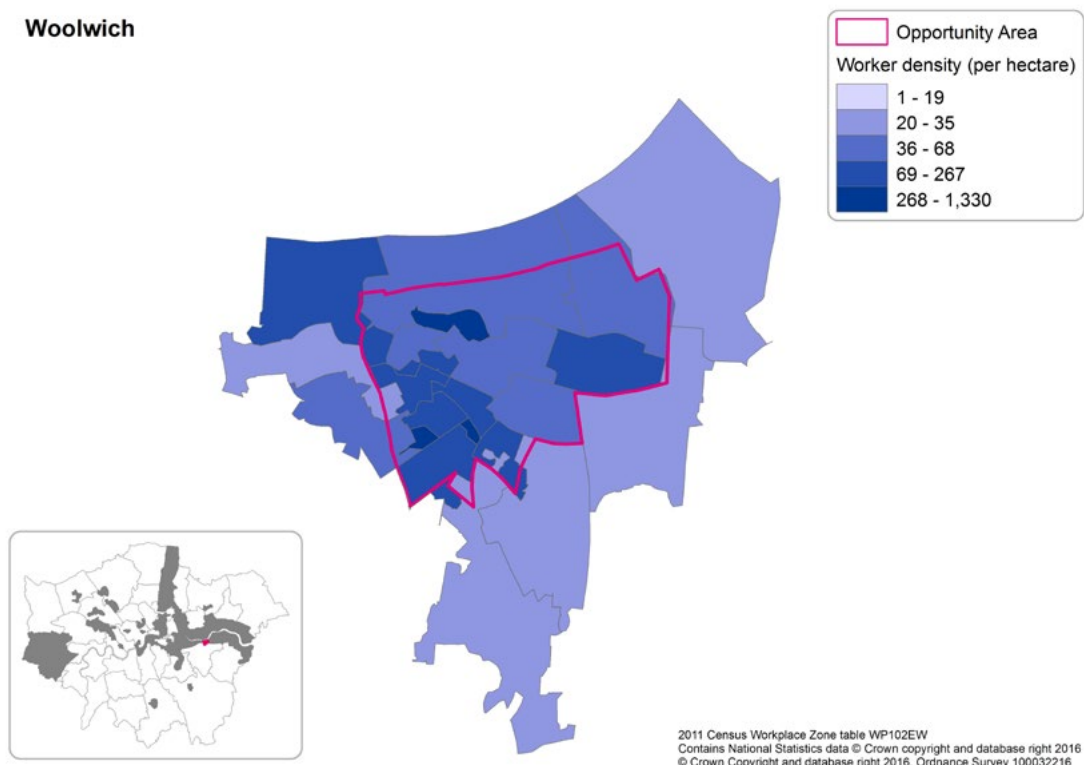
Source: Census and GLA Intelligence Unit analysis

Map A76: Population density in 2011 in Woolwich (residents per hectare)
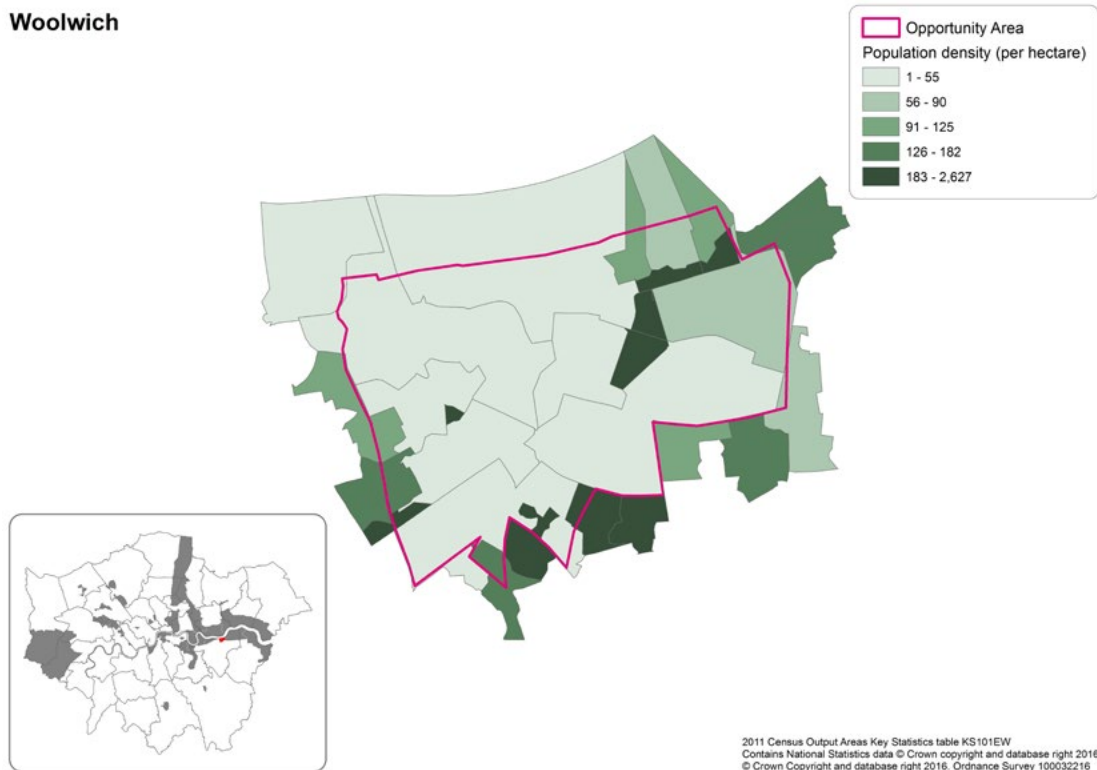
Source: Census and GLA Intelligence Unit analysis

Appendix 2.2: Sub regional employee jobs locations in London

This section of the Appendix to Chapter 2 examines employee density in London at the NUTS2 geography and thus provides a more disaggregated picture than that shown and examined in the main text. It also provides maps examining employee density at the workplace zone level in London in order to provide a different view on employment in London.

Map B1 shows that the strongest concentration of employees in Inner London – East in 2015 was in the NIOD and a fringe to the north and south of the City.

Map B1: Number of employees per square kilometre in 2015 in Inner London - East
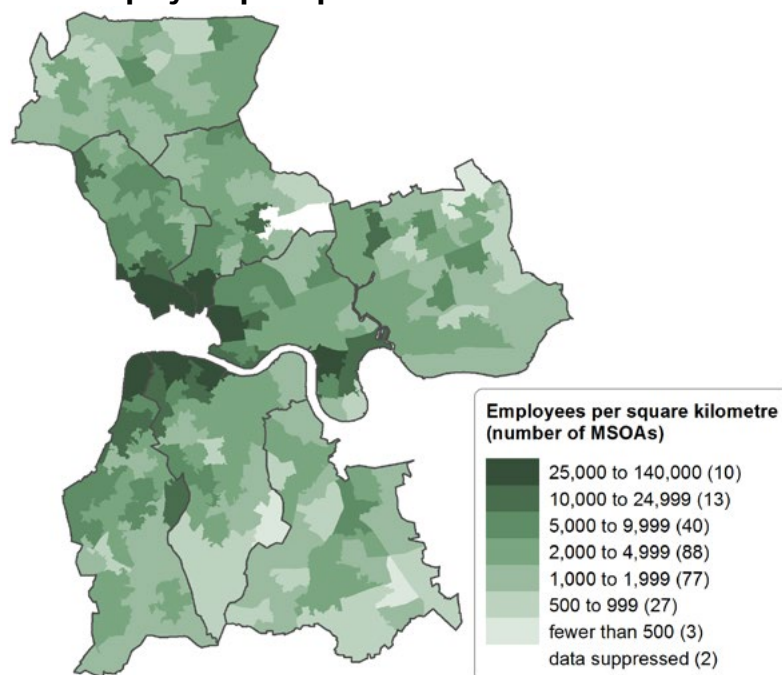
Employees per square kilometre
(number of MSOAs)

- 25,000 to 140,000 (10)
- 10,000 to 24,999 (13)
- 5,000 to 9,999 (40)
- 2,000 to 4,999 (88)
- 1,000 to 1,999 (77)
- 500 to 999 (27)
- fewer than 500 (3)
- data suppressed (2)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Source: BRES

Map B2 shows that in 2015 in Inner London – West employees were heavily concentrated in an area running from the City to a broad area going westward towards Paddington, northward up Tottenham court road and south from Victoria and also into the Knightsbridge area and with another couple of areas near Hammersmith Bridge and Wandsworth Bridge.

Map B2: Number of employees per square kilometre in 2015 in Inner London - West

Employees per square kilometre
(number of MSOAs)

25,000 to 140,000 (16)
10,000 to 24,999 (22)
5,000 to 9,999 (36)
2,000 to 4,999 (40)
1,000 to 1,999 (17)
500 to 999 (5)
fewer than 500 (0)
data suppressed (0)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
Source: Inter-Departmental Business Register, Office for National Statistics
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Source: BRES

Map B3 shows employees in 2015 in Outer London – East & North East were less heavily concentrated in most areas compared to the Inner London NUTS2 areas but with distinct areas of higher employee concentration shown throughout the geography.

Map B3: Number of employees per square kilometre in 2015 in Outer London – East & North East
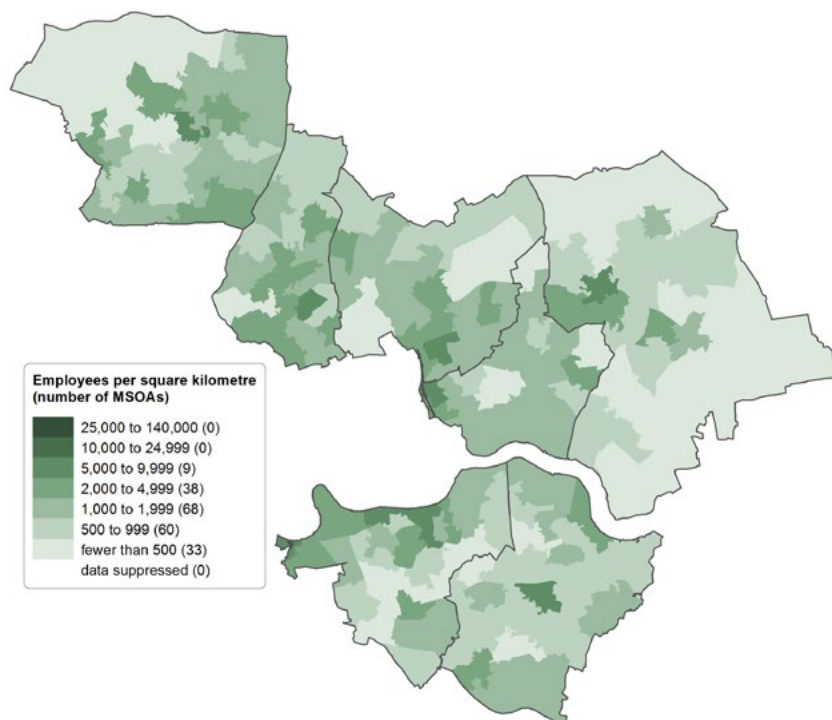
Employees per square kilometre
(number of MSOAs)

25,000 to 140,000 (0)
10,000 to 24,999 (0)
5,000 to 9,999 (9)
2,000 to 4,999 (38)
1,000 to 1,999 (68)
500 to 999 (60)
fewer than 500 (33)
data suppressed (0)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Source: BRES

Map B4 shows areas of high concentration of employees in Outer London – South in 2015 associated with the town centres of Croydon, Kingston upon Thames and Sutton.

Map B4: Number of employees per square kilometre in 2015 in Outer London – South
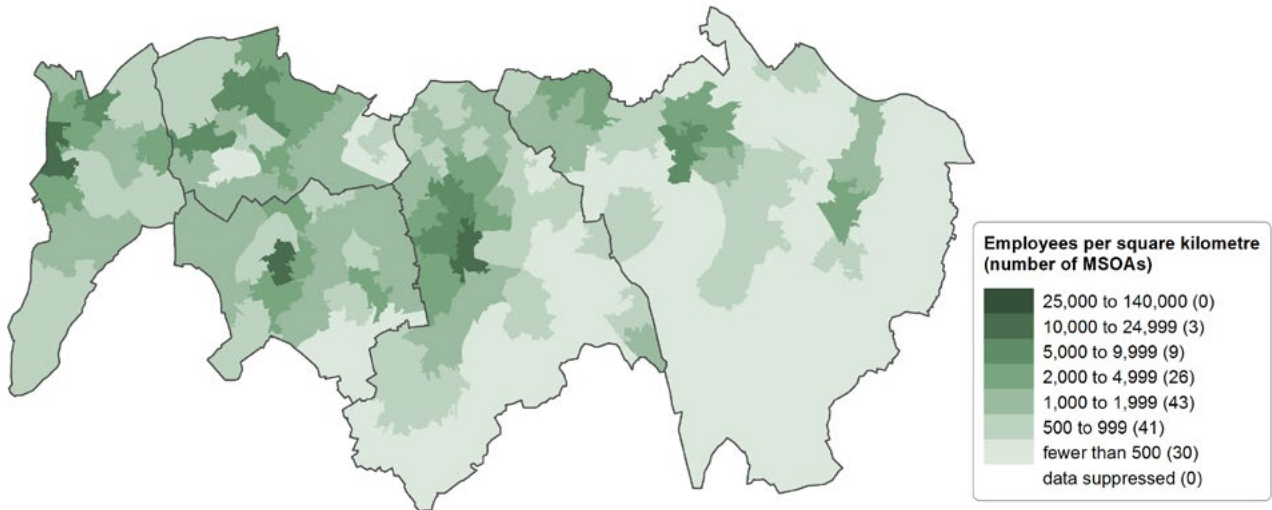
Employees per square kilometre (number of MSOAs)

25,000 to 140,000 (0)
10,000 to 24,999 (3)
5,000 to 9,999 (9)
2,000 to 4,999 (26)
1,000 to 1,999 (43)
500 to 999 (41)
fewer than 500 (30)
data suppressed (0)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Source: BRES

Map B5 shows that employees were concentrated in a number of areas of Outer London – West & North West in 2015 most likely associated with Heathrow Airport and various town centres.

Map B5: Number of employees per square kilometre in 2015 in Outer London – West & North West
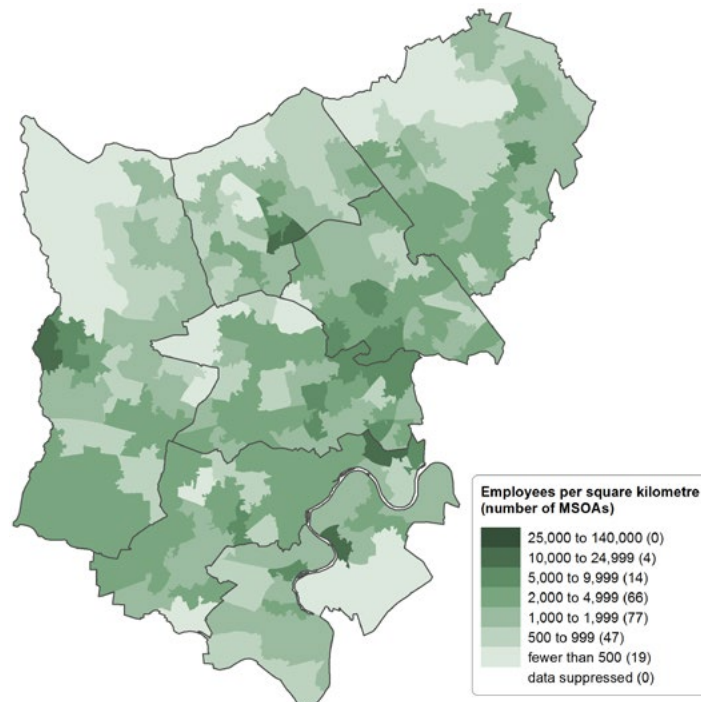
Employees per square kilometre (number of MSOAs)

25,000 to 140,000 (0)
10,000 to 24,999 (4)
5,000 to 9,999 (14)
2,000 to 4,999 (66)
1,000 to 1,999 (77)
500 to 999 (47)
fewer than 500 (19)
data suppressed (0)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Source: BRES

Finally, Maps B6 & B7 examines employee concentration in London using a different methodology than employees per square kilometre, in this case by employees per workplace zone between 2009 and 2015. As can be seen from Maps B6 & B7 there appears to have been some deepening in the number of employees in Central London workplace zones between 2009 and 2015. With, Map B7 again showing that in 2015 employees are heavily concentrated in Central London workplace zones, however a number of Outer London workplace zones can also be seen to have heavy concentrations of employees.

Map B6: Number of employees in London Workplace Zones, 2009
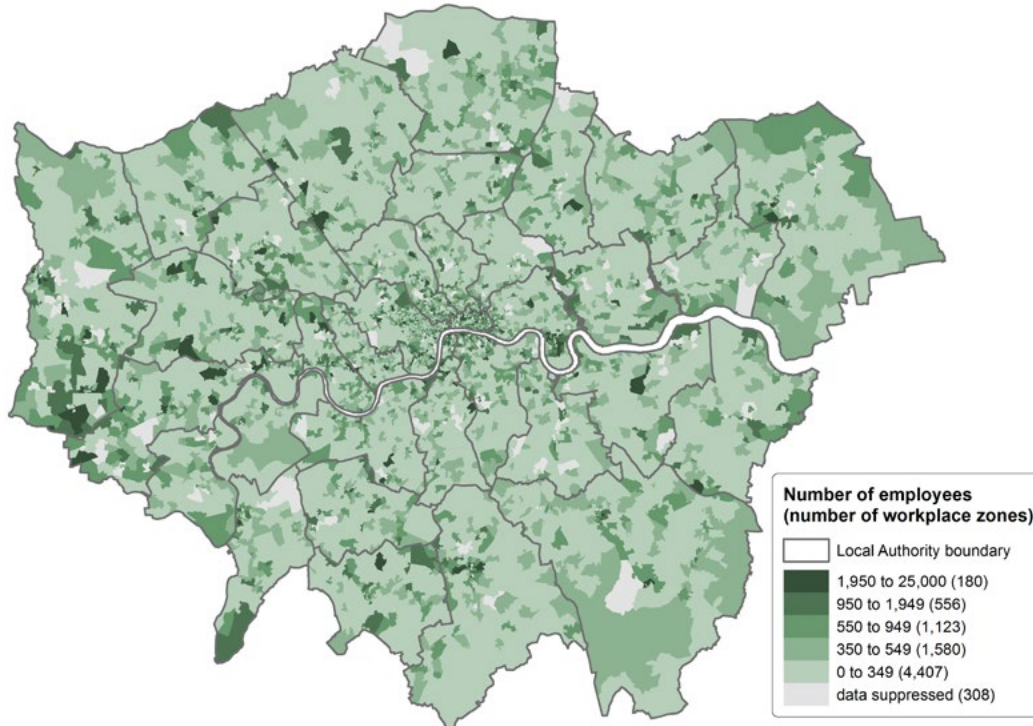
Source: Inter-Departmental Business Register, Office for National Statistics
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Source: IDBR

Map B7: Number of employees in London Workplace Zones, 2015
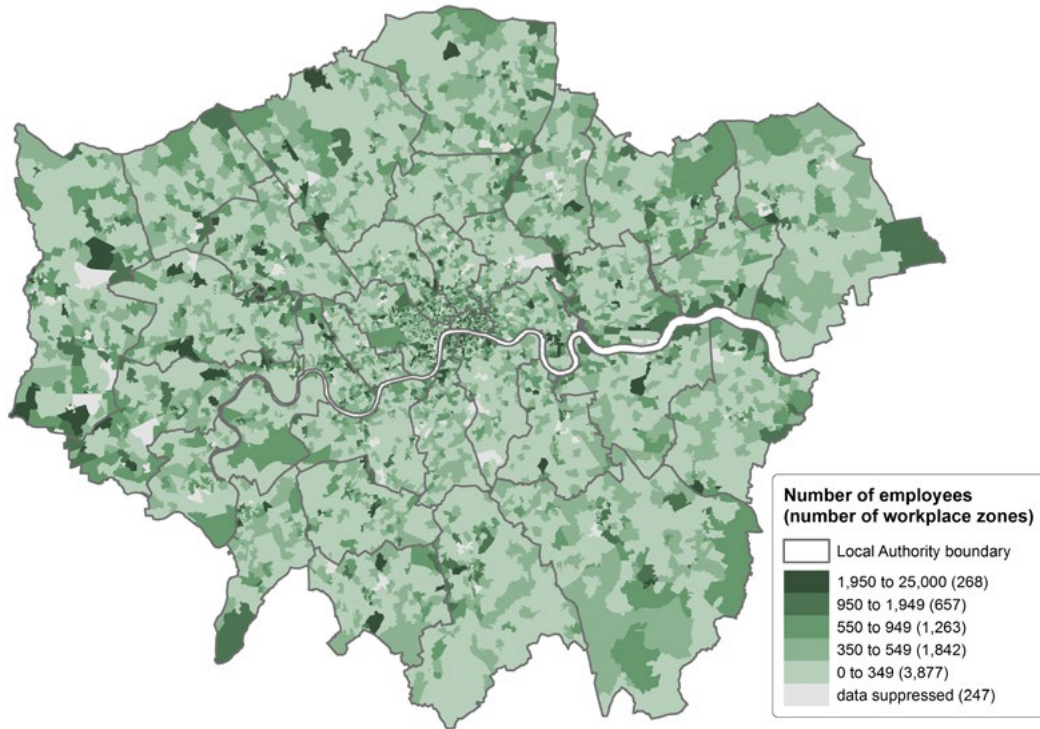
Number of employees
(number of workplace zones)

Local Authority boundary

1,950 to 25,000 (268)
950 to 1,949 (657)
550 to 949 (1,263)
350 to 549 (1,842)
0 to 349 (3,877)
data suppressed (247)

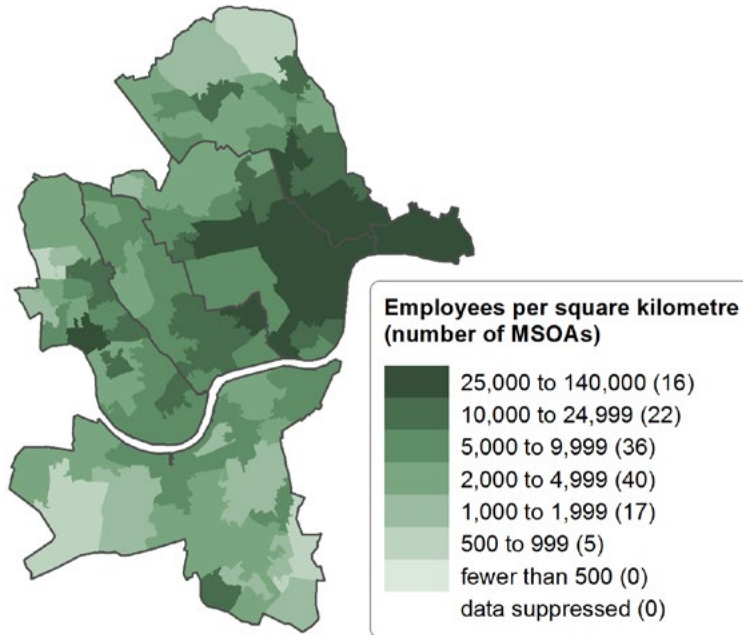Source: Inter-Departmental Business Register, Office for National Statistics
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Source: IDBR

Appendix 2.3: Output by sector in London's boroughs

This section of the appendix to Chapter 2 first looks at the evolving importance of London's LA's to London's total output in various broad sectors of the economy and thus highlights for instance the importance of Outer London to London's output in the Production sector in 2014, while Inner London has become more important to London's output in the Financial and insurance activities sector. It then moves on to look at the evolving importance of various broad sectors of the economy to the total output of London's various individual LA's. And as can be seen certain sectors such as Production have generally declined in importance to the total output of individual LA's between 1997 and 2014, while others such as Real estate activities have generally increased in importance as a percentage of total output in the individual London LA's. It should however be noted that **the scale used in each map is not consistent across the various maps** thus a sector shown to be of importance in one map may on the scale used in another map be of middling rank. This varying scale was used however in order to better highlight the sectorial differences between London's LA's.

The varying importance of London's LA's to output in the broad sectors of London's economy

Map C1 shows the importance of a number of Outer London boroughs to London's output in the Production sector over time, although the Inner London boroughs of Camden and Westminster were also important to this sector however the importance of Tower Hamlets to this sector has declined slightly between 1997 and 2014.

Map C1: Contribution of London's LA's to total output in Production in London in 1997 and 2014[2]

1997
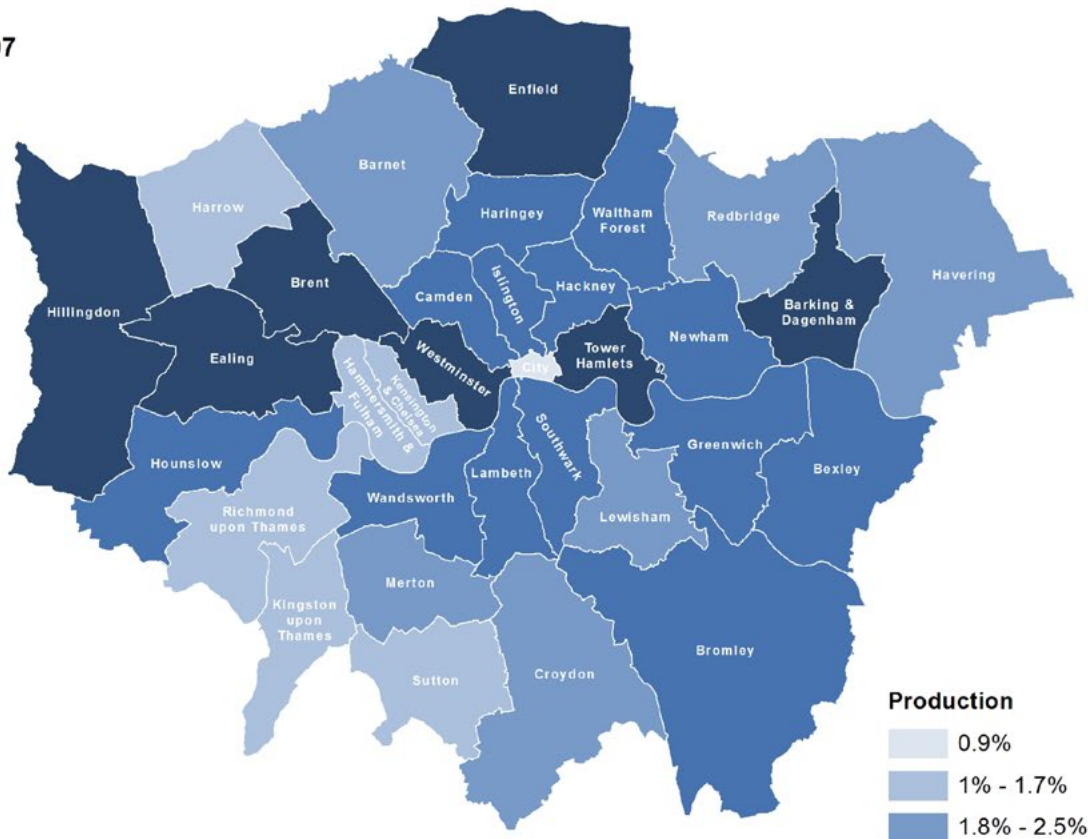
2014
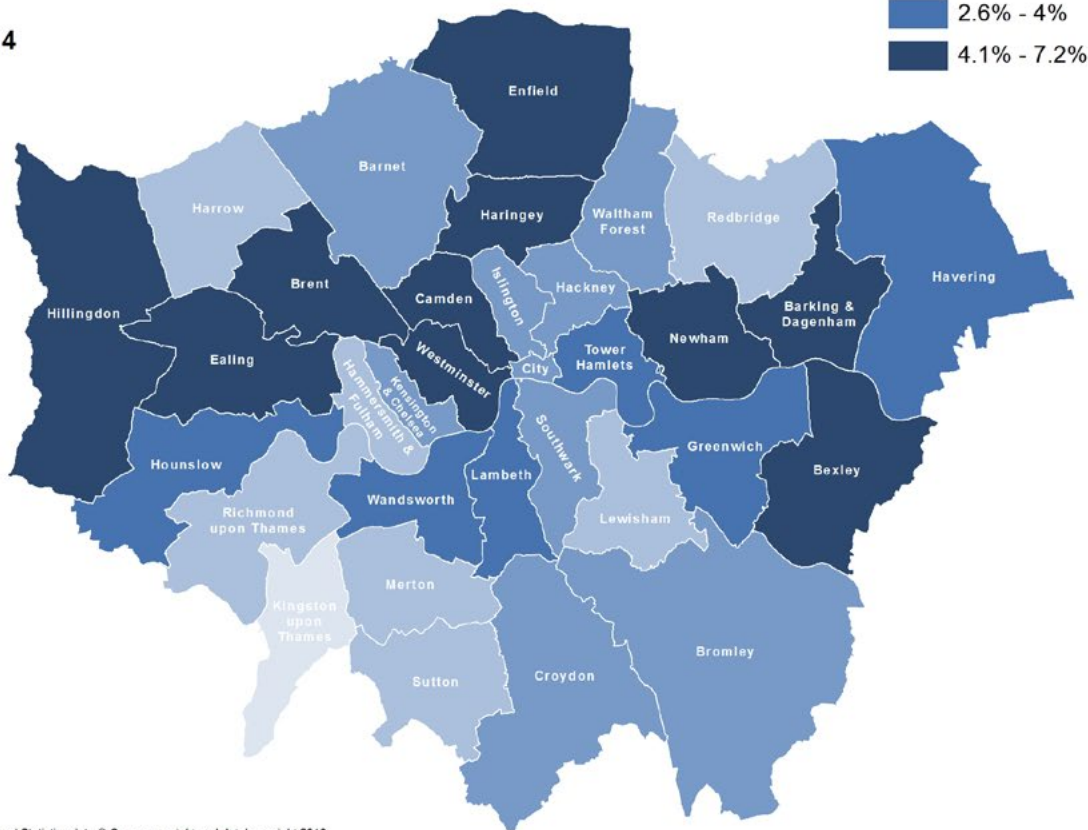
Production

- 0.9%
- 1% - 1.7%
- 1.8% - 2.5%
- 2.6% - 4%
- 4.1% - 7.2%

Source: ONS & GLA Economics calculations

Map C2 shows the reduced importance of Brent, Harrow, Southwark, and Tower Hamlets to the total London output in the Construction sector, while the boroughs of Bromley, Camden, Enfield, Havering, Hillingdon and Westminster continue to contribute significantly to London's output from this sector.

Map C2: Contribution of London's LA's to total output in Construction in London in 1997 and 2014
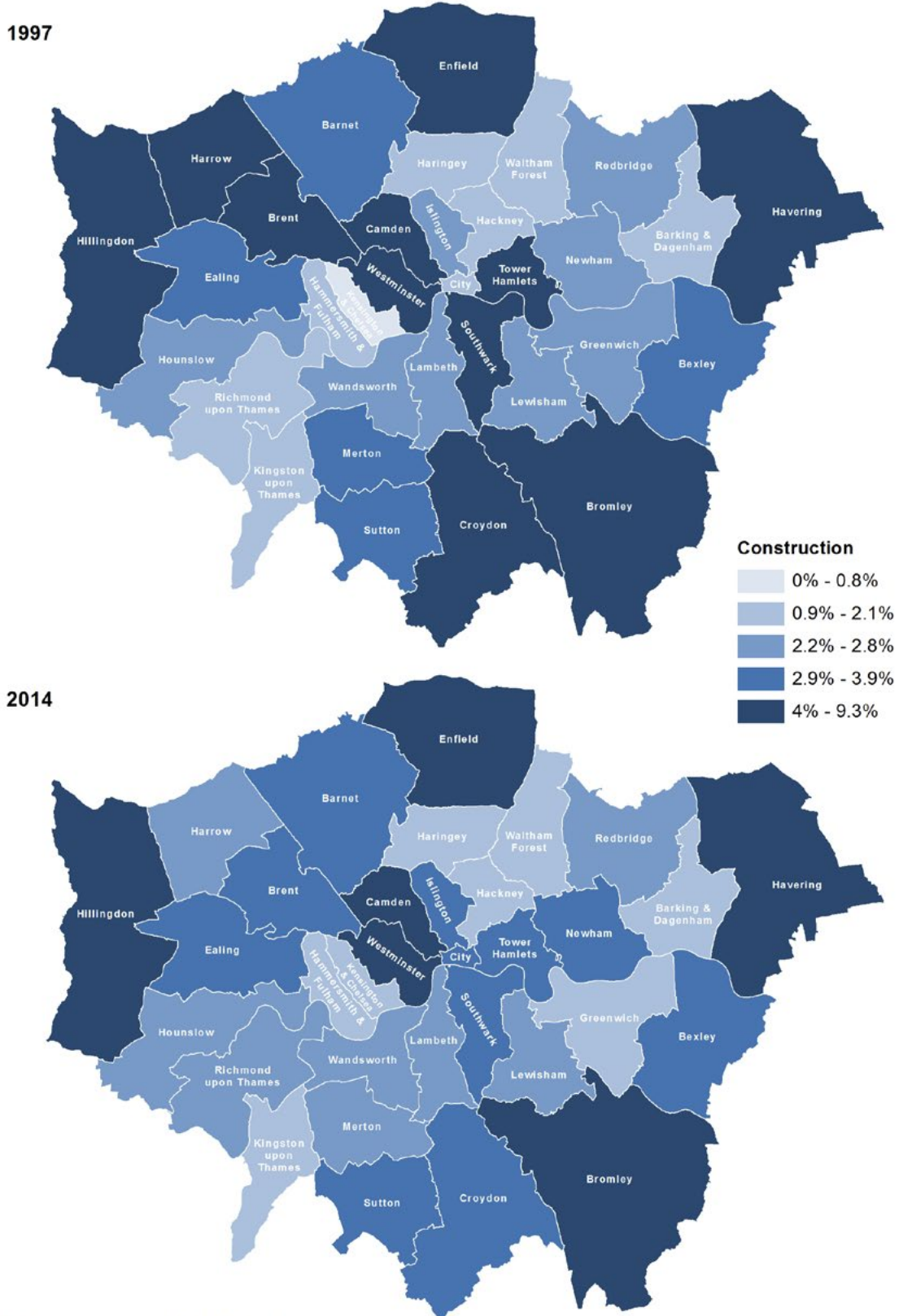
Source: ONS & GLA Economics calculations

Map C3 shows the generally steady importance of the LA's most responsible for London's output in Distribution, transport, accommodation and food over time, although Brent and Kensington and Chelsea have become more important over time and Islington less so.

Map C3: Contribution of London's LA's to total output in Distribution, transport, accommodation and food services in London in 1997 and 2014

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Source: ONS & GLA Economics calculations

Map C4 shows that apart from a decline in the relative contribution of Hammersmith and Fulham the LA's most responsible for output in Business services in London have remained relatively stable between 1997 and 2014.

Map C4: Contribution of London's LA's to total output in Business Services in London in 1997 and 2014

Source: ONS & GLA Economics calculations

Map C5 shows the increasing concentration of London's output in Financial and insurance activities in Inner London over time with to an extent the exception of Croydon.

Map C5: Contribution of London's LA's to total output in Financial and insurance activities in London in 1997 and 2014

Source: ONS & GLA Economics calculations

Map C6 shows that the LA's most responsible for output in Information and communication in London has been fairly stable between 1997 and 2014 although Lambeth's contribution to London's total output in this sector has increased.

Map C6: Contribution of London's LA's to total output in Information and communication in London in 1997 and 2014
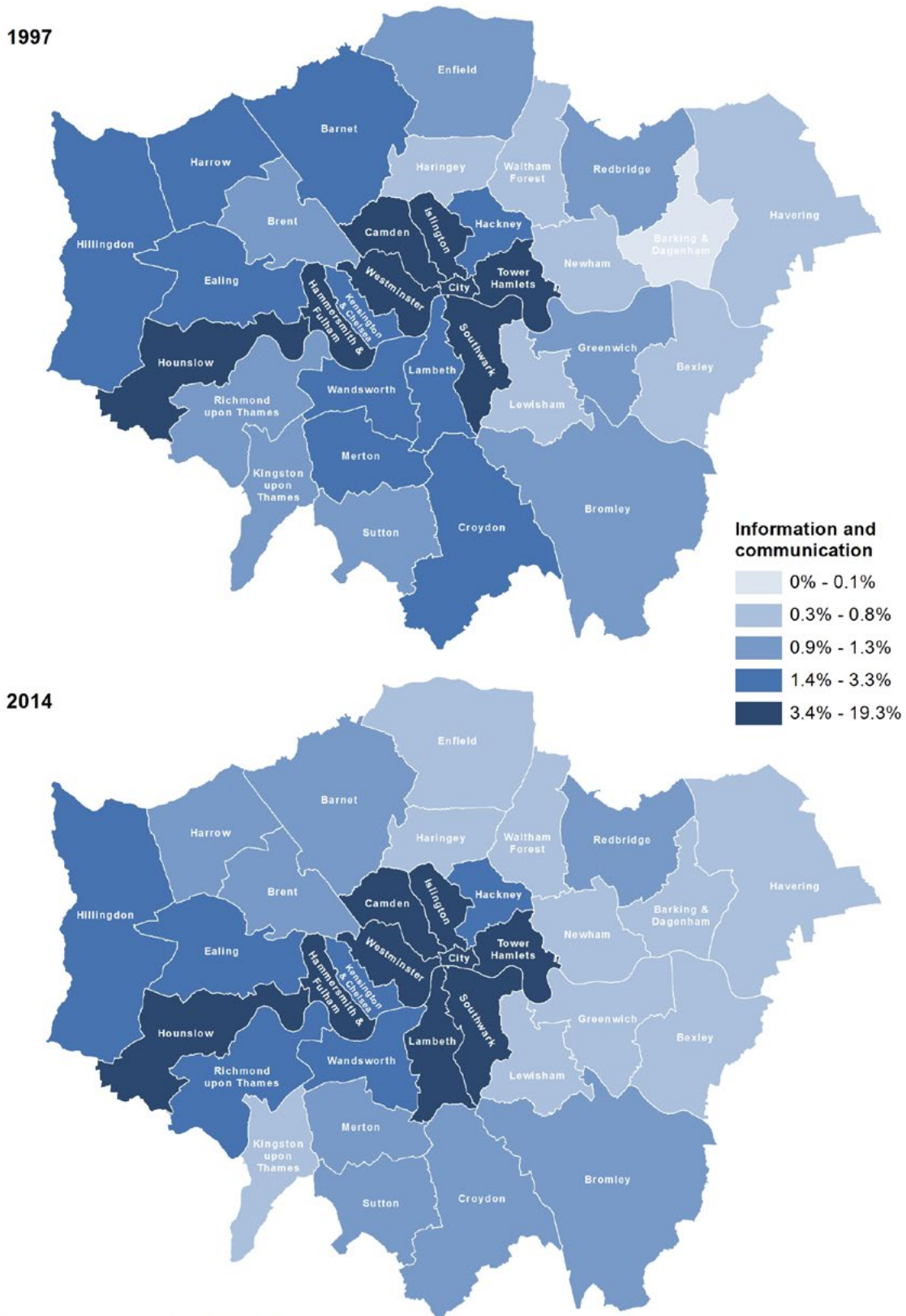
Source: ONS & GLA Economics calculations

Map C7 shows that Inner London has generally become more important to the production of London's total output in the Other services and household activities sector over time.

Map C7: Contribution of London's LA's to total output in Other services and household activities in London in 1997 and 2014

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Source: ONS & GLA Economics calculations

Map C8 shows that outside of Inner London Barnet has become more important to London's total output in Public administration, education and health, while Bromley and Croydon have become less important between 1997 and 2014.

Map C8: Contribution of London's LA's to total output in Public administration, education and health in London in 1997 and 2014
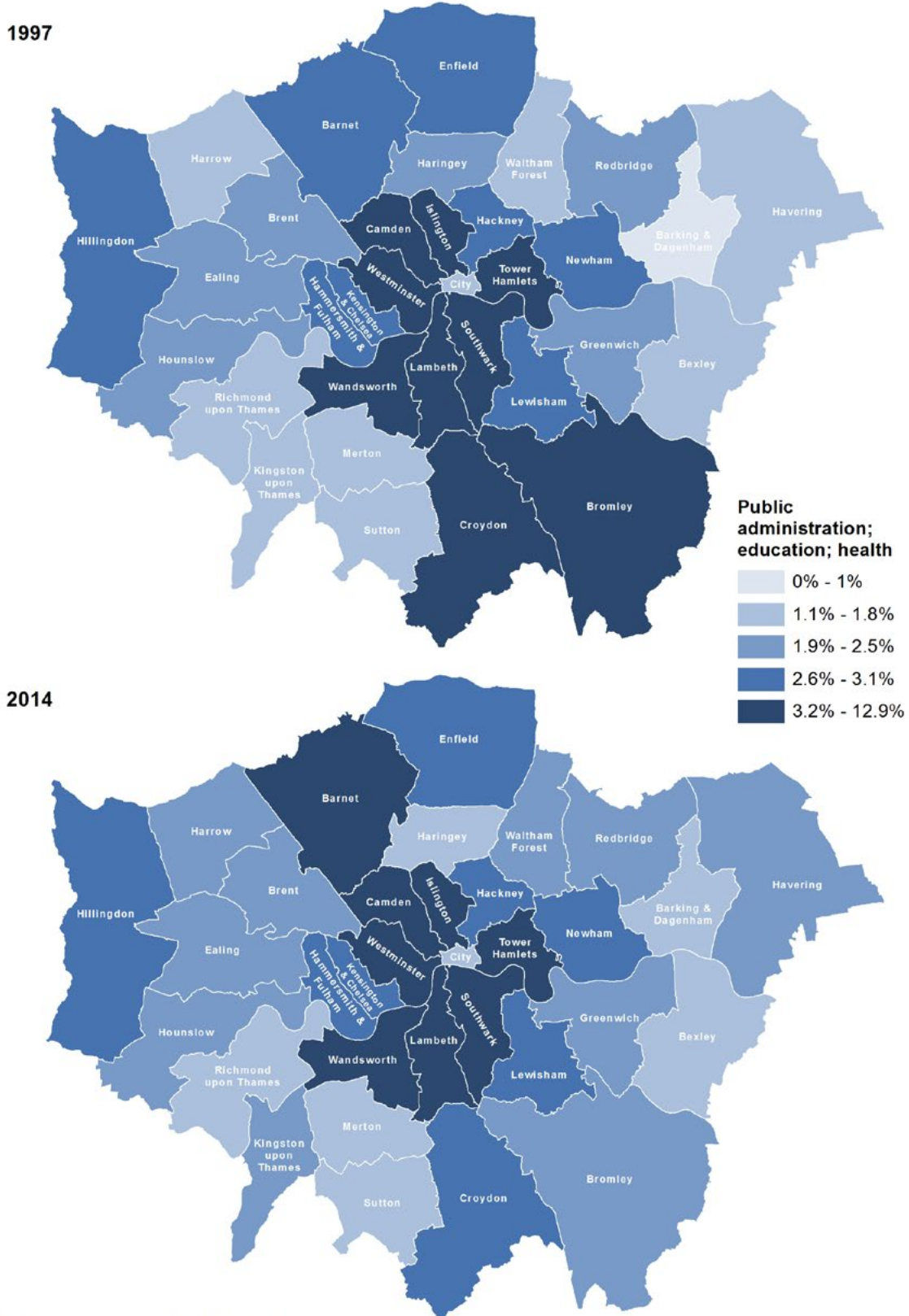
Source: ONS & GLA Economics calculations

Finally, Map C9 shows that Bromley, Croydon and Hounslow have declined in importance in terms of their contribution to total London output in Real estate activities over time.

Map C9: Contribution of London's LA's to total output in Real estate activities in London in 1997 and 2014
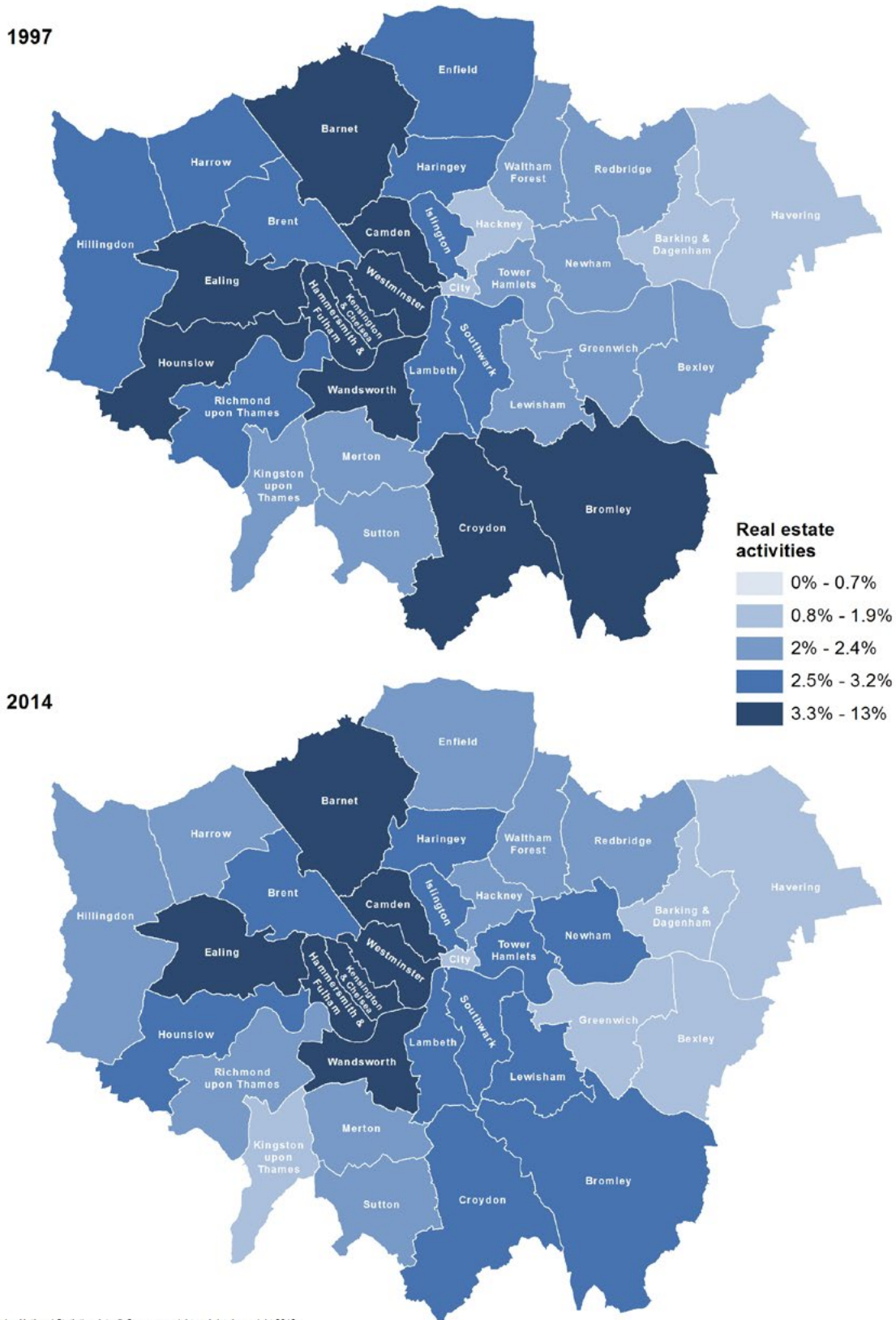
Source: ONS & GLA Economics calculations

The varying importance of the broad sectors of economy to total output in London's LA's

Map C10 shows the general decline in importance of Production to the total output of individual LA's in London between 1997 and 2014, except for in part in Barking and Dagenham and Bexley. It should however be noted that the nominal value of output in Production may well have increased over this period in the given LA's, this result could therefore just reflect that total output in these LA's may have increased at a faster rate leading to a relative decline in the importance of this sector in certain LA's.

Map C10: Output in Production by LA as percentage of LA GVA in 1997 and 2014[3]
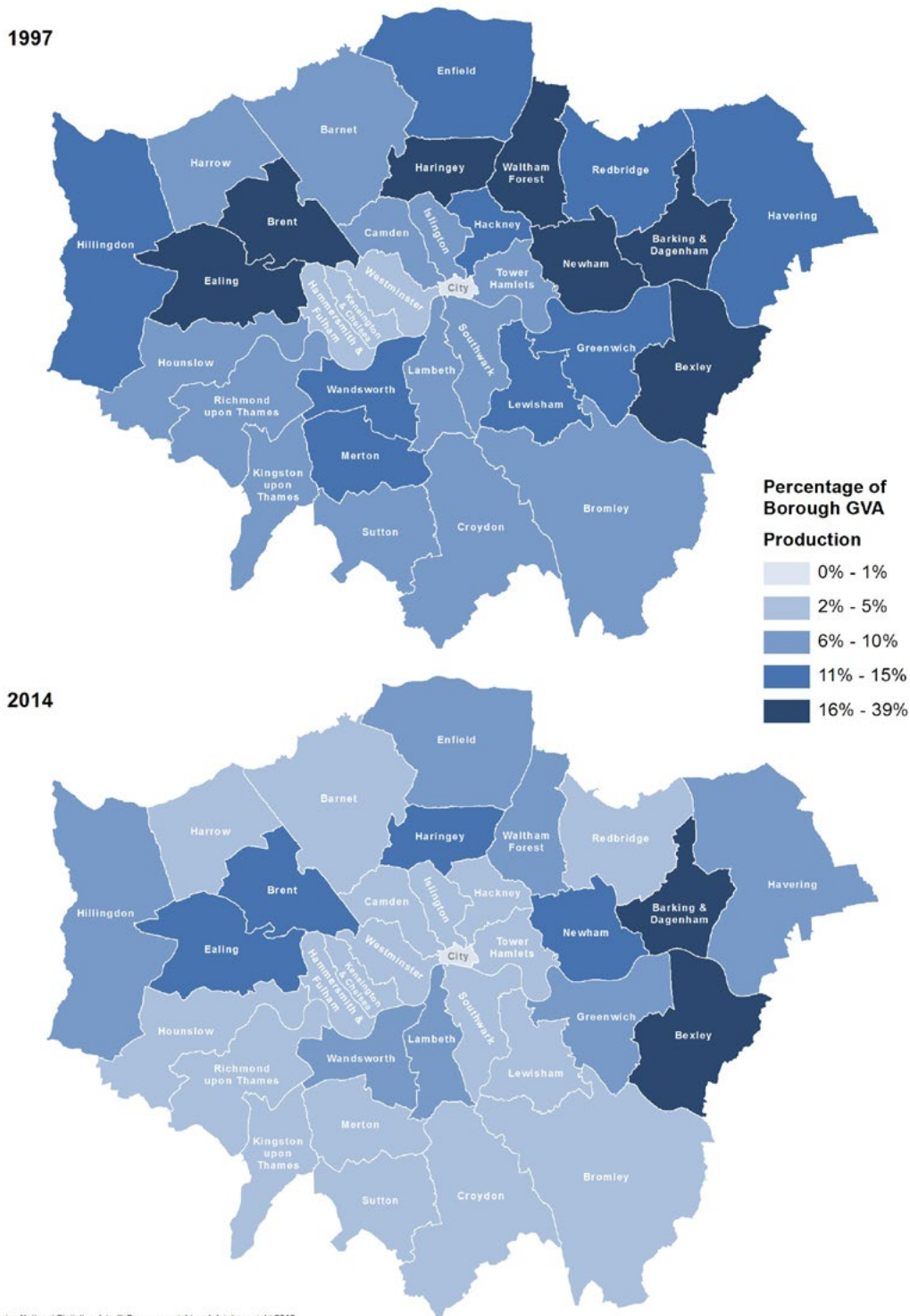
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Source: ONS & GLA Economics calculations

Map C11 shows that in general Construction has become less important to the total output of Harrow and more important in Bexley between 1997 and 2014.

Map C11: Output in Construction by LA as percentage of LA GVA in 1997 and 2014
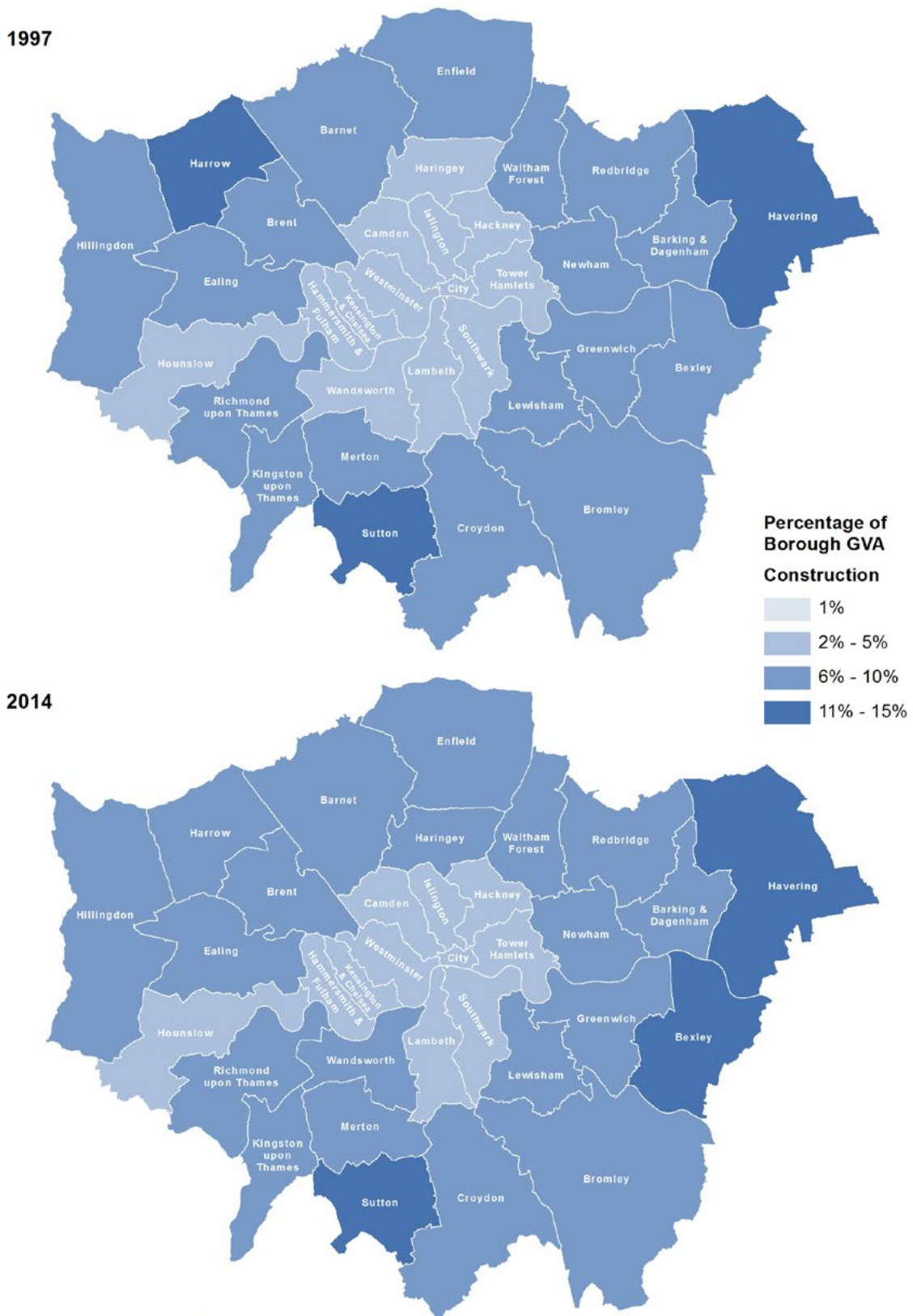
Source: ONS & GLA Economics calculations

Map C12 shows Distribution, transport, accommodation and food has generally become less important to London's LA's total output over the recent past with a couple of exceptions.

Map C12: Output in Distribution, transport, accommodation and food by LA as percentage of LA GVA in 1997 and 2014
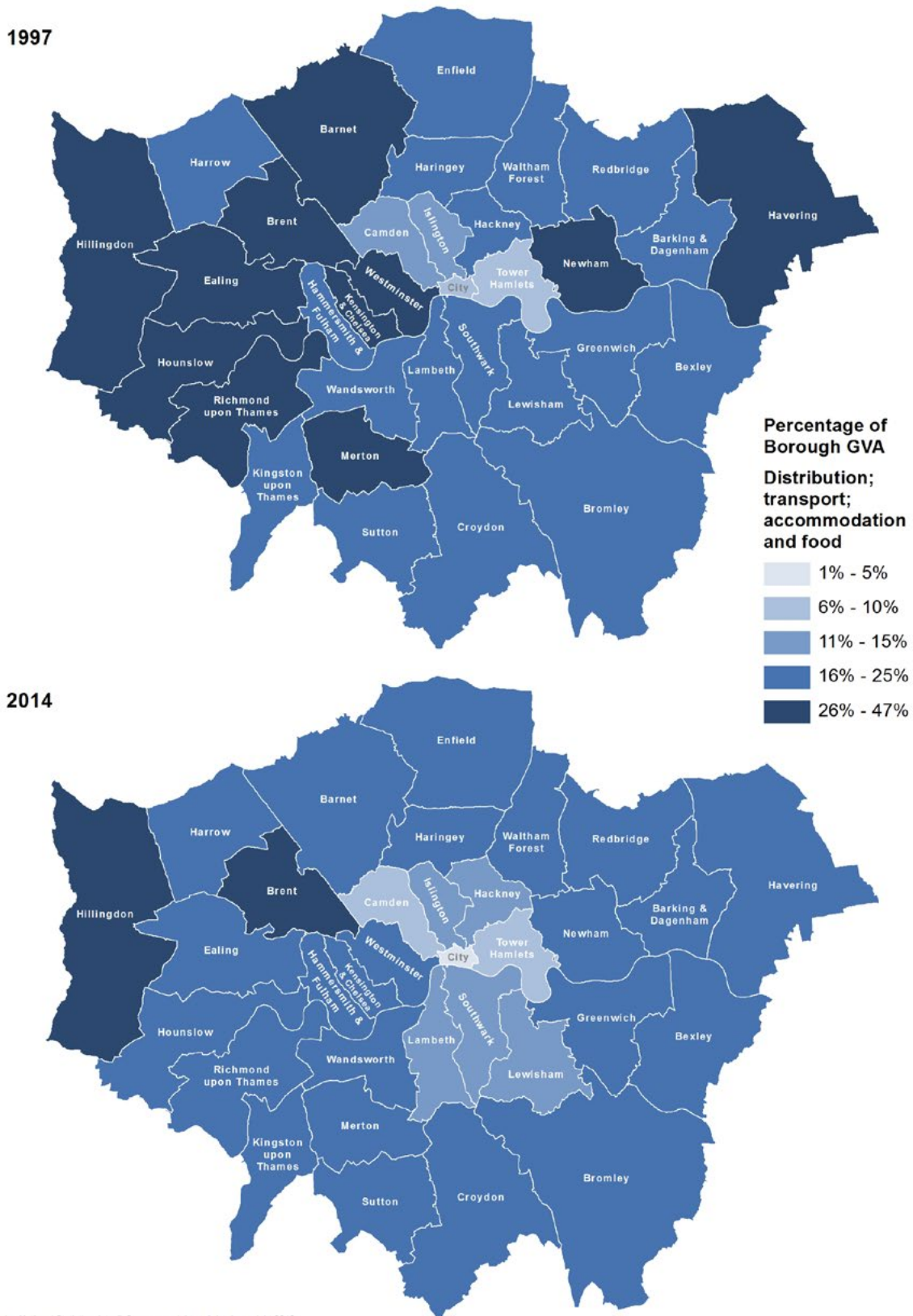
Source: ONS & GLA Economics calculations

Map C13 shows that Business services have generally maintained their importance or become more important to the total output of London's individual LA's between 1997 and 2014.

Map C13: Output in Business services by LA as percentage of LA GVA in 1997 and 2014
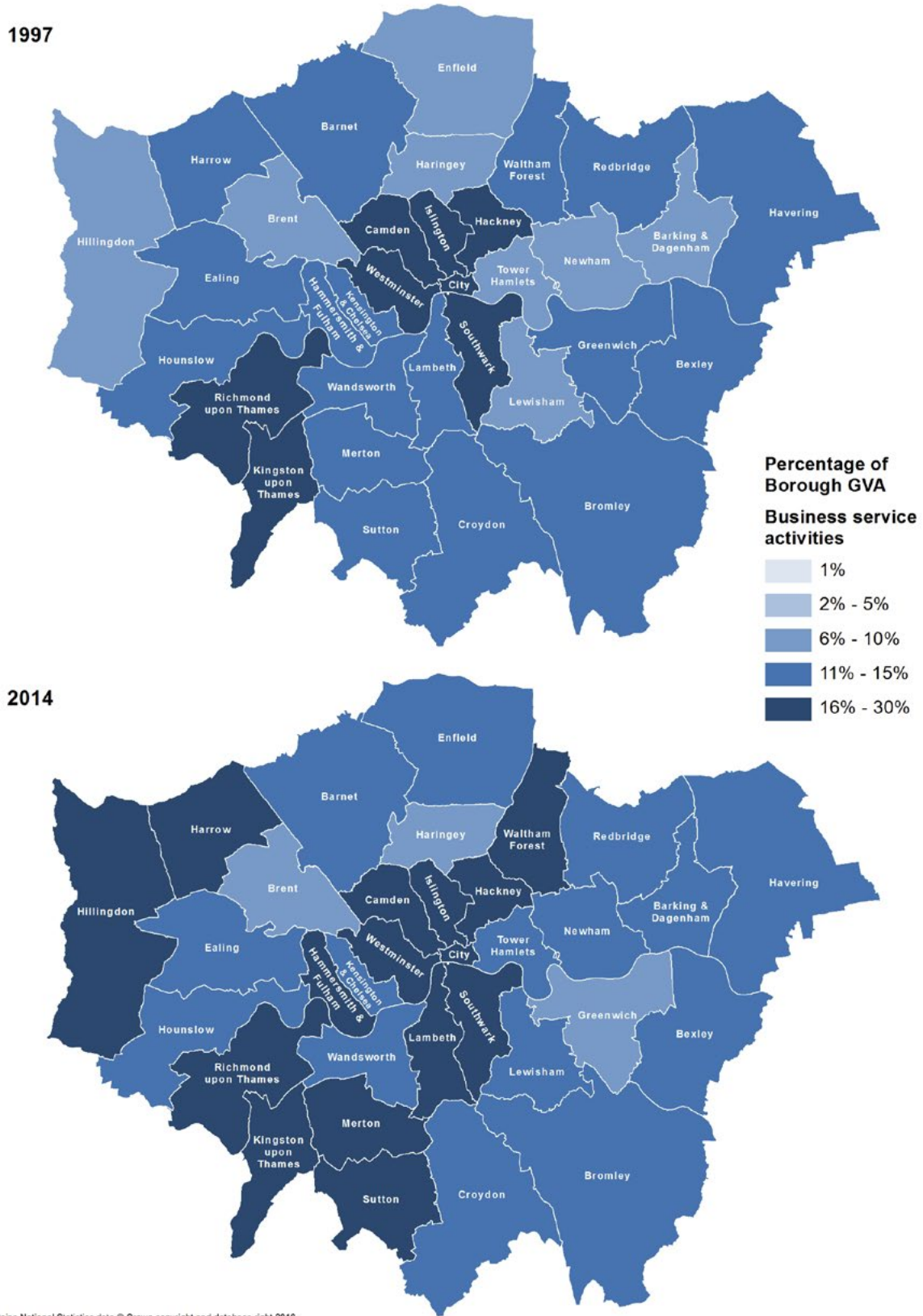
Source: ONS & GLA Economics calculations

Map C14 shows that Financial services has become more important to the total output of Islington and Westminster over the period between 1997 and 2014.

Map C14: Output in Financial and insurance activities by LA as percentage of LA GVA in 1997 and 2014
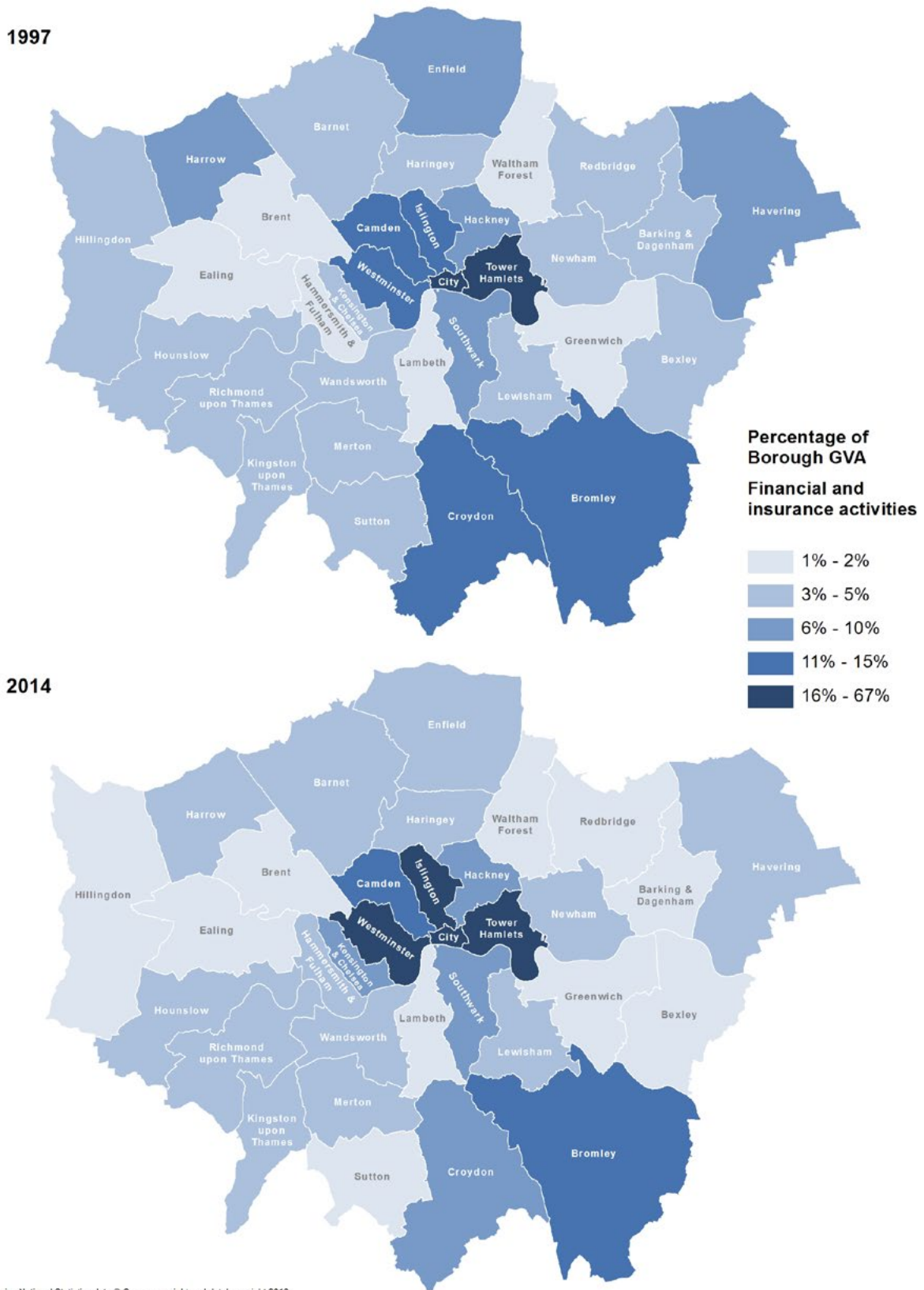
Source: ONS & GLA Economics calculations

Map C15 shows the continuing importance of Information and communications to output in Hammersmith and Fulham, Hounslow, and Islington.

Map C15: Output in Information and communication by LA as percentage of LA GVA in 1997 and 2014
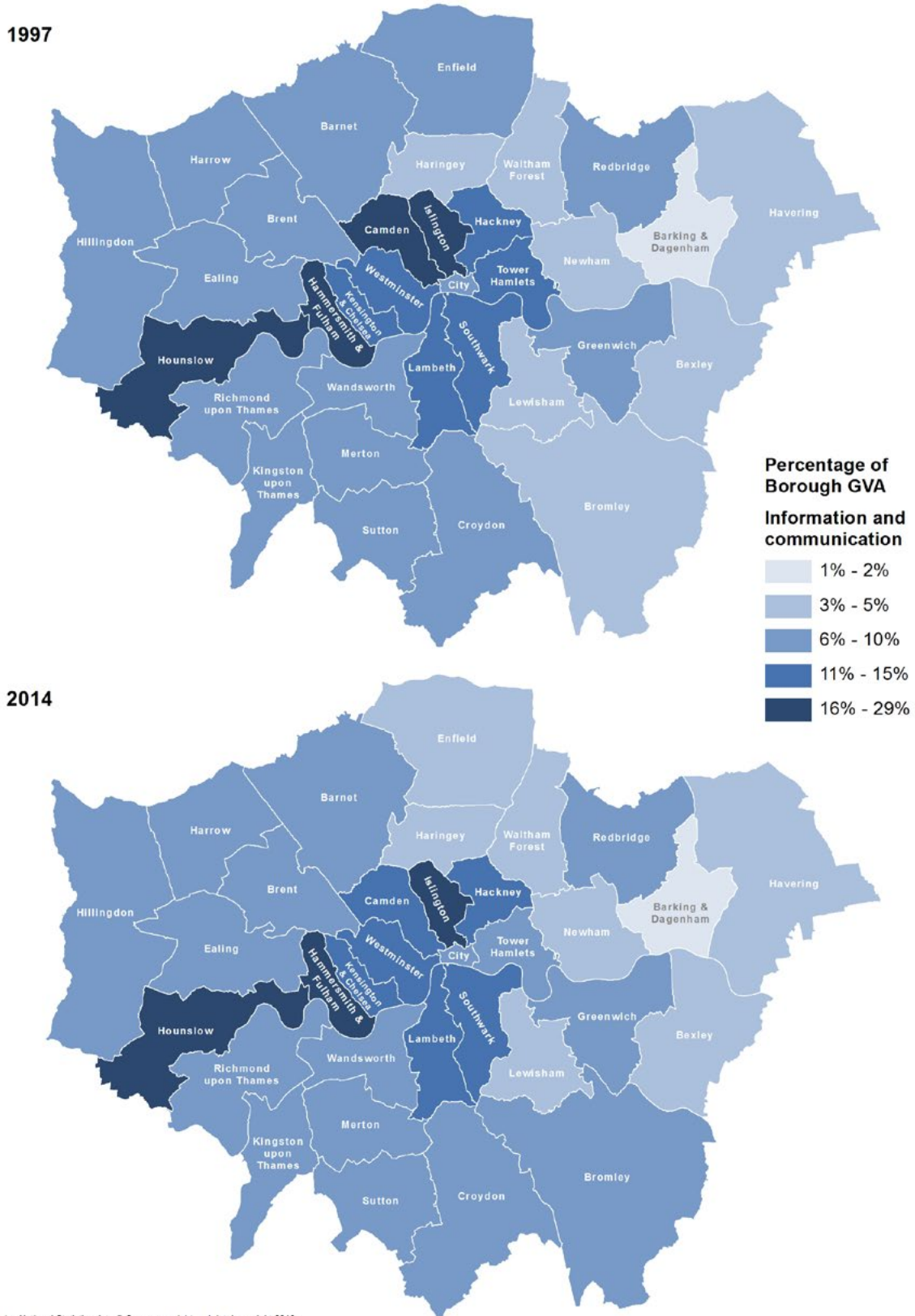
Source: ONS & GLA Economics calculations

Map C16 shows that the importance of Other services and household activities to total output in London's LA's over time has been variable depending on the given LA.

Map C16: Output in Other services and household activities by LA as percentage of LA GVA in 1997 and 2014
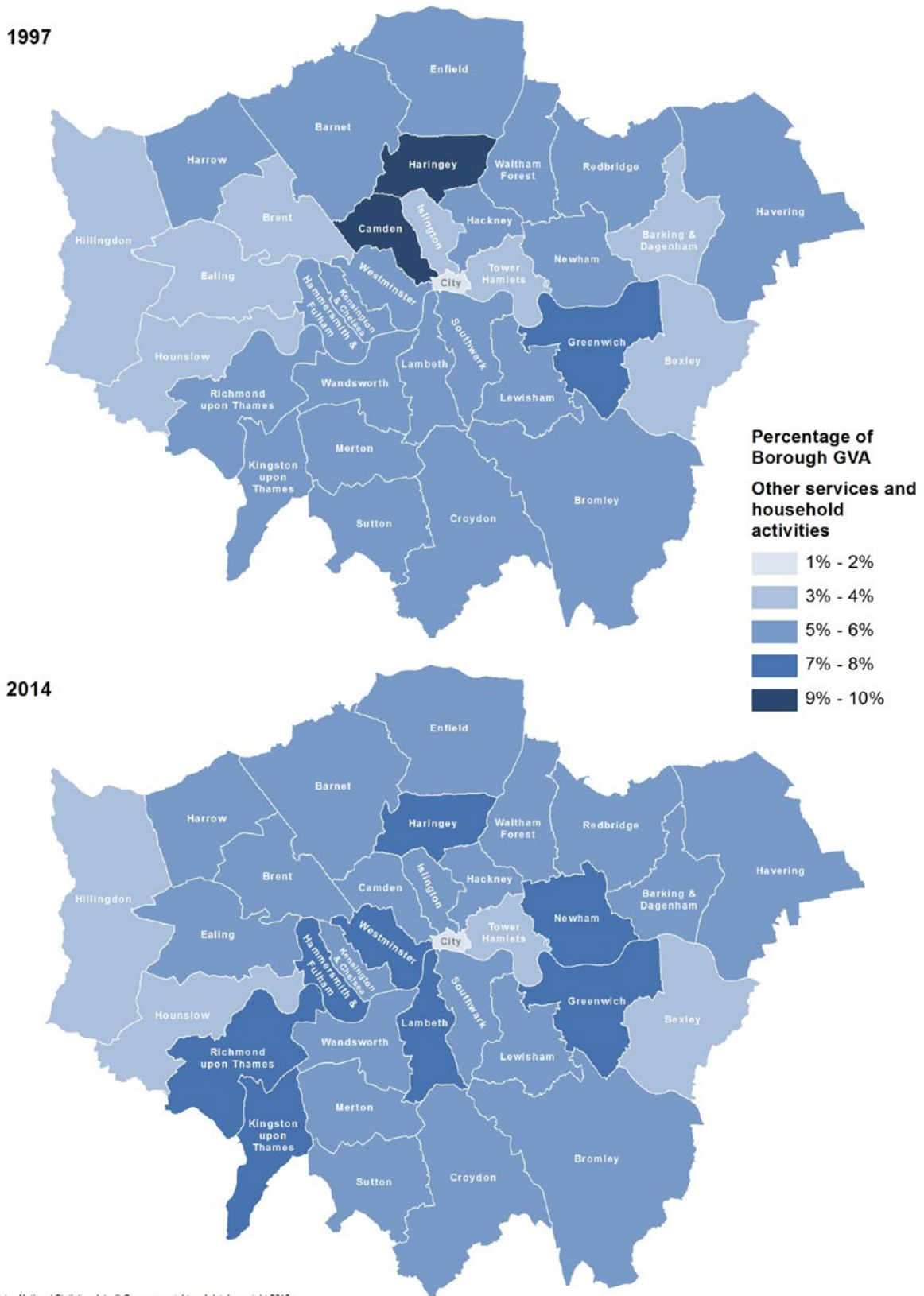
1997

2014

Percentage of Borough GVA

Other services and household activities
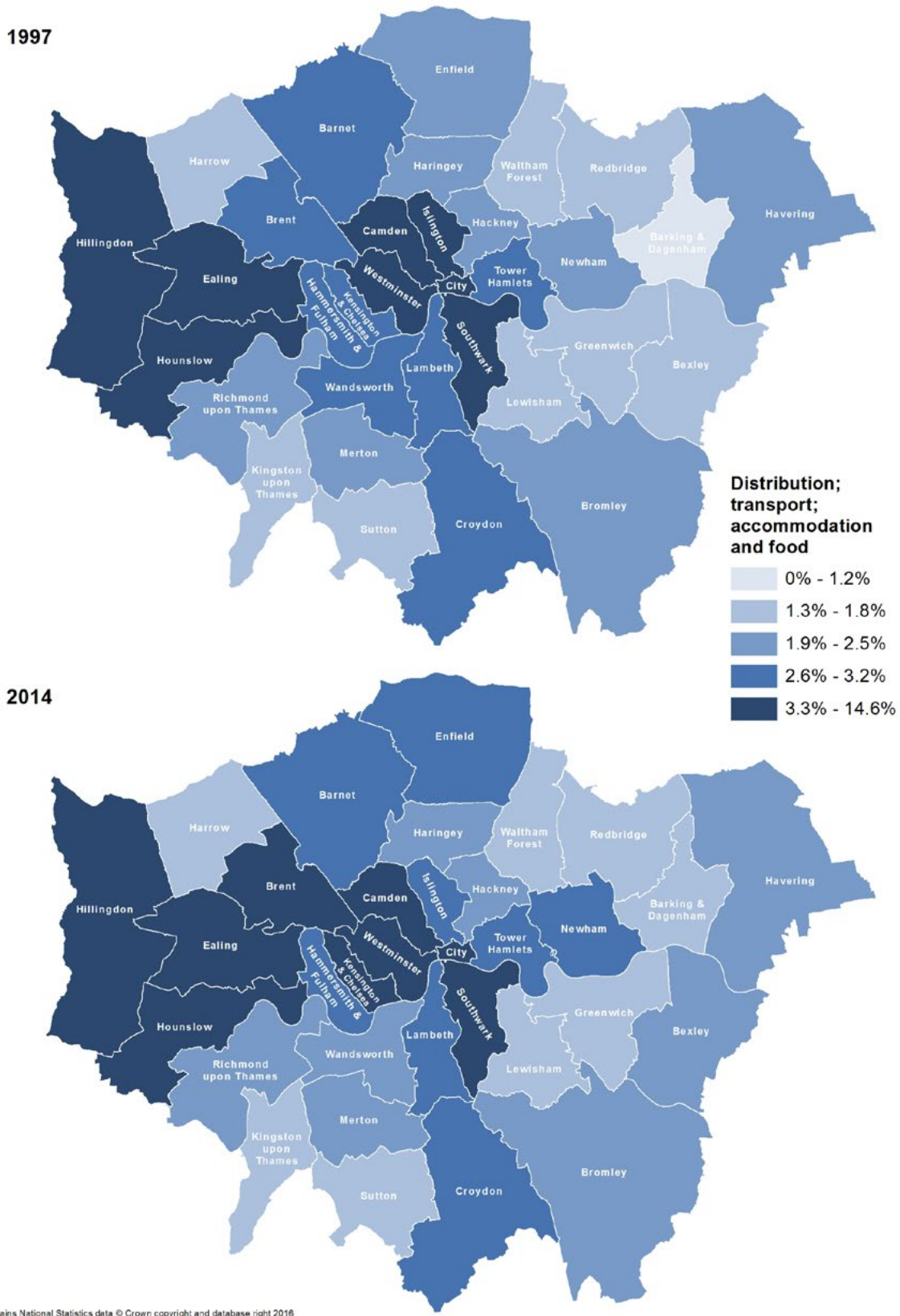
1% - 2%
3% - 4%
5% - 6%
7% - 8%
9% - 10%

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Source: ONS & GLA Economics calculations

Map C17 shows the relative continued importance of Public administration, education and health to total output in most of London's LA's over the recent past.

Map C17: Output in Public administration, education and health by LA as percentage of LA GVA in 1997 and 2014
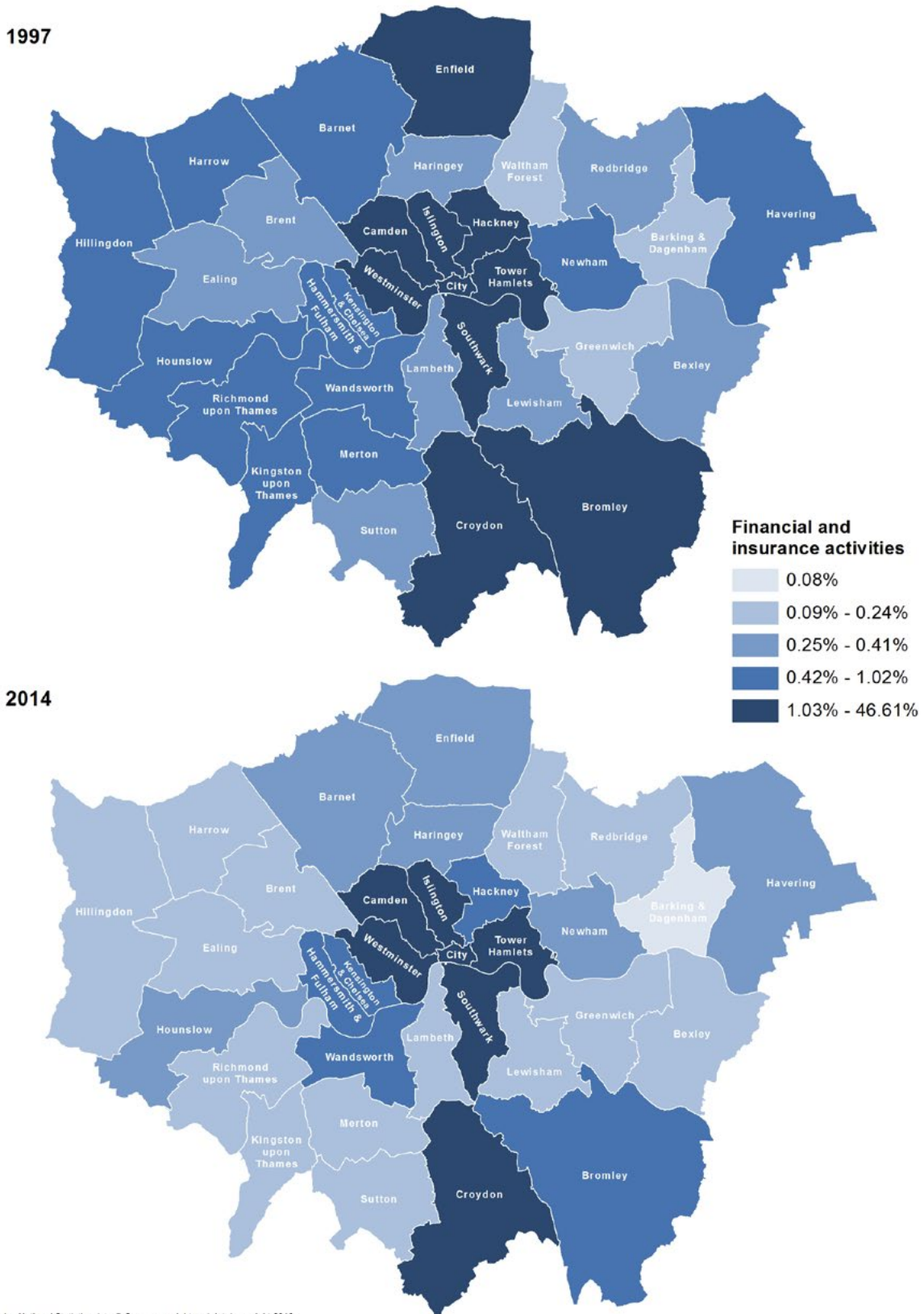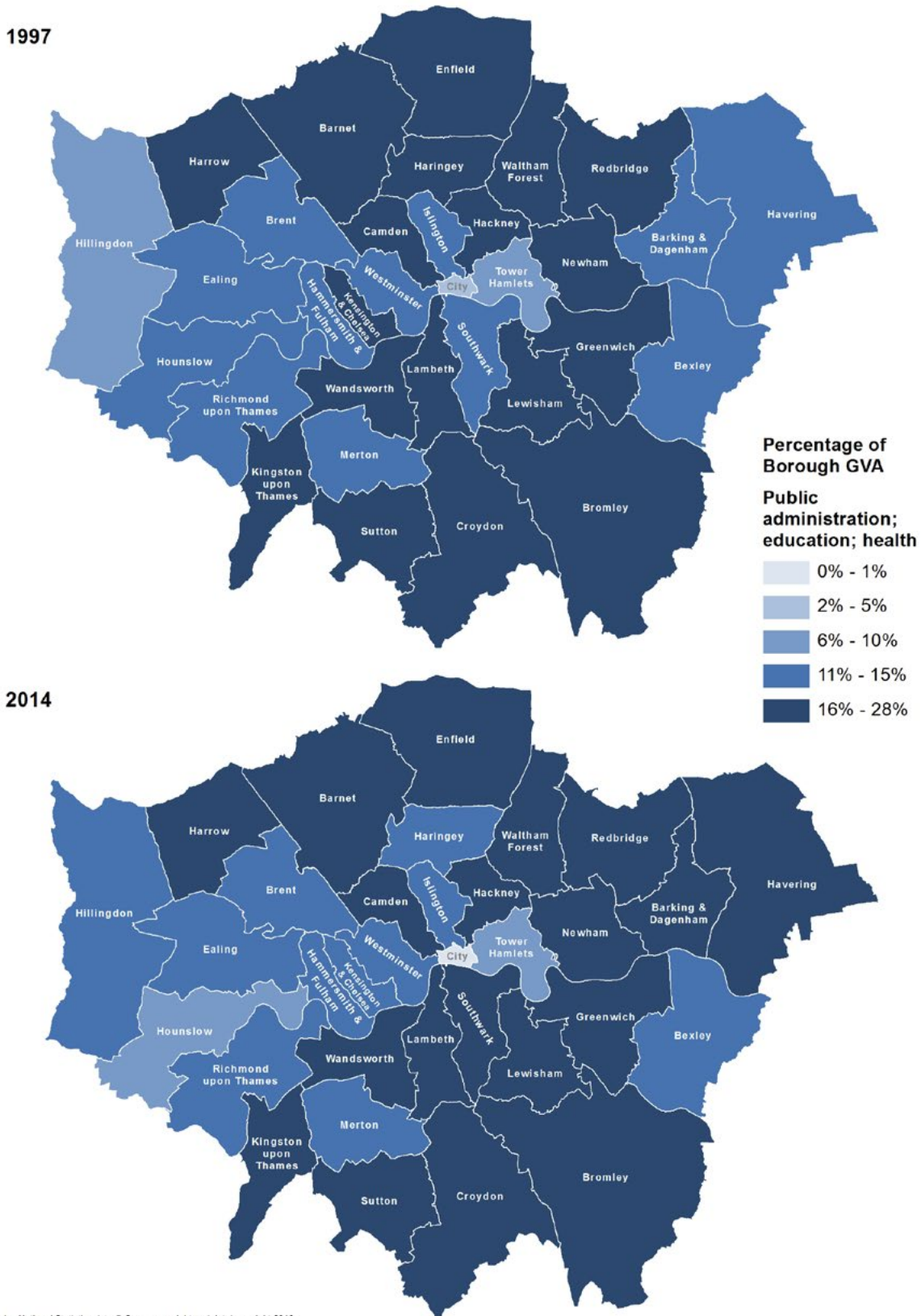

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Source: ONS & GLA Economics calculations

Finally Map C18 shows the growing importance of Real estate activities to the total output of a number of London's LA's.

Map C18: Output in Real estate activities by LA as percentage of LA GVA in 1997 and 2014
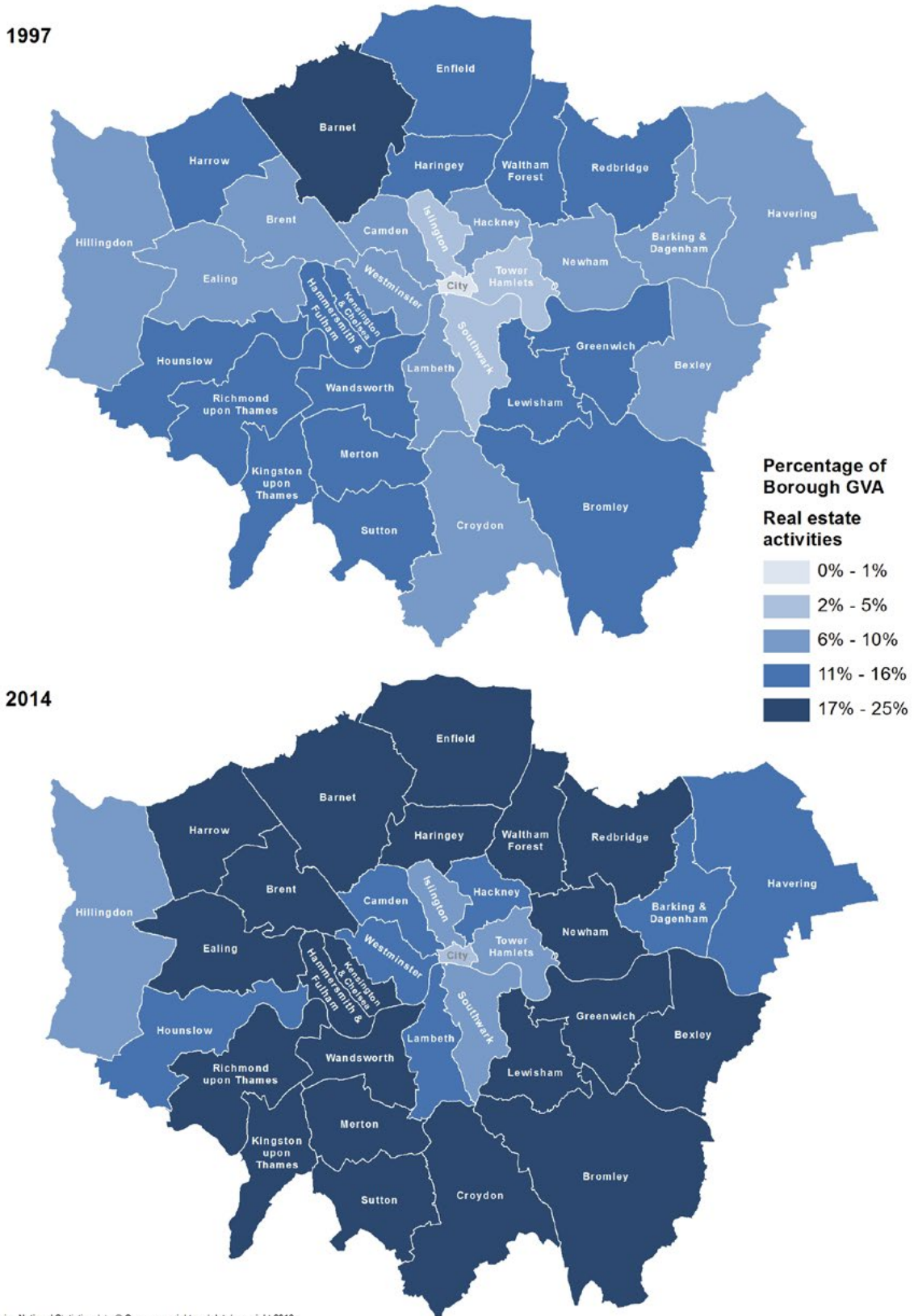
Source: ONS & GLA Economics calculations

Appendix 2.4: The science and technology category and creative industries

This section of the Appendix to Chapter 2 provides updates to analysis that GLA Economics has previously undertook for 2 non-standard sectors of the economy.

The science and technology category[4]

The Science and Technology category (STC) is heavily represented in fast growing sectors in the capital. While London has particular strengths in the Digital technologies sub-category: with research carried out in 2012 suggesting there are over 23,000 Information and Communications Technology (ICT) and software companies based in London, the highest of any European city[5]. Further, in the years between 2003 and 2015, there was a rise of 13.2 per cent in the number of employee jobs in the Science and Technology category in the Greater South East. However, the rise in the number of these jobs in London alone - at 25.2 per cent – was nearly twice as great, accounting for around 75 per cent of the total rise of 270,300 in the Greater South East (see Table D1).

Table D1: Employee jobs in the STC

	London	East	South East	Greater South East
2003	786,700	450,000	805,800	2,042,500
2008	810,400	446,700	790,100	2,047,200
2013	901,900	449,200	821,200	2,172,300
2014	943,100	466,800	839,900	2,249,700
2015	985,400	476,600	850,800	2,312,800
Change 2015/2003	198,700	26,600	34,100	270,300
% change 2015/2003	25.2	5.9	5.5	13.2

Source: ONS - IDBR[6] and GLA Economics calculations

As a proportion of total employee jobs, Table D2 shows that the number in London in Science and Technology has been broadly constant over the period under consideration. In the East it has fallen by around 2 percentage points, in the South East by just under 2 percentage points and in the Greater South East as a whole it has also fallen by around 1 percentage point.

Table D2: Employee jobs in Science and Technology as % of Total Employee Jobs

	London		East		South East		Greater South East	
	Science and Tech	% of Total	Science and Tech	% of Total	Science and Tech	% of Total	Science and Tech	% of Total
2003	786,700	20.8%	450,000	20.8%	805,800	23.6%	2,042,500	21.8%
2008	810,400	20.4%	446,700	19.3%	790,100	21.9%	2,047,200	20.7%
2013	901,900	20.6%	449,200	18.8%	821,200	22.3%	2,172,300	20.8%
2014	943,100	20.8%	466,800	18.9%	840,000	22.3%	2,249,800	20.9%
2015	985,700	20.7%	476,600	18.9%	850,800	21.9%	2,312,800	20.7%

Source: ONS - IDBR and GLA Economics calculations

Maps D1 to D3 below show the spatial characteristics of STC jobs, in the Greater South East, London and Inner London in detail. Map D1 shows a concentration of Science and Technology employee jobs along the M4 Corridor and around Southampton, Norwich, and Cambridge.

Map D1: Employee jobs in the STC in the Greater South East, 2015
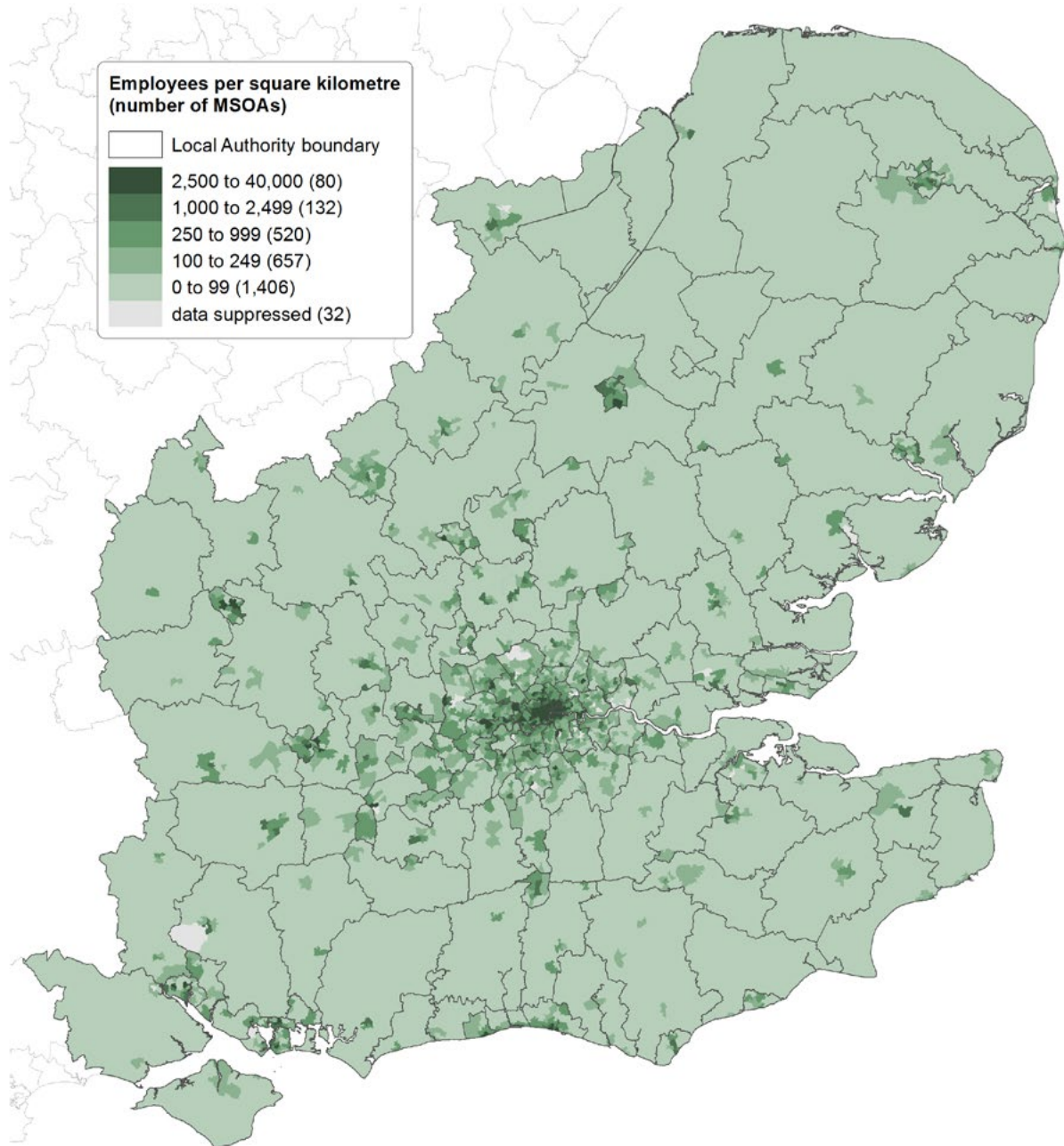
Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Map D2 shows a concentration of Science and Technology employee jobs in central and western London.

Map D2: Employee jobs in the STC in London, 2015
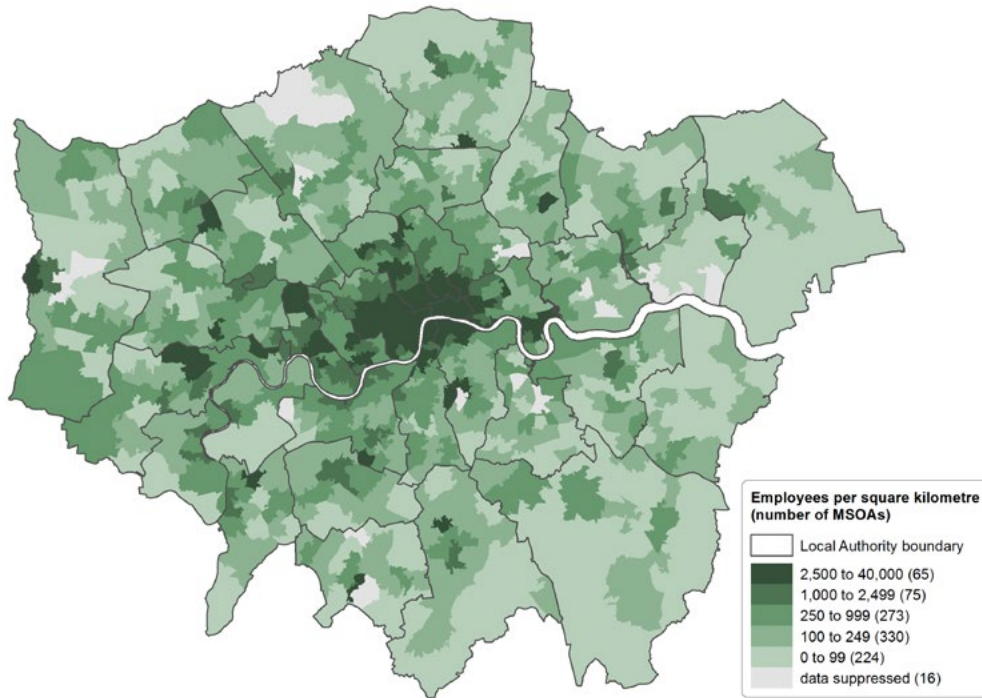
Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
Source: Inter-Departmental Business Register, Office for National Statistics
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Map D3 shows a concentration of Science and Technology employee jobs bordering each other in the LA's of Camden, Islington, City, Tower Hamlets and Westminster, while also stretching slightly across the river towards Lambeth and Southwark, with a further concentration in northern and central Hammersmith and Fulham.

Map D3: Employee jobs in the STC in Inner London, 2015
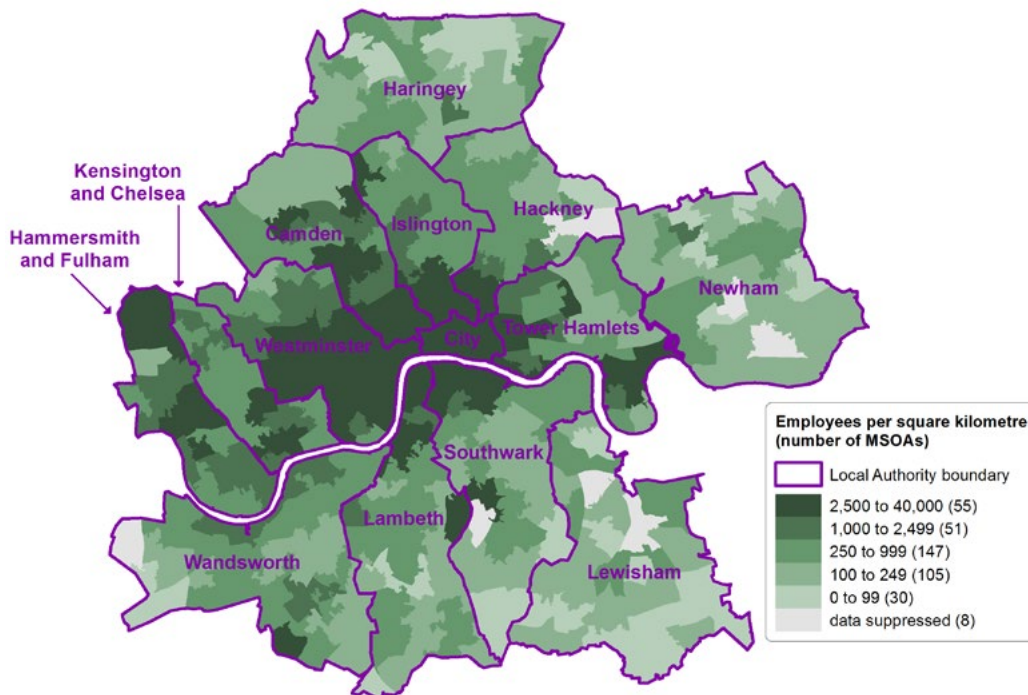
Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
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Turning to the London Boroughs, Figure D1 shows the boroughs of London with Science and Technology category jobs in 2015 numbering over 30,000. As can be observed Westminster and Camden are pre-eminent in Science and Technology category jobs in London with over 100,000 such jobs in each borough. However, Islington, Hillingdon and Southwark all showed strength in employment in this category with over 50,000 jobs in each of these boroughs.

Figure D1: London Boroughs with the highest number of Science and Technology jobs in 2015
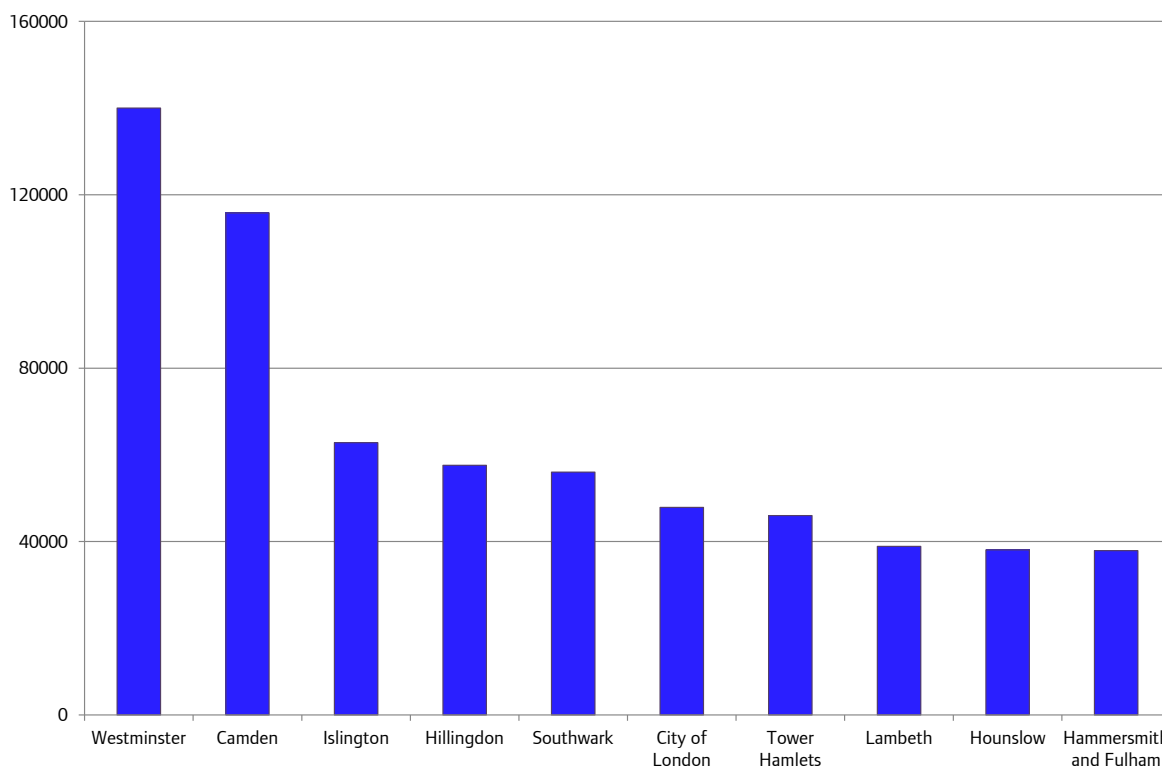
Source: ONS - IDBR

Table D3 shows there has been a rise of over 47 per cent in the number of workplaces[7] in the Science and Technology category in the years 2003 to 2015 in the Greater South East, a much bigger rise than the noted above rise for the number of employees (up 13.2 per cent), implying a fall in the average number of employees per workplace. As with employees, the rise in workplaces in London (up 65.3 per cent) was stronger than the rise in either the Eastern region or South East.

Table D3: Workplace units in the STC

	London	East	South East	Greater South East
2003	67,845	36,635	64,920	169,400
2008	75,685	39,755	69,905	185,345
2013	92,965	43,035	77,980	213,980
2014	102,105	46,245	82,785	231,135
2015	112,120	49,260	87,810	249,190
Change 2015/2003	+44,275	+12,625	+22,890	+79,790
% change 2015/2003	+65.3	+34.4	+35.3	+47.1

Source: ONS – IDBR and GLA Economics calculations

Creative industries[8]

The creative industries[9] are a significant part of London's economy as well as significant part of the creative industries in the UK as a whole. Organisations operating in the creative economy are thus important employers in London. In 2015, there were 815,500 jobs in the creative economy in London, equivalent to 16.3 per cent of total jobs in the capital (compared to standing at 7.7 per cent of the total number of jobs in the Rest of the UK)[10]. As can be seen from Maps D4 and D5 creative jobs are clustered heavily in London compared to the wider Greater South East although as more clearly shown in Map D6 they tend to cluster within Central London, with a corridor into West London.

Map D4: Number of employees in the Creative industries in the Greater South East, MSOAs (per sq. km), 2015
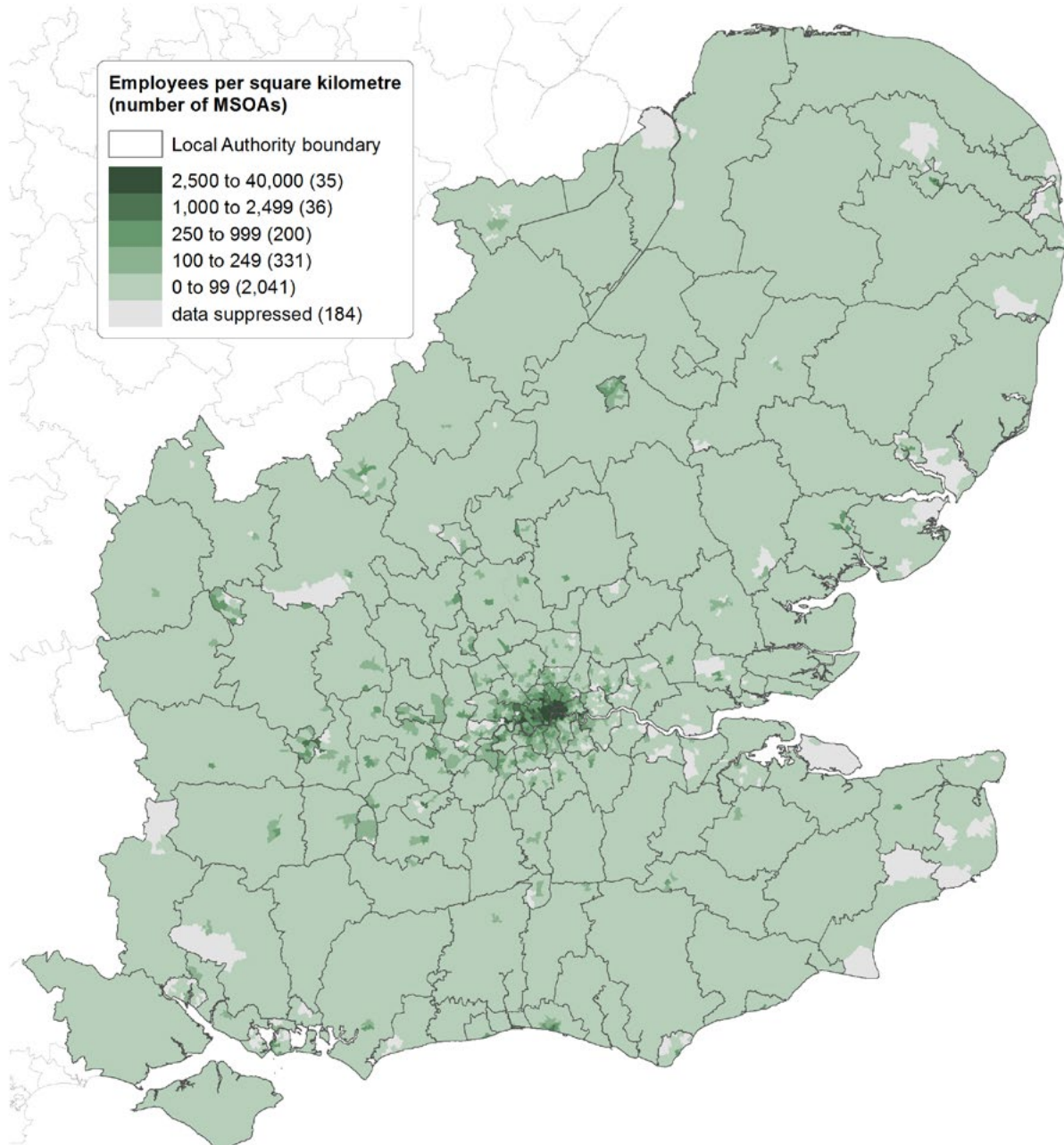
Employees per square kilometre (number of MSOAs)

- Local Authority boundary
- 2,500 to 40,000 (35)
- 1,000 to 2,499 (36)
- 250 to 999 (200)
- 100 to 249 (331)
- 0 to 99 (2,041)
- data suppressed (184)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
Source: Inter-Departmental Business Register, Office for National Statistics
Contains National Statistics data © Crown copyright and database right 2016
Contains Ordnance Survey data © Crown copyright and database right 2016. Ordnance Survey 100032216

Map D5: Number of employees in the Creative industries in London, MSOAs (per sq. km), 2015
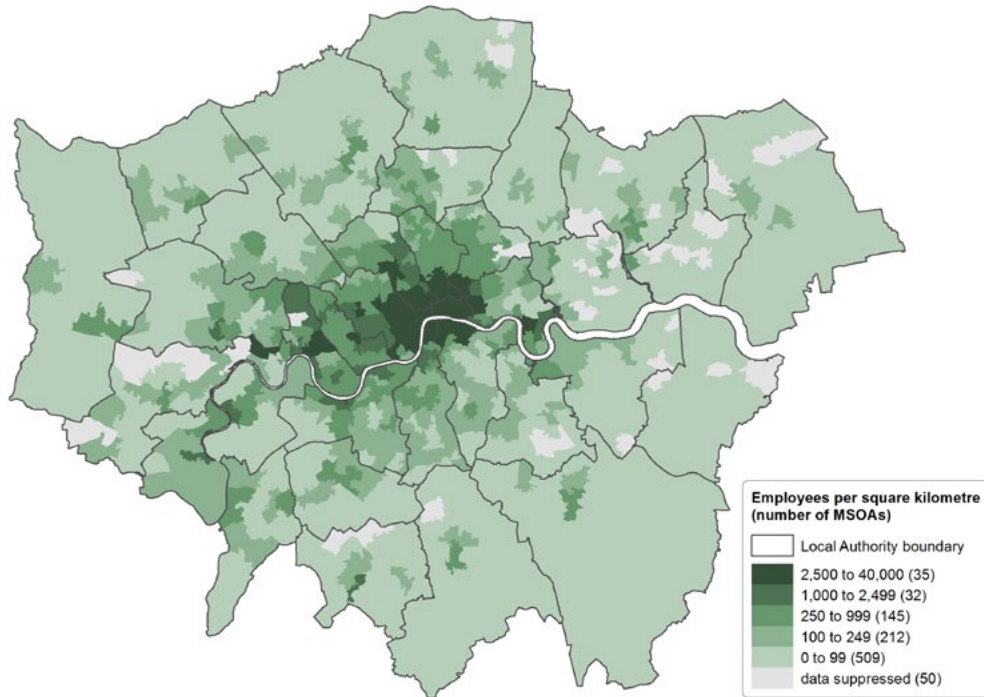
Employees per square kilometre (number of MSOAs)

- Local Authority boundary
- 2,500 to 40,000 (35)
- 1,000 to 2,499 (32)
- 250 to 999 (145)
- 100 to 249 (212)
- 0 to 99 (509)
- data suppressed (50)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
Source: Inter-Departmental Business Register, Office for National Statistics
Contains National Statistics data © Crown copyright and database right 2016
Contains Ordnance Survey data © Crown copyright and database right 2016. Ordnance Survey 100032216

Map D6: Number of employees in the Creative industries in Inner London, MSOAs (per sq. km), 2015
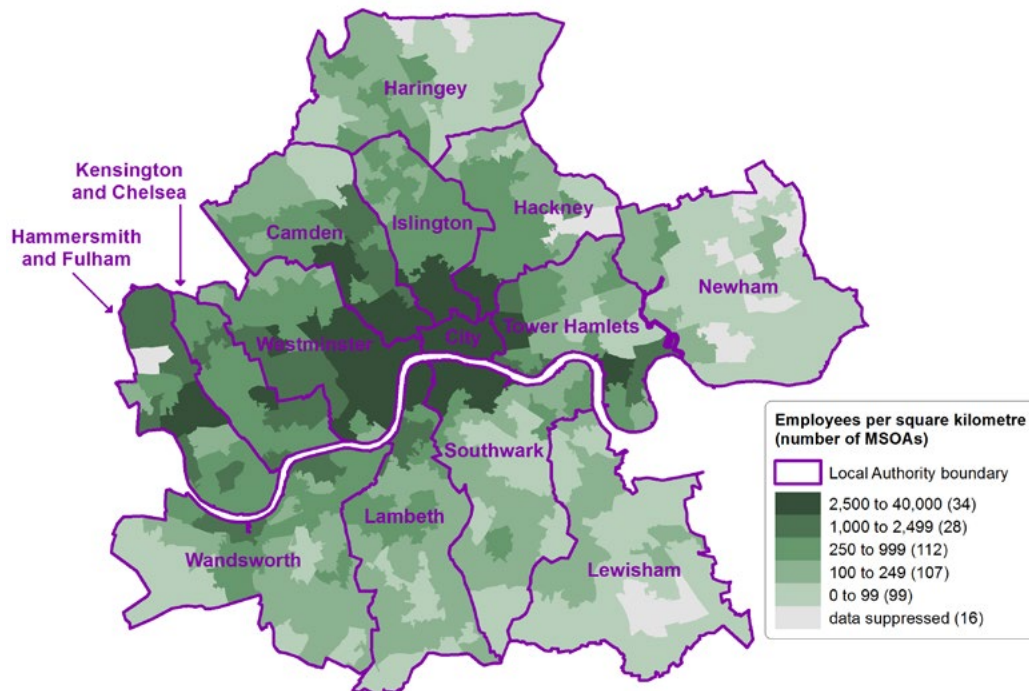
Employees per square kilometre (number of MSOAs)

- Local Authority boundary
- 2,500 to 40,000 (34)
- 1,000 to 2,499 (28)
- 250 to 999 (112)
- 100 to 249 (107)
- 0 to 99 (99)
- data suppressed (16)

Note: MSOA denotes Middle-layer Super Output Areas, a geography used for the analysis of small area statistics
Source: Inter-Departmental Business Register, Office for National Statistics
Contains National Statistics data © Crown copyright and database right 2016
Contains Ordnance Survey data © Crown copyright and database right 2016. Ordnance Survey 100032216

Appendix 2.5: Various clustering analyses for sectors across London and the Greater South East

This section of the Appendix to Chapter 2 provides the results of further broad industrial cluster analysis using a couple of statistical methodologies for both London and the Greater South East as a whole. A variety of methodologies are used in this section because as was noted in the main body of Chapter 2 using just one clustering methodology can lead to a skewed picture of London's and the Greater South East's economies.

K mean analysis[11]

This sub-section provides maps of individual dominant employment clusters by selected broad industrial sectors using the same clustering methodology used in Map 2.21 for both London and the Greater South East. These clusters were produced by K mean analysis applied to employment data from the Census for the workplace zones of London and the Greater South East.

London

Map E1 shows that in 2011 employment clusters in Distribution, hotels and restaurants could be found throughout London.

Map E1: Dominant employment clusters in Distribution, hotels and restaurants in London by workplace zones in 2011
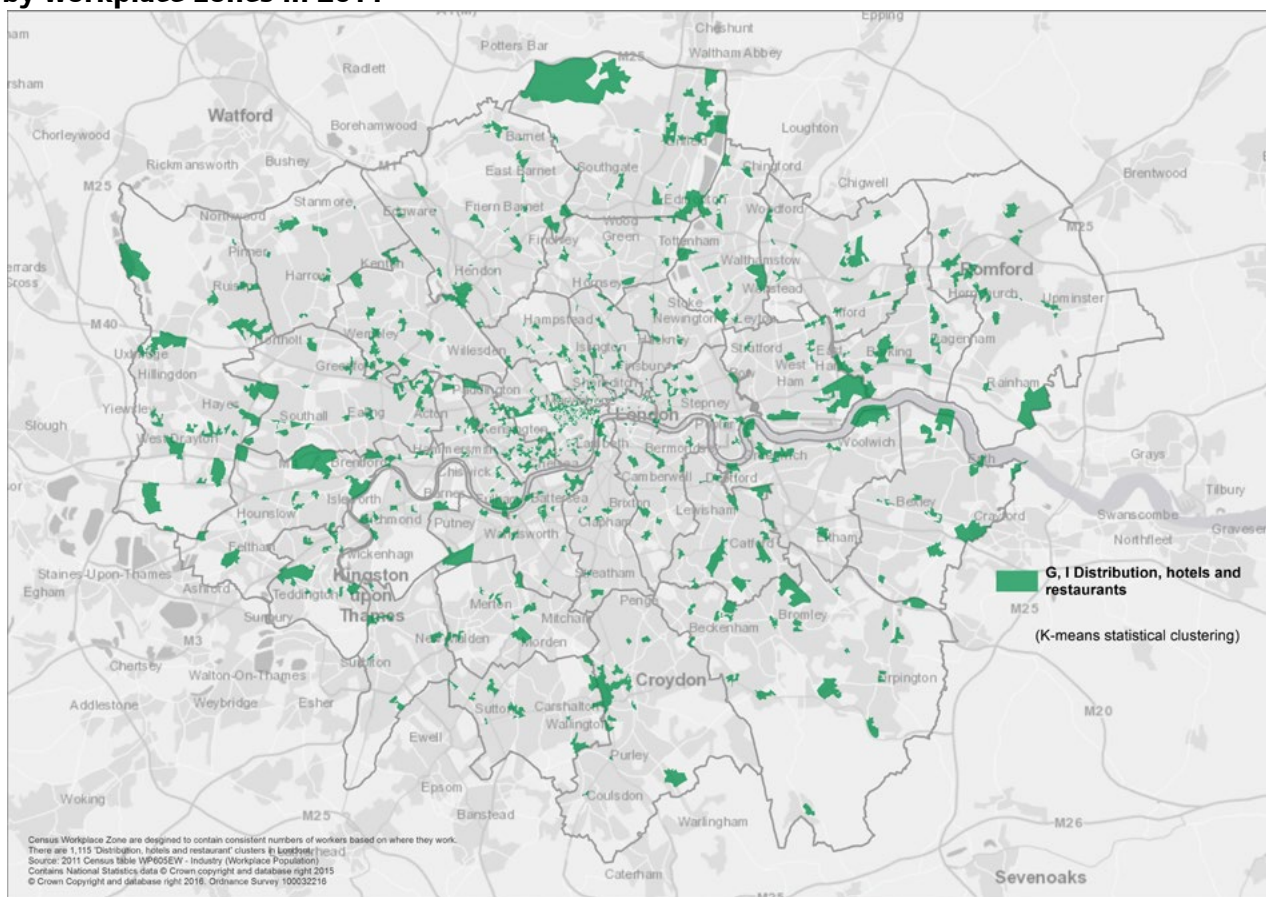
Source: Census and GLA Intelligence Unit Analysis

Map E2 shows clustering in employment in Financial and insurance activities in London in 2011 and highlights the importance of Inner London for this sector.

Map E2: Dominant employment clusters in Financial and insurance activities in London by workplace zones in 2011
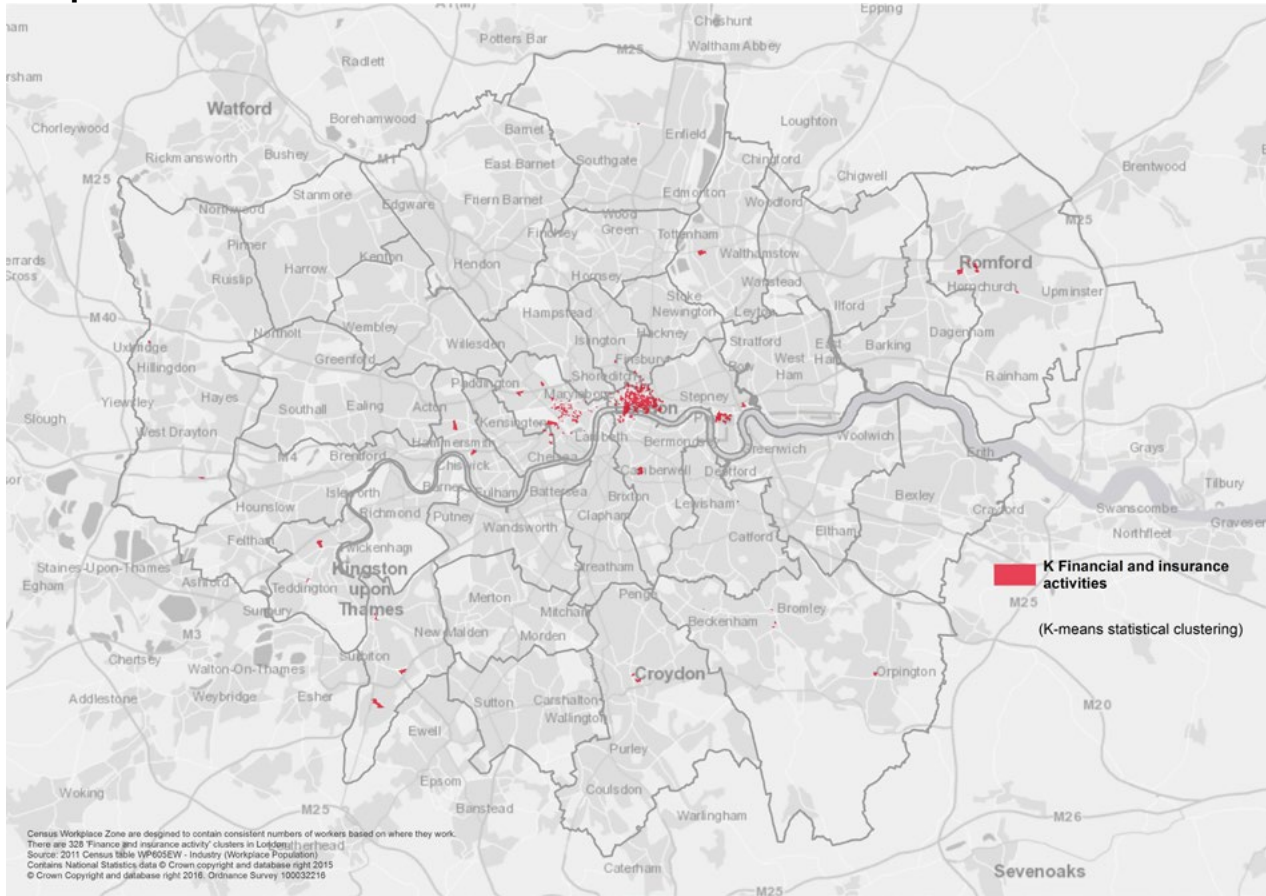
Source: Census and GLA Intelligence Unit Analysis

Map E3 shows that employment in Professional, scientific and technical activities in London in 2011 formed a number of clusters in Central London but with a number of further clusters seen in West and North London as well.

Map E3: Dominant employment clusters in Professional, scientific and technical activities in London by workplace zones in 2011
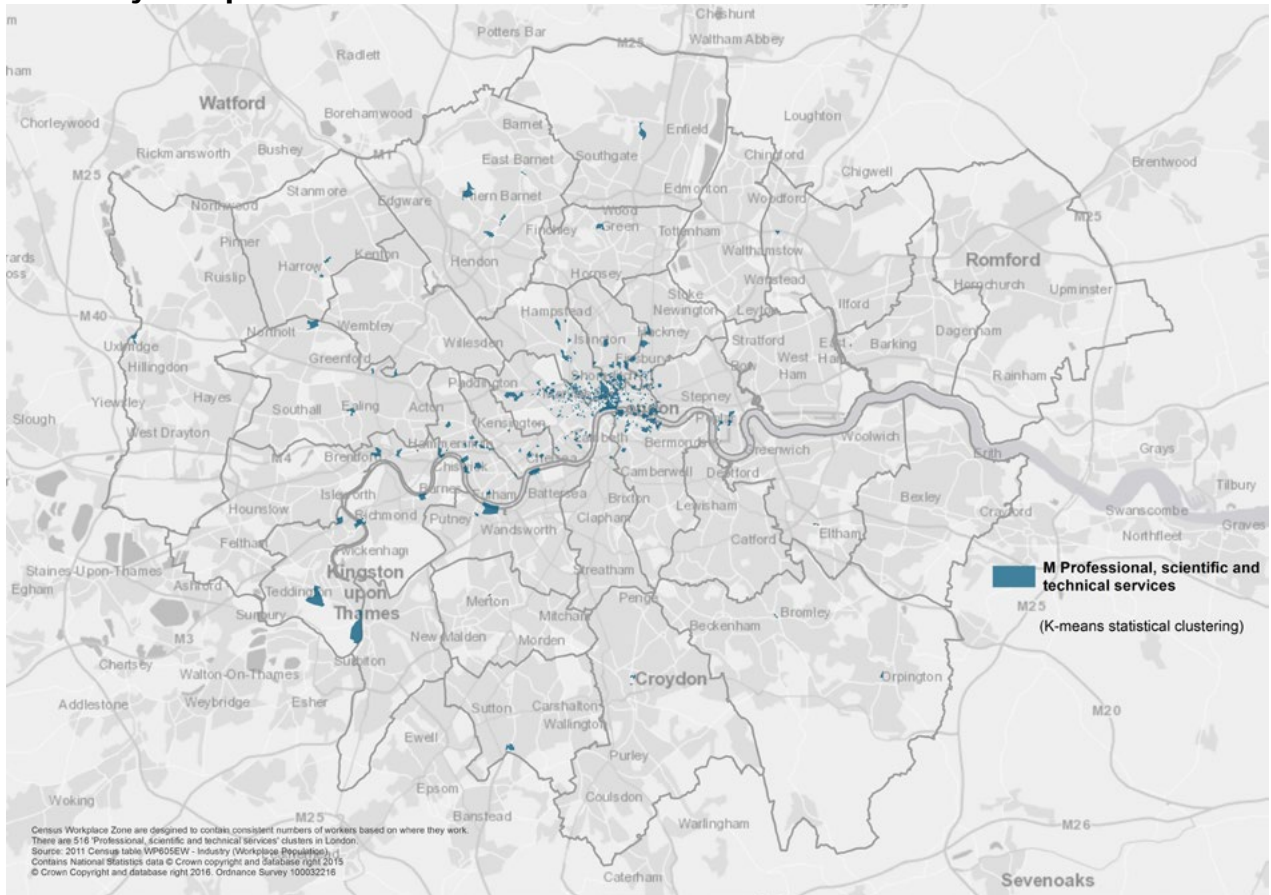
Source: Census and GLA Intelligence Unit Analysis

Map E4 shows that in 2011 employment in Public administration, education & health formed broad clusters across London.

Map E4: Dominant employment clusters in Public administration, education & health in London by workplace zones in 2011
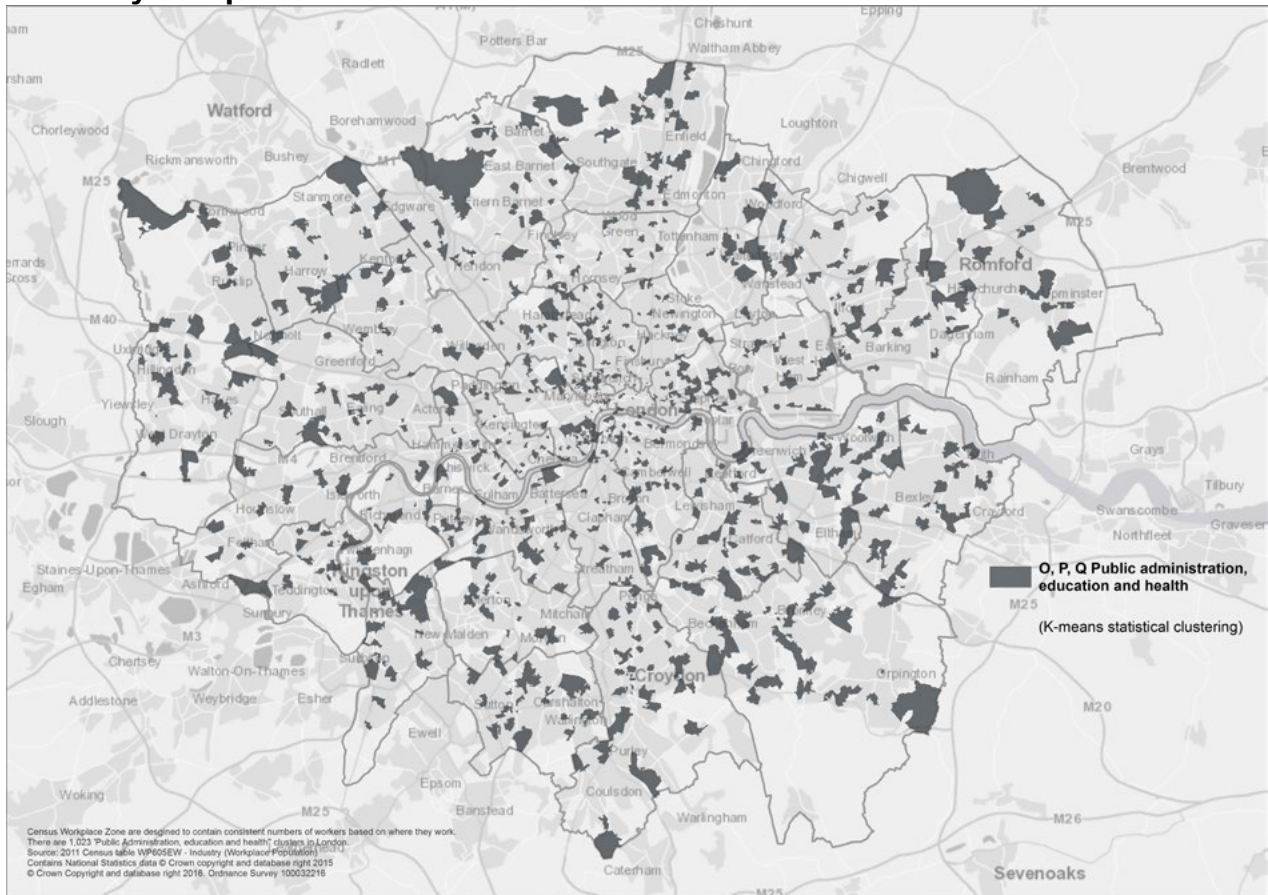
Source: Census and GLA Intelligence Unit Analysis

Map E5 shows a number of clusters of employment in the Transportation and communication sector in 2011 in London especially around the Heathrow area but with City Airport also clearly visible.

Map E5: Dominant employment clusters in Transport and communication in London by workplace zones in 2011
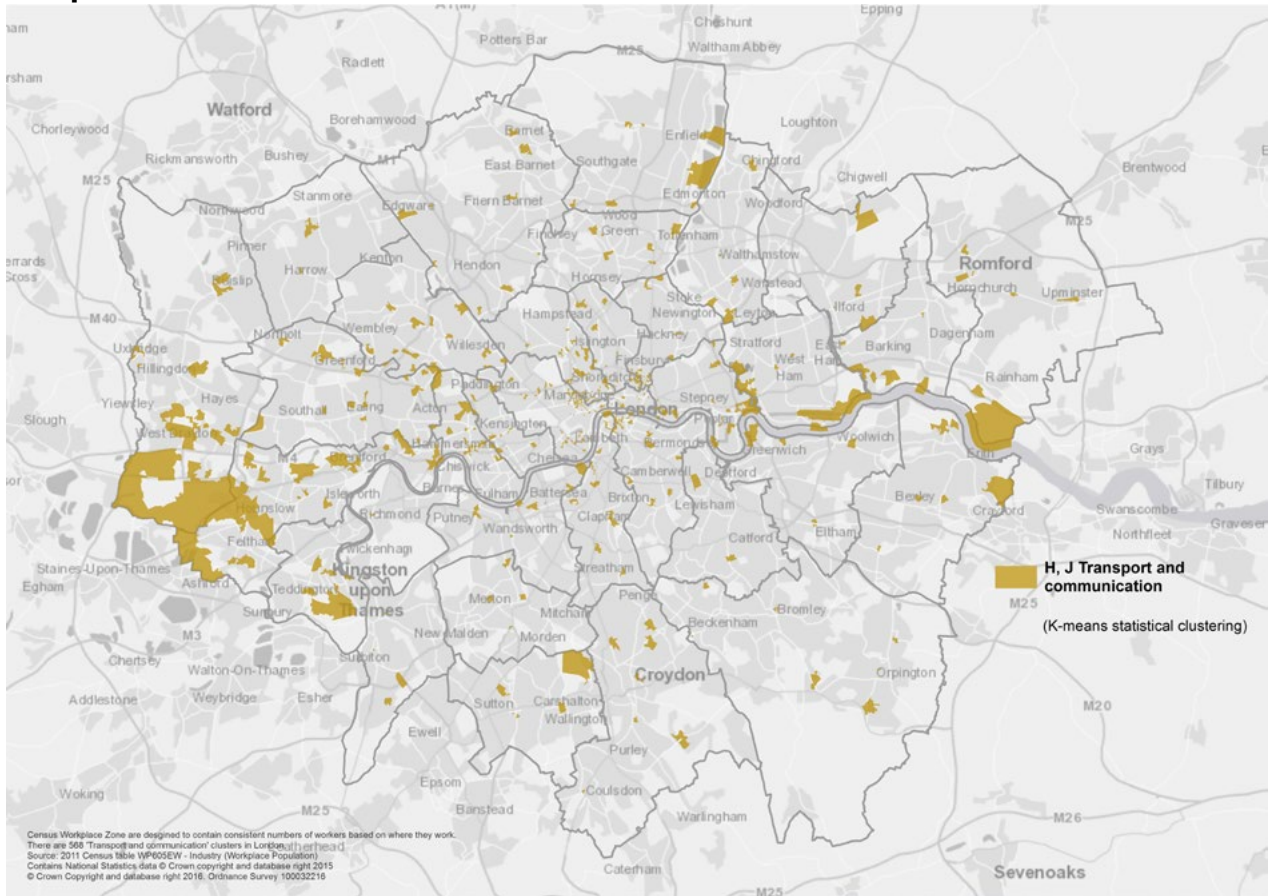
Source: Census and GLA Intelligence Unit Analysis

The Greater South East

Map E6 shows that in 2011 employment clusters in the Distribution, hotels and restaurants sector could be found throughout London and in many areas of the Greater South East.

Map E6: Dominant employment clusters in Distribution, hotels and restaurants in the Greater South East by workplace zones in 2011
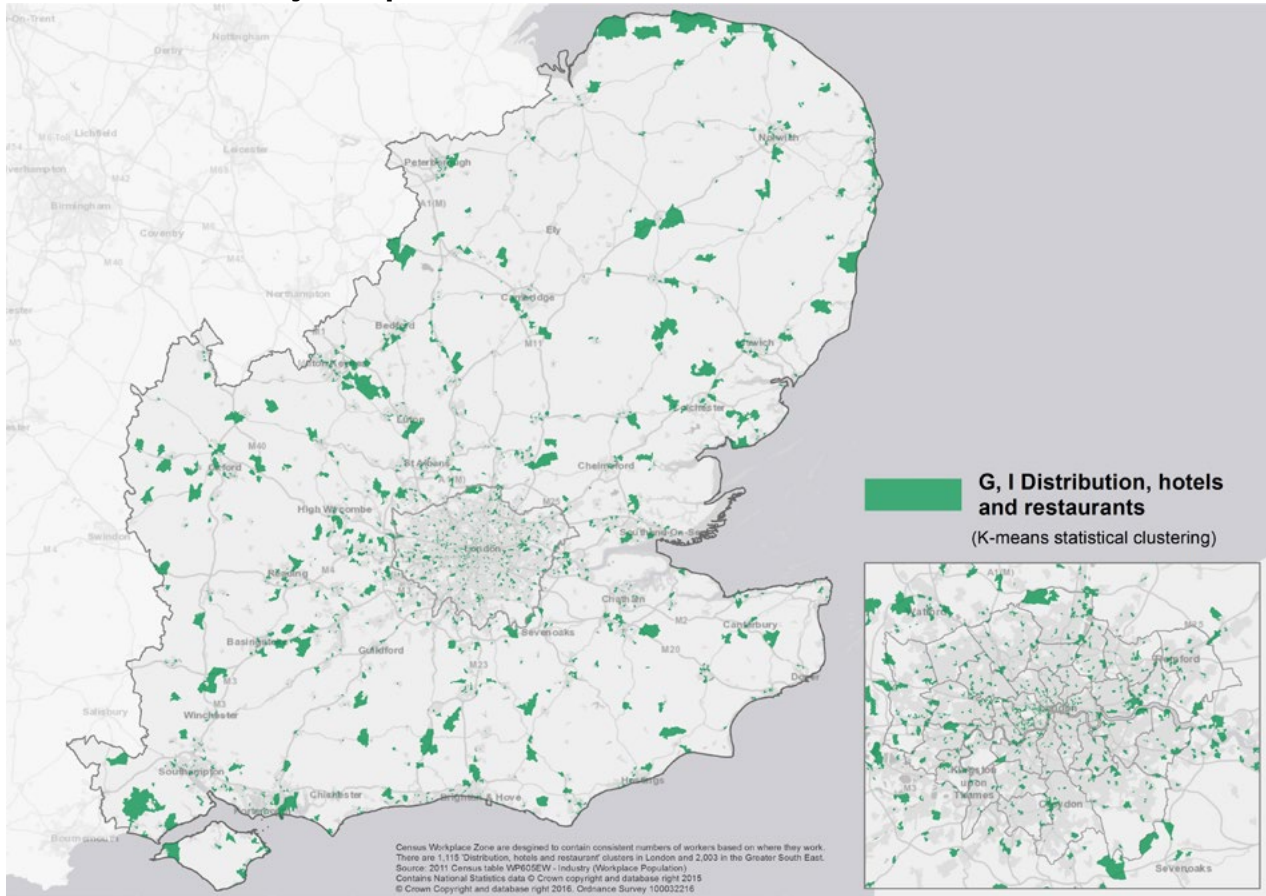
Source: Census and GLA Intelligence Unit Analysis

Map E7 shows clustering in employment in Financial and insurance activities in Inner London in 2011 but also in other areas of the wider South East such as around Norwich.

Map E7: Dominant employment clusters in Financial and insurance activities in the Greater South East by workplace zones in 2011
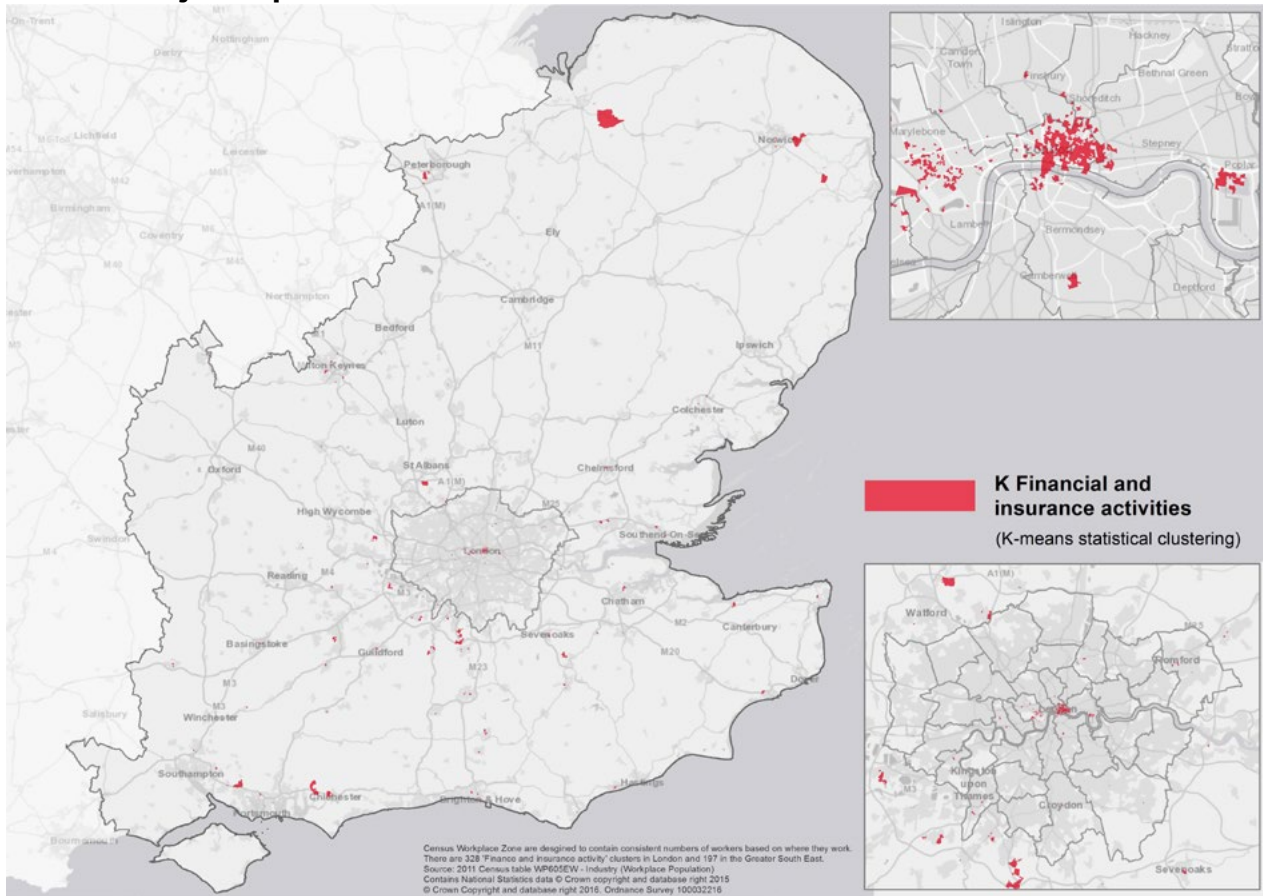
Source: Census and GLA Intelligence Unit Analysis

Map E8 shows that employment in the Professional, scientific and technical activities sector in the Greater South East in 2011 formed a number of clusters in Central London but with a number of further clusters seen such as around Cambridge and Oxford.

Map E8: Dominant employment clusters in Professional, scientific and technical activities in the Greater south East by workplace zones in 2011
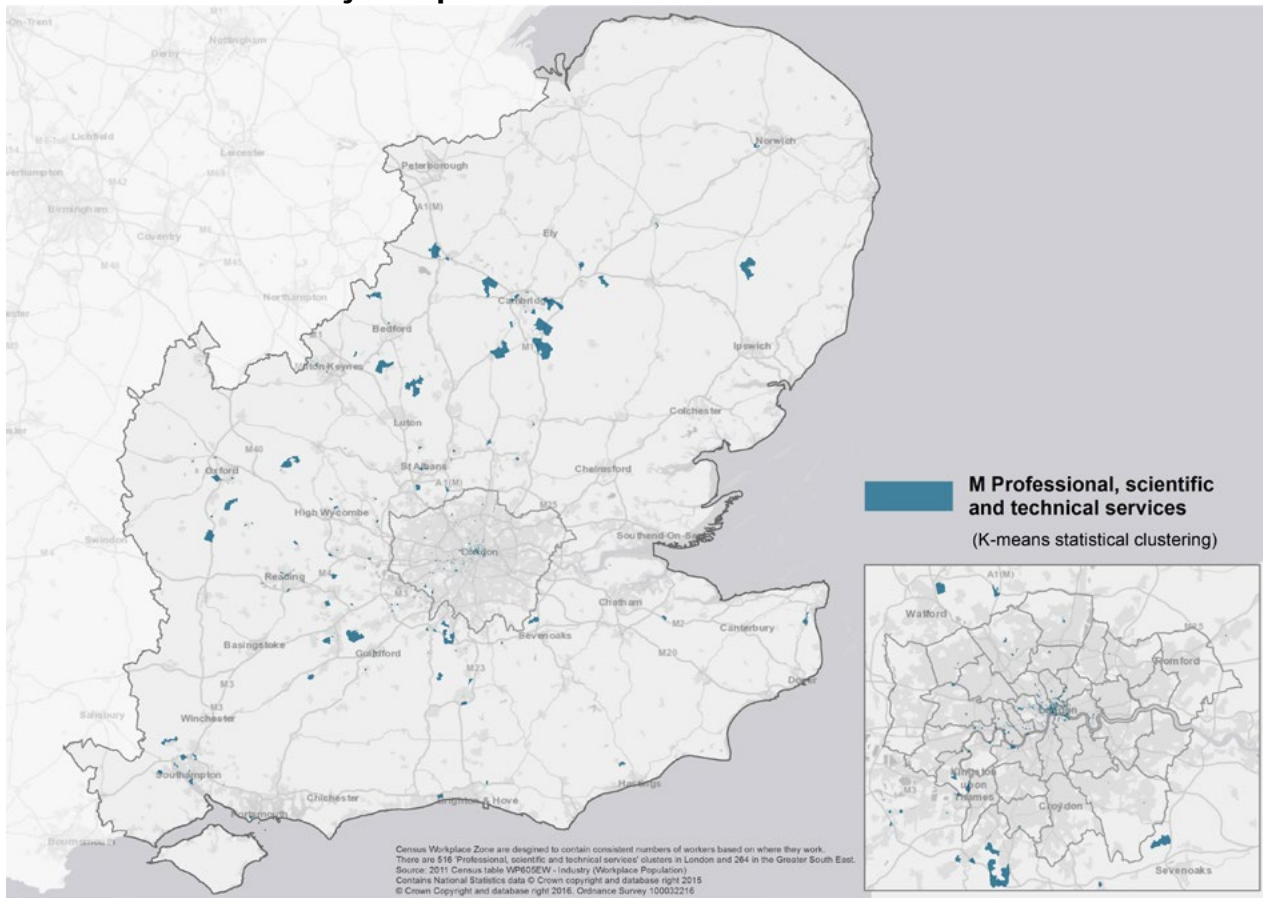
Source: Census and GLA Intelligence Unit Analysis

Map E9 shows that there was a number of clusters in employment in Public administration, education & health in the Great South East in 2011 generally associated with the major urban areas.

Map E9: Dominant employment clusters in Public administration, education & health in the Great South East by workplace zones in 2011
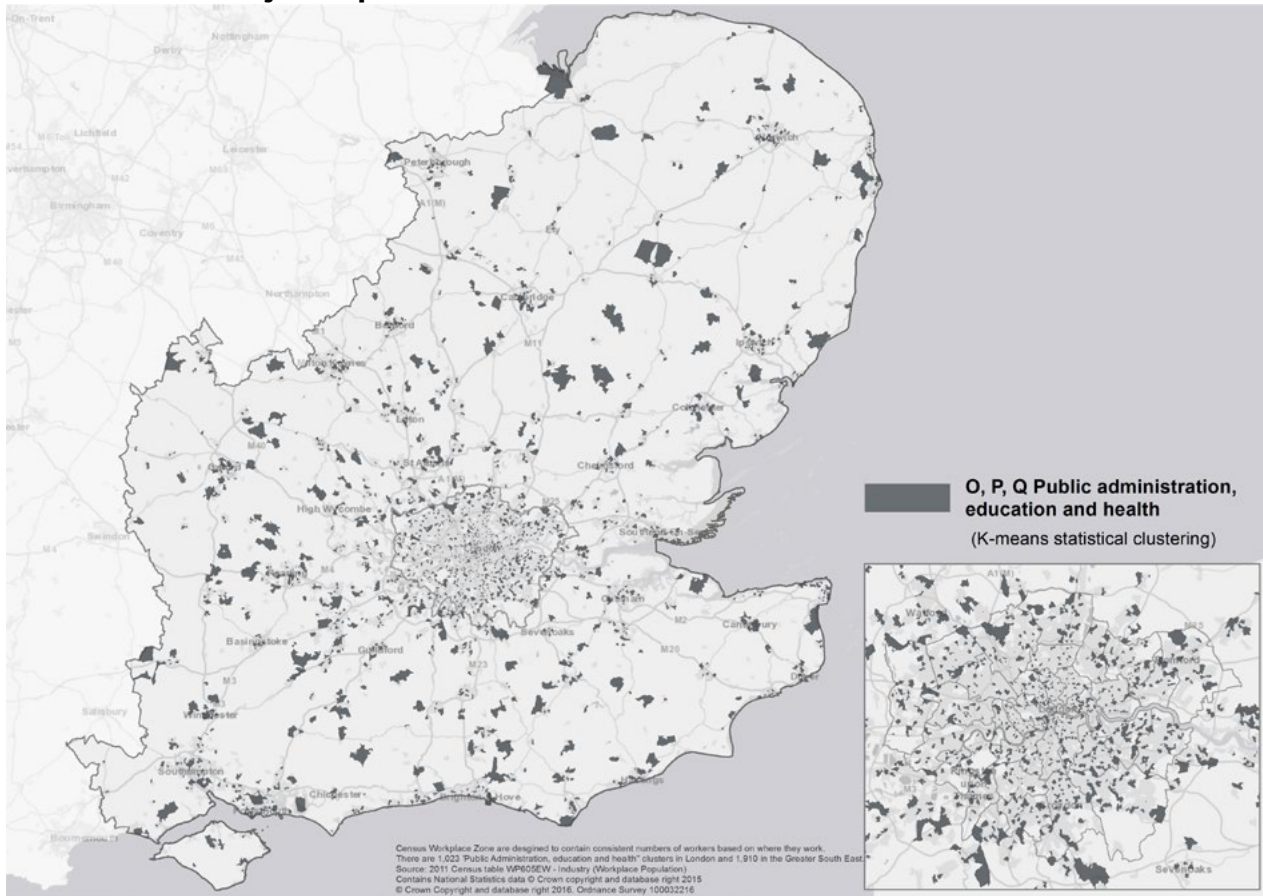
Source: Census and GLA Intelligence Unit Analysis

Map E10 shows clusters of employment in the Transportation and communication sector in 2011 in the Greater South East especially around the Heathrow area but with a number of other clusters clearly visible mostly associated with various transport hubs.

Map E10: Dominant employment clusters in Transport and communication in the Greater South East by workplace zones in 2011
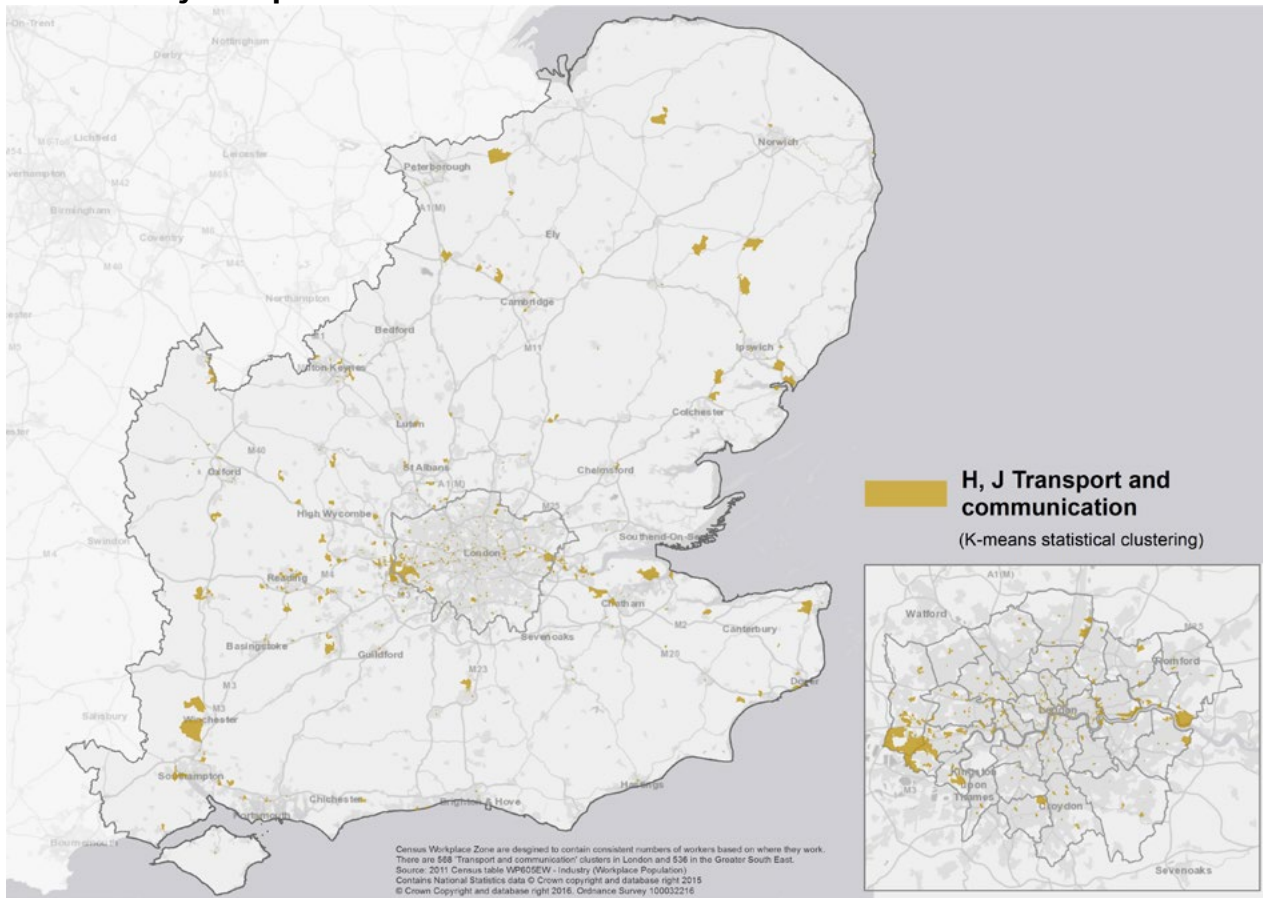
Source: Census and GLA Intelligence Unit Analysis

Hot spot analysis

This section of the Appendix to Chapter 2 examines employment clustering in London and also the Greater South East using the same methodology used to generate Map 2.8 but a different methodology than that used in Section 2.6.1 of Chapter 2. From this methodology certain clusters of employment can be seen across London and the Greater South East. It should be noted that the maps for London do still generally highlight the importance of the CAZ as a location for business for most sectors, with maps E11 to E20 showing clusters for a number of industrial sectors[12]. At this level of geography these clusters highlight the dominate areas of employment for these sectors in London and the Greater South East but do not necessarily include every small area of high employment concentration in a given sector in London and the Greater South East.

London

Map E11 examines employment concentration in Manufacturing in London in 2011 and shows that this sector is more clustered in Outer London.

Map E11: Clustering in Manufacturing employment in London in 2011
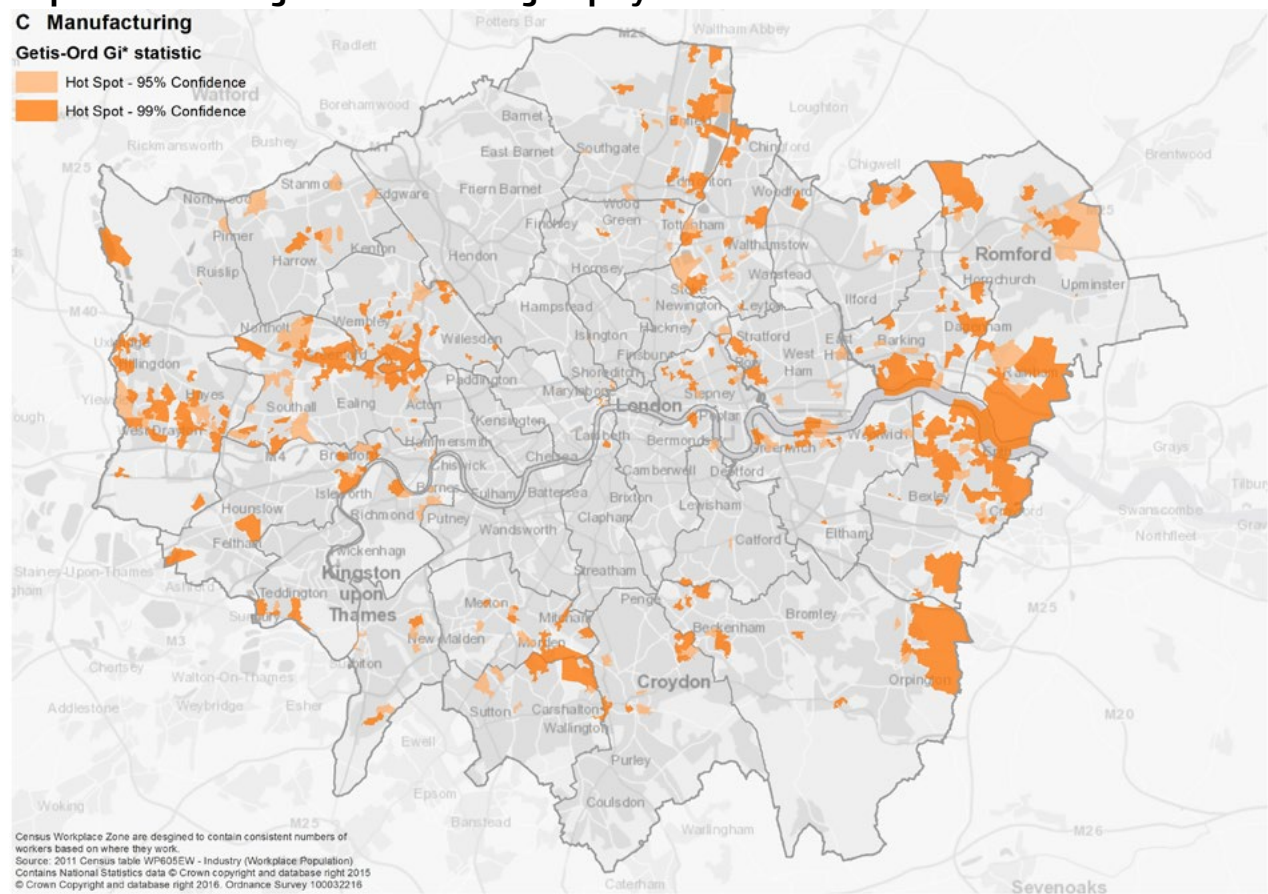
Source: Census and GLA Intelligence Unit analysis

Map E12 shows employment clustering in Construction in London in 2011and shows significant clustering in Outer East London with areas also seen in Outer North, North West and South London as well.

Map E12: Clustering in Construction employment in London in 2011
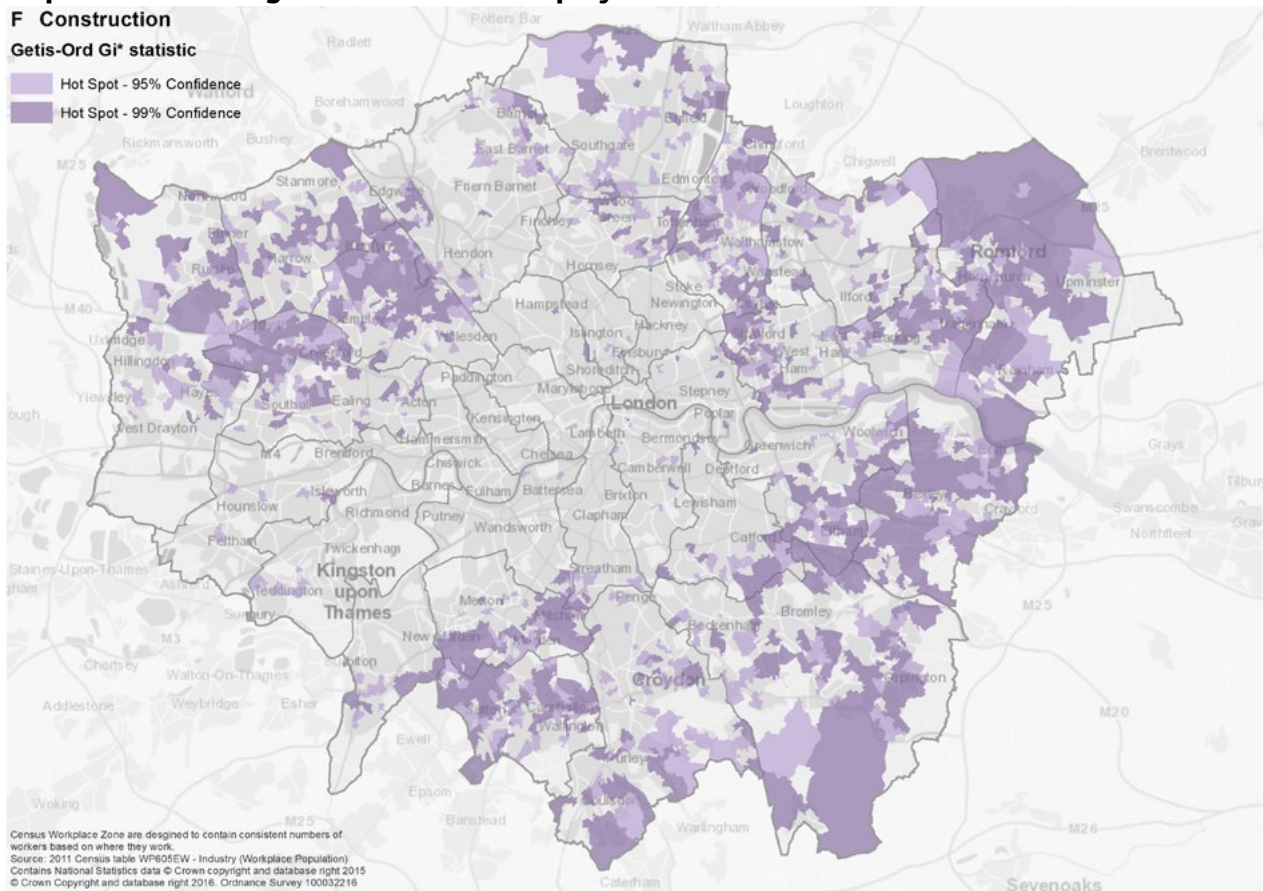
Source: Census and GLA Intelligence Unit analysis

Map E13 shows employment clustering in the Distribution, hotels and restaurants sector in London in 2011 in Central London but also across many other areas of the capital as well.

Map E13: Clustering in Distribution, hotels and restaurants employment in London in 2011
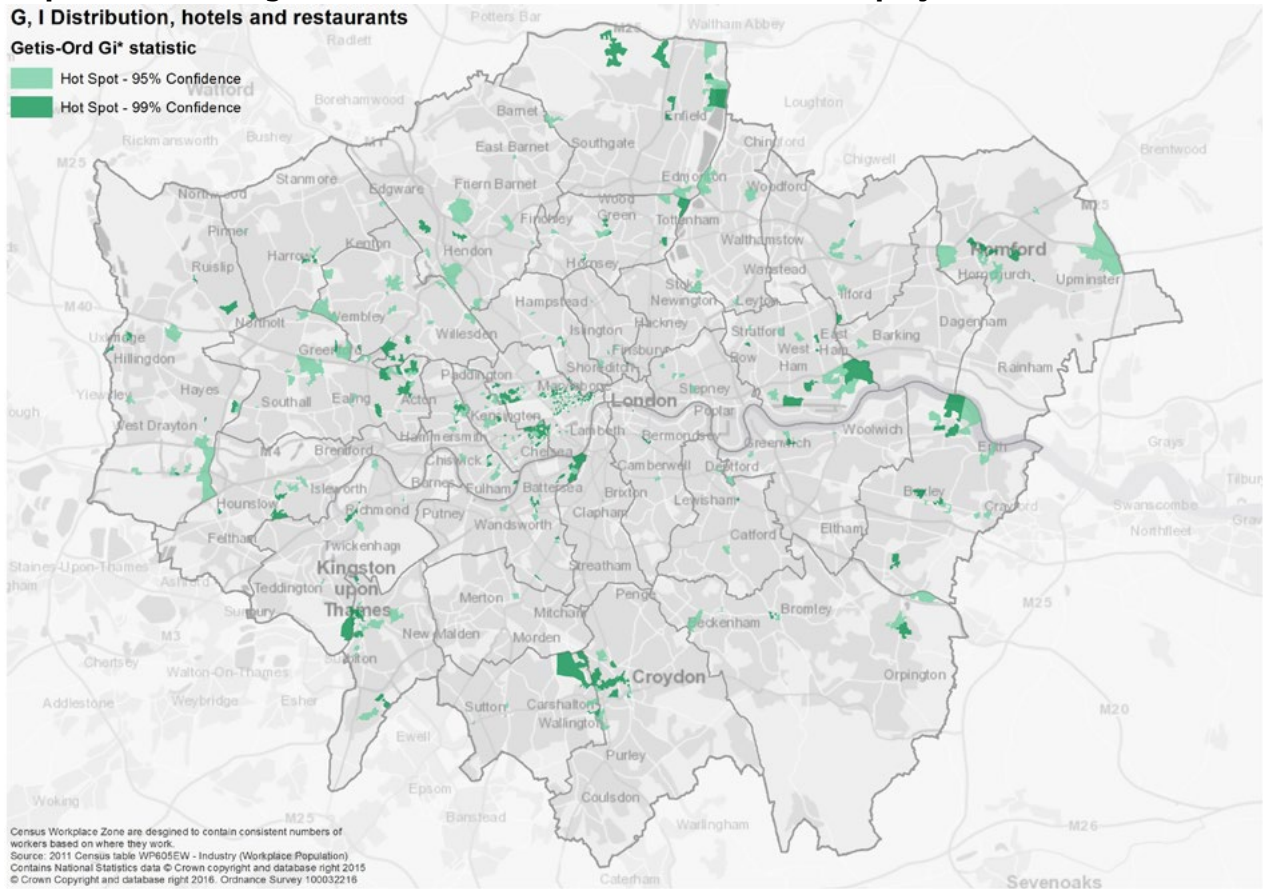
Source: Census and GLA Intelligence Unit analysis

In 2011 in London Map E14 highlights clustering in employment in the Transport and communication sector around Heathrow but also in a swathe across the middle of London.

Map E14: Clustering in Transport and communication employment in London in 2011
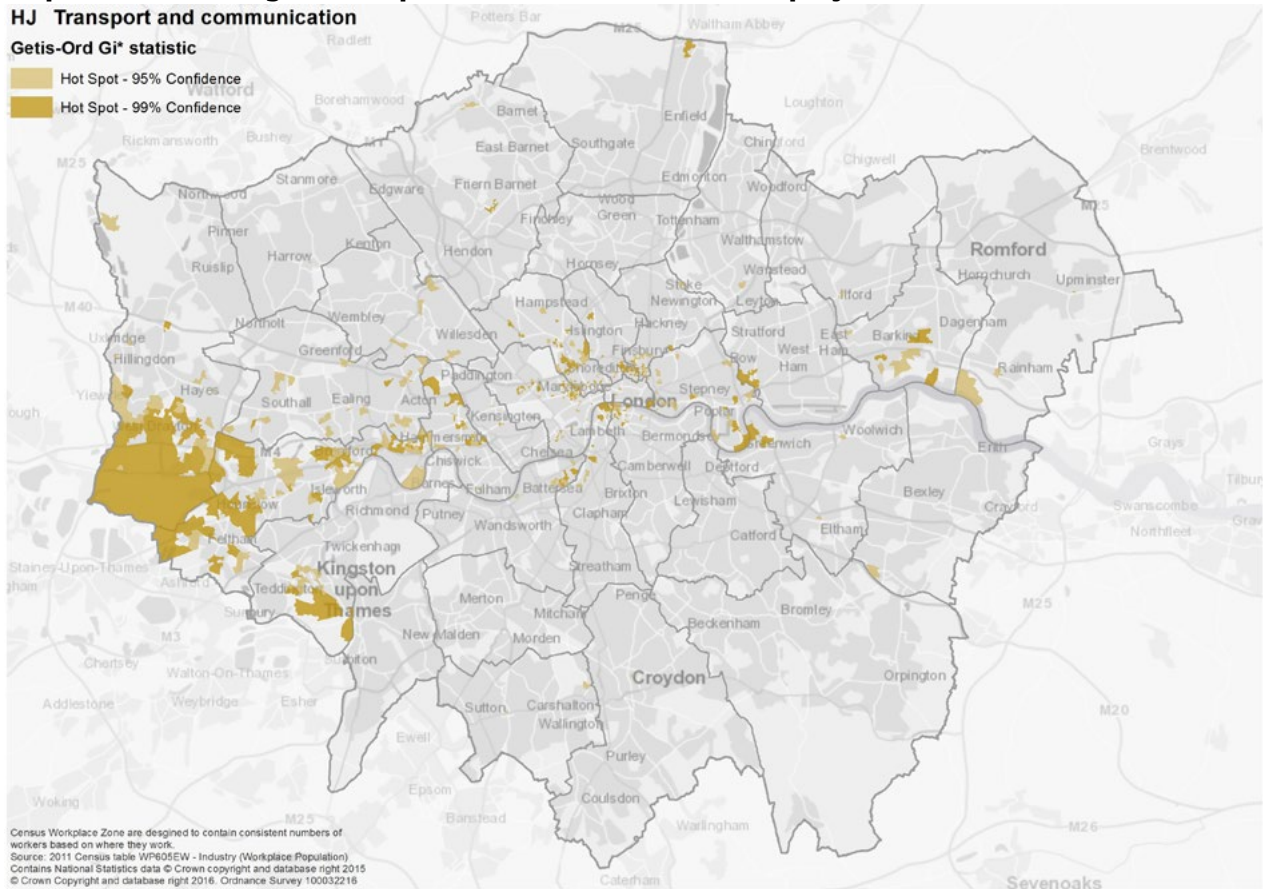
Source: Census and GLA Intelligence Unit analysis

Map E15 shows that Finance and insurance activities employment was generally clustered around the CAZ, NIOD and Mayfair area in London in 2011.

Map E15: Clustering in Finance and insurance activities employment in London in 2011
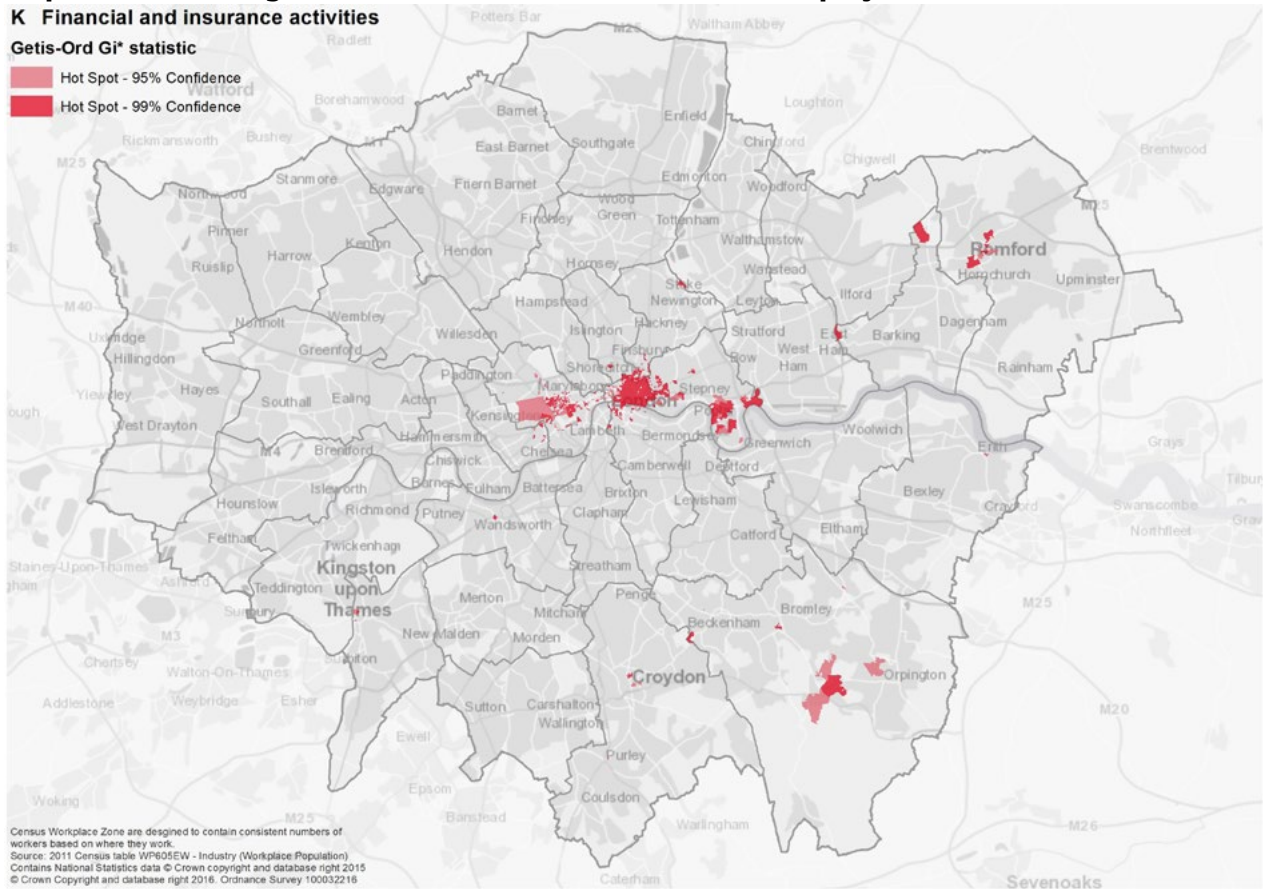
Source: Census and GLA Intelligence Unit analysis

Map E16 shows that in 2011 clusters of employment in Real estate activities could be found in many areas of London.

Map E16: Clustering in Real estate activities employment in London in 2011
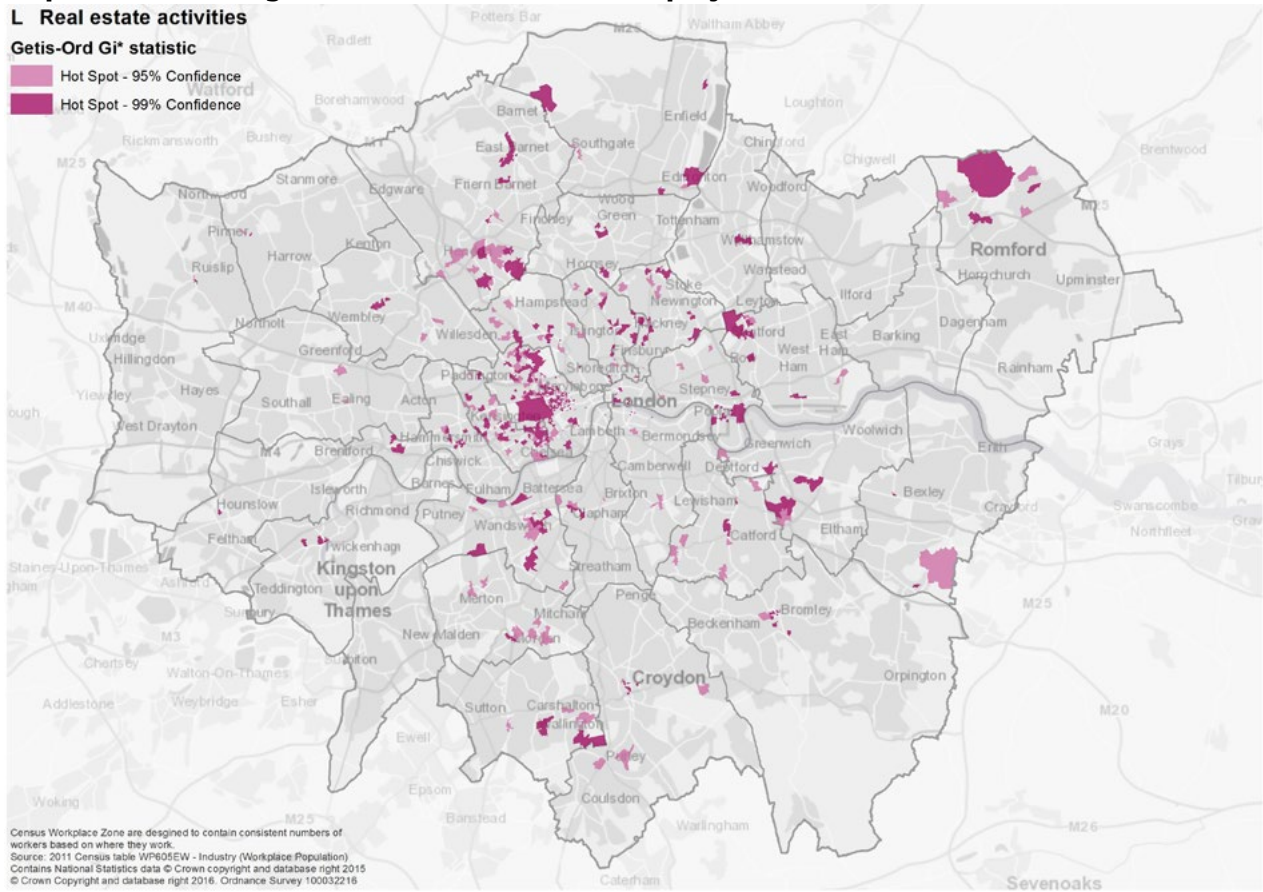
Source: Census and GLA Intelligence Unit analysis

In 2011 Map E17 shows there was a cluster of employment in Professional, scientific and technical activities in Central London but with a few other clusters also visible.

Map E17: Clustering in Professional, scientific and technical activities employment in London in 2011
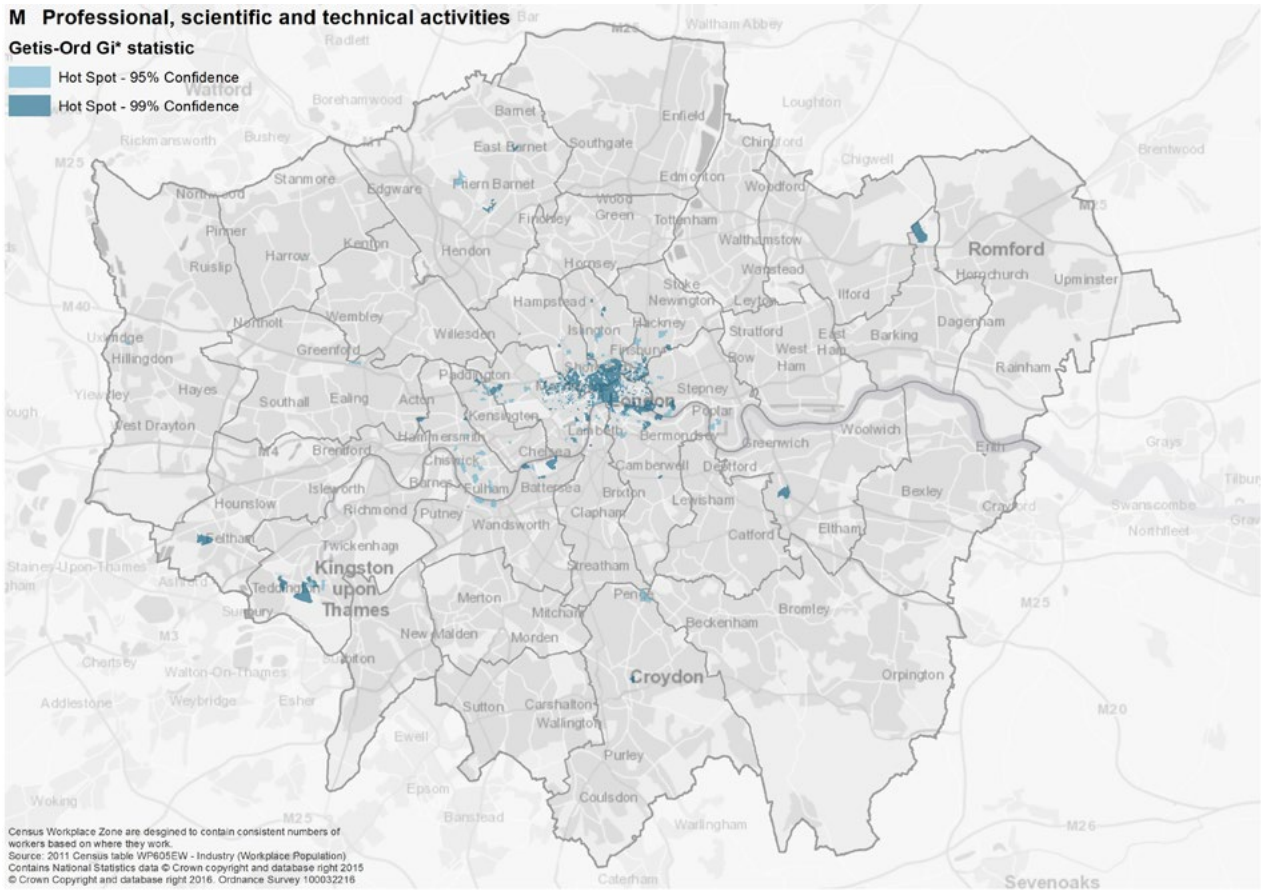
Source: Census and GLA Intelligence Unit analysis

Map E18 highlights a number of clusters of employment in the Administrative activities sector spread across London in 2011.

Map E18: Clustering in Administrative activities employment in London in 2011
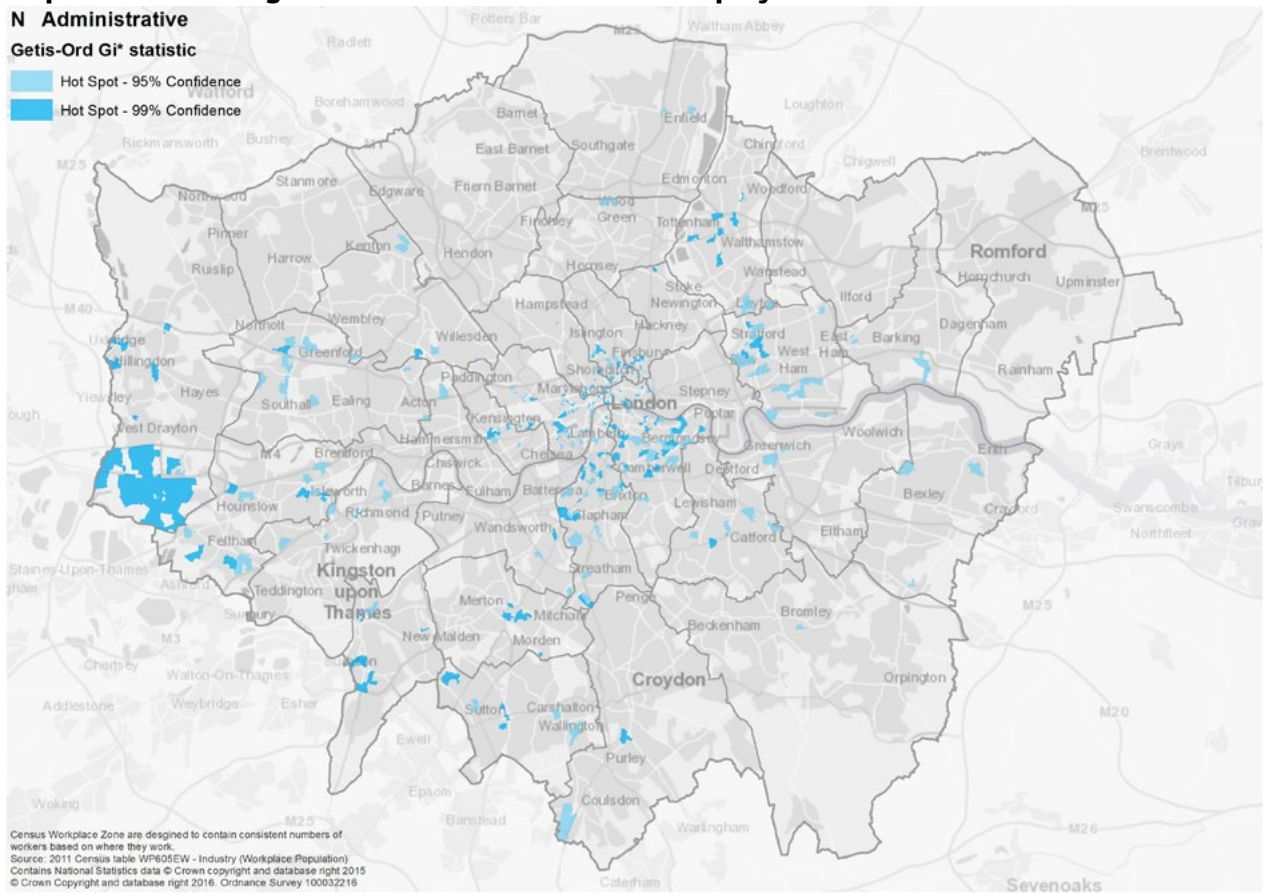
Source: Census and GLA Intelligence Unit analysis

Map E19 highlights a number of clusters of employment in Public administration, education and health in London in 2011.

Map E19: Clustering in Public administration, education and health activities employment in London in 2011
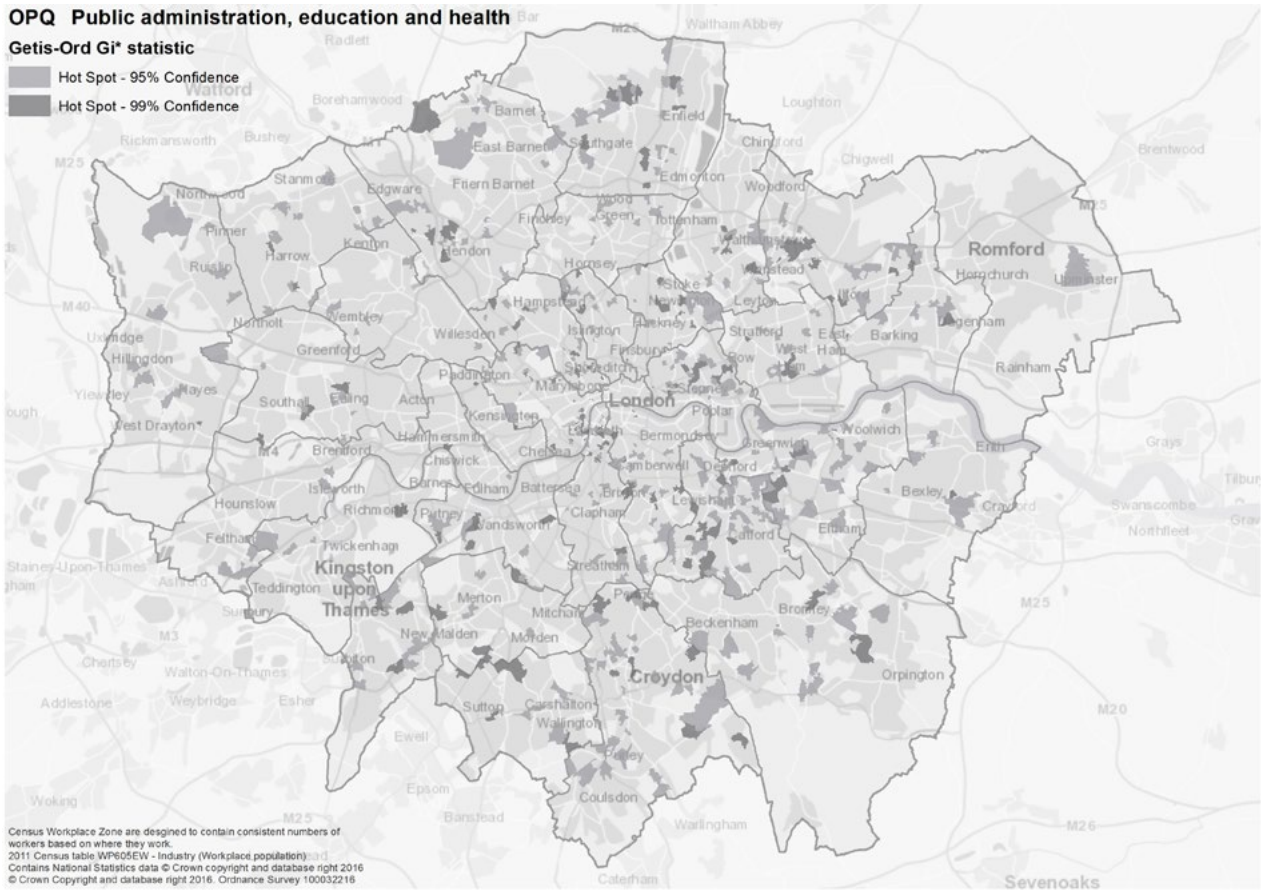
Source: Census and GLA Intelligence Unit analysis

Map E20 highlights a number of clusters of employment in the Other sector in London in 2011.

Map E20: Clustering in the Other sector employment in London in 2011
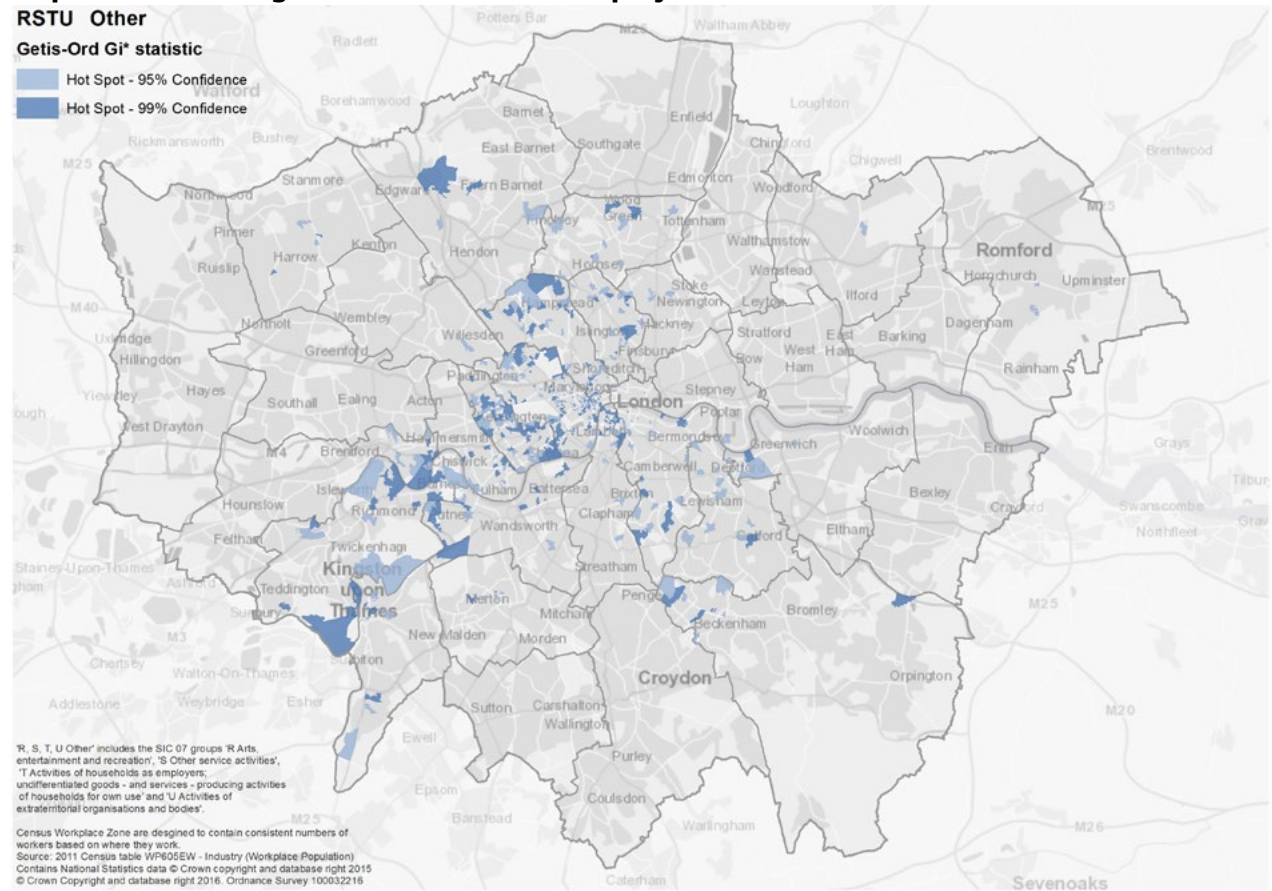
Source: Census and GLA Intelligence Unit analysis

The Greater South East[13]

Map E21 examines employment concentration in Manufacturing in the Greater South East in 2011 and shows that this sector has a number of clusters outside of London.

Map E21: Clustering in Manufacturing employment in the Greater South East in 2011
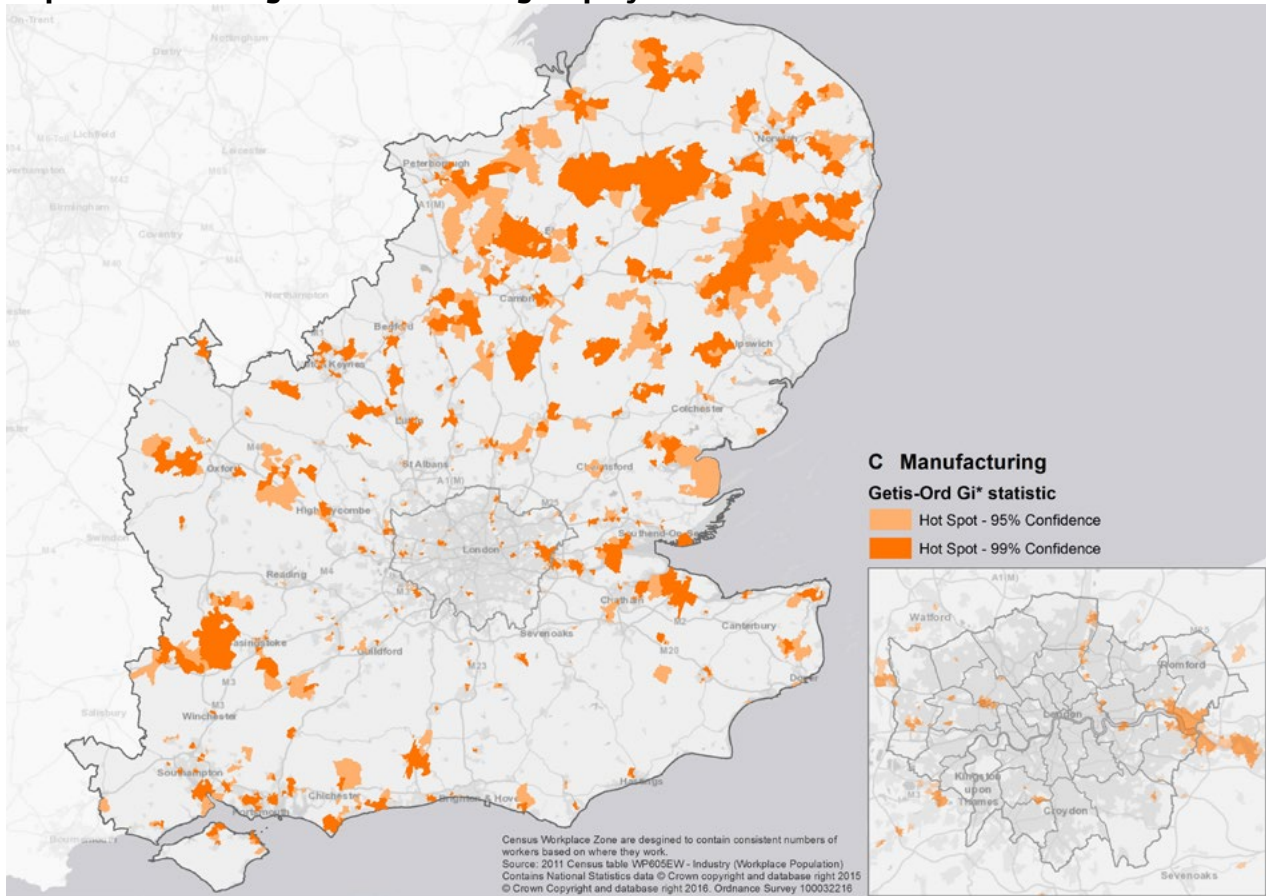
Source: Census and GLA Intelligence Unit analysis

Map E22 shows employment clustering in Construction in the Greater South East in 2011and shows significant grouping to the east of London but with clustering seen in a number of other areas of this geography as well.

Map E22: Clustering in Construction employment in the Greater South East in 2011
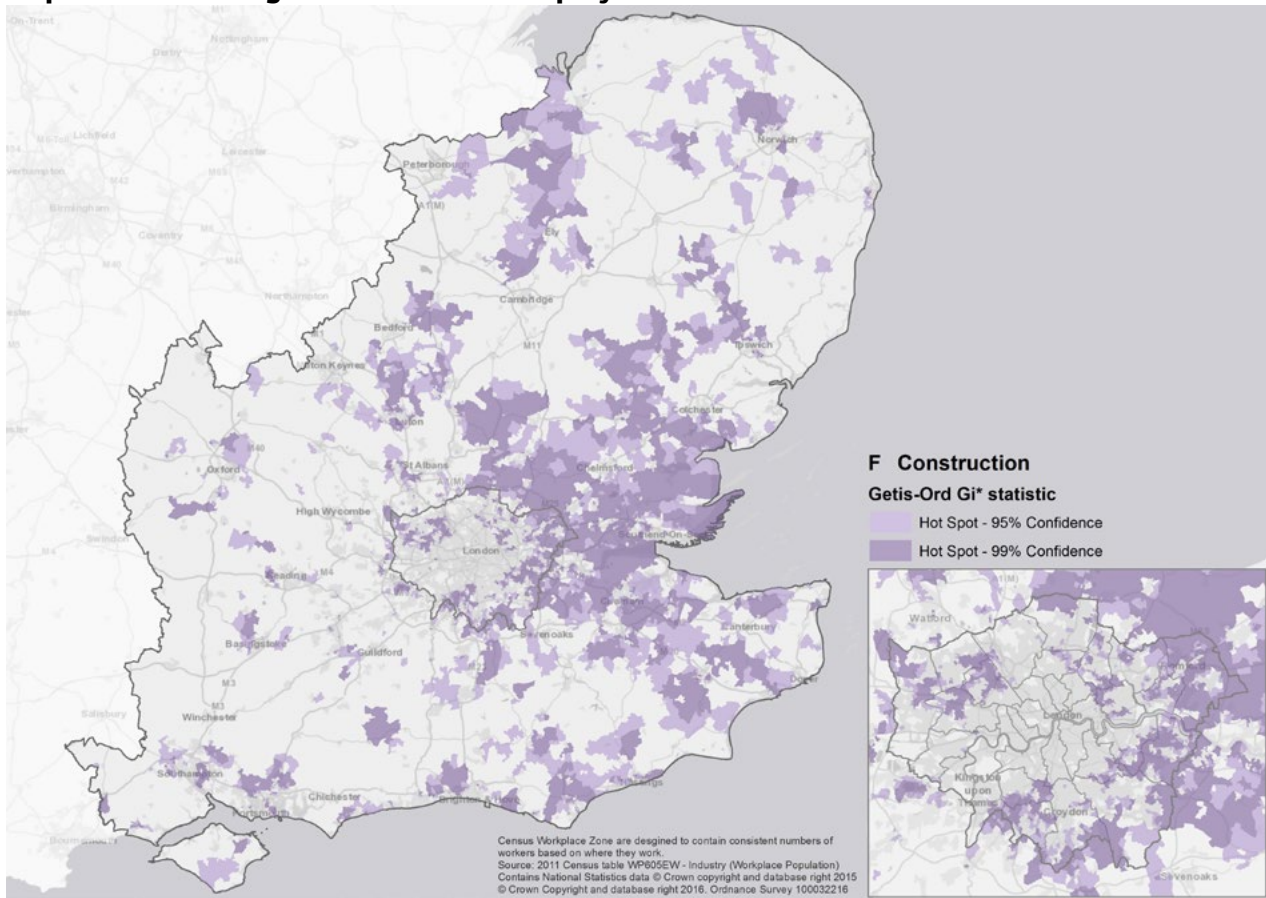
Source: Census and GLA Intelligence Unit analysis

Map E23 shows employment clustering in the Distribution, hotels and restaurants sector in the Greater South East in 2011 with a number of clusters visible in London but also a few in the wider South East as a whole as well.

Map E23: Clustering in Distribution, hotels and restaurants employment in the Greater South East in 2011
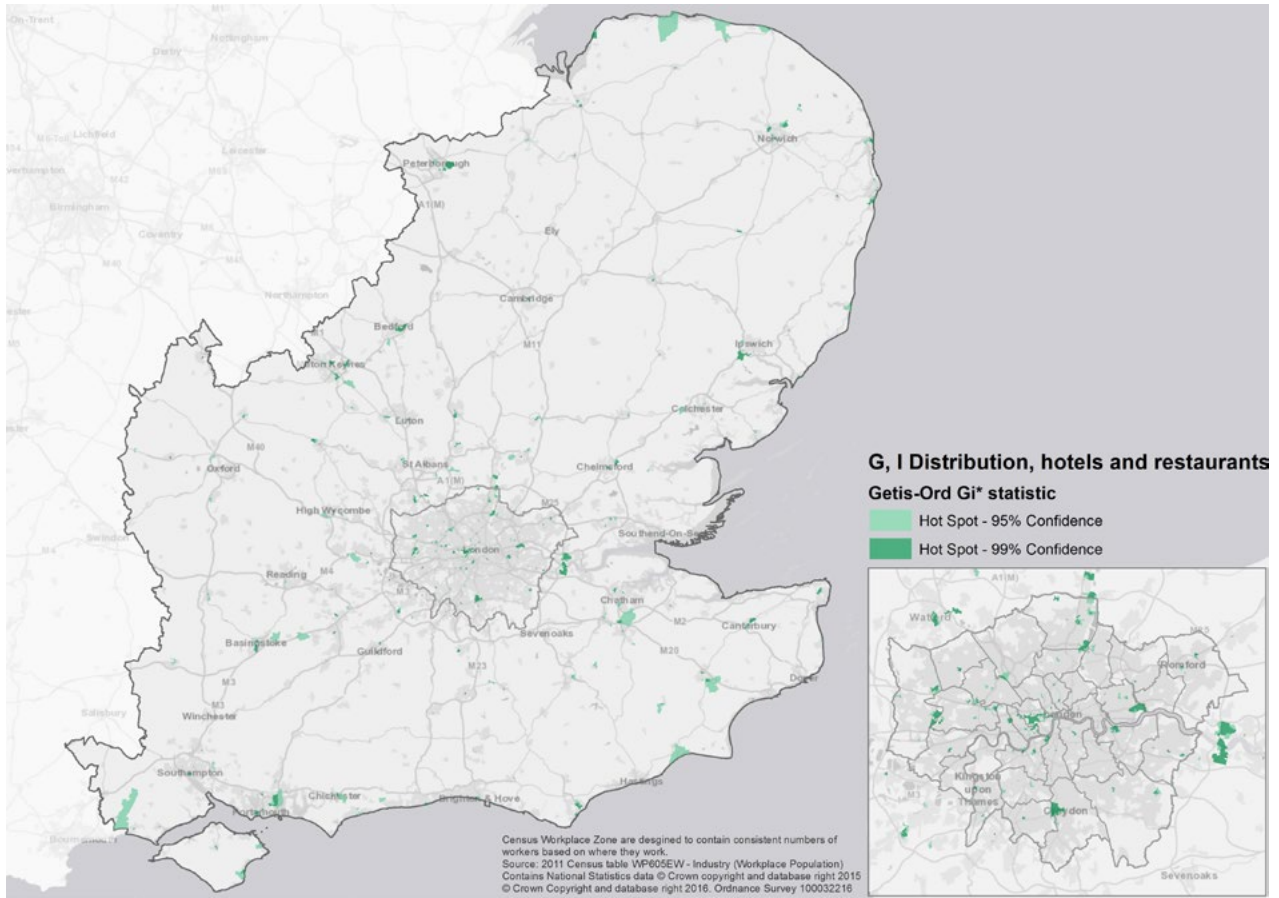
Source: Census and GLA Intelligence Unit analysis

In 2011 in the Greater South East Map E24 highlights clustering in employment in the Transport and communication sector around Heathrow and to the west and east of London with other clusters visible in the wider South East such as near Luton most likely associated with the airport.

Map E24: Clustering in Transport and communication employment in the Greater South East in 2011
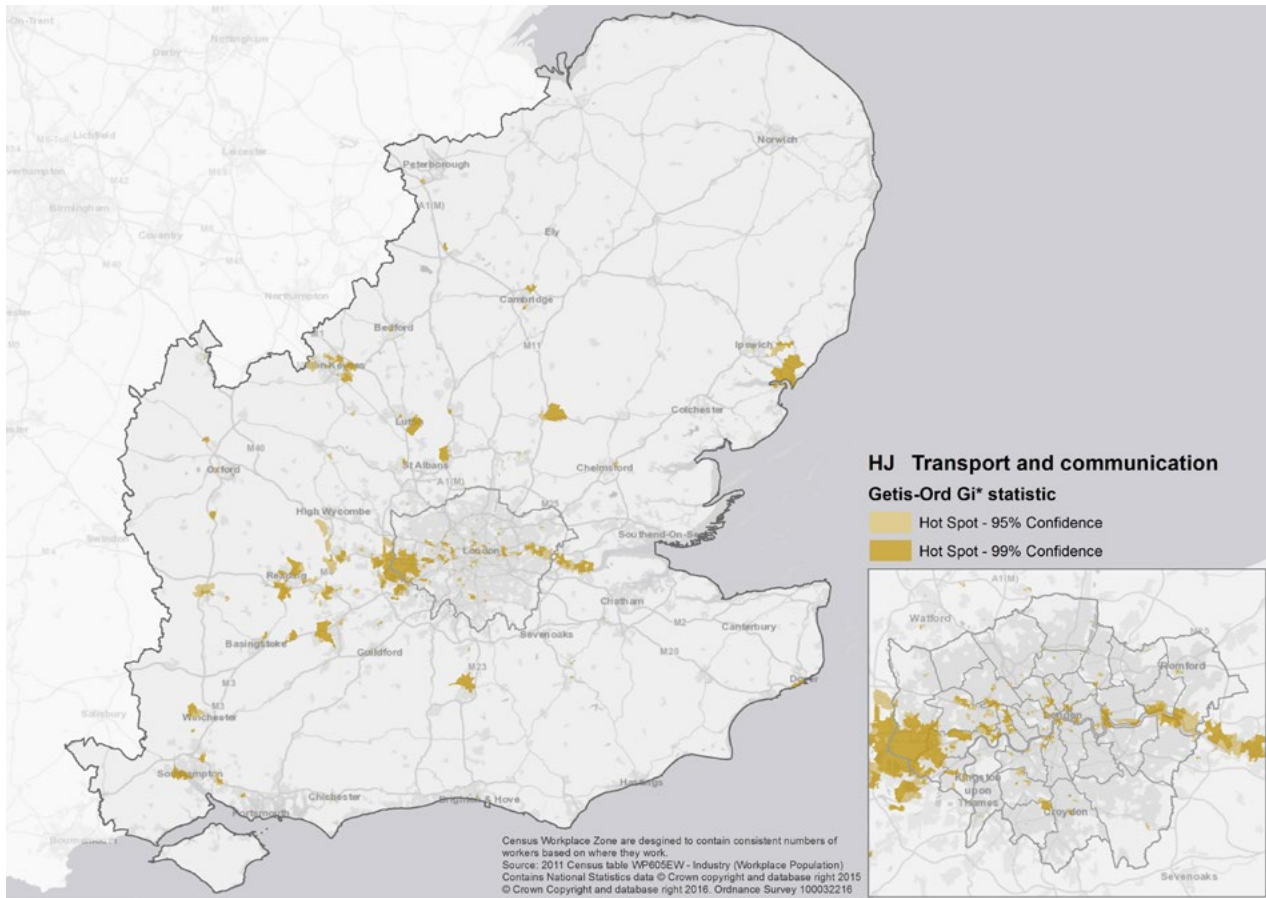
Source: Census and GLA Intelligence Unit analysis

Map E25 shows that Finance and insurance activities employment had a few clusters in Central London in 2011, with a few other clusters visible in the wider South East such as one associated with Peterborough.

Map E25: Clustering in Finance and insurance activities employment in the Greater South East in 2011
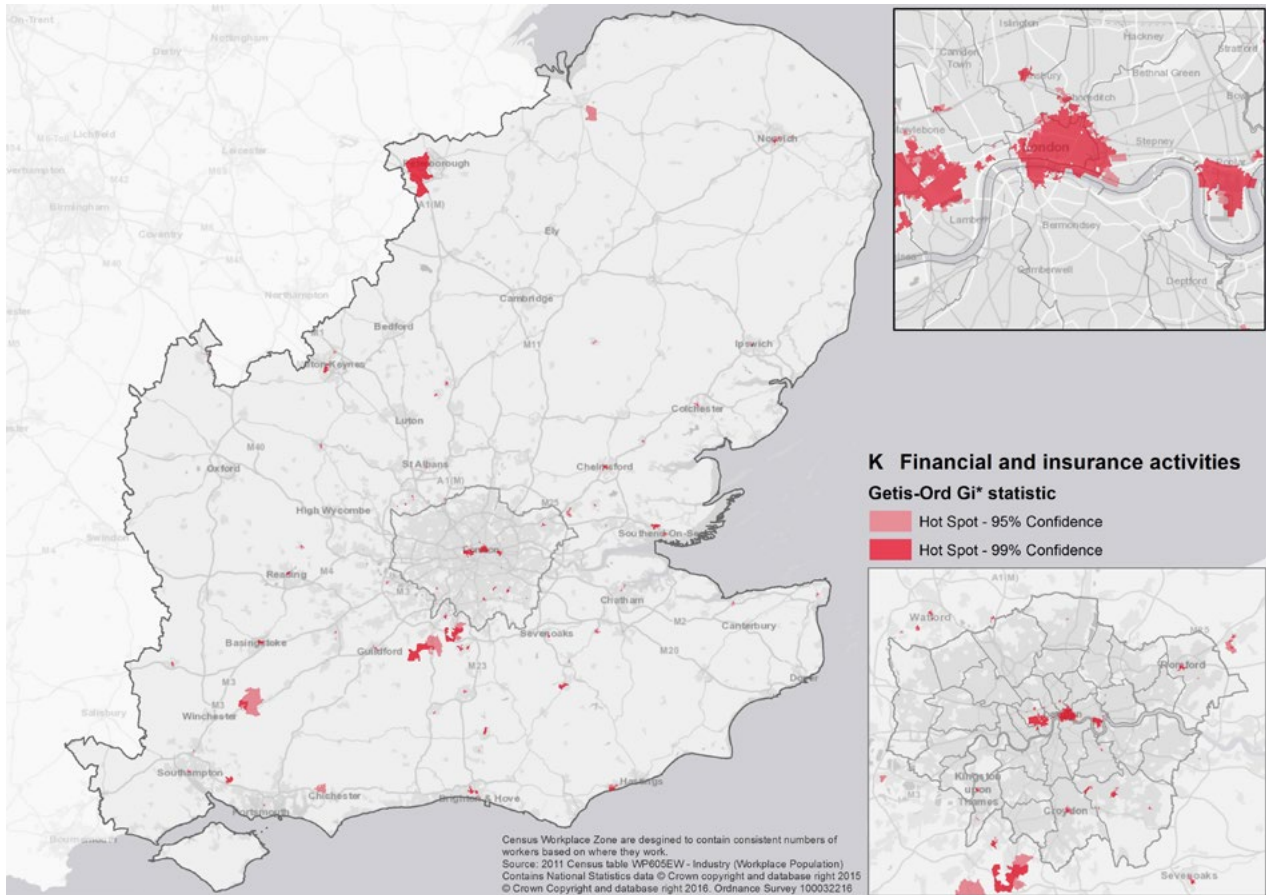
Source: Census and GLA Intelligence Unit analysis

Map E26 shows that in 2011 clusters of employment in Real estate activities could be found in many areas of London and also doted across the wider South East.

Map E26: Clustering in Real estate activities employment in the Greater South East in 2011
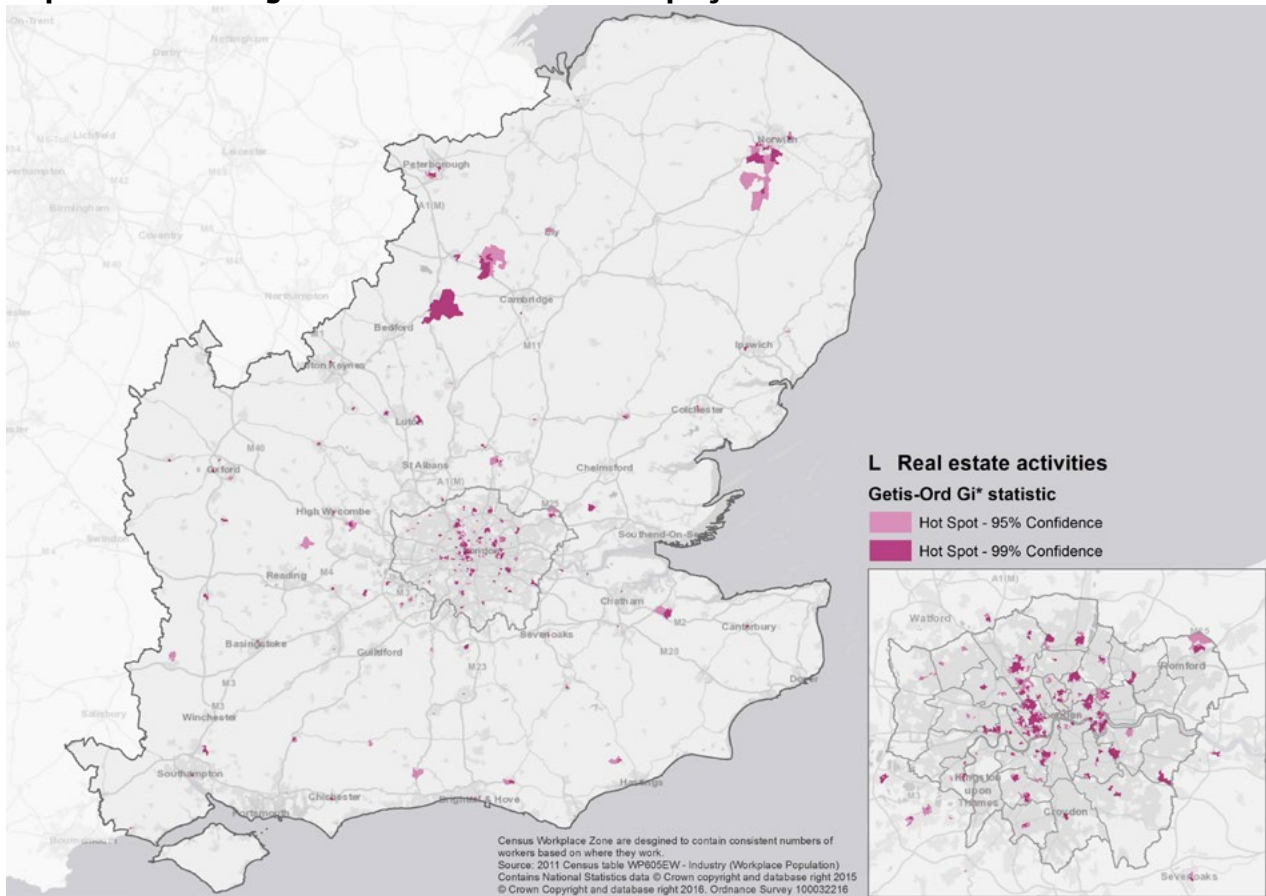
Source: Census and GLA Intelligence Unit analysis

In 2011 Map E27 shows there was a cluster of employment in Professional, scientific and technical activities in Central London and the south western area of London and its surroundings with other prominent clusters visible in the wider South East such as around Cambridge and Oxford.

Map E27: Clustering in Professional, scientific and technical activities employment in the Greater South East in 2011
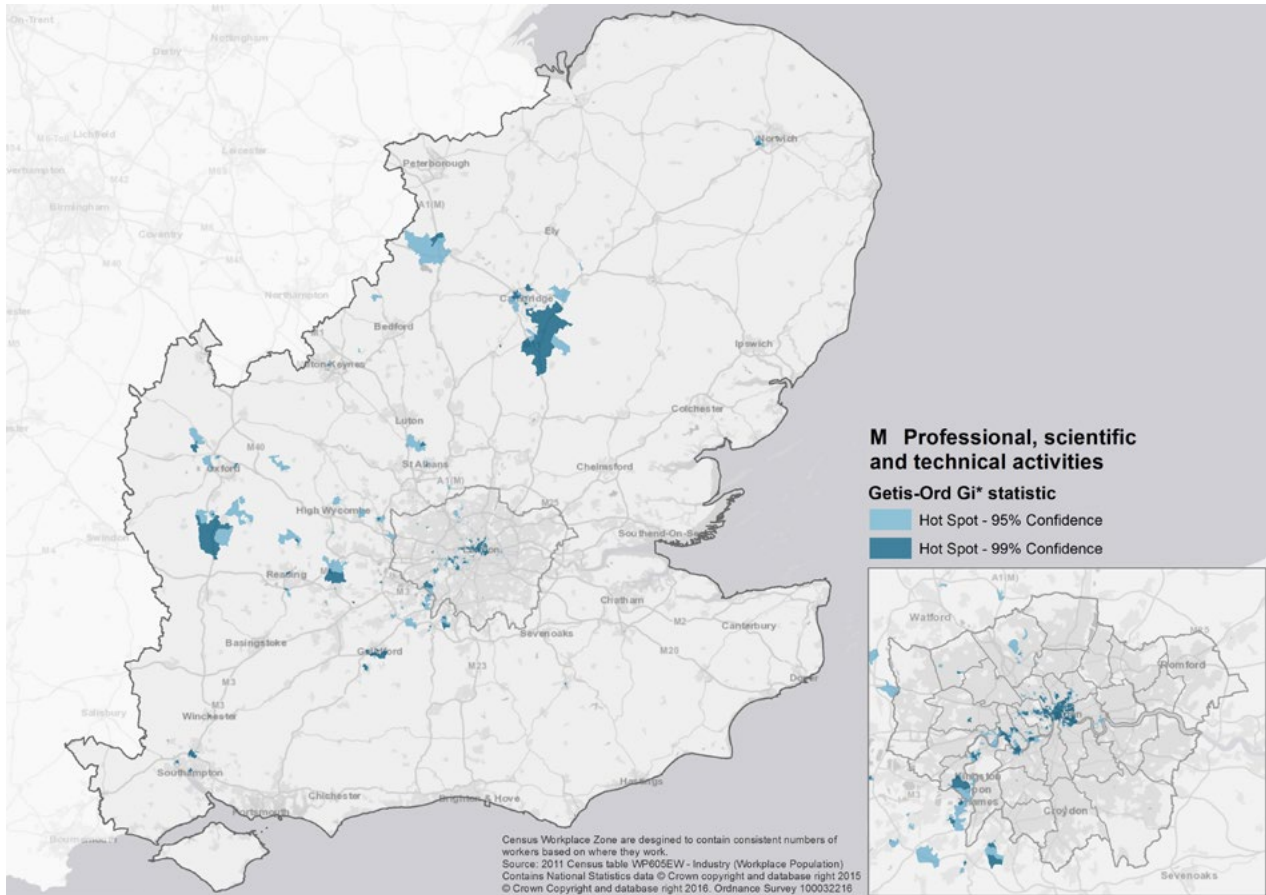
Source: Census and GLA Intelligence Unit analysis

Map E28 highlights a number of clusters of employment in the Administrative and support service activities sector across the Greater South East in 2011.

Map E28: Clustering in Administrative activities employment in the Greater South East in 2011
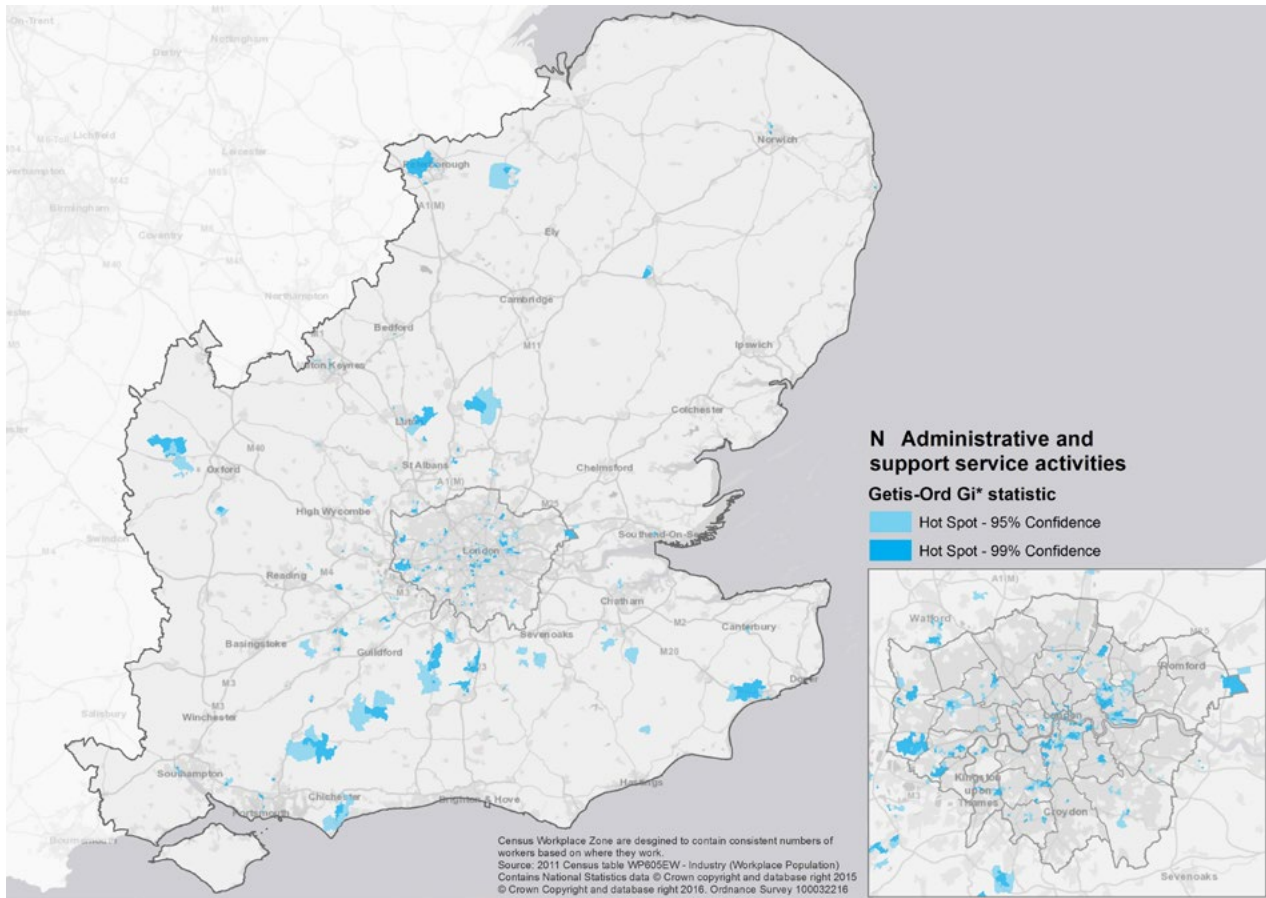
Source: Census and GLA Intelligence Unit analysis

Map E29 highlights a number of clusters of employment in Public administration, education and health across the Greater South East in 2011 generally associated with various urban areas.

Map E29: Clustering in Public administration, education and health activities employment in the Greater South East in 2011
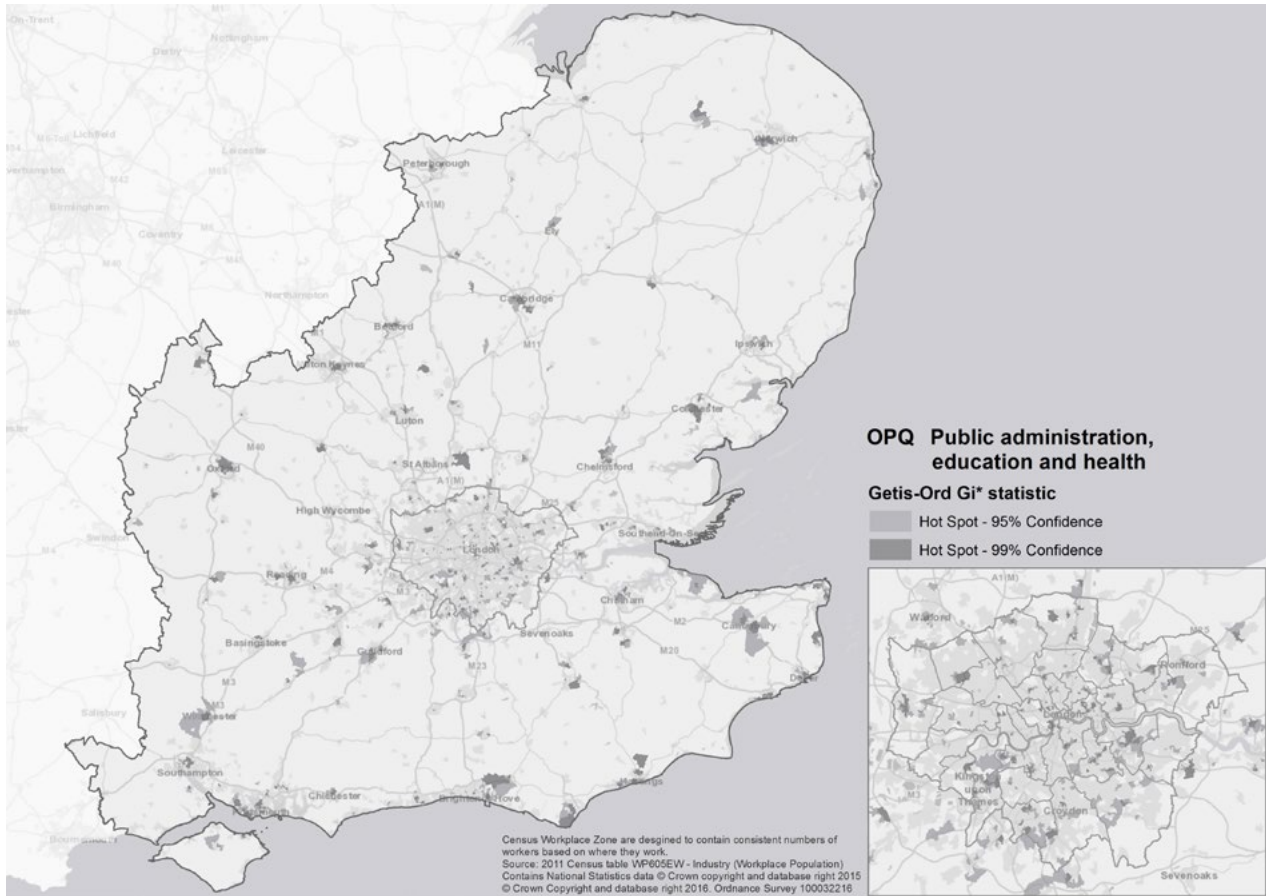
Source: Census and GLA Intelligence Unit analysis

Map E30 highlights a number of clusters of employment in the Other sector across the Greater South East in 2011.

Map E30: Clustering in the Other sector employment in the Greater South East in 2011
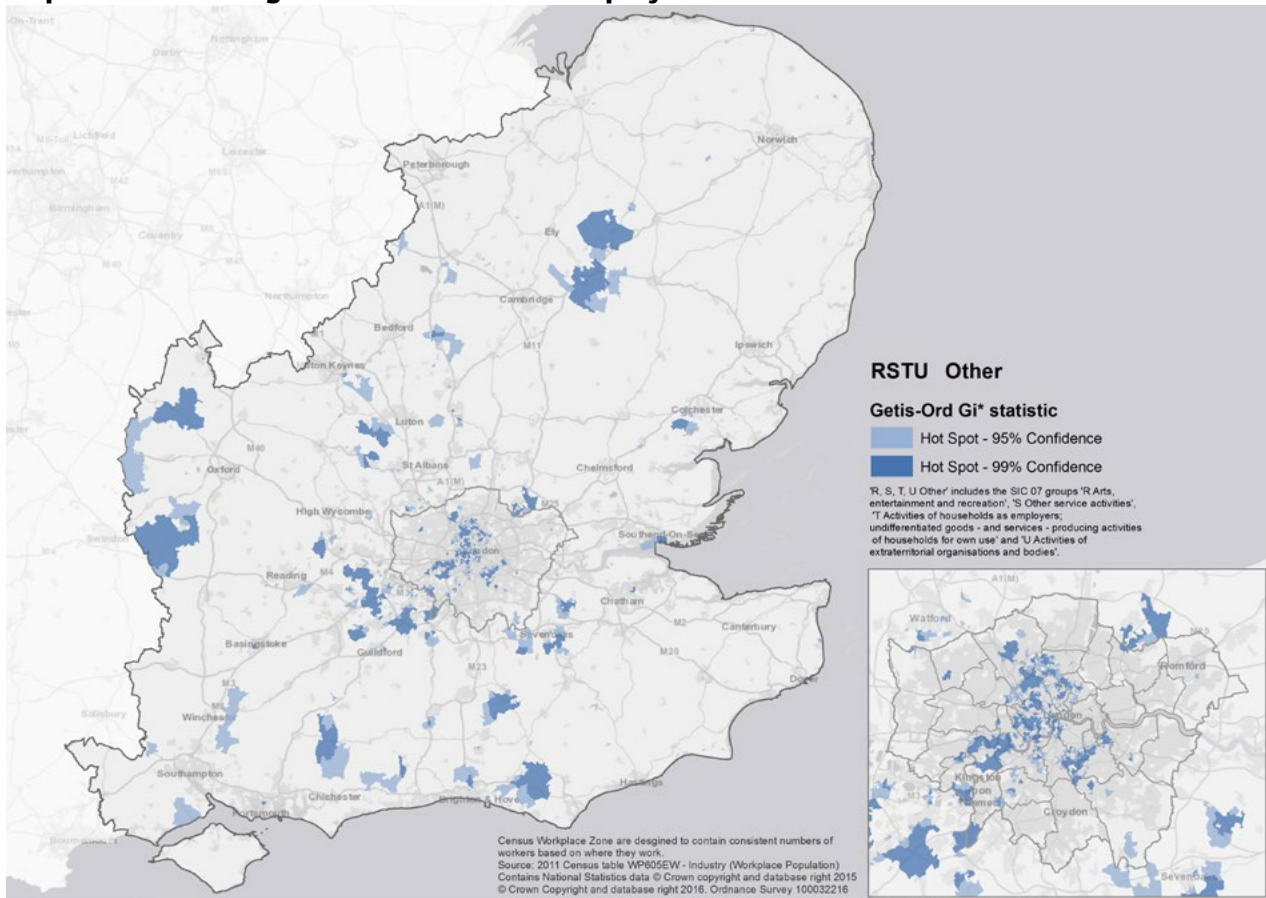
Source: Census and GLA Intelligence Unit analysis

Appendix to Chapter 2 endnotes

1 Note that the scale used for these maps varies between maps.

2 As above.

3 As above.

4 For further details on the STC in London and the Greater South East please see: Douglass, G. & Hoffman, J., March 2015, 'Working Paper 64: The science and technology category in London'. GLA Economics.

5 Theseira, M. January 2012, 'London's Digital Economy', GLA Intelligence Unit.

6 The raw data used in this analysis can be found at: ONS, Published ad hoc data and analysis: Business and Energy, requests during October 2015: Reference 004794, 26 October 2015 and ONS, 19 May 2016, Breakdowns of business activity in the Greater South East: 2015.

7 Workplaces here do not include workplaces of just the self employed as only employee jobs are examined in this paper.

8 For further details on the creative industries in London and the Greater South East please see: Togni, L., October 2015, 'Working Paper 70: The creative industries in London'. GLA economics.

9 The analysis presented in here adopts the definitions of the creative economy and creative industries developed by the Department for Culture, Media & Sport, further details can be found GLA Economics Working Paper 70.

10 ONS, 25 May 2016, 'Jobs in the Creative Economy in London and the rest of the UK: 2015'.

11 Cluster analysis (K-means) was undertaken to classify areas in London that display similar characteristics of workers based on their Industrial class from the 2011 Census. A pattern recognition method called k Nearest Neighbour Analysis (KNN) was then used to estimate areas in the Greater Southeast that displayed similar characteristics to the classes found in London (during the initial K-means analysis).

12 It should be noted that the key thing with hot spot analysis compared with the K-means clustering approach is that this is spatial analysis, looking at each industrial sector dataset (such as sectors RSTU, OPQ, K, L etc.) in isolation; therefore values of other employment industry types will not be considered or have any influence over the result presented here.

This works well for most of the industry types, but does produce a fairly undefined and cluttered map for sectors F - Construction, C - Manufacturing, and RSTU - Other. These also didn't come out of the K-means clustering as dominant clusters but when compared to the raw data as seen on the DataShine map then similar patterns can be seen. Also it should be noted that the geographic area of a WPZ increases with distance from Central London.

This 'hot spot' analysis was carried out in ArcGIS using the Hot Spot Analysis (Getis-Ord Gi*) tool. For each Workplace Zone (WPZ) the Gi* statistic (Z score) was calculated, where a higher Z score indicates more intense clustering of high values (hot spot). This tool looks at each feature against neighbouring features. For a statistically significant hot spot, a WPZ must have a high value and be surrounded by other WPZs with high values.

The local sum for a feature and its neighbours is compared proportionally to the sum of all features; when the local sum is much different than the expected local sum, and that difference is too large to be the result of random chance, a statistically significant Z score results.

A spatial weights matrix was generated using 'Polygon Contiguity Edges and Corners' as the conceptualisation of spatial relationships. This approach means that a neighbourhood is created using neighbours that share an edge or corner with the WPZ. In this analysis each WPZ was required to have a neighbourhood of at least 8 neighbours. If this minimum number of neighbours was not met, then additional neighbours would be added according to proximity of the feature centroid.

Note that further, detail on the clustering methodology used for these maps can be found in: Douglass, G., August 2015, 'Working Paper 68: Work and life in the Central Activities Zone, the northern part of the Isle of Dogs and their fringes'. GLA Economics.

13 Note as all workplace zones in the Greater South East were used to generate these maps there may be slight differences between the clustering shown in London in these maps and the clustering shown in London in section E2.1 as only London based workplace zones were used in that analysis.

Appendix to Chapter 3

Appendix 3.1: The geography of the central cordon

Map A1 sets out the geography of the central cordon as defined by TfL. It should be noted that this geography, while overlapping in many parts, is different to the geography of the CAZ.

Map A1: The central cordon
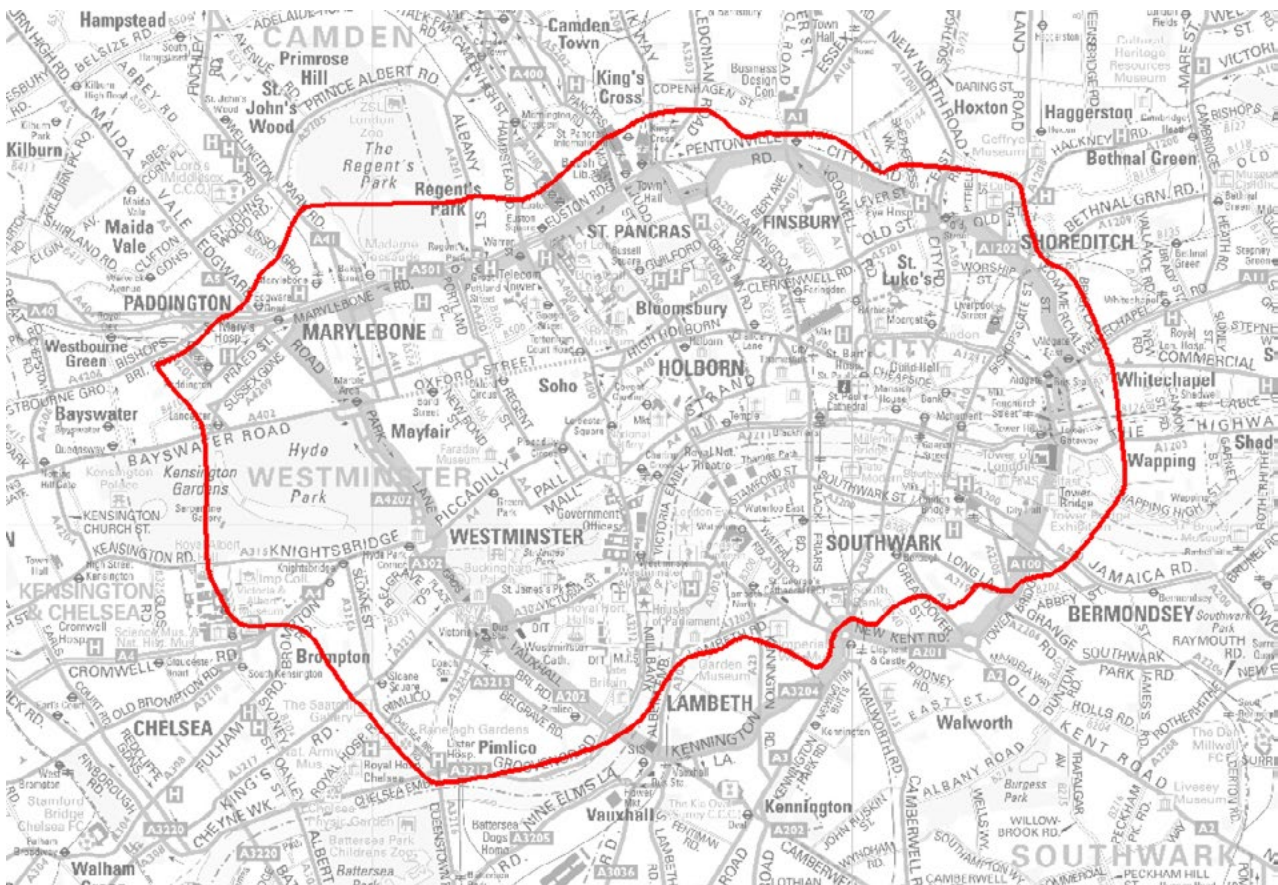
Source: TfL

Appendices to Chapter 5

Appendix 5.1: SMEs in London

The following appendix provides background data on small businesses in London – their number, the turnover associated with them, and employment. These data are drawn from the Department for Business, Energy and Industrial Strategy (BEIS) Business Population Estimates, and are a snapshot for the start of 2015 (i.e. 1 January 2015). Data used to develop these estimates are drawn from the Interdepartmental Business Register, the Labour Force Survey (both ONS), and HMRC self-assessment data. Where the tables refer to employees, these will not necessarily match other sources of employment by sector used within Chapter 1, which uses Business Register and Employment Survey, and Workforce Jobs data.

1. Number of SMEs in London, broken down by size:

The following table gives the number of businesses and employees by business size:

Business Size Group	Number of businesses	Number of employees (thousands)
0 employees (unregistered)	544,920	589
0 employees (registered)	216,125	224
1	18,050	39
2-4	116,035	321
5-9	41,680	279
10-19	21,435	293
20-49	10,570	322
50-99	3,590	249
100-199	1,595	222
200-249	375	84
250-499	700	245
Over 500 employees	760	2,209

All businesses	975,835	5,076
All employers (at least 1 employee)	214,790	4,264

Headlines:

- There were 974,375 SMEs in London, accounting for 99.85 per cent of all businesses in London
- SMEs account for 51.8 per cent of all employment in London
- There are 214,790 businesses in London with at least one employee, 22.0 per cent of all businesses in London
- 4.264 million people are employed in businesses in London, of which 2.622 million are employed in SME's

2. Employment in SMEs by size – All sectors:

Business Size Group	Number of businesses	Number of employees (thousands)
Micro (0 to 9) – inc. unregistered	936,810	1,452
Micro (0 to 9) – only registered	391,890	863
Small (10 to 49)	32,005	615
Medium (50 to 249)	7,020	555

3. Turnover of businesses:

The following tables provide detail of the turnover of businesses in London, however there are some important caveats to this data – where we would recommend that care is used in presenting these statistics:

● Total turnover of all businesses in London was estimated at £1.09 trillion. It should be noted that this is not the same as GVA. The total GVA of London's economy was £364 billion in 2014. London's economy accounts for 22.5 per cent of the total UK economy.
● SMEs account for around 48.1 per cent of all business turnover in London (£525.0 billion)
● These estimates are of private sector businesses and do not include the output of the public sector.
● Estimates of business turnover do not include the Financial and Insurance Activities sector, due to the way that business turnover is calculated in this sector (being inconsistent with other sectors). This is a particular issue for London since Financial and Insurance activities is the largest individual sector of London's economy in terms of output, producing £68.7bn of GVA, accounting for 18.9 per cent of London's total economic output.

Business Size Group	Number of businesses	Turnover (£ millions)
0 employees (unregistered)	544,920	21,936
0 employees (registered)	216,125	39,678
1	18,050	3,576
2-4	116,035	51,872
5-9	41,680	55,128
10-19	21,435	69,941
20-49	10,570	111,650
50-99	3,590	57,193
100-199	1,595	94,325
200-249	375	19,750
250-499	700	175,596
Over 500 employees	760	389,930

All businesses	975,835	1,090,576
All employers (at least 1 employee)	214,790	1,028,962

Business Size Group	Number of businesses	Turnover (£ millions)
Micro (0 to 9) – inc. unregistered	936,810	172,190
Micro (0 to 9) – only registered	391,890	150,254
Small (10 to 49)	32,005	181,591
Medium (50 to 249)	7,020	171,268

4. Sectoral breakdown of SMEs

The BIS statistics provide detail of the number of businesses, employment and business turnover for SMEs across business sectors.

Notes:
- Some sectors are grouped together for the analysis, such as those in primary activities (mining, quarrying, oil and gas, waste & recycling etc.), however these represent only a small proportion of London's economy, so are not included
- Turnover data for Financial and Insurance activities are not included within this dataset
- Not all sectors are included here
- Sectors are based on the Standard Industrial Classification (SIC2007) sections – i.e. major industrial sections. Data are not broken to any lower industrial classification within the BIS statistics; however are available using the ONS UK Business Counts dataset.
- Data on employment by sector will not correlate with Workforce Jobs data by industry, since these are point in time estimates, and only account for private sector businesses.

Industry Sector: C: Manufacturing

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	11,535	12	321
0 employees (registered)	5,045	5	621
1	450	1	62
2-4	3,520	10	1,078
5-9	1,645	11	1,306
10-19	930	13	1,425
20-49	515	16	2,409
50-99	170	12	1,792
100-199	80	11	2,030
200-249	15	3	845
250-499	25	8	2,224
Over 500 employees	30	81	63,129

All businesses	23,960	183	77,241
All employers	7,380	165	76,299
Micro (excluding unregistered)	10,660	27	3,067
Micro (inc. unregistered)	22,195	39	3,388
Small	1,445	29	3,834
Medium	265	26	4,467
All SMEs	**23,905**	**94**	**11,889**
SME: Proportion of all businesses	**99.8%**	**51.4%**	**15.4%**

Industry Sector F: Construction

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	132,070	133	5,288
0 employees (registered)	21,385	22	5,094
1	1,245	3	262
2-4	12,265	32	6,838
5-9	2,945	19	4,946
10-19	1,210	16	3,604
20-49	405	12	3,150
50-99	115	8	1,957
100-199	45	7	2,308
200-249	15	4	1,076
250-499	25	8	3,050
Over 500 employees	15	45	8,351

All businesses	171,740	309	45,924
All employers	18,285	153	35,542
Micro (excluding unregistered)	9,460	76	17,140
Micro (inc. unregistered)	169,910	209	22,428
Small	1,615	28	6,754
Medium	175	19	5,341
All SMEs	**171,700**	**256**	**34,523**
SME: Proportion of all businesses	**99.98%**	**82.9%**	**75.2%**

Industry Sector G: Wholesale and Retail

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	24,370	28	1,288
0 employees (registered)	21,520	23	3,844
1	3,170	7	869
2-4	18,420	55	15,749
5-9	8,175	54	21,457
10-19	3,540	48	40,281
20-49	1,515	45	67,830
50-99	430	29	23,217
100-199	180	25	59,949
200-249	45	10	6,386
250-499	70	24	142,219
Over 500 employees	110	569	103,010

All businesses	81,545	917	486,097
All employers	35,655	867	480,965
Micro (excluding unregistered)	51,285	139	41,919
Micro (inc. unregistered)	75,655	167	43,207
Small	5,055	93	108,111
Medium	655	64	89,552
All SMEs	**81,365**	**324**	**240,870**
SME: Proportion of all businesses	**99.8%**	**35.3%**	**49.6%**

Industry Sector I: Accommodation and Food Services

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	2,990	4	98
0 employees (registered)	2,100	2	391
1	1,340	3	123
2-4	8,160	27	1,204
5-9	4,685	31	1,369
10-19	2,595	35	1,698
20-49	1,545	46	2,496
50-99	440	30	1,722
100-199	190	26	1,469
200-249	35	8	483
250-499	70	24	1,410
Over 500 employees	80	204	9,566

All businesses	24,230	441	22,027
All employers	19,140	435	21,539
Micro (excluding unregistered)	16,285	63	3,087
Micro (inc. unregistered)	19,275	67	3,185
Small	4,140	81	4,194
Medium	665	64	3,674
All SMEs	**24,080**	**212**	**11,053**
SME: Proportion of all businesses	**99.4%**	**48.1%**	**50.2%**

Industry Sector J: Information and Communication

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	34,670	40	1,425
0 employees (registered)	37,510	38	6,222
1	255	1	43
2-4	13,815	33	3,980
5-9	2,820	19	3,203
10-19	1,575	21	3,997
20-49	1,020	31	11,022
50-99	380	26	6,596
100-199	180	25	7,048
200-249	35	7	1,213
250-499	60	21	5,576
Over 500 employees	75	206	50,229

All businesses	92,395	468	100,554
All employers	20,215	390	92,907
Micro (excluding unregistered)	54,400	91	13,448
Micro (inc. unregistered)	89,070	131	14,873
Small	2,595	52	15,019
Medium	595	58	14,857
All SMEs	**92,260**	**241**	**44,749**
SME: Proportion of all businesses	**99.9%**	**51.5%**	**44.5%**

Industry Sector K: Financial and Insurance Activities

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	7,000	15	-
0 employees (registered)	6,155	4	-
1	110	0	-
2-4	2,555	7	-
5-9	1,225	8	-
10-19	755	10	-
20-49	495	16	-
50-99	235	17	-
100-199	155	22	-
200-249	35	8	-
250-499	75	26	-
Over 500 employees	90	266	-

All businesses	18,885	400	-
All employers	5,730	381	-
Micro (excluding unregistered)	10,045	19	-
Micro (inc. unregistered)	17,045	34	-
Small	1,250	26	-
Medium	425	47	-
All SMEs	**18,720**	**107**	**-**
SME: Proportion of all businesses	**99.1%**	**26.8%**	**-**

Industry Sector M: Professional, scientific and technical activities

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	70,850	81	4,612
0 employees (registered)	64,240	66	11,856
1	3,740	8	668
2-4	23,520	62	7,495
5-9	6,825	46	6,709
10-19	3,415	47	6,789
20-49	1,710	53	9,491
50-99	565	40	6,583
100-199	250	36	6,610
200-249	65	15	3,575
250-499	120	43	9,145
Over 500 employees	95	155	27,797

All businesses	175,395	652	101,331
All employers	40,305	505	84,862
Micro (excluding unregistered)	98,325	182	26,728
Micro (inc. unregistered)	169,175	263	31,340
Small	5,125	100	16,280
Medium	880	91	16,768
All SMEs	**175,180**	**454**	**64,388**
SME: Proportion of all businesses	**99.9%**	**69.9%**	**63.5%**

Industry Sector N: Administrative and Support Services

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	41,985	45	1,539
0 employees (registered)	20,940	22	3,831
1	3,240	7	809
2-4	10,400	29	6,601
5-9	3,565	24	4,703
10-19	2,010	27	4,479
20-49	1,125	35	6,534
50-99	510	36	6,899
100-199	225	31	3,241
200-249	70	15	3,386
250-499	135	47	4,976
Over 500 employees	115	325	20,992

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
All businesses	84,320	641	67,990
All employers	21,395	574	62,619
Micro (excluding unregistered)	38,145	82	15,944
Micro (inc. unregistered)	80,130	127	17,483
Small	3,135	62	11,013
Medium	805	82	13,526
All SMEs	**84,070**	**271**	**42,022**
SME: Proportion of all businesses	**99.7%**	**42.3%**	**61.8%**

Industry Sector R: Arts, entertainment and recreation

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
0 employees (unregistered)	61,880	65	2,381
0 employees (registered)	9,940	11	1,353
1	610	*	*
2-4	2,990	8	1,003
5-9	945	6	859
10-19	520	7	787
20-49	185	6	613
50-99	85	6	*
100-199	30	*	1,662
200-249	5	*	*
250-499	20	7	993
Over 500 employees	20	49	32,977

Business Size Group	Number of businesses	Employment (thousands)	Turnover (£ millions)
All businesses	77,230	170	43,492
All employers	5,410	95	39,758
Micro (excluding unregistered)	14,485	*	*
Micro (inc. unregistered)	76,365	*	*
Small	705	13	1,400
Medium	120	*	*
All SMEs	**77,190**	**(114)**	**(9,522)**
SME: Proportion of all businesses	**99.9%**	**(67.1%)**	**(21.9%)**

Note: * = that data are not statistically significant, i.e. data not available. Data in brackets are calculated given available data

Appendix 5.2: Detailed analysis of business churn in London

Sector	1998-2001	2001-2004	2004-2007
Science/Tech	12.2%	13.7%	13.0%
Creative Industries	11.3%	14.6%	12.9%
Construction	11.2%	12.2%	14.2%
Manufacturing	10.6%	10.7%	9.4%
Retail Trade	11.2%	10.2%	9.2%
Transportation and storage	11.0%	11.4%	10.6%
Accommodation and food service activities	10.8%	10.7%	10.0%
Information and communication	14.5%	18.4%	16.7%
Financial and insurance activities	10.4%	10.1%	9.6%
Real estate activities	8.9%	9.7%	10.2%
Professional, scientific and technical activities	12.3%	14.0%	13.8%
Administrative and support service activities	15.9%	18.6%	15.6%
Public administration and defence	15.4%	8.9%	7.0%
Education	9.3%	8.5%	8.9%
Human health and social work activities	9.9%	8.7%	10.4%
Arts, entertainment and recreation	10.4%	12.5%	10.0%
Other services activities	12.0%	10.2%	9.9%

Sector	2007-2008	2008-2009	2009-2010
Science/Tech	17.5%	21.4%	20.8%
Creative Industries	19.0%	23.0%	21.2%
Construction	15.7%	21.6%	19.8%
Manufacturing	13.6%	17.1%	16.5%
Retail Trade	14.3%	17.7%	20.5%
Transportation and storage	16.7%	18.0%	18.9%
Accommodation and food service activities	16.2%	18.6%	19.7%
Information and communication	21.7%	25.2%	24.2%
Financial and insurance activities	15.9%	15.0%	13.2%
Real estate activities	20.3%	13.4%	9.2%
Professional, scientific and technical activities	18.8%	20.7%	22.0%
Administrative and support service activities	21.0%	31.3%	23.3%
Public administration and defence	13.4%	15.3%	10.2%
Education	13.3%	15.7%	15.5%
Human health and social work activities	13.1%	20.2%	18.5%
Arts, entertainment and recreation	20.0%	18.0%	15.7%
Other services activities	15.9%	20.6%	19.1%

Sector	2010-2011	2011-2012	2012-2013
Science/Tech	19.8%	20.7%	19.6%
Creative Industries	19.0%	20.4%	18.5%
Construction	16.3%	22.7%	23.2%
Manufacturing	18.7%	18.4%	15.8%
Retail Trade	23.6%	23.8%	19.3%
Transportation and storage	20.5%	22.7%	19.1%
Accommodation and food service activities	23.7%	23.3%	19.3%
Information and communication	22.2%	22.2%	22.1%
Financial and insurance activities	23.4%	20.2%	19.6%
Real estate activities	12.0%	15.0%	16.2%
Professional, scientific and technical activities	17.9%	21.3%	23.0%
Administrative and support service activities	23.6%	25.3%	20.7%
Public administration and defence	32.2%	13.7%	14.6%
Education	15.4%	16.8%	13.5%
Human health and social work activities	26.1%	24.2%	29.5%
Arts, entertainment and recreation	17.8%	22.6%	19.7%
Other services activities	22.2%	23.4%	19.4%

Source: TBR

Appendix to Chapter 6

Appendix 6.1: Public transport crowding

Table 6.12 examines train overcrowding at peak times in London and other English and Welsh cities as well as London rail terminals in more detail. These data show that London is more congested than other rail destinations, with most of London's terminals suffering from significant overcrowding.

Table 6.12: Passengers in excess of capacity (PiXC) by city, 2014, and percentage point change from 2013

City	AM Peak (7:00 to 9:59)		PM Peak (16:00 to 18:59)		Both Peaks	
	PiXC	Change from 2013	PiXC	Change from 2013	PiXC	Change from 2013
Birmingham	1.6%	0.8%	0.8%	-0.1%	1.2%	0.4%
Bristol	0.0%	-1.2%	0.2%	-0.6%	0.1%	-0.9%
Cardiff	0.5%	-0.4%	0.5%	0.1%	0.5%	-0.1%
Leeds	1.8%	0.2%	1.4%	-0.1%	1.6%	0.0%
Leicester	1.0%	-0.1%	2.9%	2.0%	2.0%	1.0%
Liverpool	0.0%	-0.3%	0.4%	0.4%	0.2%	0.1%
Manchester	4.3%	1.8%	2.3%	1.6%	3.3%	1.7%
Newcastle	1.0%	1.0%	0.0%	0.0%	0.4%	0.4%
Nottingham	0.2%	0.2%	1.0%	1.0%	0.6%	0.6%
Sheffield	1.1%	-2.9%	0.6%	-0.9%	0.8%	-1.8%
Total for cities outside London	**1.7%**	**0.4%**	**1.1%**	**0.4%**	**1.4%**	**0.4%**
Blackfriars (via Elephant and Castle)	10.6%	0.4%	3.2%	1.8%	7.6%	0.9%
Euston	3.6%	-0.9%	4.7%	-0.6%	4.2%	-0.8%
Fenchurch Street	7.0%	1.0%	2.4%	0.8%	4.9%	0.9%
King's Cross	2.7%	1.3%	2.8%	0.8%	2.7%	1.0%
Liverpool Street[1]	5.5%	2.0%	2.1%	0.6%	3.9%	1.3%
London Bridge[2]	3.1%	1.0%	0.5%	0.0%	1.9%	0.5%
Marylebone[3]	4.9%	1.3%	2.8%	1.7%	3.9%	1.5%
Moorgate	10.6%	8.6%	5.4%	5.2%	8.0%	6.8%
Paddington[4]	13.5%	3.7%	6.0%	-2.6%	10.1%	0.8%
St. Pancras International	7.2%	4.0%	6.6%	4.9%	6.9%	4.4%
Victoria[5]	3.3%	-0.1%	0.3%	0.3%	1.9%	-0.2%
Waterloo[6]	5.5%	0.5%	3.6%	0.6%	4.6%	0.6%
London	**5.4%**	**1.4%**	**2.5%**	**0.6%**	**4.1%**	**1.0%**
Total for all cities	**4.6%**	**1.2%**	**2.2%**	**0.5%**	**3.5%**	**0.9%**

Source: Department for Transport

Table 6.13 shows the busyness of London stations with, for instance, London Bridge station having nearly double the number of passenger arrivals in a given day than all Birmingham stations combined and over 3.5 times the number of arrivals at the morning peak. It also highlights the lack of seating on a number of trains entering London in relation to the number of passengers on these trains with numbers at some London stations such as Vauxhall (for Waterloo) and London Bridge being particularly unfavourable and shows the capacity constraints some London train services are facing. Finally, the size of train usage in London compared to elsewhere in Britain has also been highlighted by national rail statistics which show that "in 2012/13, 62 per cent of all rail journeys in Great Britain started or finished in London", while in the Greater South East London dominates as a starting point or terminus with "66 per cent of journeys in the South East and 76 per cent in the East of England start[ing] or finish[ing] in London"[7].

Table 6.13: City centre[8] (London Zone 1) peak and all day arrivals and departures by rail on a typical autumn weekday, by city, 2014

	AM peak arrivals (07:00–09:59)			PM peak departures (16:00–18:59)			All day arrivals			All day departures		
	Number of services	Total seats	Passengers	Number of services	Total seats	Passengers	Number of services	Total seats	Passengers	Number of services	Total seats	Passengers
Birmingham[9]	179	51,826	39,473	186	51,668	40,489	960	269,019	115,769	953	265,941	112,304
Bristol[10]	52	14,349	8,036	51	13,071	9,600	267	70,179	28,138	259	68,251	28,461
Cardiff[11]	114	20,453	12,423	116	20,631	12,952	619	109,621	34,821	621	109,259	35,778
Leeds	120	29,370	25,897	123	30,444	26,885	617	145,063	70,819	607	143,380	70,042
Leicester	37	10,908	5,472	37	10,518	6,619	202	56,551	25,641	200	56,507	25,909
Liverpool[12]	128	30,599	20,155	139	30,646	21,792	712	153,095	65,832	712	150,865	62,765
London[13]	1,027	566,089	563,354	1,004	546,699	475,540	4,708	2,223,651	1,032,610	4,727	2,210,144	1,019,261
Manchester[14]	186	40,625	30,907	193	43,100	33,703	962	207,396	92,929	961	206,919	93,217
Newcastle	34	9,863	4,447	38	9,750	5,860	199	54,009	22,420	195	53,318	22,517
Nottingham	34	7,084	4,287	40	7,498	4,775	211	43,590	14,239	208	42,271	13,977
Sheffield	58	12,049	7,224	63	12,425	9,088	345	67,633	30,892	345	68,613	31,829
London by station[15]												
Elephant and Castle (for Blackfriars)	34	18,655	23,211	30	16,040	15,167	134	71,085	32,613	134	68,737	26,257
Euston	61	30,678	27,289	66	32,616	26,360	318	129,336	73,304	319	129,578	75,394
Fenchurch Street	48	26,508	25,194	44	25,380	21,014	172	75,294	34,641	169	72,474	33,781
King's Cross	47	27,122	19,098	50	27,695	17,822	220	103,673	50,000	226	102,065	48,760
Liverpool Street[16]	153	95,383	68,545	148	92,565	59,382	657	351,404	106,652	643	340,145	109,160
London Bridge[17]	200	124,710	143,343	189	116,115	116,138	850	451,076	229,610	871	459,481	222,175
Marylebone[18]	44	13,824	13,793	44	12,932	11,876	174	44,832	24,953	180	45,456	24,818
Old Street (for Moorgate)	31	13,920	11,647	33	14,384	11,100	113	46,168	16,687	113	45,936	18,971
Paddington[19]	65	28,207	27,034	60	27,515	22,169	295	116,637	67,829	293	116,519	57,644

St. Pancras International	68	34,622	35,265	70	34,537	31,625	342	149,045	67,556	345	152,063	70,837
Victoria[20]	125	70,217	63,040	121	68,701	53,377	679	323,019	124,781	681	321,924	119,388
Vauxhall (for Waterloo)	151	82,243	105,896	149	78,219	89,509	754	362,082	203,984	753	355,766	212,075
London total	1,027	566,089	563,354	1,004	546,699	475,540	4,708	2,223,651	1,032,610	4,727	2,210,144	1,019,261

Source: Department for Transport

Table 6.14 examines crowding at London's stations in more detail, looking at the 1 hour and 3 hour am and pm peak based congestion and standing on trains arriving in various cities and individual London stations.

Table 6.14: Peak crowding on a typical autumn weekday in London by terminal (2014)

AM peak arrivals (07:00-09:59)[21]		Passengers in excess of capacity (PiXC)		Passengers standing		Services with PiXC		Services with passengers standing	
		Number	%[22]	Number	%[23]	Number	%[24]	Number	%[25]
Blackfriars (via Elephant and Castle)[26]	1 hour peak	2,076	17%	4,530	37%	11	79%	13	93%
	3 hour peak	2,461	11%	6,200	27%	15	44%	24	71%
Euston	1 hour peak	475	4%	1,750	15%	3	13%	11	46%
	3 hour peak	918	4%	3,931	16%	10	16%	27	44%
Fenchurch Street	1 hour peak	1,653	10%	5,467	32%	13	68%	19	100%
	3 hour peak	2,439	7%	9,855	28%	23	48%	43	90%
King's Cross	1 hour peak	419	4%	717	7%	3	15%	5	25%
	3 hour peak	516	3%	1,009	5%	5	11%	10	21%
Liverpool Street[27]	1 hour peak	3,355	7%	9,908	21%	23	37%	43	69%
	3 hour peak	5,280	5%	15,839	16%	39	25%	75	47%
London Bridge[28]	1 hour peak	2,950	4%	22,360	32%	29	37%	66	85%
	3 hour peak	4,375	3%	35,043	25%	43	22%	127	64%
Marylebone[29]	1 hour peak	615	9%	1,018	15%	9	60%	13	87%
	3 hour peak	679	5%	1,384	10%	14	32%	23	52%
Moorgate	1 hour peak	1,556	18%	3,206	37%	9	75%	11	92%
	3 hour peak	1,714	11%	4,371	27%	12	39%	18	58%
Paddington[30]	1 hour peak	1,981	16%	2,868	24%	11	46%	12	50%
	3 hour peak	3,824	13%	5,893	21%	26	40%	29	45%
St. Pancras International[31]	1 hour peak	1,564	9%	4,519	25%	12	44%	19	70%
	3 hour peak	2,668	7%	8,254	22%	21	31%	39	57%

Victoria[32]	1 hour peak	1,207	3%	9,601	27%	14	31%	36	80%
	3 hour peak	2,563	3%	16,305	21%	26	21%	74	59%
Waterloo[33]	1 hour peak	3,853	8%	17,909	37%	21	38%	54	98%
	3 hour peak	5,760	5%	30,632	29%	36	24%	122	81%
London total	1 hour peak	21,703	7%	83,854	28%	158	40%	302	76%
	3 hour peak	33,198	5%	138,716	22%	270	26%	611	59%
PM peak departures (16:00-18:59)[34]									
Blackfriars (via Elephant and Castle)	1 hour peak	459	6%	1,292	17%	6	46%	11	85%
	3 hour peak	505	3%	2,332	15%	10	33%	17	57%
Euston	1 hour peak	554	6%	1,562	17%	4	17%	9	39%
	3 hour peak	1,170	5%	3,381	14%	9	14%	25	38%
Fenchurch Street	1 hour peak	148	1%	2,352	16%	4	20%	16	80%
	3 hour peak	718	2%	5,305	18%	11	25%	34	77%
King's Cross	1 hour peak	9	0%	316	4%	1	6%	5	28%
	3 hour peak	637	3%	1,266	6%	7	14%	15	30%
Liverpool Street	1 hour peak	865	2%	3,318	9%	5	8%	22	37%
	3 hour peak	1,756	2%	7,337	9%	14	9%	51	33%
London Bridge	1 hour peak	107	0%	8,690	18%	3	4%	41	60%
	3 hour peak	551	0%	16,510	14%	9	5%	86	45%
Marylebone	1 hour peak	117	3%	166	4%	3	20%	5	33%
	3 hour peak	342	3%	761	6%	9	20%	17	39%
Moorgate	1 hour peak	718	11%	1,771	26%	5	42%	8	67%
	3 hour peak	871	5%	3,011	19%	8	24%	18	55%
Paddington	1 hour peak	313	4%	879	10%	5	23%	8	36%
	3 hour peak	1,459	6%	3,052	13%	16	27%	22	37%

St. Pancras International	1 hour peak	870	7%	2,051	17%	7	27%	11	42%
	3 hour peak	2,120	7%	5,745	18%	20	29%	32	46%
Victoria	1 hour peak	74	0%	4,180	16%	1	2%	24	59%
	3 hour peak	210	0%	9,136	14%	5	4%	65	54%
Waterloo	1 hour peak	1,918	6%	7,972	24%	15	29%	42	81%
	3 hour peak	3,216	4%	20,052	22%	27	18%	107	72%
London total	1 hour peak	6,151	3%	34,548	16%	59	16%	202	55%
	3 hour peak	13,554	3%	77,887	15%	145	14%	489	48%

Source: Department for Transport

Appendix 6.1 endnotes

1 Figures are based on only one manual count per service. Includes services that terminate at Stratford (AM) and services that start at Stratford (PM).

2 Services to and from Charing Cross and Cannon Street are included in the London Bridge figures.

3 Figures are based on only one manual count per service.

4 Includes Heathrow Connect services.

5 Includes Gatwick Express services.

6 Southeastern services calling at Waterloo East are not included in the Waterloo figures as they are included in the figures at London Bridge.

7 Rail Executive, 15 October 2014, 'Rail Trends, Great Britain 2013/14'.

8 Arrivals and departures at the city centre station. For cities with more than one station in the city centre, arrivals are counted at the first station a service calls at and departures on departure from the last station called at.

9 Moor Street, New Street and Snow Hill.

10 Temple Meads.

11 Cardiff Central and Queen Street.

12 Liverpool Central, Lime Street, Moorfields and James Street.

13 All stations in Zone 1 of the Transport for London (TfL) travelcard area on routes into major terminals.

14 Oxford Road, Piccadilly and Victoria.

15 Central London is defined as all stations in Zone 1 of the Transport for London (TfL) travelcard area on routes into major terminals. The stations listed are the first station on each route within Zone 1. Where this is not a terminal, the terminal on that route is listed in brackets.

16 Figures are based on only one manual count per service.

17 Services to and from Charing Cross and Cannon Street are included in the London Bridge figures.

18 Figures are based on only one manual count per service.

19 Includes Heathrow Connect services.

20 Includes Gatwick Express services.

21 The 3 hour AM peak is between 07:00 and 09:59. The 1 hour AM peak is the high peak hour between 08:00 and 08:59.

22 As a percentage of standard class critical load.

23 As above.

24 As a percentage of total number of services.

25 As above.

26 For Thameslink services travelling through London, arrivals are included in the figures for the first terminal a service calls at and departures in the figures for the last terminal called at.

27 Figures are based on only one manual count per service. Includes services that terminate at Stratford (AM) and services that start at Stratford (PM).

28 For Thameslink services travelling through London, arrivals are included in the figures for the first terminal a service calls at and departures in the figures for the last terminal called at. Services to and from Charing Cross and Cannon Street are included in the London Bridge figures.

29 Figures are based on only one manual count per service.

30 Includes Heathrow Connect services.

31 For Thameslink services travelling through London, arrivals are included in the figures for the first terminal a service calls at and departures in the figures for the last terminal called at.

32 Includes Gatwick Express services.

33 Southeastern services calling at Waterloo East are not included in the Waterloo figures as they are included in the figures at London Bridge.

34 The 3 hour PM peak is between 16:00 and 18:59. The 1 hour PM peak is the high peak hour between 17:00 and 17:59.

Appendix to Chapter 8

Appendix 8.1: The impact of migration

As noted earlier, people from across the world have migrated to London to work, to study and to be with other members of their family. More recently, there has been some debate as to the overall impact of migration on the UK. The main points focus around the labour market, businesses, the Exchequer and local services including housing and schools, though other impacts include culture and international relations (these are not discussed in any great detail here). This appendix brings together some of the existing evidence and research on the matter and, although these findings may potentially differ in the future particularly as a result of the EU Referendum result, is based on the available information to date.

Labour market

Migrants from the EEA who are resident in London had a higher employment rate (80.3 per cent) in 2015 than the UK-born population (74.4 per cent) as shown in Table 8.5. This is in line with the reasons for international migration discussed in Chapter 5; the main reason for coming to the UK cited by all migrants in all but three years since 1995 were work related and reflects the employment opportunities and wages in the UK/London compared with their previous country. Interestingly, the employment rates for migrants were slightly higher for those residents in London than for migrants resident in the UK as a whole.

Table 8.5: Employment and unemployment rates by country of birth for London and UK residents in 2015, 16-64yrs

Country of birth	London		UK	
	Employment rate	Unemployment rate	Employment rate	Unemployment rate
UK or British Overseas Territory	74.4%	6.4%	74.0%	5.2%
Rest of the EEA (excluding the UK)	80.3%	4.3%	79.2%	4.9%
All other countries (excluding the UK and EEA)	67.4%	6.6%	66.3%	7.2%

Source: ONS Annual Population Survey

A common argument against migration is that migrants could reduce the employment chances of UK natives. However, there is a clear consensus in the literature that this is not the case[1]. This, in part, can be due to migrants consuming goods and services themselves, which increases demand and also the number of jobs that produces these goods and services. Nevertheless, some studies have found an impact on wages at the lower end of the wage distribution, but the magnitude of this impact is disputed[2]. For example, the Centre for European Reform reported that immigration from the EU between 2004 and 2015 has reduced wages of low-skilled service workers, but the effect was very small[3]. Similarly, Nickell & Saleheen also found a small negative impact of immigration on wages, particularly for semi or unskilled occupations[4]. In contrast, Dustmann et al. found an increase in average wages as migration increased over the 1997 to 2005 period, though this in part was due to a gain for medium and high-paid workers outweighing a decrease for low-paid workers[5]. It

should be noted, however, that Wadsworth et al. suggested that these results from all three studies were overstated and the overall effect was close to zero[6]. Metcalf[7] highlights that whilst one of the potential costs of low skilled migration is a 'small negative impact on wages of low paid workers' overall low skilled migrants had a neutral impact on UK-born employment rates, fiscal contribution, GDP per head and productivity. It should be noted, however, that all these studies look at the impact at the UK level and trends may be different within London.

Education

On average, migrants are better educated than those born in the UK[8]. This can be seen in Table 8.6 which shows the percentage of jobs by highest qualification and country of birth for the UK. For example, 41.3 per cent of those born in the UK have higher education and above, though this rises to 46.5 per cent for those born elsewhere in the EEA and 57.5 per cent for those born in any other country. Indeed, these figures may underestimate the level of qualifications or skills for migrants given the high proportion of 'other qualifications' held by that group.

Table 8.6: Share of jobs in the UK by highest qualification and country of birth of job holder in 2015

Highest qualification	Born in the UK	Born elsewhere in the EEA (excluding the UK)	Born in any other country (excluding the UK/EEA)
Higher degree	9.8%	15.3%	19.7%
Ordinary degree or equivalent	21.4%	22.3%	28.2%
Higher education	10.1%	8.9%	9.6%
GCE, A level or equivalent	25.1%	13.1%	11.5%
GCSE grades A*-C or equivalent	22.1%	7.8%	7.8%
Other qualifications	6.3%	25.6%	15.8%
No qualifications	5.3%	7.1%	7.4%
Total	**100.0%**	**100.0%**	**100.0%**

Note: the Workforce Jobs series is the preferred measure of jobs, but the Annual Population Survey is used here for its individual-level information such as country of birth and educational qualification.
Source: ONS Annual Population Survey

This distinction is not as clear cut when looking at jobs in London (Table 8.7). The percentage of jobs with higher education or above was 58.2 per cent for those born in the UK, but this was slightly lower at 57 per cent for the EEA. However, as noted earlier, migrants tend to have a much higher proportion of 'other qualifications' which potentially clouds the situation on skills.

Table 8.7: Share of jobs in London by highest qualification and country of birth of job holder in 2015

Highest qualification	Born in the UK	Born elsewhere in the EEA (excluding the UK)	Born in any other country (excluding the UK/EEA)
Higher degree	16.9%	21.2%	20.4%
Ordinary degree or equivalent	34.6%	27.1%	29.9%
Higher education	6.7%	8.7%	10.0%
GCE, A level or equivalent	18.8%	12.3%	10.8%
GCSE grades A*-C or equivalent	15.7%	5.2%	7.0%
Other qualifications	4.2%	20.3%	16.1%
No qualifications	3.1%	5.2%	5.8%
Total	**100.0%**	**100.0%**	**100.0%**

Note: the Workforce Jobs series is the preferred measure of jobs, but the Annual Population Survey is used here for its individual-level information such as country of birth and educational qualification.
Source: ONS Annual Population Survey

Businesses

Research by the Department for Business, Innovation & Skills (BIS) found that businesses largely held a positive view of the impact of migrant employees[9]. Firms noted that migrant workers typically brought more knowledge and skills than would otherwise have been the case from a domestic worker. Moreover, given cultural differences, migrants bring new ideas and processes that can lead to the upskilling of colleagues and increase productivity[10]. Nevertheless, businesses also reported challenges associated with the integration of migrants and language.

Migrants could also play an important part in leading and creating new businesses. However, the only data that is available – the BIS Small Business Survey – looks at the proportion of small and medium enterprises (SMEs) in the UK that were led by someone belonging to a minority ethnic group which is not the same as being born outside of the UK. Acknowledging this, the survey showed that 6 per cent of SMEs in the UK were minority ethnic led in 2014[11]. This was higher when solely looking at start-ups (12 per cent). Altogether it was estimated that there were 300,000 minority ethnic group led SMEs in the UK which contributed £30bn in GVA to the UK's non-financial business economy. No regional data is available for the latest survey, but it was reported that 28 per cent of SMEs in London were minority ethnic led in 2010 – that was above the UK average of 8 per cent in the same year and the highest of all UK regions[12]. Other research by the GLA using the 2006 London Annual Business Survey similarly showed that 21 per cent of social enterprises and 20 per cent of non-social enterprises in London were owned by people belonging to other ethnic groups besides White British in 2006[13].

Moreover, a survey conducted in 2005 by the then Department for Trade and Industry showed that people born in East Europe (followed by those born in the Middle East, West Africa and South America) were the most likely to have already done or are thinking about starting a business as shown in Figure 8.42. In fact, levels of entrepreneurship were higher than people born in the UK for almost all other world regions with the exceptions of West Europe and North America.

Figure 8.42: Proportion of population that have or are thinking about starting a business by region of birth for England in 2005
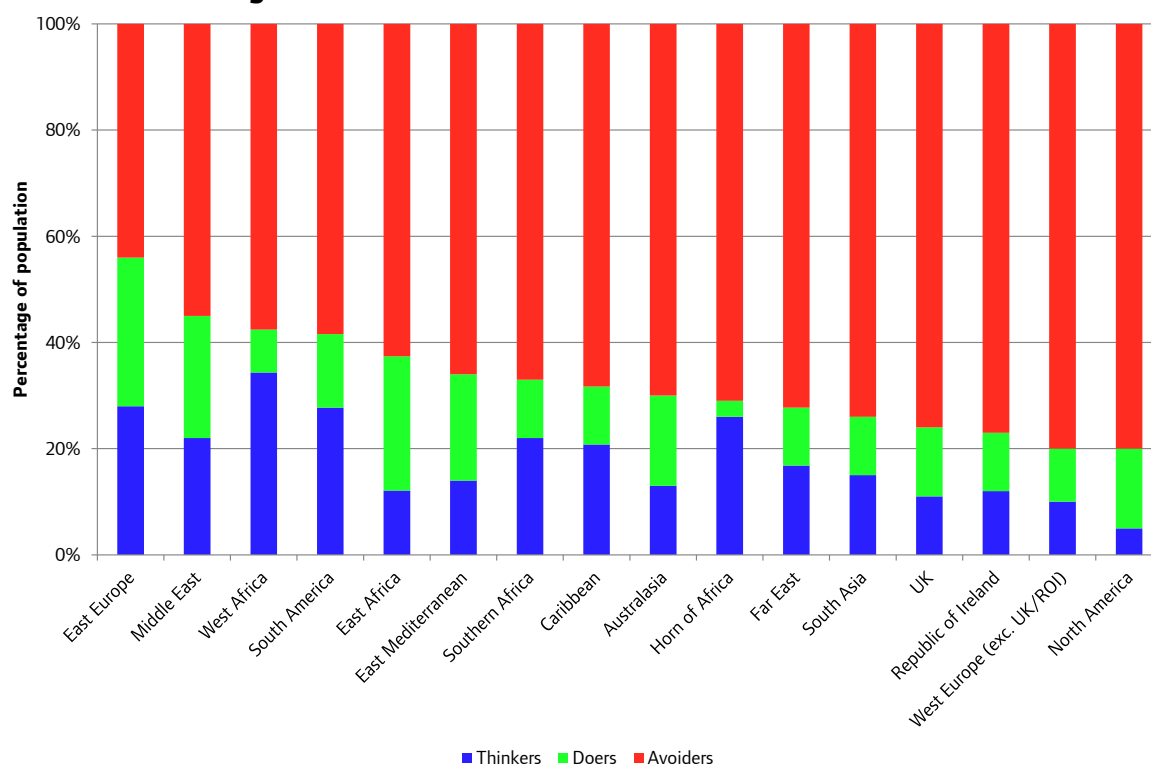
Source: Department for Trade and Industry Household Survey of Entrepreneurship 2005

A report by Latin Elephant[14] further suggests that minority ethnic groups led businesses and, particularly clusters of these firms, can help support the local economy by providing greater employment opportunities for ethnic minorities for example.

Exchequer

The fiscal impact of migration is the difference between the costs of the services and benefits they receive and the taxes and other public finance contributions they make. The Migration Observatory summarised the existing literature of the fiscal impact of migration, but noted that estimates are *"limited because of a lack of data and accurate information about a wide range of important factors. For this and other reasons, a significant number of assumptions must be made in order to estimate the fiscal effects of immigration, and results tend to change based on these assumptions"*[15].

Acknowledging this uncertainty, the Migration Observatory concluded that the fiscal impact is small – around +/- 1 per cent of UK GDP – meaning that the tax contribution that foreign-born individuals make is broadly in line with the cost of the services they receive[16]. For example, Dustmann & Frattini estimated that the net fiscal impact of immigration from EEA countries was +£8.8bn between 1995 and 2011, which compared with a net fiscal impact of -£604.5bn for those born in the UK[17]. The authors partly linked this to immigrants receiving less tax credits and benefits than natives. Meanwhile, other estimates by MigrationWatch UK that uses a different set of assumptions suggests that the net fiscal impact of EEA migrants over the same period was instead –£13.6bn[18].

Whilst this general finding provides for the average effect, the impact may well vary depending on the group considered and the time of arrival for example. Table 8.8 shows the estimates of the net fiscal impact of migrants from a number of studies though, as noted above, these are subject to some uncertainty as results can vary depending on the assumptions made. Positive numbers suggest a net fiscal contribution over the time period as a whole shown in the first column; negative numbers suggest that costs were greater than tax contributions. Overall, the studies suggest that the

fiscal effect of recent migrants (whether positive or negative) was generally better than non-recent migrants, and similarly EEA migrants over non-EEA migrants.

Table 8.8: Estimates of the fiscal effects of immigration for the UK over various time periods, constant 2011 prices

Time period	All migrants		Recent migrants	
	EEA	Non-EEA	EEA	Non-EEA
Dustmann & Frattini (2013) The fiscal effects of immigration to the UK, Centre for Research and Analysis of Migration, discussion paper series no 22/13.				
1995-2011	+ £8.8bn	- £104.1bn		
2001-2011	+ £9.0bn	- £86.8bn	+ £22.1bn	+ £2.9bn
Dustmann & Frattini (2014) The fiscal effects of immigration to the UK, *The Economic Journal*, 124, pg.583-643.				
1995-2011	+ £4.4bn	- £118.0bn		
2001-2011				+ £5.2bn
MigrationWatch UK (2014) An assessment of the fiscal effects of immigration to the UK.				
1995-2011	- £13.6bn	- £134.9bn		
2001-2011	- £13.4bn	- £116.8bn	- £0.25bn	- £27.17bn
Rawthorn (2014) Large scale immigration: its economic and demographic consequences for the UK, Civitas.				
2001-2011			- £0.3bn	- £29.7bn

Note: the figures shown in this table are the cumulative fiscal effect over the specified time period. Source: See table. Taken from: Vargas-Silva (2015)

A separate study by the OECD found similar conclusions in that the overall fiscal impact is small[19].

Local services

A related point is whether migration has an effect on local services such as the availability of healthcare, schools or housing for example. In terms of the propensity to use services and focussing on the NHS, Wadsworth found that the use of hospitals and GP services was broadly the same for immigrants and native born populations[20]. Similarly, Steventon & Bardsley also found no evidence that immigrants use elective or emergency care more than the UK-born population[21]. Moreover, Giuntella et al. found no evidence that immigration increases waiting times in A&E and elective care, though they observed an increase in waiting times for outpatients in more deprived areas outside of London[22].

Looking at housing, there is little and conflicting evidence to inform on whether this impact is positive or negative or the magnitude of this effect. Economic theory would suggest that an increase in demand for housing (for example) would result in higher prices and rents, though the overall effect would partly be dependent on the responsiveness of housing supply. A study looking at the impact of international migration on house prices between 2003 and 2008, finds that price effects are only modest. This is in part due to lower demand for housing among migrants, as well as the offsetting effects of prices on rates of household formation and outflows of domestic residents[23]. In contrast, Sá found that a 1 per cent increase in the migrant population resulted in a reduction in house prices by 1.6 per cent[24]. The author suggested that this dynamic was – like above – due to the offsetting effect of UK-born residents moving out of the area as migrant concentration increases which has a downward effect on prices.

In terms of social housing, the Migration Observatory reported that the percentage of migrants living in social housing (18 per cent) was broadly in line with the native population (17 per cent). However, Battiston et al. suggests that once relevant household characteristics (such as number of children and number of adults in work) are accounted for migrants are significantly less likely to be in social housing than the UK-born population[25].

Appendix to Chapter 8 endnotes

1 Home Office and Department for Business, Innovation & Skills (2014). Impacts of migration o UK native employment: an analytical review of the evidence.

2 Vargas-Silva, C & Markaki, Y & Sumption, M (2016). The impacts of international migration on poverty in the UK, Joseph Rowntree Foundation.

3 Centre for European Reform (2016). The economic consequences of leaving the EU.

4 Nickell, S & Saleheen, J (2015). The impact of immigration on occupational wages: evidence from Britain, *Bank of England staff working papers,* 574.

5 Dustmann, C et al. (2013). The effect of immigration along the distribution of wages, *Review of Economic Studies*, 80, 1, pg.145-173.

6 Wadsworth, J et al. (2016). Brexit and the impact of immigration on the UK, LSE Centre for Economic Performance.

7 Work Immigration and the Labour Market, Incorporating the role of the Migration Advisory Committee, David Metcalf Chair, Migration Advisory Committee and London School of Economics, June 2016 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/547697/MAC-_report_immigration_and_the_labour_market.pdf)

8 The data used in this section is from the ONS Annual Population Survey and refers to the number of jobs in 2014. Therefore, it is not comparable with the data used in the country of birth section of Chapter 8, which alternatively uses the ONS 2011 Census and refers to the number of residents in 2011.

9 BIS (2015). The impact of migrant workers on UK businesses, BIS Research Paper 217, February 2015.

10 An increase in productivity could lead to an increase in wages and partly explain why immigration does not have a significant impact on wages.

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15 Vargas-Silva, C (2015). The fiscal impact of immigration in the UK, The Migration Observatory, Briefing, Revision 3.

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24 Sá, F (2015). Immigration and house prices in the UK, *The Economic Journal*, 125, 587, pg.1393-1424.

25 Battiston, D et al. (2014). Immigration and the access to social housing in the UK, CEP discussion paper no 1264. Available at: http://cep.lse.ac.uk/pubs/download/dp1264.pdf

Appendices to Chapter 9

Appendix 9.1: Headline labour market statistics for London boroughs

This appendix presents the economic activity, employment and unemployment rates for the London boroughs for 2005 to 2015.

Table 9.28: Economic activity rates by borough, residents aged 16-64 years, 2005 to 2015

Borough	2005	2007	2009	2011	2013	2015
Barking & Dagenham	69.0%	72.3%	71.1%	71.4%	74.7%	73.9%
Barnet	74.4%	72.6%	72.0%	75.3%	76.7%	75.3%
Bexley	79.5%	77.3%	75.7%	76.8%	79.8%	81.3%
Brent	71.6%	75.4%	75.6%	69.2%	75.3%	75.1%
Bromley	82.8%	83.0%	79.8%	78.1%	80.2%	79.9%
Camden	69.6%	71.7%	71.4%	67.1%	68.6%	72.2%
City of London	77.7%	88.9%*	81.6%*	74.0%*	65.8%*	65.4%*
Croydon	79.3%	78.1%	79.6%	75.4%	80.5%	78.8%
Ealing	72.9%	72.7%	73.7%	75.9%	74.4%	77.4%
Enfield	74.1%	69.5%	67.9%	73.8%	72.8%	75.5%
Greenwich	74.4%	74.8%	70.8%	76.1%	72.4%	78.7%
Hackney	59.4%	70.7%	75.5%	72.8%	70.3%	73.3%
Hammersmith & Fulham	75.6%	76.4%	73.7%	72.1%	75.4%	81.4%
Haringey	71.5%	70.7%	67.8%	73.7%	74.9%	75.8%
Harrow	75.5%	77.0%	78.9%	78.6%	75.3%	77.6%
Havering	77.6%	79.2%	77.7%	80.2%	77.1%	80.6%
Hillingdon	75.7%	69.1%	78.3%	76.2%	77.2%	77.8%
Hounslow	77.6%	73.1%	77.5%	78.0%	80.3%	77.7%
Islington	67.2%	74.0%	73.3%	75.6%	75.4%	76.4%
Kensington & Chelsea	70.6%	69.7%	67.9%	67.1%	70.5%	71.5%
Kingston-upon-Thames	77.1%	74.6%	78.4%	74.1%	78.8%	77.8%
Lambeth	72.8%	75.6%	81.3%	81.8%	84.7%	83.7%
Lewisham	76.6%	75.1%	78.0%	74.0%	79.9%	80.6%
Merton	76.1%	81.4%	78.8%	77.9%	80.1%	82.5%
Newham	61.6%	64.0%	65.3%	64.5%	70.5%	72.7%
Redbridge	69.1%	70.4%	72.6%	70.3%	75.2%	74.4%
Richmond-upon-Thames	78.6%	80.7%	78.4%	77.5%	80.2%	82.8%
Southwark	68.9%	71.0%	74.6%	72.0%	73.1%	80.7%
Sutton	82.4%	80.4%	81.2%	79.8%	83.2%	82.6%
Tower Hamlets	65.4%	62.9%	70.0%	69.4%	73.2%	77.4%

Waltham Forest	72.4%	71.6%	71.7%	76.2%	76.6%	77.2%
Wandsworth	77.5%	78.9%	82.5%	81.3%	82.1%	83.3%
Westminster	69.4%	67.0%	72.6%	68.0%	71.1%	72.5%
London	**73.4%**	**73.7%**	**74.9%**	**74.4%**	**76.3%**	**77.7%**

Note: January to December periods and has been reweighted in July 2016. Figures that are unreliable due to small sample sizes are shown by "" and should be used with caution. Figures that are not available due small sizes or disclosure are shown by "!".*

Source: ONS Annual Population Survey

Table 9.29: Employment rates by borough, residents aged 16-64 years, 2005 to 2015

Borough	2005	2007	2009	2011	2013	2015
Barking & Dagenham	62.3%	66.0%	62.4%	62.0%	64.2%	65.9%
Barnet	69.8%	69.3%	67.0%	69.2%	72.3%	68.7%
Bexley	76.4%	73.9%	69.4%	70.9%	73.2%	75.2%
Brent	65.3%	68.4%	68.8%	60.6%	67.1%	69.6%
Bromley	80.0%	79.5%	75.6%	73.7%	75.7%	75.6%
Camden	64.4%	67.1%	65.2%	61.4%	63.6%	69.3%
City of London	77.7%	88.9%*	63.3%*	!	!	65.4%*
Croydon	73.1%	72.6%	71.8%	66.0%	73.4%	75.5%
Ealing	67.0%	67.9%	64.4%	68.0%	65.4%	72.9%
Enfield	66.7%	65.7%	60.9%	64.8%	66.8%	72.9%
Greenwich	67.5%	67.8%	63.5%	67.7%	64.4%	72.4%
Hackney	53.3%	62.1%	68.2%	67.0%	62.6%	69.0%
Hammersmith & Fulham	70.2%	70.2%	67.0%	66.7%	70.9%	77.6%
Haringey	66.5%	64.7%	59.8%	65.7%	68.4%	71.5%
Harrow	70.9%	73.4%	71.4%	73.4%	67.9%	74.0%
Havering	73.2%	76.6%	71.2%	73.9%	70.7%	76.4%
Hillingdon	69.3%	65.2%	72.3%	69.5%	70.6%	73.4%
Hounslow	72.8%	69.7%	70.4%	72.4%	74.1%	74.3%
Islington	63.4%	68.4%	65.3%	68.0%	68.5%	72.9%
Kensington & Chelsea	65.6%	66.3%	62.8%	62.6%	65.5%	68.3%
Kingston-upon-Thames	72.5%	72.7%	74.1%	67.9%	73.9%	74.2%
Lambeth	65.8%	67.8%	72.5%	72.4%	78.0%	78.6%
Lewisham	70.8%	66.7%	69.4%	67.7%	71.3%	76.0%
Merton	70.2%	77.8%	73.2%	71.3%	76.1%	78.8%
Newham	55.8%	57.3%	55.5%	54.4%	62.0%	66.3%
Redbridge	64.8%	66.1%	66.9%	63.0%	67.1%	68.4%
Richmond-upon-Thames	76.2%	77.1%	74.1%	74.5%	77.1%	79.6%
Southwark	63.5%	64.9%	65.7%	63.3%	65.0%	74.4%
Sutton	79.3%	75.2%	77.2%	73.3%	77.9%	78.1%
Tower Hamlets	57.3%	55.5%	59.5%	60.0%	63.2%	70.4%
Waltham Forest	66.3%	66.5%	65.2%	67.8%	70.8%	73.1%
Wandsworth	72.8%	73.9%	77.6%	75.5%	74.3%	78.7%
Westminster	63.3%	62.9%	66.6%	62.9%	66.7%	65.9%
London	**68.0%**	**68.6%**	**67.9%**	**67.3%**	**69.5%**	**73.0%**

Note: January to December periods and has been reweighted in July 2016. Figures that are unreliable due to small sample sizes are shown by "" and should be used with caution. Figures that are not available due small sizes or disclosure are shown by "!".*

Source: ONS Annual Population Survey

Table 9.30: Unemployment rates by borough, residents aged 16 years and over, 2005 to 2015

Borough	2005	2007	2009	2011	2013	2015
Barking & Dagenham	9.6%	8.5%	12.1%	13.1%	14.0%	11.0%
Barnet	6.3%	4.5%	6.6%	7.9%	5.5%	8.4%
Bexley	3.9%	4.2%	8.0%	7.5%	8.4%	7.5%
Brent	8.7%	9.0%	8.8%	12.3%	10.7%	7.4%
Bromley	3.4%	4.1%	5.2%	5.6%	5.6%	5.2%
Camden	7.2%	6.4%	8.6%	8.0%	7.0%	3.9%
City of London	!	!	!	!	!	!
Croydon	7.7%	7.1%	9.9%	12.2%	8.6%	4.1%
Ealing	8.0%	6.6%	12.4%	10.1%	11.7%	5.7%
Enfield	9.8%	5.6%	10.0%	12.0%	8.1%	3.8%
Greenwich	9.1%	9.2%	10.1%	11.0%	10.7%	8.0%
Hackney	10.2%	12.1%	9.6%	8.0%	10.9%	5.8%
Hammersmith & Fulham	7.2%	8.1%	9.0%	7.3%	6.1%	4.6%
Haringey	6.9%	8.4%	11.8%	11.0%	8.4%	5.5%
Harrow	5.8%	4.6%	9.9%	6.5%	9.6%	4.5%
Havering	5.5%	3.2%	8.1%	7.8%	8.4%	5.2%
Hillingdon	8.3%	5.6%	7.6%	8.5%	8.4%	5.7%
Hounslow	6.3%	4.8%	9.0%	7.1%	7.8%	4.2%
Islington	5.6%	7.5%	10.7%	9.9%	9.1%	4.4%
Kensington & Chelsea	6.8%	4.7%	7.3%	6.8%	7.2%	4.1%
Kingston-upon-Thames	5.9%	3.0%	5.5%	8.5%	6.1%	4.4%
Lambeth	9.7%	10.4%	10.7%	11.4%	7.8%	5.9%
Lewisham	7.6%	11.0%	10.9%	8.8%	10.6%	5.7%
Merton	7.6%	4.6%	7.1%	8.4%	4.8%	4.5%
Newham	9.3%	10.4%	15.0%	15.5%	12.0%	8.9%
Redbridge	6.1%	5.9%	7.6%	10.1%	10.6%	7.8%
Richmond-upon-Thames	3.3%	4.4%	5.8%	3.9%	3.7%	3.7%
Southwark	7.7%	8.4%	11.6%	12.0%	11.1%	7.6%
Sutton	3.9%	6.3%	4.8%	7.8%	6.3%	5.5%
Tower Hamlets	12.3%	11.8%	14.8%	13.6%	13.6%	8.9%
Waltham Forest	8.4%	7.1%	8.8%	10.8%	7.5%	5.3%
Wandsworth	6.0%	6.3%	5.8%	7.3%	9.3%	5.8%
Westminster	8.6%	6.2%	7.9%	7.2%	6.0%	8.7%
London	**7.2%**	**6.9%**	**9.2%**	**9.5%**	**8.7%**	**6.1%**

Note: January to December periods and has been reweighted in July 2016. Figures that are unreliable due to small sample sizes are shown by "*" and should be used with caution. Figures that are not available due small sizes or disclosure are shown by "!".
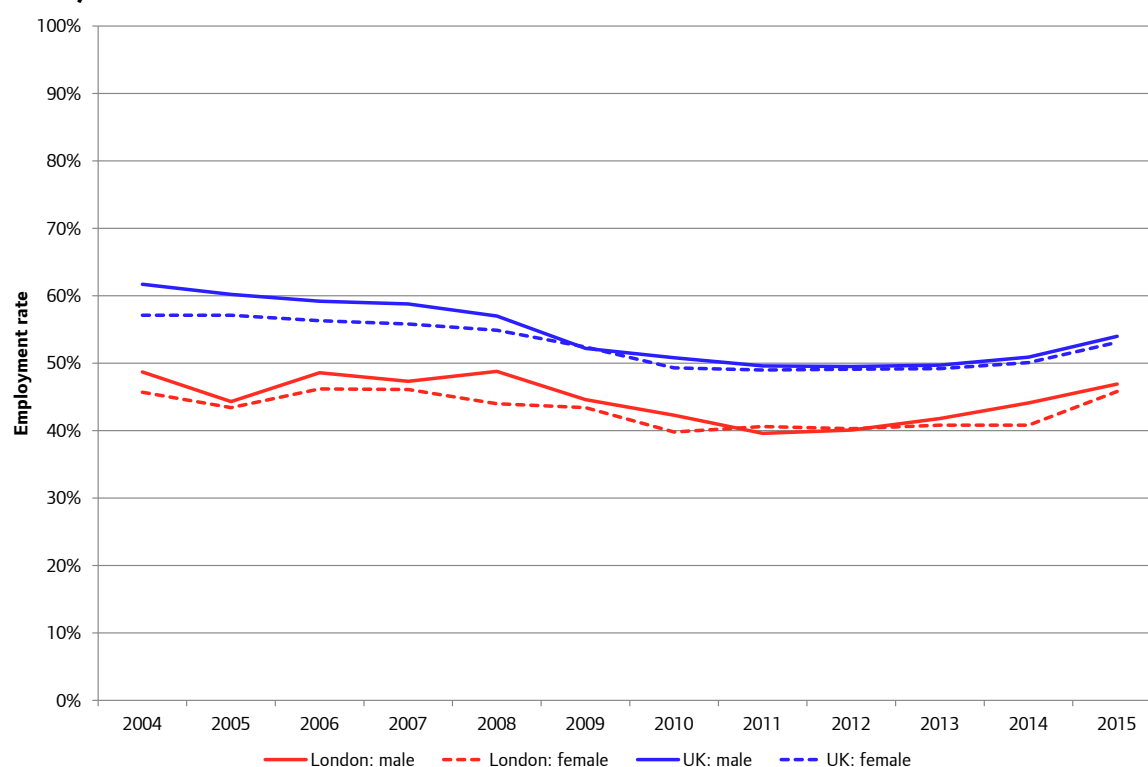
Source: ONS Annual Population Survey

Appendix 9.2: Employment rates by age groups and gender

This appendix presents the employment rates by age groups for both men and women as well as for London and the UK.

Employment rates for men and women aged 16-24 were broadly similar in London as shown in Figure 9.88 below. Although the same can be said for the UK as a whole, the employment rates were consistently above those for London.
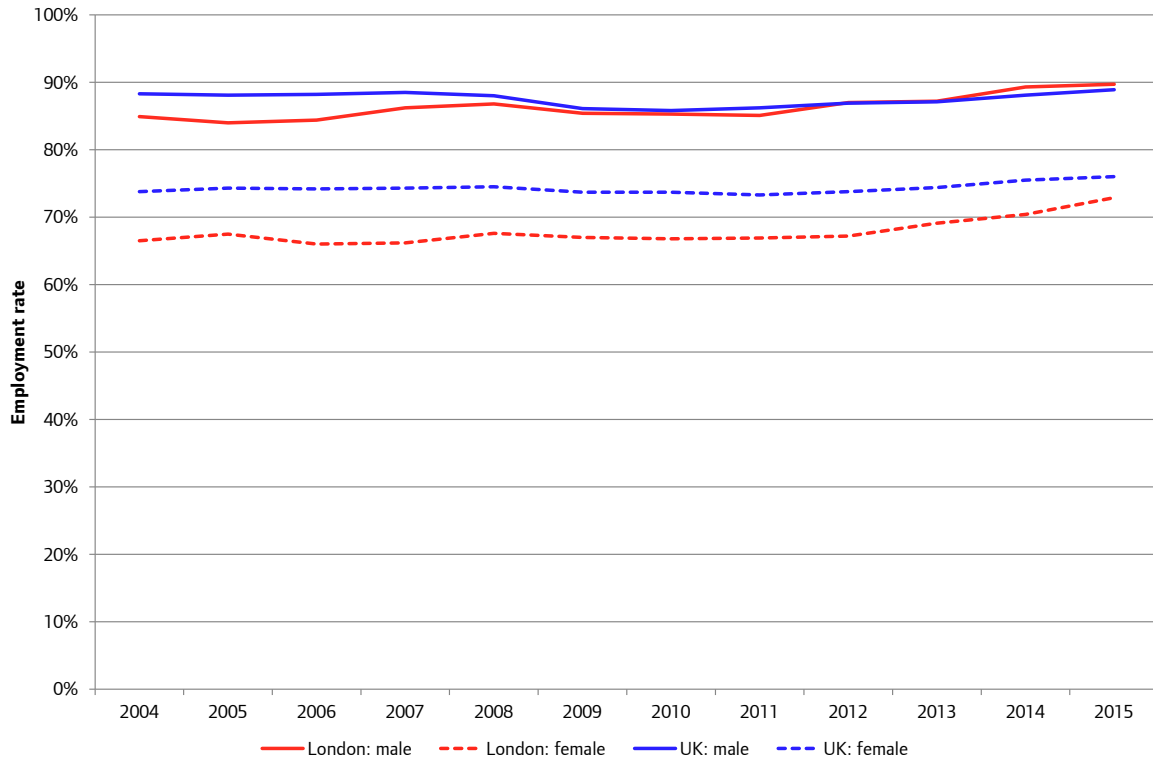
Figure 9.88: Employment rates for the 16-24 age group by gender for London and the UK, residents, 2004 to 2015

Note: January to December periods and has been reweighted in July 2016. Source: ONS Annual Population Survey

That said, differences between the male and female employment rates were observed for the 25-49 age group (Figure 9.89). For example, 89.7 per cent of men in London were employed in 2015, compared with 72.9 per cent for women. Moreover, whilst the male employment rate for London was similar to the UK, London's female employment rate has been statistically below that for the UK. This gap stood at 3.1 percentage points in 2015. A potential reason for this could be due to women with dependent children having a lower employment rate in London than the rest of the UK as noted in the main paper.

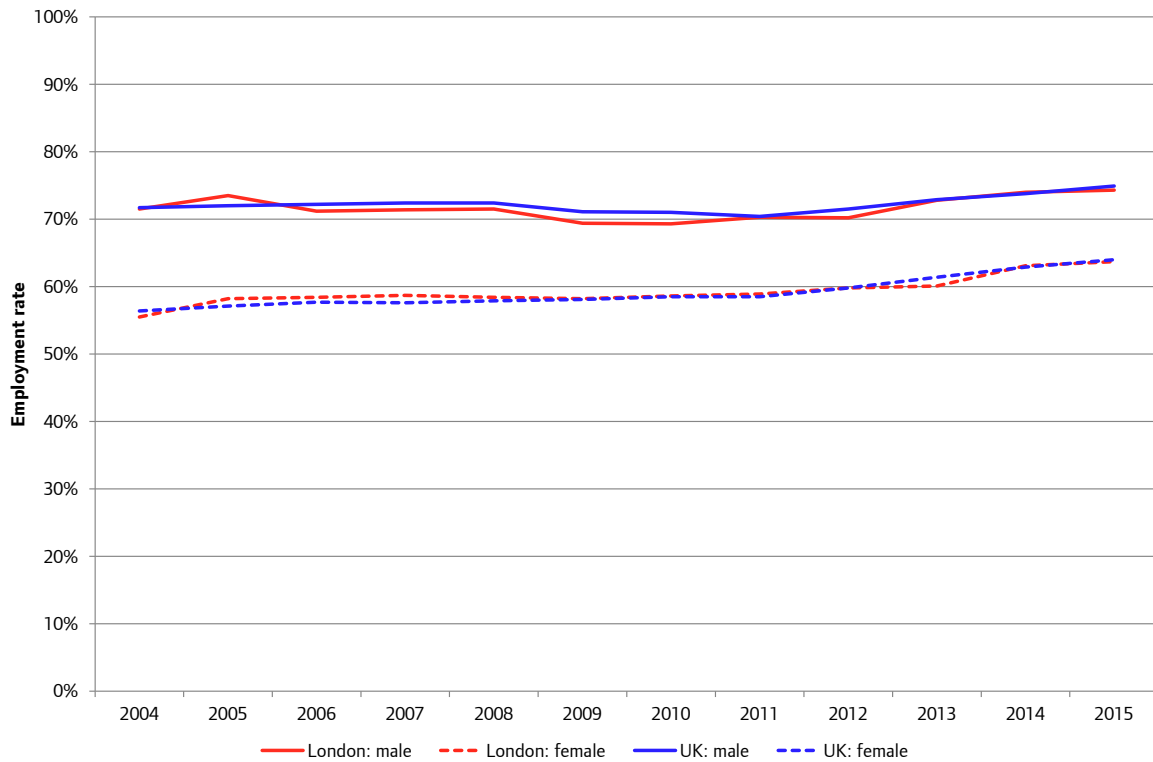**Figure 9.89: Employment rates for the 25-49 age group by gender for London and the UK, residents, 2004 to 2015**

Note: January to December periods and has been reweighted in July 2016.
Source: ONS Annual Population Survey

Whilst the differences between male and female employment rates were also present for the 50-64 age group, the gaps between London and the UK had narrowed as shown in Figure 9.90. In fact, after accounting for the confidence intervals, there was no statistical difference between London and the UK.

Figure 9.90: Employment rates for the 50-64 age group by gender for London and the UK, residents, 2004 to 2015
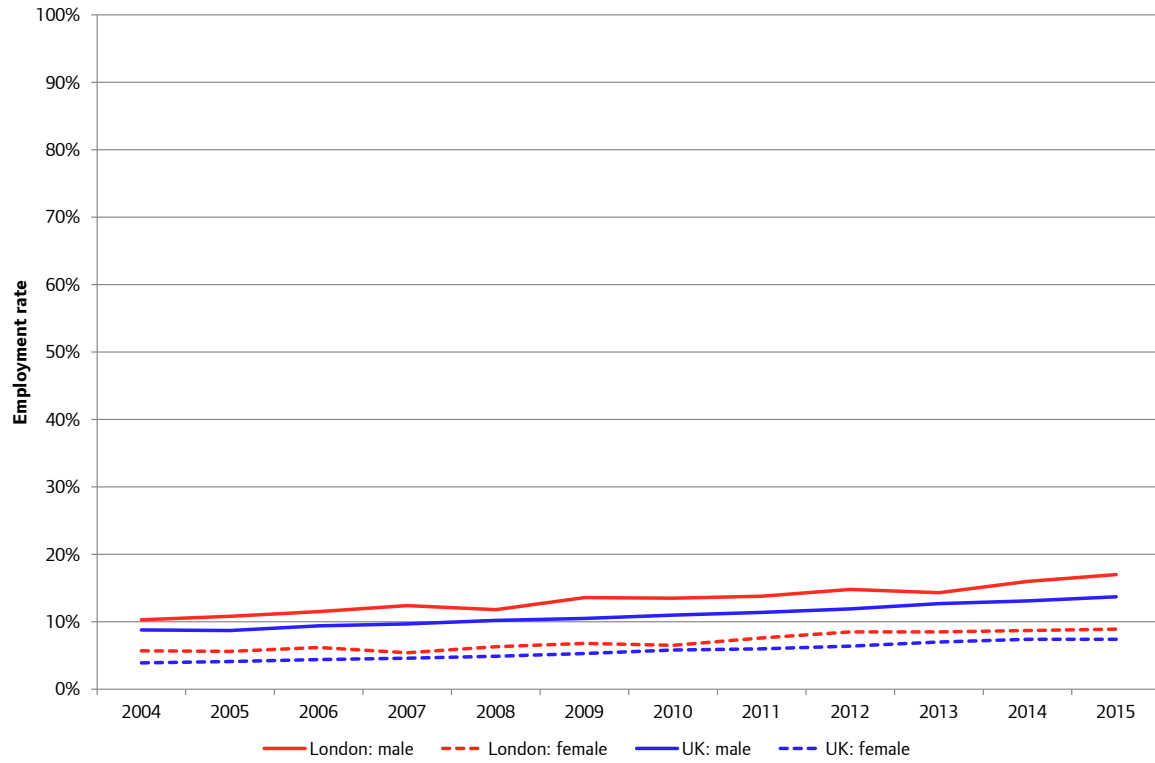

Note: January to December periods and has been reweighted in July 2016.
Source: ONS Annual Population Survey

Employment rates for the over 65 age group are shown in Figure 9.91 even though they are outside of the working age definition of 16-64 years. As noted previously, London had a higher overall employment rate than the UK and this was the case for both men and women. That said, London's male employment rate (17 per cent in 2015) was generally above that for women (8.9 per cent).

Figure 9.91: Employment rates for the over 65 age group by gender for London and the UK, residents, 2004 to 2015

Note: January to December periods and has been reweighted in July 2016.
Source: ONS Annual Population Survey

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