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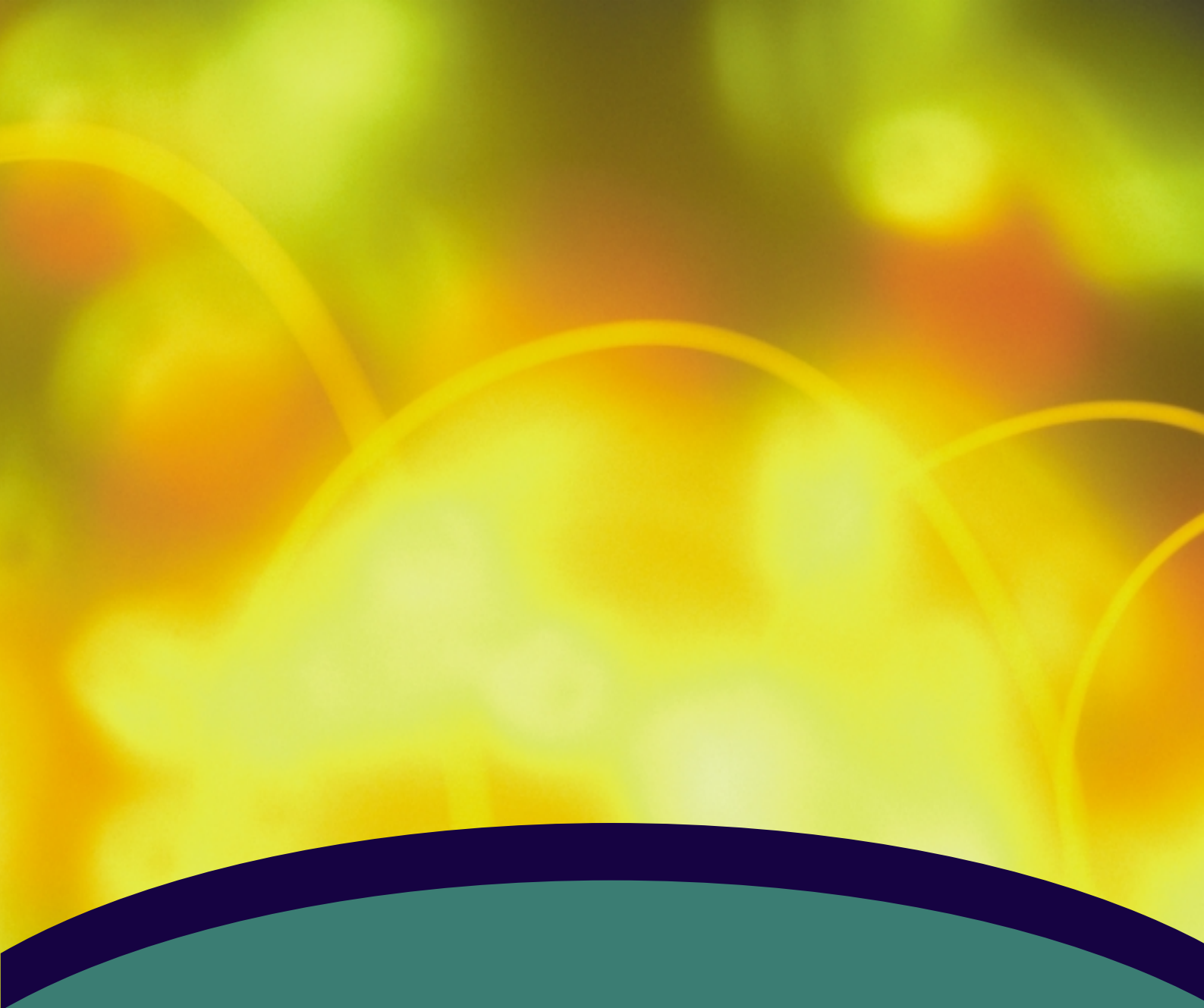

Employers Skill Survey

SKILLS, LOCAL AREAS AND UNEMPLOYMENT

Employers Skill Survey

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PREFACE

This report provides results from the spatial analyses of the Skills Task Force (STF) Employers' Skill Survey. It forms part of a wider programme of research into the extent, causes, and implications of skill deficiencies, sponsored by DfES (Department for Education and Skills - formerly DfEE). This research programme has been carried out under the direction of Terence Hogarth and Rob Wilson at the Institute for Employment Research (IER) at the University of Warwick. Fieldwork for the survey was undertaken by IFF Research Ltd under the direction of David Spilsbury and Jan Shury.

We are also grateful for the helpful comments provided by DfES officials at the design, analysis, and drafting stages. Information on other DfES skills research can be obtained from the address at the back of this report.

Further reports in this series provide more in-depth analysis and discussion of other elements of the project. These include a statistical report based on the survey and a series of complementary, in depth, case studies of individual sectors.
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Executive Summary

The National Skills Task Force acknowledged that a national skills strategy needs an explicit and coherent spatial component, with local action tied to local needs. The establishment of new local agencies, such as the local Learning and Skills Councils and Lifelong Learning Partnerships, provides further impetus for deriving information and intelligence on skills at sub-regional level.

The sub-regional analyses of information from the Employer Skills Survey (ESS) 1999 contained in this report provide new information on the incidence of skill deficiencies at local level, and their relationship with unemployment. The analyses supplement the findings of previous studies confirming the existence of substantial variations in skill deficiencies between local areas.

A North-South Divide

The report shows there is evidence for a broad North-South divide in both skill-shortage vacancies (in the external labour market) and in skill gaps (experienced internally by firms).

In general, the incidence of skill deficiencies is greatest in southern England and lowest in northern England.

However, a broad regional perspective misses the variation that is apparent within regions.

Intra-regional Differences

Analysis of variation within regions reveals that the pattern is more complex than suggested by simple inter-regional comparisons, since most regions contain both areas in which the incidence of skill deficiencies is relatively high and areas where it is low. Only in the North East is there a relatively uniform (and, in this instance, low incidence) pattern.

Skill deficiencies are particularly acute in Berkshire, and a general 'west-east' split is evident within the 'Greater South East'; there is a higher than average incidence of skill-shortage vacancies in areas to the south, west and north of London (the 'Western Crescent').

This extends into the South West region, with local areas in the eastern part of the region displaying a higher incidence of skill-shortage vacancies than those in far south-west. Similarly, in the West Midlands, the incidence of skill-shortage vacancies is higher in local areas in the south-east of the region.

Skills and Unemployment

Examination of the spatial variations in skill-shortage vacancies alongside local unemployment rates and trends in employment growth reveals that:

- There is a negative relationship between the incidence of skill-shortage vacancies and the local unemployment rate (i.e. in general, low unemployment rate areas tend to have a higher than average incidence of skill-shortage vacancies, and vice versa). However, in statistical terms, this relationship is relatively weak.
- There is a positive relationship between the incidence of skill-shortage vacancies and recent employment growth (i.e. in general, areas experiencing greater employment growth in recent years tend to display a higher incidence of skill-shortage vacancies). Again, in statistical terms, this relationship is relatively weak.

A Typology of Areas and Further Key Findings

The report presents a typology of Local Learning and Skills Council (LLSC) areas from which it is evident that:

- In parts of London, relatively high unemployment rates (calculated on a residence-basis) coexist alongside a relatively high, and higher than expected, incidence of skill-shortage vacancies.
- In much of the 'Greater South East' outside London there is a higher than average, but lower than expected, incidence of skill-shortage vacancies.
- There is a group of predominantly urban areas, mainly located in the northern part of England, where in the face of higher than average unemployment rates, the incidence of skill-shortage vacancies, although lower than average, is higher than expected.
- Many rural areas display a lower than average, and a lower than expected, incidence of skill-shortage vacancies given the prevailing local unemployment rates.

The spatial patterns revealed in the analyses provide useful comparative information for the development of local and regional skills strategies and raise important issues concerning balanced development both within and between regions.

1. Background

1.1 Introduction

The Employers Skill Survey: Statistical Report (Bosworth et al., 2000) provided an overview of results from the Skills Task Force (STF) Employers Skill Survey (ESS) 1999[1] at national level, with some disaggregations to regional level. An important objective of the work reported here was to prepare for econometric analysis of the ESS 1999 data (Bosworth et al., 2001) by disaggregating the data to a range of sub-regional geographical frameworks and by providing information on measures of local labour market conditions. However, as outlined below, there is considerable policy interest in analyses of ESS 1999 data at local level, and this report documents such analyses.

1.2 Rationale for spatial analyses of skills deficiencies

In a paper for the National Skills Task Force entitled Spatial Skill Variations: *Their Extent and Implications*, Campbell et al. (1999) contended that:

- a national skills strategy requires an explicit and coherent spatial component with local action tied to local needs; and that
- a spatial skills strategy becomes a crucial component of a wider local and regional economic development strategy.

A range of evidence has been presented at the sub-national level demonstrating that there are substantial variations in skill levels between local areas (Payne, 1997, 2000; Green, 1999; Department of the Environment, Transport and the Regions, 2000). Campbell et al. (1999) identified at least four ways in which the existence of spatial variations in skill levels could have profound implications for policy:

1. spatial variations could restrict the development of a national skills agenda - on the basis that without action to tackle problems of low skills localities, national progress will be obstructed;
2. low skill localities will be excluded from any emergent high skill society - hence the goal of 'narrowing the gap' between the poorest localities and 'the rest' will not be achieved (Social Exclusion Unit, 1998, 2000; Department for Education and Employment, 1999);
3. if spatial skill variations are also associated with variations in local economic performance, then their existence will hamper national economic performance; and
4. existence of such a relationship will restrict the development and potential of localities themselves, and thus the economic and social opportunities of people who live in them.

The establishment of Regional Development Agencies, local arms of the Learning and Skills Council and Local Lifelong Learning Partnerships, working in partnership with local authorities , the Employment Service and others, (Benneworth and Jones, 2000) provides a further impetus for deriving information and intelligence to support regional and local skills strategies.

1 The ESS 1999 consisted of 26,952 interviews across England, of which 23,070 were conducted by telephone and 3,882 through face-to-face interviews. All employers surveyed had a minimum of five employees at the specific location sampled. All business sectors (public and private) were covered, with the exception of Agriculture, Hunting and Forestry (1992 SIC codes 01-02), Fishing (1992 SIC code 05) and Private Households with Employed Persons (1992 SIC code 95).

1.3 Scope of the report

This report outlines the construction of labour market indicators for a range of sub-regional geographies. Methodological considerations in analysing the ESS 1999 data at sub-regional level are outlined also. The bulk of the report concentrates on the presentation of descriptive analyses. Particular emphasis is placed on spatial disaggregation to Local Learning and Skills Council (LLSC) areas. Information is presented on the prevalence of vacancies at LLSC area level and the relationships between vacancies proving hard-to-fill for skill-related reasons (referred to hereafter as 'skill-shortage vacancies), unemployment and employment growth are explored. In addition, a typology of LLSC areas is presented, distinguishing between areas on the basis of the prevalence of skill-shortage vacancies and the expected prevalence of skill-shortage vacancies relative to the local unemployment rate. Information is also presented on the broad occupational profile of vacancies and on the reasons for vacancies. In the final section of the descriptive analyses, the prevalence of skill gaps by LLSC area is outlined. The report concludes with a summary of the issues raised by the analyses presented at local level.

2. Spatial Analyses of the ESS Data - Methodology

Although the ESS data are postcoded, to date analyses have concentrated on the national and regional levels. In order to exploit the postcoded ESS data, it was necessary to:

A) ***Match the postcodes to a range of geographical units:*** The four main geographies selected for matching were:

1. Government Office Regions [GORs - 9 regions in England: London, the South East, Eastern region, the South West, the West Midlands, the East Midlands, Yorkshire & the Humber, the North West and the North East]
2. Local Learning and Skill Council areas [LLSCs - 47 areas]
3. 1998 Travel-To-Work Areas [TTWAs - 207 areas in England]
4. Unitary Authority / Local Authority Districts (as defined in 1998) [UALADs - 354 areas in England]

Other geographies were used where external data sources of potential interest for the econometric analyses (see Bosworth et al., 2001) dictated. One example, is the use of Nomeclature of Territorial Units for Statistics (NUTS) 3 areas for Gross Domestic Product (GDP) data.

In addition each establishment was coded according to an Office for National Statistics (ONS) geodemographic classification of wards, thus enabling distinctions to be made between areas according to their socio-economic and demographic profiles. Geodemographic classifications of areas are a powerful and effective way of summarising demographic, employment, socio-economic, household characteristics and housing variables in the Census of Population. They are widely used for research, education and marketing purposes.

The principle upon which this geographical coding was undertaken was through matching the postcode on each record in the ESS database with lists which link unit postcodes to higher level geographical units. Three such files were used for this purpose:

1. A list of Local Learning and Skills Council areas, defined in terms of unit postcodes, supplied by the Department for Education and Employment, containing 1,632,084 cases, *for England only*.
2. The Office for National Statistics' "All Fields Postcode Directory" (AFPD), which gives for each unit postcode, a large variety of areal units it falls into, including the county, the Census enumeration district, Unitary Authority, 1998 Travel-to-Work Area and TECLEC area. This file contains 2,131,286 cases, but covers *the whole of the UK*.
3. The Office for National Statistics' classification of 1991 Census wards, containing 10,529 cases for *the whole of Great Britain*.

See Appendix 1 for details of the methodology used for geographical coding.

B) ***Generation of local labour market variables from external data sources for use in econometric analyses of ESS data:*** The variables generated included:

- unemployment rates
- economic activity rates and employment rates
- indicators of the industrial structure of employment and employment change
- indicators of the occupational structure of employment
- GDP
- earnings.

Not all variables could be provided for all geographies - see Appendix 2 for further details of the variables generated and associated data sources.

3. Analysing ESS data at Sub-Regional Level: Some Methodological Considerations

At the sub-regional level it is important to note that the ESS 1999 data are *not* weighted to any sub-regional geographies[2]. Hence, at sub-regional level the ESS data are subject to sampling variation.

In terms of *sample size*, at LLSC level the number of ESS interviews conducted ranged from 228 in Northumberland LLSC to 1,472 in Greater Manchester LLSC. Along with Northumberland LLSC, there were also less than 300 ESS interviews conducted in Cumbria, Shropshire and Somerset LLSC areas. At the other end of the spectrum, in excess of 1,000 ESS interviews were conducted in West Yorkshire and Central London LLSC areas, as well as in Greater Manchester. Clearly, to some extent these variations in sample size reflect the differential size, in terms of numbers of employers and total employment, of LLSC areas. Details are presented in Appendix 3. There is also a problem of the representativeness of the ESS 1999 data for the Humberside LLSC area[3].

At the level of TTWAs and UALADs, variations in sample size are wider, reflecting the differences in size structure of geographical units of each of these types. Large urban TTWAs, such as London, Manchester, Slough & Woking, Tyneside, Birmingham, Leeds, Sheffield & Rotherham, Nottingham, Liverpool and Bristol have sample sizes in excess of 400 ESS interviews, while amongst UALADs, Leeds, Birmingham and Westminster have the largest sample sizes. At the other end of the size spectrum, 45 TTWAs (out of 207 in England) and 16 UALADs (out of 354) have sample sizes of less than 25 interviews. The TTWAs/UALADs concerned are overwhelmingly small[4] rural areas.

Across England as a whole, 14 per cent of the *ESS interviews* were conducted *face-to-face*, while 86 per cent were conducted by *telephone*. Less than 5 per cent of interviews were conducted face-to-face in Norfolk, Northumberland and Hereford & Worcester LLSC areas, while in North London, Cambridgeshire and Berkshire the proportion of face-to-face interviews exceeded 25 per cent of ESS interviews conducted. Further details are presented in Appendix 3.

The *Employers Skill Survey: Statistical Report* (Bosworth et al., 2000) showed that the distribution of vacancies varied by *size of establishment* and *industrial sector*. As noted above, the ESS sample was not drawn up in such a way as to be representative of all employers at LLSC level. However, the information presented in Appendix 3 on the size and sectoral distribution of establishments by LLSC area does not suggest any large scale cause for concern about the representativeness of the ESS sample for the purpose of the indicative analyses presented here.

2 The ESS 2001 is weighted to LLSC areas, with the aim of an achieved sample of 400 employers in each LLSC area. As far as possible, the sample at LLSC level is intended to be representative of local industries.

3 It is also salient to note that only 3 ESS interviews in the Humberside LLSC area are coded to the City of Kingston upon Hull, so the LLSC data are not representative of the spread of employment across the LLSC area as a whole. This problem was unforeseen, and can be attributed to the use of the BT Business database, which has little coverage in Hull, as a sampling frame. Alternative methods have been used to overcome this problem for ESS 2001.

4 In terms of the population and employment size.

4. Descriptive Analyses at Sub-Regional Level

4.1 Introduction

This main part of the report focuses on the spatial characteristics of skill deficiencies. Most of the analyses are presented at the LLSC area level.

Section 4.2 outlines the spatial distribution of vacancies. A distinction is made between:

- *all vacancies* reported,
- *hard-to-fill vacancies* - which may arise due to limited efforts at job advertising, relatively unattractive salaries or job conditions on offer, or an excess of demand over supply of required skills, and
- *skill-shortage vacancies* - that subset of reported hard-to-fill vacancies which are skill-related - i.e. vacancies that are due to:
    - ◊ low number of applicants with the required skills,
    - ◊ lack of work experience the company demands,
    - ◊ lack of qualifications the company demands

(This is a tight definition of 'skill-related' which excludes factors relating to applicants' personal attributes and to general competition among employers for the best applicants).

The main focus in this report is on skill-shortage vacancies.

Section 4.3 examines relationships between skill-shortage vacancies and the unemployment rate at local level. Some analyses are also presented of the relationship between the incidence of skill-shortage vacancies and recent employment growth.

In Section 4.4 a typology of LLSC areas is presented. The typology combines two dimensions: the incidence of skill-shortage vacancies and the expected incidence of skill-shortage vacancies given the prevailing unemployment rate. Hence, distinctions are made between areas with a higher than average and a lower than average incidence of vacancies, and between areas with a higher than expected and a lower than expected incidence of vacancies given the unemployment rate.

Section 4.5 displays information on the occupational profile of vacancies, while in Section 4.6 summary information on the reasons for vacancies is presented.

Section 4.7 outlines the spatial distribution of *skill gaps*. A skill gap is a divergence between firms' current skill levels and those which are required to meet business objectives. They are internal to firms and are measured by questions about the lack of proficiency of current staff.

4.2 Spatial variations in the incidence of vacancies

Establishments reporting vacancies by LLSC area

Table 1 provides a count of vacancies reported in each LLSC area. The results reported are based on weighted data that seek to represent the relevant population. Information is presented on:

(a) skill-shortage vacancies

(b) hard-to-fill vacancies

(c) all vacancies.

The LLSC areas are ordered by region - North West, North East, West Midlands, Yorkshire & the Humber, East Midlands, Eastern, London, South East and South West. The differences in the counts are a function of both the different sizes of the LLSC areas (in employment terms) and differences in the incidence of reporting of vacancies. Focusing on the incidence of vacancies, Table 2 shows the percentage of establishments in each LLSC area reporting skill-shortage vacancies, hard-to-fill vacancies and total vacancies.

Table 3 provides a ranking of the percentage of establishments in each LLSC area with:

(a) skill-shortage vacancies

(b) hard-to-fill vacancies

(c) all vacancies.

Figures 1-3 display this information in map form, with LLSCs grouped into quartiles. (For a key to the maps of LLSC areas see Appendix 4.)

On the measure of establishments reporting skill-shortage vacancies (see Figure 1 and Table 3) there is some evidence for a 'North-South divide'. This can also be quantified by a broad summary measure, for which the North West, North East, West Midlands, Yorkshire & the Humber and East Midlands are defined as being in the 'North' and London, the South East, South West and Eastern region are defined as being in the 'South'. In the 'North' 6.1 per cent of establishments reported skill-shortage vacancies, compared with 9.2 per cent in the 'South' and 7.7 per cent across England as a whole. This does not perfectly reflect the distinctions at local level, but:

- all of the LLSC areas reporting a greater than national proportion of skill-shortage vacancies are located in southern England and the Midlands;
- all areas in the highest quartile (i.e. with the highest percentages of establishments reporting skill-shortage vacancies) are to the south of a line from the Severn to the Wash;
- all areas in the lowest quartile (i.e. with the lowest percentages of establishments reporting skill-shortage vacancies) are north of a line from Shropshire to Norfolk;
- all areas, with the exception of West Yorkshire, to the north of a line from the Mersey to the Humber are in the lower two quartiles.

However, there are also important intra-regional differences - for example:

- in the Eastern region, nearly 12 per cent of establishments in Hertfordshire record skill-shortage vacancies (ranked 3rd out of all LLSC areas in England) compared with only 4 per cent in Norfolk;
- in the West Midlands, nearly 9 per cent of establishments in Coventry & Warwickshire record skill-shortage vacancies, compared with 5.5 per cent in Shropshire and Staffordshire.

The North East is the only region where all LLSC areas are in the same quartile: the one with the lowest percentage of establishments reporting skill-shortage vacancies.

The spatial patterns are similar, but not the same, on the percentage of establishments reporting hard-to-fill vacancies and the percentage reporting vacancies of any kind. A broad 'North-South' division is apparent: 13.6 per cent of establishments in the 'North' reported hard-to-fill vacancies, compared with 19.1 per cent in the 'South' and 16.5 per cent across England as a whole. The respective shares of establishments reporting vacancies of any kind were 28.6 per cent in the 'North' and 35.8 per cent in the 'South', compared with 32.4 per cent across the whole of England. This broad regional division coexists alongside intra-regional differences. There is a representative each from the West Midlands (Coventry & Warwickshire), Yorkshire & the Humber (North Yorkshire) and the East Midlands (Nottinghamshire) in the list of LLSC areas with a greater than average percentage of establishments reporting vacancies.

Table 1: Number of vacancies by LLSC area

Area - LLSCs (by region)		skill shortage vacancies	hard-to-fill vacancies	all vacancies
North West	Cumbria	315	1156	2550
	Merseyside-Halton	2000	3776	9600
	Lancashire	1435	4553	12465
	Cheshire-Warrington	1371	3810	9045
	Greater Manchester	3878	11278	24405
North East	Tyne and Wear	1246	2699	9123
	County Durham	562	1109	2607
	Tees Valley	1266	1954	5163
	Northumberland	324	927	2021
West Midlands	Birmingham and Solihull	2032	4158	10621
	Staffordshire	1407	2860	6767
	Shropshire	541	4579	8383
	Herefordshire and Worcestershire	1287	3034	7732
	The Black Country	1400	4094	9136
	Coventry and Warwickshire	2016	5913	11793
Yorks. & Humber	North Yorkshire	981	3898	8308
	South Yorkshire	1471	3580	9359
	West Yorkshire	4963	10679	22731
	Humberside	789	1781	3836
East Midlands	Lincolnshire	939	2124	7605
	Northamptonshire	1673	3125	7641
	Leicestershire	1385	3375	7604
	Derbyshire	1082	3013	7439
	Nottinghamshire	2912	4588	12022
Eastern	Bedfordshire	1195	3073	7016
	Essex	3872	8397	16803
	Cambridgeshire	2218	5310	9718
	Hertfordshire	3071	6471	13025
	Norfolk	761	2224	5298
	Suffolk	920	2437	6193
London	Central London	8361	15712	47664
	North London	2575	5044	12611
	East London	4739	10022	24419
	West London	5894	12852	25917
	South London	2720	5751	18351
South East	Surrey	3303	8667	15898
	East-West Sussex and Brighton & Hove	3992	9062	16495
	Oxfordshire Milton Keynes and Bucks	2637	8070	18585
	Kent and Medway	2413	7168	14145
	Hants. I. of Wight Portsmouth & So'ton	2837	9670	19694
	Berkshire	4281	10046	16096
South West	Devon and Cornwall	2298	6528	11995
	Somerset	670	1892	4288
	Gloucestershire	1018	3276	6933
	BournemouthDorset and Poole	1394	3574	8653
	Wiltshire and Swindon	1360	3919	7784
	Avon	2518	5711	12123
Total		**102322**	**246941**	**557658**

Source: ESS - weighted data.

Table 2: Percentage of establishments reporting vacancies by LLSC area

Area - LLSCs (by region)		% with skill shortage vacancies	% with hard-to-fill vacancies	% reporting vacancies	no. of establish -ments
North West	Cumbria	3.9	10.2	21.8	5725
	Merseyside-Halton	5.6	11.6	25.2	12160
	Lancashire	3.2	10.0	28.4	15456
	Cheshire-Warrington	4.4	14.5	27.7	10400
	Greater Manchester	6.4	15.0	28.4	27818
North East	Tyne and Wear	4.4	9.5	27.1	11673
	County Durham	5.6	11.1	23.6	3978
	Tees Valley	5.7	10.9	26.0	6039
	Northumberland	1.3	7.7	20.6	2969
West Midlands	Birmingham and Solihull	7.5	15.2	32.1	11156
	Staffordshire	5.5	11.5	25.0	9675
	Shropshire	5.5	15.0	31.5	6095
	Herefordshire and Worcestershire	7.6	13.0	29.0	8634
	The Black Country	6.8	13.6	28.2	11345
	Coventry and Warwickshire	8.9	18.6	36.0	10118
Yorks. & Humber	North Yorkshire	6.3	18.9	35.5	8825
	South Yorkshire	4.1	11.8	26.3	13567
	West Yorkshire	6.9	15.3	29.8	24226
	Humberside	6.8	11.7	25.5	6197
East Midlands	Lincolnshire	7.4	13.3	28.1	6892
	Northamptonshire	10.2	17.1	29.5	7277
	Leicestershire	6.3	13.5	26.3	10632
	Derbyshire	5.1	13.8	28.3	9905
	Nottinghamshire	8.7	15.2	33.0	10987
Eastern	Bedfordshire	6.2	18.3	38.6	5037
	Essex	9.0	17.8	32.6	14625
	Cambridgeshire	9.0	19.5	37.7	8124
	Hertfordshire	11.9	21.8	37.8	11021
	Norfolk	4.0	12.5	28.9	6500
	Suffolk	6.6	15.5	32.5	6679
London	Central London	10.1	16.7	36.2	36559
	North London	9.9	18.6	36.7	9217
	East London	7.4	14.6	32.6	20967
	West London	12.2	21.5	38.8	19107
	South London	8.6	17.6	36.9	11026
South East	Surrey	11.1	26.0	40.8	11337
	East-West Sussex and Brighton & Hove	10.3	23.9	42.0	13156
	Oxfordshire Milton Keynes and Bucks	9.1	21.3	39.3	15144
	Kent and Medway	6.9	17.3	30.4	14039
	Hants. I. of Wight Portsmouth & So'ton	9.9	20.7	36.6	16676
	Berkshire	16.1	30.2	47.6	9477
South West	Devon and Cornwall	6.8	15.6	28.1	17559
	Somerset	6.2	12.3	28.3	4944
	Gloucestershire	6.2	17.2	35.2	6451
	Bournemouth Dorset and Poole	5.9	20.3	33.4	7153
	Wiltshire and Swindon	10.3	23.2	36.4	6544
	Avon	9.0	18.8	34.6	10629
Total		**7.7**	**16.5**	**32.4**	**533723**

Source: ESS - weighted data.

Table 3: Ranking of LLSC areas: percentage of establishments reporting vacancies

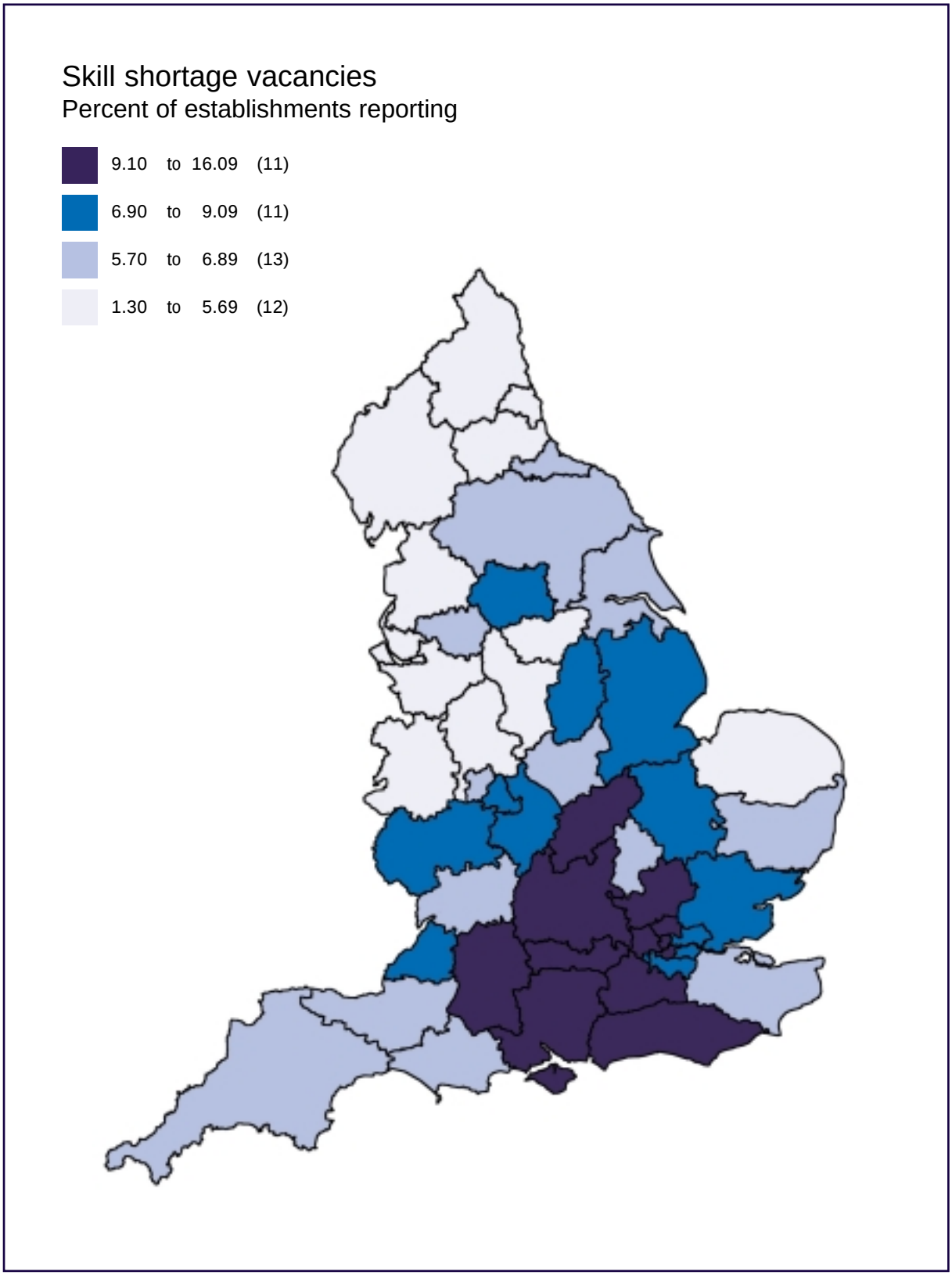
Area - LLSCs	% with skill-sh. vacs	Area - LLSCs	% with hard-to-fill fill vacs	Area - LLSCs	% with vacs
Berkshire	16.1	Berkshire	30.2	Berkshire	47.6
West London	12.2	Surrey	26.0	E-W Sussex, Brighton&Hove	42.0
Hertfordshire	11.9	E-W Sussex, Brighton&Hove	23.9	Surrey	40.8
Surrey	11.1	Wiltshire and Swindon	23.2	Oxfordshire, MK and Bucks	39.3
E-W Sussex, Brighton&Hove	10.3	Hertfordshire	21.8	West London	38.8
Wiltshire and Swindon	10.3	West London	21.5	Bedfordshire	38.6
Northamptonshire	10.2	Oxfordshire, MK and Bucks	21.3	Hertfordshire	37.8
Central London	10.1	Hants IoW Portsmouth Soton	20.7	Cambridgeshire	37.7
North London	9.9	Bournemouth Dorset & Poole	20.3	South London	36.9
Hants IoW Portsmouth Soton	9.9	Cambridgeshire	19.5	North London	36.7
Oxfordshire, MK and Bucks	9.1	North Yorkshire	18.9	Hants IoW Portsmouth, Soton	36.6
Avon	9.0	Avon	18.8	Wiltshire and Swindon	36.4
Cambridgeshire	9.0	North London	18.6	Central London	36.2
Essex	9.0	Coventry and Warwickshire	18.6	Coventry and Warwickshire	36.0
Coventry and Warwickshire	8.9	Bedfordshire	18.3	North Yorkshire	35.5
Nottinghamshire	8.7	Essex	17.8	Gloucestershire	35.2
South London	8.6	South London	17.6	Avon	34.6
Total	**7.7**	Kent and Medway	17.3	Bournemouth Dorset & Poole	33.4
Herefordshire & Worcs	7.6	Gloucestershire	17.2	Nottinghamshire	33.0
Birmingham and Solihull	7.5	Northamptonshire	17.1	East London	32.6
Lincolnshire	7.4	Central London	16.7	Essex	32.6
East London	7.4	**Total**	**16.5**	Suffolk	32.5
West Yorkshire	6.9	Devon and Cornwall	15.6	**Total**	**32.4**
Kent and Medway	6.9	Suffolk	15.5	Birmingham and Solihull	32.1
The Black Country	6.8	West Yorkshire	15.3	Shropshire	31.5

Table 3: (continued) **Ranking of LLSC areas: percentage of establishments reporting vacancies**

Area - LLSCs	% with skill-sh. vacs	Area - LLSCs	% with hard-to-fill fill vacs	Area - LLSCs	% with vacs
Humberside	6.8	Birmingham and Solihull	15.2	Kent and Medway	30.4
Devon and Cornwall	6.8	Nottinghamshire	15.2	West Yorkshire	29.8
Suffolk	6.6	Greater Manchester	15.0	Northamptonshire	29.5
Greater Manchester	6.4	Shropshire	15.0	Herefordshire & Worcs	29.0
Leicestershire	6.3	East London	14.6	Norfolk	28.9
North Yorkshire	6.3	Cheshire-Warrington	14.5	Lancashire	28.4
Somerset	6.2	Derbyshire	13.8	Greater Manchester	28.4
Gloucestershire	6.2	The Black Country	13.6	Somerset	28.3
Bedfordshire	6.2	Leicestershire	13.5	Derbyshire	28.3
Bournemouth Dorset & Poole	5.9	Lincolnshire	13.3	The Black Country	28.2
Tees Valley	5.7	Herefordshire & Worcs	13.0	Lincolnshire	28.1
County Durham	5.6	Norfolk	12.5	Devon and Cornwall	28.1
Merseyside -Halton	5.6	Somerset	12.3	Cheshire-Warrington	27.7
Staffordshire	5.5	South Yorkshire	11.8	Tyne and Wear	27.1
Shropshire	5.5	Humberside	11.7	Leicestershire	26.3
Derbyshire	5.1	Merseyside-Halton	11.6	South Yorkshire	26.3
Cheshire -Warrington	4.4	Staffordshire	11.5	Tees Valley	26.0
Tyne and Wear	4.4	County Durham	11.1	Humberside	25.5
South Yorkshire	4.1	Tees Valley	10.9	Merseyside-Halton	25.2
Norfolk	4.0	Cumbria	10.2	Staffordshire	25.0
Cumbria	3.9	Lancashire	10.0	County Durham	23.6
Lancashire	3.2	Tyne and Wear	9.5	Cumbria	21.8
Northumberland	1.3	Northumberland	7.7	Northumberland	20.6

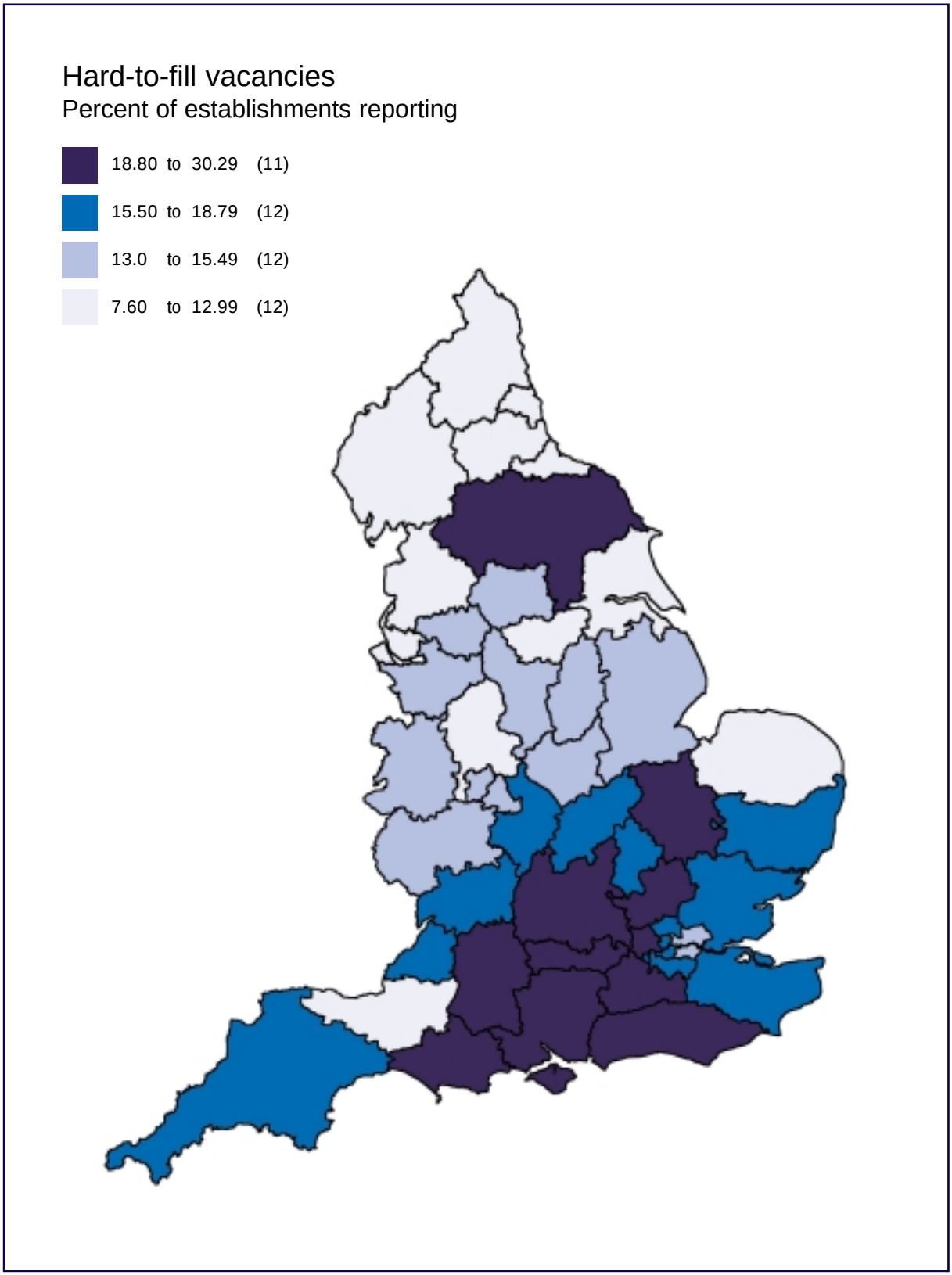
Source: ESS - weighted data.

Figure 1: Percentage of establishments reporting skill-shortage vacancies - LLSC areas



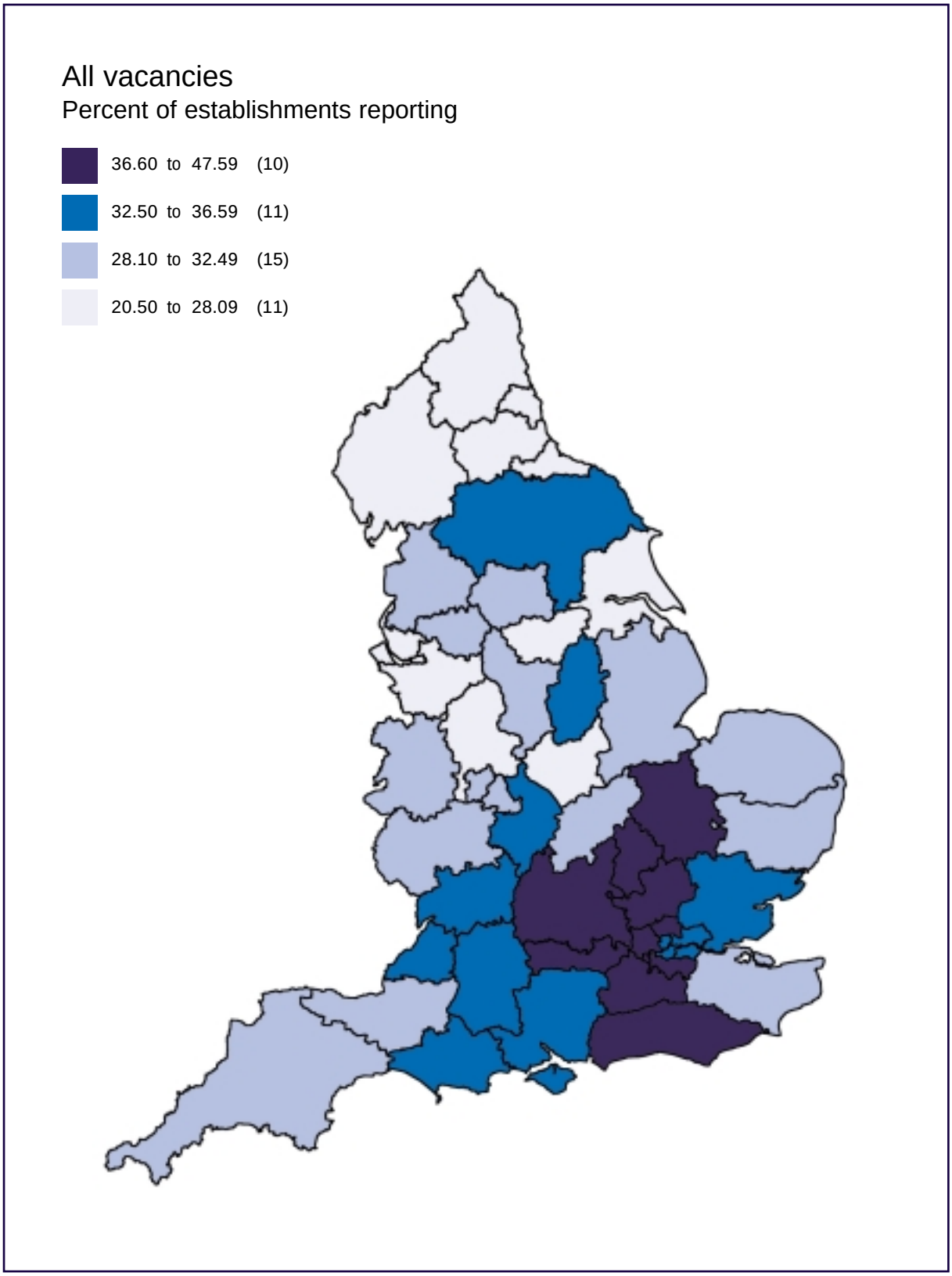
Source: ESS - weighted data.

Figure 2: Percentage of establishments reporting skill-shortage vacancies - LLSC areas



Source: ESS - weighted data.

Figure 3: Percentage of establishments reporting vacancies - LLSC areas



Source: ESS - weighted data.

Berkshire heads the list on all three measures - illustrating the economic buoyancy of the Thames Valley. Adjoining areas of West London, Surrey and Wiltshire & Swindon are also included towards the top of the rankings on all three measures in Table 3. Hertfordshire, East-West Sussex / Brighton & Hove, Hampshire / Isle of Wight / Portsmouth & Southampton and Oxfordshire / Milton Keynes & Buckinghamshire are also ranked consistently higher on the percentage of establishments with hard-to-fill and skill-shortage vacancies than on the 'all vacancies' indicator. A key feature on all three maps (Figures 1-3) is the:

- 'western crescent' around London - on the maps.
- 'Kent & Medway, Essex and East London tend to exhibit lower percentages of establishments reporting vacancies on all three measures than the areas of the 'Greater South East'[5] to the west of London.

Establishments reporting vacancies by geodemographic class

Table 4 provides an alternative perspective to the information on LLSCs in Table 3 by providing a ranking of the percentage of establishments by geodemographic class (as outlined in Section 2, [see also Wallace and Denham, 1996]) with:

(a) skill-shortage vacancies

(b) hard-to-fill vacancies

(c) all vacancies.

This Table confirms some of the key socio-economic divides that might be expected:

- The lower than average percentages of establishments reporting vacancies and skill-shortage vacancies in areas of Miners Terraces, Declining Resorts, Textile Towns Terraces, Remoter Coast & Country, Heavy Industry and areas with names suggesting a legacy of manufacturing industry, is indicative of low demand.
- By contrast, highest percentages of establishments reporting skill-shortage vacancies are found in those areas designated as Expanding Towns, Concentrations of Affluence, Inner London, Cosmopolitan London, Green Belt, Classic Commuters, etc. This is indicative of the possibility of 'overheating' and of continuing pressures for development in areas where there are likely to be strict planning restrictions (see Section 5).

Vacancies as a proportion of employees

As an alternative to the measures calculated on the basis of establishments, a measure of vacancy density was derived using the number of employees as the base - i.e. vacancies are expressed as a proportion of employees.

Table 5 ranks LLSC areas on the density of skill-shortage vacancies; (the ranking of LLSC areas on the percentage of establishments reporting skill-shortage vacancies is displayed alongside for comparison). Figure 4 displays the information on skill-shortage vacancies expressed as a percentage of employees, with LLSCs divided into quartiles.

5 The term 'Greater South East' is used in the economic geography literature to refer to those areas outside of the 'Rest of the South East' (ROSE) Standard Planning Region with strongest functional ties to London and ROSE. There is no single or 'official' definition of the 'Greater South East', but it is generally considered to encompass, at a minimum, Cambridgeshire, Northamptonshire, Coventry & Warwickshire, Wiltshire & Swindon and Bournemouth / Dorset / Poole, along with London and ROSE. Sometimes the term is used more broadly, to cover an even wider area - encompassing areas such as Gloucestershire, Hereford & Worcestershire, Leicestershire, Norfolk and Suffolk, etc.

Table 4: Ranking of geodemographic classes: percentage of establishments reporting vacancies

Geodemographic class	% with skill-sh. vacs	Geodemographic class	% with hard-to-fill vacs	Geodemographic class	% with vacs
Expanding Towns	12.3	Concentrations of affluence	22.7	Urban achievers	42.6
Concentrations of affluence	11.6	Urban achievers	22.1	Growth points	38.7
Inner London	10.7	Green Belt	20.6	Young Singles	38.4
Urban achievers	10.3	Expanding Towns	20.1	Concentrations of affluence	38.0
Cosmopolitan London	9.7	Accessible Countryside	19.8	Cosmopolitan London	36.6
Green Belt	9.7	Growth points	19.7	Classic Commuters	35.7
Classic Commuters	9.6	Transient populations	19.5	Inner London	34.5
London public housing	9.5	Classic Commuters	19.1	Green Belt	34.5
Young Singles	9.1	Inner London	19.1	Better off manufacturing	34.4
High rise housing	8.8	Better off retired	18.7	Outer suburbs	33.9
Transient populations	8.1	Cosmopolitan London	18.2	Expanding Towns	33.2
Remoter Retirement Areas	8.1	Young Singles	18.0	Retirement areas	33.1
Better off retired	8.0	Remoter Retirement Areas	18.0	London public housing	32.9
Leafier Suburbs	7.9	Better off manufacturing	17.9	Leafier Suburbs	32.9
Affluent villages	7.8	Established prosperity	17.8	Scottish inner city	32.8
Total	**7.7**	Outer suburbs	17.8	Low amenity housing	32.6
Industrial towns	7.5	Leafier Suburbs	17.8	Established prosperity	32.5
Ethnic groups in industry	7.4	Small towns	17.3	**Total**	**32.4**
Mixed economies	7.4	**Total**	**16.5**	Transient populations	32.2
Growth points	7.3	Town & Country	15.7	Accessible Countryside	32.2
Small towns	7.2	London public housing	15.5	Ethnic groups in industry	32.0
Edge of town	7.2	Agricultural heartland	15.4	Small towns	31.9
Accessible Countryside	7.1	Industrial towns	15.2	Declining Resorts	31.9
West Midland manufacturing	7.1	Industrial Margins	15.1	Better off retired	31.6
Traditional manufacturing	7.0	Remoter Coast and Country	14.9	Coastal very elderly	30.7
Outer suburbs	7.0	Affluent villages	14.5	Town & Country	30.3
Town & Country	7.0	Textile Towns Terraces	14.5	Affluent villages	29.7
Better off manufacturing	6.8	Ethnic groups in industry	14.4	Margins of deprivation	29.5
Welsh Coalfields	6.4	Edge of town	14.3	High rise housing	29.3
Agricultural heartland	6.1	Mixed economies	14.2	Industrial towns	29.1
Retirement areas	6.0	Retirement areas	14.2	Industrial Margins	28.7
Margins of deprivation	6.0	Primary production	14.1	Agricultural heartland	28.5
Established prosperity	6.0	Traditional manufacturing	13.9	Remoter Retirement Areas	28.4
Low amenity housing	5.9	West Midland manufacturing	13.8	Edge of town	28.0

Table 4: (continued) Ranking of geodemographic classes: percentage of establishments reporting vacancies

Geodemographic class	% with skill-sh. vacs	Geodemographic class	% with hard-to-fill vacs	Geodemographic class	% with vacs
Declining Resorts	5.7	Declining Resorts	13.4	West Midland manufacturing	27.7
Primary production	5.7	Coastal very elderly	13.2	Heavy Industry	27.5
Textile Towns Terraces	5.1	Welsh Coalfields	13.0	Textile Towns Terraces	27.4
Scottish inner city	4.9	Low amenity housing	12.8	Mixed economies	26.9
Heavy Industry	4.8	High rise housing	12.8	Scottish-Public Housing	26.7
Industrial Margins	4.5	Margins of deprivation	12.8	Traditional manufacturing	26.6
Remoter Coast and Country	3.9	Scottish-Public Housing	11.6	Primary production	25.0
Coastal very elderly	3.9	Heavy Industry	11.0	Welsh Coalfields	24.7
Scottish - Public Housing	3.5	Miners Terraces	10.3	Remoter Coast and Country	22.0
Miners Terraces	3.1	Scottish inner city	9.6	Miners Terraces	13.9

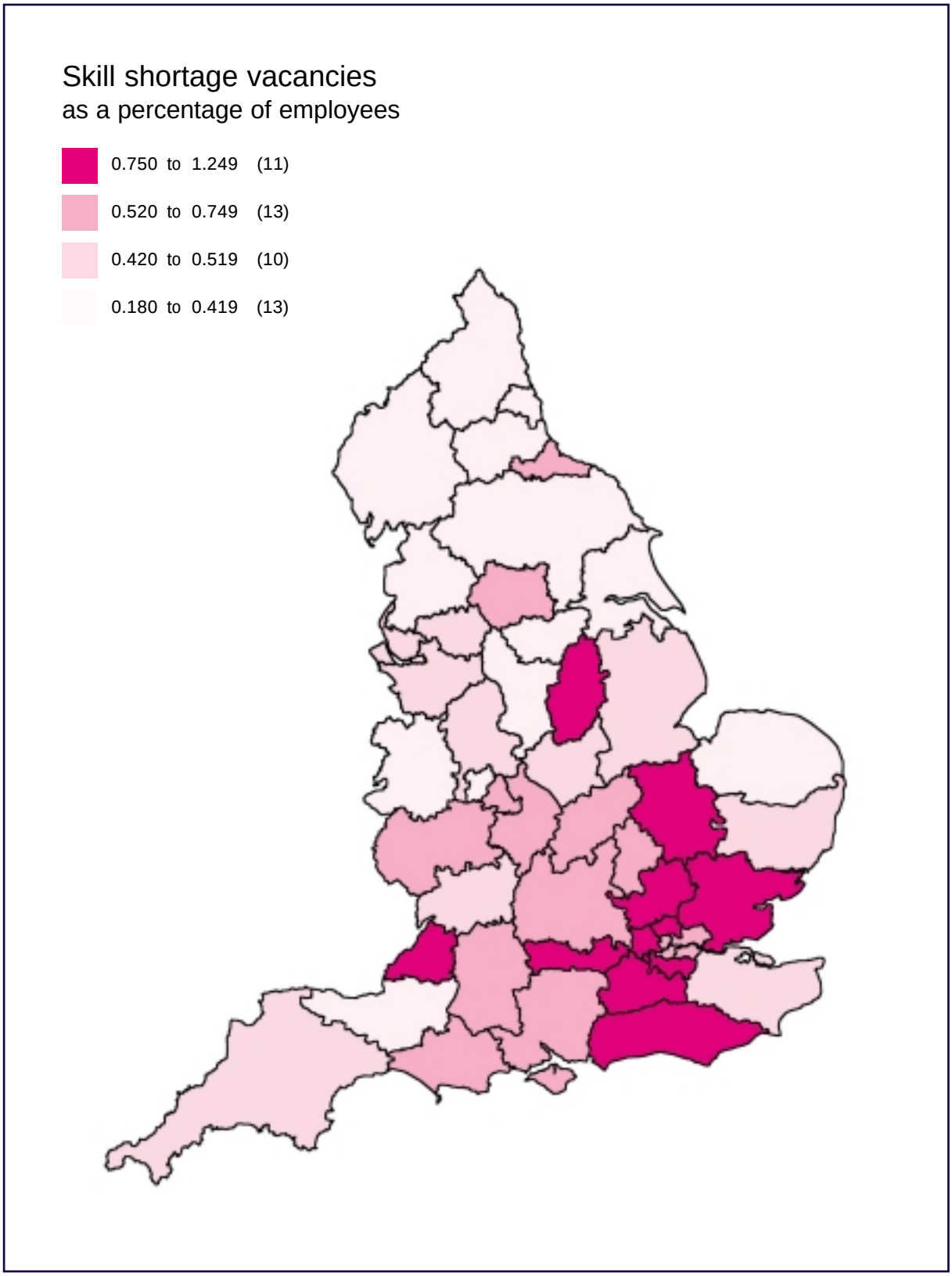
Source: ESS - weighted data.

Note: Since the geodemographic classification used was devised to cover Great Britain, rather than England, some class names have 'Welsh' or 'Scottish' in the title, indicating that many members are drawn from Wales or Scotland. However, some areas in England are included in these geodemographic classes.

Table 5: Ranking of LLSC areas: density of skill-shortage vacancies and percentage of establishments reporting skill-shortage vacancies

rank	Area - LLSCs	sk-sh. vacs. as % of employees	Area - LLSCs	% estabs. with. sk-sh vacs
1	Berkshire	1.2	Berkshire	16.1
2	E-W Sussex and Brighton & Hove	1.0	West London	12.2
3	West London	1.0	Hertfordshire	11.9
4	Hertfordshire	0.9	Surrey	11.1
5	North London	0.9	E-W Sussex and Brighton & Hove	10.3
6	Surrey	0.9	Wiltshire and Swindon	10.3
7	Cambridgeshire	0.9	Northamptonshire	10.2
8	Essex	0.8	Central London	10.1
9	Avon	0.8	North London	9.9
10	South London	0.8	Hampshire IoW Portsmouth & Soton	9.9
11	Nottinghamshire	0.8	Oxfordshire MK and Bucks	9.1
12	Northamptonshire	0.7	Avon	9.0
13	Central London	0.7	Cambridgeshire	9.0
14	Bedfordshire	0.6	Essex	9.0
15	Bournemouth Dorset and Poole	0.6	Coventry and Warwickshire	8.9
16	Wiltshire and Swindon	0.6	Nottinghamshire	8.7
17	Coventry and Warwickshire	0.6	South London	8.6
18	**Total**	**0.6**	**Total**	**7.7**
19	West Yorkshire	0.6	Herefordshire and Worcestershire	7.6
20	Birmingham and Solihull	0.6	Birmingham and Solihull	7.5
21	Tees Valley	0.6	Lincolnshire	7.4
22	Oxfordshire MK and Bucks	0.5	East London	7.4
23	Hampshire IoW Portsmouth & Soton	0.5	West Yorkshire	6.9
24	Herefordshire and Worcestershire	0.5	Kent and Medway	6.9
25	East London	0.5	The Black Country	6.8
26	Kent and Medway	0.5	Humberside	6.8
27	Gloucestershire	0.5	Devon and Cornwall	6.8
28	Devon and Cornwall	0.5	Suffolk	6.6
29	Staffordshire	0.5	Greater Manchester	6.4
30	Leicestershire	0.5	Leicestershire	6.3
31	Mersyside-Halton	0.4	North Yorkshire	6.3
32	Cheshire-Warrington	0.4	Somerset	6.2
33	Greater Manchester	0.4	Gloucestershire	6.2
34	Suffolk	0.4	Bedfordshire	6.2
35	Lincolnshire	0.4	Bournemouth Dorset and Poole	5.9
36	Humberside	0.4	Tees Valley	5.7
37	North Yorkshire	0.4	County Durham	5.6
38	Derbyshire	0.4	Mersyside-Halton	5.6
39	County Durham	0.4	Staffordshire	5.5
40	Somerset	0.4	Shropshire	5.5
41	Norfolk	0.4	Derbyshire	5.1
42	Tyne and Wear	0.4	Cheshire-Warrington	4.4
43	South Yorkshire	0.3	Tyne and Wear	4.4
44	The Black Country	0.3	South Yorkshire	4.1
45	Northumberland	0.3	Norfolk	4.0
46	Shropshire	0.3	Cumbria	3.9
47	Lancashire	0.3	Lancashire	3.2
48	Cumbria	0.2	Northumberland	1.3

Figure 4: Density of skill-shortage vacancies - LLSC areas



Source: ESS - weighted data.

A comparison shows that:

- Similar patterns of LLSC area variation in the incidence of skill-shortage vacancies are revealed whether employees (in the 'density' measure) or establishments is used as the base; (the correlation coefficient for the two data series is 0.87)[6].
- On both measures Berkshire LLSC appears at the top of the rankings, and Hertfordshire and West London are included in the 'top 4' LLSC areas on both measures.
- Some LLSC areas are ranked somewhat higher on the measure calculated using establishments than on the density one: Hampshire, the Isle of Wight, Portsmouth & Southampton and Oxfordshire, Milton Keynes & Buckinghamshire have above average values on the establishment measure but have slightly lower than average values on the density measure. Conversely, some areas are ranked higher on the employee density neasure than on the establishment-based skill-shortages measure: Bournemouth, Dorset & Poole and Tees Valley are examples.

Overall:

- The pattern of a greater concentration of skill-shortage vacancies in southern England is apparent on both measures. Taking the broad 'North'/'South' distinction defined in terms of aggregations of regions, skill-shortage vacancies account for 0.5 per cent of employees in the 'North' and 0.7 per cent of employees in the 'South', compared with 0.6 per cent across England as a whole.
- At the intra-regional level, the greater density of skill-shortage vacancies in the western part than in the eastern part of the south-eastern England is also evident.
- At the opposite end of the spectrum, South Yorkshire and much of north-east England, is characterised by a lower than average density of skill-shortage vacancies.

4.3 The relationships between skill-shortage vacancies, unemployment and employment growth at local level

Skill-shortage vacancies and the unemployment rate

An important policy question for skills development, and for local and regional economic development more generally, is:

Is there a negative and invariant relationship between the reporting of skill-shortage vacancies and unemployment?

In the first instance, in an attempt to answer this question, LLSC areas, TTWAs and UALADs were classified into 'high', 'medium' and 'low' unemployment categories. As far as possible, the divisions into 'high', 'medium' and 'low' categories were defined on the basis of 'natural breaks' in the unemployment rate distributions for the different geographical areas. For *TTWAs* and *UALADs* the categories were defined using the annual average claimant count unemployment rate 1999 with the following categories:

6 Some of the differences between the establishment- and employee-based measures may be explained by differences in the size structure of establishments between LLSC areas and differential reporting of skill-shortage vacancies in establishments of different sizes.

- low: 0.0-2.9%
- medium: 3.0-4.9%
- high: 5.0% and over

For LLSC areas 'low', 'medium' and 'high' unemployment rate categories were designated using the ILO unemployment rate from the 1998 LFS (this being the latest annual data available at local level at the time of writing) as follows:

- low: 0.0-4.9%
- medium: 5.0-6.9%
- high: 7.0% and over

Table 6 shows the percentage of establishments with:

(a) skill-shortage vacancies
(b) hard-to-fill vacancies
(c) all vacancies
by unemployment rate category.

Table 6: Percentage of establishments reporting vacancies by unemployment rate categories

Unemployment category	% with skill shortage vacancies	% with hard-to-fill vacancies	% reporting vacancies
LLSCs			
Low	8.5	18.8	34.9
Medium	7.2	15.7	30.7
High	7.4	14.0	30.9
TTWAs			
Low	9.3	20.1	35.9
Medium	7.6	16.0	32.7
High	6.1	13.2	27.4
UALADs			
Low	8.6	18.8	35.2
Medium	6.9	15.3	30.8
High	7.4	14.8	30.4
Total	**7.7**	**16.5**	**32.4**

Across LLSC areas, TTWAs and UALADs:

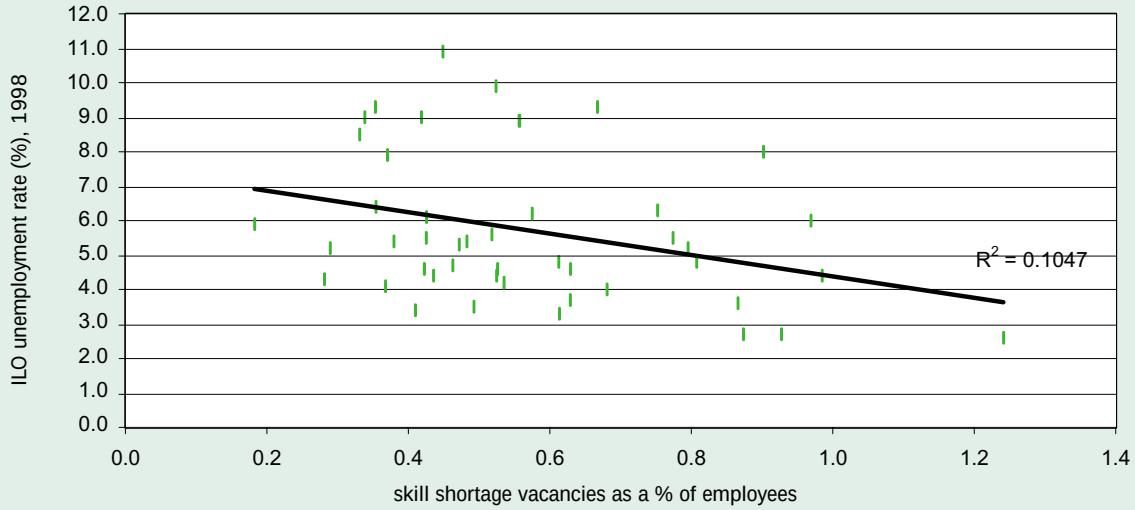
- a consistent pattern emerges of 'low' unemployment rate categories displaying higher than average percentages of establishments reporting all vacancy types identified (i.e. skill-shortage vacancies, hard-to-fill vacancies and total vacancies).

In the 'low' unemployment rate areas, unemployment rates are so low that they would indicate a situation of 'full employment'[7]

In the case of TTWAs, the higher the unemployment rate category, the lower the percentage of establishments reporting vacancies of each type. Categories designated using LLSCs and UALADs as the geographical base show no clear gradation between the 'high' and 'medium' unemployment rate categories.

Further insights into the relationship between the reporting of skill-shortage vacancies and unemployment may be gleaned from the scattergrams presented in Figures 5-10.

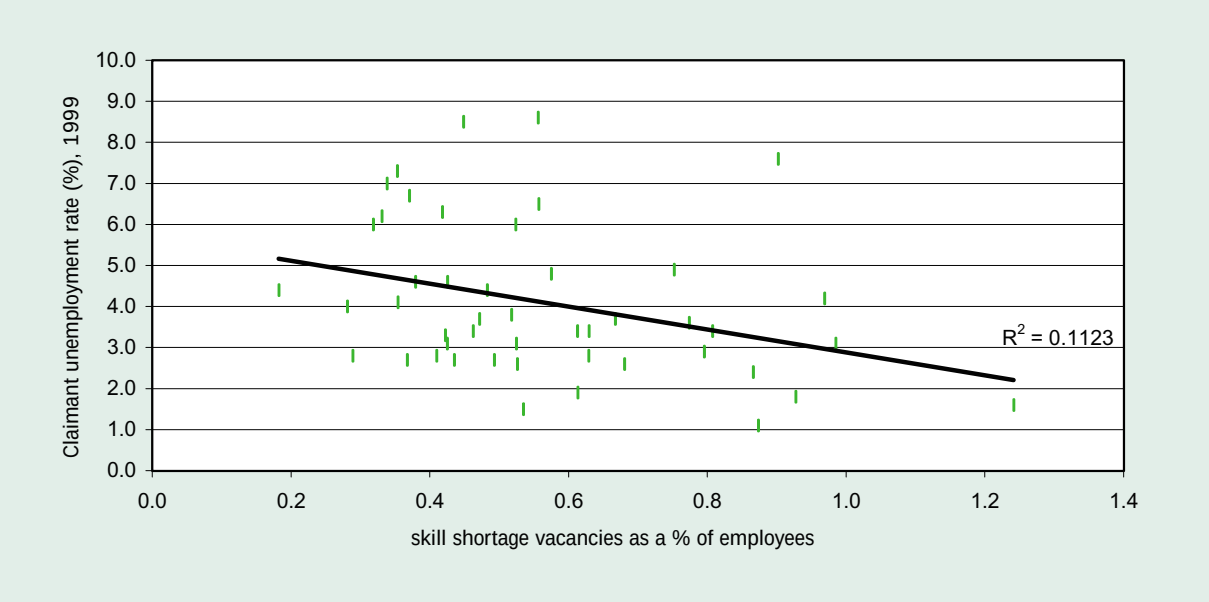
Figure 5: Relationship between the density of skill-shortage vacancies and the ILO unemployment rate, 1998 - LLSC areas



Note: This relationship is significant at the 5 per cent level.

7 Although it should be borne in mind that there have been ongoing debates about the measurement of unemployment, and that there is increasing recognition that unemployment is only a partial measure of non-employment.

Figure 6: Relationship between the density of skill-shortage vacancies and the claimant unemployment rate, 1999 - LLSC areas



Note: This relationship is significant at the 5 per cent level.

Figure 5 shows the relationship between the density of skill-shortage vacancies as a percentage of employees and the ILO unemployment rate for LLSC areas, while Figure 6 shows the relationship between the density of skill-shortage vacancies and the claimant count unemployment rate for LLSC areas. (The difference between the ILO unemployment rate and the claimant count unemployment rate is outlined in Box 1.)

Figure 7: Relationship between the percentage of establishments reporting skill shortage vacancies and the ILO unemployment rate, 1998 - LLSC areas

Note: This relationship is significant at the 5 per cent level.

Figure 8: Relationship between the percentage of establishments reporting skill shortage vacancies and the claimant unemployment rate, 1999 - LLSC areas

Note: This relationship is significant at the 5 per cent level.

Figures 7 and 8 show the relationship between the percentage of establishments reporting skill-shortage vacancies, and the ILO unemployment rate and the claimant count unemployment rate, respectively, for LLSC areas.

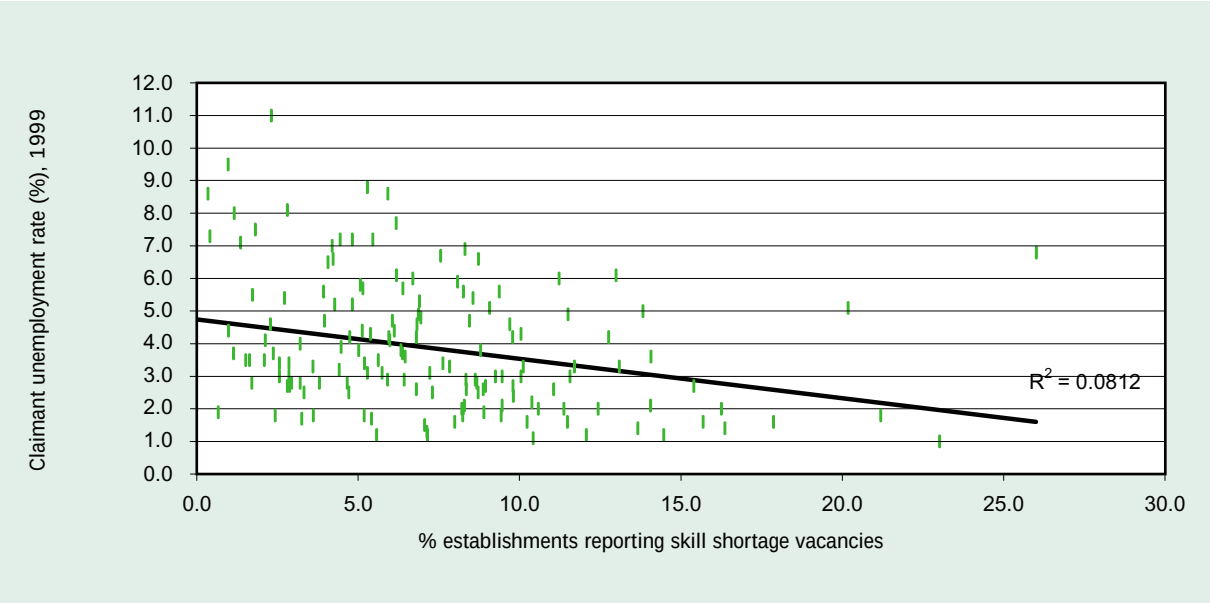
Box 1: Comparison of the ILO unemployment rate and the claimant count unemployment rate

- The *ILO unemployment rate* for LLSC areas is calculated on a residence-base [i.e. the denominator is the economically active resident in the area].
- The *claimant count unemployment rate* (calculated from JUVOS statistics) is calculated on a workplace-basis [i.e. using employment in an area as one of the main components in the denominator].

In general, there is a close association between these two unemployment rate measures at LLSC level, as indicated by a correlation coefficeint of 0.91. However, for some areas which are major centres of in-commuting (with Central London being a prime example), calculating unemployment rates on a workplace-basis tends to result in a 'dampening' of the unemployment rate relative to one calculated on a residence-base. For areas where the unemployment rates are different on the two measures, choice of the unemployment rate measure used has implications for the relationships obtained between the incidence of skill-shortage vacancies and the unemployment rate.

Figure 9 shows the relationship between the percentage of establishments reporting skill-shortage vacancies and the claimant count unemployment rate for TTWAs. The relationship is negative, but weak.[8]

Figure 9: Relationship between the percentage of establishments reporting skill shortage vacancies and the claimant unemployment rate, 1999 - TTWAs



Note: TTWAs where the unweighted number of establishments is less than 25 are excluded. In 45 cases the unweighted number of establishments is between 25 and 49. This relationship is significant at the 5% level.

The scattergrams in Figures 5-9 show that, as would be expected:

- the relationship between the incidence of skill-shortage vacancies and the unemployment rate is negative in all instances.

However, the relationship (as indicated by the R^2 coefficient) is relatively weak in all instances.

From a policy perspective, it is instructive to note the identity of some of the *'outliers'*; (see also Section 4.4 for a typology of LLSC areas). For example:

- while both Tyne & Wear and Central London share high ILO unemployment rates (9.3 per cent); in the former 4.4 per cent of establishments reported skill-shortage vacancies, compared with 10.1 per cent in the latter;
- North London, East London and West London also register relatively high percentages of establishments reporting skill-shortage vacancies (and similar patterns are evident on the density of skill-shortages measure), alongside relatively high unemployment rates;
- conversely, the LLSC with the highest ILO unemployment rate, Merseyside-Halton (10.9 per cent) has a relatively small percentage of establishments reporting skill-shortage vacancies (5.6 per cent).

8 In many instances, TTWAs are smaller (in terms of population and employment size) than LLSC areas, and the likelihood is that the establishments included in the ESS are less representative of total employment in the former than in the latter area types. Although TTWAs are defined in functional, whereas LLSC areas are based on administrative boundaries, sampling variations and associated sample representativeness issues may be one factor underlying the weaker relationship found for TTWAs than for LLSC areas.

A similar analysis was conducted using the long-term unemployment rate (defined as those unemployed for at least six months, according to claimant count data from JUVOS), on the basis that the long-term unemployment rate might better capture structural unemployment than the unemployment rate. Figure 10 shows the relationship between the percentage of establishments reporting skill-shortage vacancies and the long-term unemployment rate for LLSC areas.

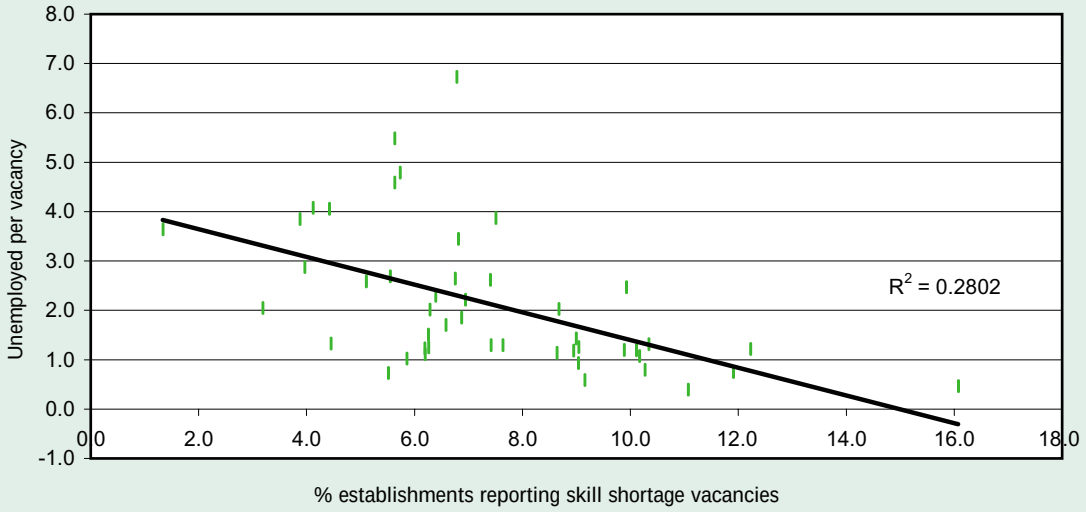
Figure 10: Relationship between the percentage of establishments reporting skill shortage vacancies and the long-term unemployment rate, 1999 - LLSC areas

Note: This relationship is significant at the 5 per cent level.

As for the unemployment rate (see Figure 8), the relationship is weak and negative. Indeed, the relationship is slightly weaker using the long-term unemployment rate than the unemployment rate.

Using ESS data it is possible to aggregate the (weighted) numbers of vacancies across establishments in each LLSC area. Using unemployment count information, it is possible to construct a measure of the number of unemployed per vacancy (i.e. JUVOS unemployment total / weighted total of vacancies from ESS data). Figure 11 shows the relationship between the percentage of establishments reporting skill-shortage vacancies and the number of unemployed per vacancy for LLSC areas.

Figure 11: Relationship between the percentage of establishments reporting skill shortage vacancies and the number of unemployed per vacancy, 1999 - LLSC areas



Note: This relationship is significant at the 2 per cent level.

The negative relationship (i.e. the higher the number of unemployed per vacancy in an area, the lower the proportion of establishments reporting skill-shortage vacancies) is stronger than those using the unemployment rate measure. This is indicative of a greater incidence of skill-shortage vacancies in 'tight' local labour market conditions.

Skill-shortage vacancies and employment change

Given that the relationship with the unemployment rate and the percentage of establishments reporting skill-shortage vacancies was in the expected direction (i.e. negative) but was rather weak, it was decided to explore the question:

Is there a positive and invariant relationship between the reporting of skill-shortage vacancies and recent employment growth?

Figure 12: Relationship between the percentage of establishments reporting skill shortage vacancies and the percentage change in employees, 1993-8 - LLSC areas

Note: This relationship is significant at the 1 per cent level.

Figure 13: Relationship between the percentage of establishments reporting skill shortage vacancies and the percentage change in employees, 1996-8 - LLSC areas

Note: This relationship is not significant.

In the first instance, change in employees was measured over a five-year period from 1993 to 1998, and secondly, change in employees over a shorter-time period, 1996 to 1998, was investigated. Ideally a period up to 1999 would have been selected but employment data from the 1999 Annual Business Inquiry (the replacement for the Annual Employment Survey from 1999) were not available at the time of writing. Instead, the data for employment are taken from the 1998 Annual Employment Survey and from the pre-cursor Census of Employment in some earlier years. The measure used is one of employees rather than total employment since the data source in question does not cover the self-employed. Figures 12 and 13 show the relationship between the percentage of establishments reporting skill-shortage vacancies and the percentage change in total employees between 1993 and 1998, and between 1996 and 1998, respectively, for LLSC areas.

As would be expected, the relationship (as indicated by the R^2 coefficient) is positive. This means that:

- in general, the larger the percentage increase in the number of employees over the period 1993 to 1998 (but to a much lesser extent over the period from 1996 to 1998), the higher the percentage of establishments reporting skill-shortage vacancies.

In the case of the 'change in total employees' measure for 1993 to 1998 the positive relationship with the percentage of establishments reporting skill-shortage vacancies, is stronger than the negative relationship with the ILO unemployment rate. However, the relationship with change in employees over the period from 1996 to 1998 is extremely weak. Even if an alternative data source (the Annual Labour Force Survey) is used for measuring change in employment over the period from 1996 to 1998, the relationship between the relationship remains extremely weak:

At a greater scale of spatial disaggregation, relationships between the percentage of establishments reporting skill-shortage vacancies and the percentage change in total employees between 1993 and 1998 for TTWAs or UALADs are weak and insignificant, and so are not reported here. Part of the reason for this may be some extreme values recorded on the percentage change in employees measure for some, particularly small, TTWAs and UALADs - probably due to a lack of robustness in the Census of Employment/Annual Employment Survey data.

4.4 A typology of LLSC areas

A typology of LLSC areas was developed, incorporating two dimensions:

- the density of skill-shortage vacancies
- expected density of skill-shortage vacancies on the basis of the ILO unemployment rate[9]

1st Dimension:

1) *higher* than England average density of skill-shortage vacancies (code 1)
2) *lower* than England average density of skill-shortage vacancies (code 2)

9 It would be possible to derive a similar typology on the basis of 'percentage of establishments reporting skill-shortage vacancies' (instead of the density of skill-shortage vacancies) and using the 'JUVOS unemployment rate (instead of the ILO unemployment rate). The grouping of LLSC areas into types would differ slightly on the basis of the classificatory variables used.

2nd Dimension:

a) *higher* than expected density of skill shortages on the basis of ILO unemployment rate - (code a)

b) *similar* to expected density of skill shortages on the basis of ILO unemployment rate - (code b)

c) *lower* than expected density of skill shortages on the basis of ILO unemployment rate - (code c)

Combining these two dimensions, a 6-fold categorisation is obtained, as outlined in Table 7. The LLSC areas in each of the 6 categories are listed in Table 8 and shown in Figure 14. (In Table 8 some of the 6 categories are further subdivided, in order to distinguish particular groups of LLSC areas within categories; for a mapping of these subdivisions see Appendix 5.)

Table 7: 6-fold categorisation of LLSC areas

Category	Density of skill-shortage vacancies	Whether density of skill-shortage vacancies greater / similar / lesser than expected on basis of ILO unemployment rate
1a	> average	> expected
1b	> average	similar to expected
1c	> average	< expected
2a	< average	> expected
2b	< average	similar to expected
2c	< average	< expected

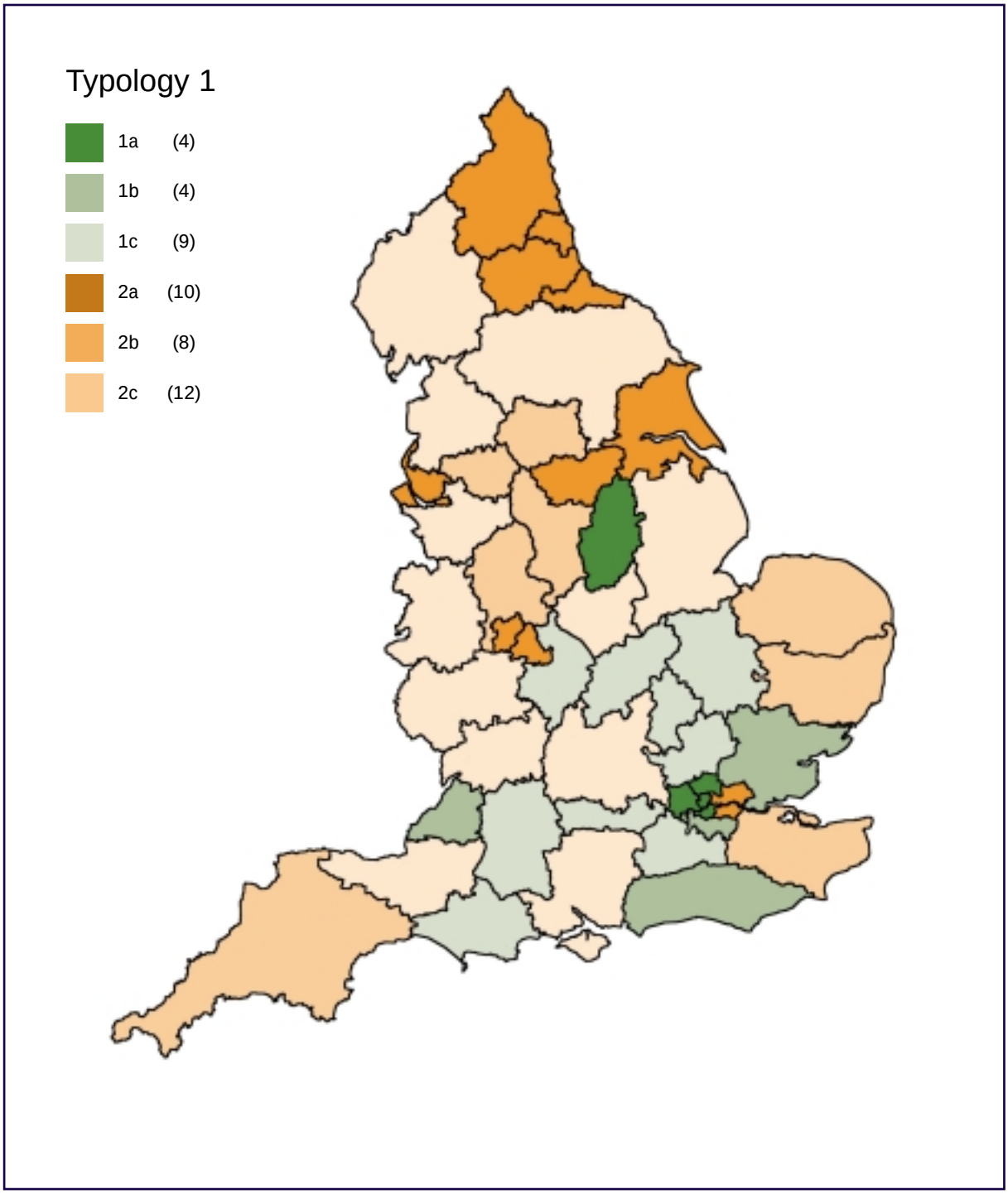
Table 8: Details of LLSC area typology

Category	Characteristics	LLSC area membership	Comments
1a	> average density of skill-shortage vacancies, > expected density of skill-shortage vacancies given unemployment rate	West London North London Nottinghamshire Central London	Category dominated by LLSC areas in London. Relatively high residence-based unemployment rates co-exist alongside a relatively high level of skill-shortage vacancies.
1b	> average density of skill-shortage vacancies, similar to expected density of skill-shortage vacancies given unemployment rate	E-W Sussex/ B'ton/Hove Essex Avon South London	All located in southern England. Three of the four areas are in or close to London (South London, Essex, Sussex). Avon contains Bristol - the largest urban area in southern England outside London.
1c	> average density of skill-shortage vacancies, < expected density of skill -shortage vacancies given unemployment rate	Berkshire Hertfordshire Surrey Cambridgeshire Northamptonshire Bedfordshire B'mouth, Dorset, Poole Wiltshire & Swindon Coventry & Warwicks	All LLSC areas in this category are located in the 'Greater South East' outside London. Generally low unemployment rates are indicative of a situation of 'full-employment'. It is possible to make a distinction between: ◊ the first 4 areas listed (category 1c1, Appendix 5) which have a much higher than average density of skill-shortage vacancies coupled with amongst the lowest unemployment rates in England, where labour and skill shortages appear to act as a constraint on further economic development ◊ the second five areas listed (category 1c2) which have a higher than average density of skill-shortage vacancies, but where the density is not so pronounced as in category 1c1.
2a	< average density of skill-shortage vacancies, > expected density of skill-shortage vacancies given unemployment rate	Birmingham & Solihull Tees Valley East London Merseyside-Halton Humberside Co. Durham Tyne & Wear South Yorkshire Black Country Northumberland	A distinctive group, overwhelmingly urban (including the metropolitan West Midlands and East London), containing all LLSC areas in the North East, together with other traditional high unemployment areas. In these areas, despite demand-deficiency, there is a higher than expected density of skill-shortage vacancies. It is possible to make a distinction between: ◊ the first 3 areas listed (category 2a1, Appendix 5) which have a density of skill-shortage vacancies only slightly lower than average

Table 8: Details of LLSC area typology
(continued)

Category	Characteristics	LLSC area membership	Comments
			◊ the second 7 areas listed (category 2a2) which have a density of skill-shortage vacancies considerably lower than average.
2b	< average density of skill-shortage vacancies, similar to expected density of skill-shortage vacancies given unemployment rate	West Yorkshire Kent & Medway Devon & Cornwall Staffordshire Greater Manchester Suffolk Derbyshire Norfolk	Includes some of the more peripheral areas in southern England (notably Devon & Cornwall, Norfolk and Suffolk), together with areas of the north Midlands and the Manchester and West Yorkshire conurbations, and Kent & Medway.
2c	< average density of skill-shortage vacancies, < expected density of skill-shortage vacancies given prevailing unemployment rate	Oxford/MK/Bucks Hants/IoW/ Portsm./Soton Hereford & Worcs Gloucestershire Leicestershire Cheshire / Warrington Lincolnshire North Yorkshire Somerset Shropshire Lancashire Cumbria	This is the largest and most diverse of the six categories. It is possible to make a distinction between: ◊ the first four areas (category 2c1, Appendix 5) where the density of skill-shortage vacancies is only slightly lower than average - two of these areas are located in the South East, and the other two are located in the 'Greater South East' ◊ the second five areas (category 2c2) where the density of skill-shortage vacancies is lower than average and unemployment rates tend to be lower than average ◊ the third three areas (category 2c3) with amongst the lowest densities of skill-shortage vacancies coupled with lower than average unemployment rates - these areas are mainly rural and peripheral in character.

Figure 14: Typology of LLSC areas



Note: For key to categories see Table 7.

From the typology outlined in Figure 14 and Table 8 a number of key spatial characteristics emerge (see Box 2). In general, these reinforce the points made in Section 4.2. Nevertheless, the typology is useful, particularly in its more detailed form, in distinguishing between LLSC areas with different relationships between the incidence of skill-shortage vacancies and the unemployment rate - as an indicator of labour market conditions.

Box 2: Key spatial characteristics evident from the typology of LLSC areas

- The majority of LLSC areas with a higher density of skill-shortage vacancies than the England average (categories 1a-1c) are located in southern England and southern Midlands (including the Northamptonshire and Coventry & Warwickshire LLSC areas). Nottinghamshire (category 1a), in the northern Midlands, is the main exception, and is the sole LLSC area in categories 1a-1c that is not contiguous to the main concentrations of LLSCs areas with higher than average densities of skill-shortage vacancies located to the south, west and north of London.
- Alongside this 'North-South divide', there are some important intra-regional variations in skill-shortage vacancies and unemployment.
- A tendency for many rural areas to be characterised by a lower than average, and lower than expected, incidence of skill-shortage vacancies, often combined with lower than average unemployment rates;
- A picture of a lower than average, and a greater than expected, incidence of skill-shortage vacancies in many large urban areas - particularly, in many northern cities, co-existing with higher than average unemployment rates; and finally
- London emerges as distinctive, in terms of displaying:
  - ◊ a generally higher than average incidence of skill-shortage vacancies - East London is the sole exception here, but, even so, the density of skill-shortage vacancies is only slightly lower than the national average,
  - ◊ a higher than expected density of skill-shortage vacancies, given the generally higher than average unemployment rates prevailing in the capital.

4.5 Occupational profile of vacancies

In order to gain some insights into the occupational profile of vacancies, measures of the percentage of vacancies in particular occupational groups were constructed at LLSC area level. Rather than use the full disaggregation available at the 9-fold SOC Major Group level, four groupings were devised, on the basis of both qualification levels associated with particular occupations, distribution of occupations by industry and the distribution of skill-shortage vacancies by occupation. The aim was to avoid classes containing very small numbers of skill-shortage vacancies. After some experimentation, the 4-fold grouping of occupations by broad qualification level outlined in Table 9 was judged most appropriate.

Table 9: Occupational groupings

Level[10]	SOC Major Groups
4	1: Managers & administrators 2: Professional occupations 3: Associate professional & technical occupations
3	4: Clerical & secretarial occupations 6: Personal & protective service occupations 7: Sales occupations
2	5: Craft & related workers
1	8: Plant & machine operatives 9: Other occupations

10 The ordering of occupations by broad qualification level is based in the convention of ascribing higher numbers to more advanced/higher level qualifications than to less advanced/lower level qualifications; (see also Elias and McKnight [2001, forthcoming]).

Table 10 shows the occupational profile of:

(a) skill-shortage vacancies

(b) hard-to-fill vacancies

(c) all vacancies

by LLSC area.

A general tendency is evident for:

- level 1 occupations (i.e. those associated with lower level qualifications) to account for a smaller percentage of skill-shortage vacancies than of total vacancies;
- conversely, level 2 occupations generally account for a higher percentage of skill-shortage vacancies than of total vacancies in most LLSC areas;
- approximately half of all vacancies are in level 3 occupations, but only a third of skill-shortage vacancies are at this level;
- level 4 occupations account for around a quarter of total vacancies and of hard-to-fill vacancies, but for a third of skill-shortage vacancies.

At LLSC area level the occupational profile of skill-shortage vacancies varies. To some extent, this reflects the differential occupational structure of employment at LLSC area level: as exemplified by the fact that level 4 occupations account for well over 40 per cent of skill-shortage vacancies in Central London, while in more rural areas, such as Devon and Cornwall and Lincolnshire, the percentages are lower. However, over and above variations in occupational structure, there are variations in the occupational profile of vacancies at LLSC area level.

In Table 11 skill-shortage vacancies are expressed as a percentage of total employment by occupation (i.e. a density measure) in each LLSC area. From Table 11 it is evident that:

- Berkshire displays the highest density of level 4 occupation skill-shortage vacancies of any LLSC area; with West London, Essex and Nottinghamshire registering the next highest percentages. The majority of LLSC areas with higher than average densities of such vacancies are in southern England, but exceptions include the Tees Valley and Cheshire-Warrington. Rural areas tend to display low densities of skill-shortage vacancies in such occupations; (in part reflecting the under-representation of such occupations relative to the national average in many rural areas).
- For level 3 occupations, the highest densities are again found in southern England: the rankings are headed by Berkshire, Cambridgeshire and Bournemouth Dorset and Poole. However, again there are exceptions: Merseyside-Halton, a high unemployment area, displays close to the England average densities on level 4 and level 3 occupations, although it has lower than average densities on level 1 and level 2 occupations.
- It is amongst level 2 occupations that skill-shortages are most prevalent. Skill-shortages appear most severe in London and the Home Counties; in North London, Bedforshire, East London, Surrey, Sussex, Nottinghamshire and West London skill-shortage vacancies account for more than 2 per cent of employment.
- Level 1 occupations are characterised by the lowest densities of skill-shortages. The highest values on the density measure are recorded in Sussex, South London and Avon.

Table 10: Occupational profile of vacancies by LLSC area

LLSC area	% skill-shortage vacs				% hard-to-fill vacs				% total vacancies			
	1	2	3	4	1	2	3	4	1	2	3	4
Cumbria	34.8	14.0	31.6	19.5	25.7	6.7	51.7	15.9	17.9	3.8	64.6	13.6
Merseyside-Halton	4.9	18.7	39.6	36.8	10.6	13.5	40.6	35.4	11.3	16.7	45.7	26.4
Lancashire	18.5	37.6	28.4	15.5	16.5	14.1	58.9	10.5	16.3	11.2	60.4	12.1
Cheshire-Warrington	13.2	27.0	12.3	47.5	20.4	16.0	31.8	31.8	18.9	10.1	49.9	21.1
Greater Manchester	9.6	26.1	37.1	27.3	22.2	17.5	38.6	21.8	19.3	9.5	49.7	21.5
Tyne and Wear	15.8	14.2	42.1	28.0	16.6	7.1	44.3	32.0	13.3	3.8	55.6	27.4
County Durham	20.5	7.6	55.9	16.0	22.1	14.8	47.3	15.8	19.1	11.1	48.1	21.6
Tees Valley	31.5	20.8	12.0	35.7	28.2	15.0	25.4	31.3	25.1	8.8	43.5	22.6
Northumberland	9.4	13.8	0.0	76.7	8.1	22.4	19.1	50.4	16.0	13.7	36.5	33.8
Birmingham and Solihull	9.0	32.2	23.6	35.3	17.6	22.0	32.1	28.3	13.5	9.6	49.9	27.0
Staffordshire	15.2	32.9	25.7	26.2	24.2	17.7	40.6	17.5	25.3	9.3	45.7	19.7
Shropshire	51.3	14.3	16.9	17.5	39.7	3.4	51.2	5.7	28.2	2.9	57.3	11.6
Herefordshire and Worcestershire	18.9	28.6	29.1	23.4	16.2	12.7	45.8	25.3	17.5	6.2	50.5	25.8
The Black Country	27.7	23.6	28.0	20.7	26.9	12.3	32.0	28.8	20.6	9.2	50.8	19.4
Coventry and Warwickshire	30.9	10.7	48.5	9.9	29.8	6.5	56.0	7.7	20.5	7.9	61.5	10.1
North Yorkshire	21.4	10.9	44.4	23.3	24.5	6.5	51.8	17.2	15.7	4.6	59.8	19.8
South Yorkshire	21.6	22.0	17.7	38.7	14.5	18.7	40.6	26.2	18.2	19.1	43.2	19.5
West Yorkshire	6.6	22.2	48.6	22.6	11.1	17.1	52.9	18.9	13.0	13.3	55.4	18.3
Humberside	8.9	45.6	33.9	11.7	33.0	20.2	36.4	10.4	26.1	15.9	39.1	18.9
Lincolnshire	21.4	42.7	21.8	14.1	26.4	22.9	30.1	20.6	48.1	7.6	25.2	19.1
Northamptonshire	22.1	7.7	31.1	39.1	32.3	5.4	39.5	22.8	26.6	5.5	50.4	17.5
Leicestershire	22.2	35.0	20.5	22.4	25.6	28.3	29.4	16.7	25.5	14.3	41.0	19.2
Derbyshire	30.0	11.3	35.8	22.9	31.6	21.2	34.7	12.5	34.0	11.2	42.1	12.6
Nottinghamshire	3.0	34.3	13.2	49.4	14.5	23.5	26.1	35.9	14.2	12.8	48.8	24.3
Bedfordshire	8.9	64.7	6.9	19.5	8.3	29.7	48.2	13.9	13.5	13.4	49.2	23.8
Essex	12.3	16.0	21.3	50.3	20.4	12.3	37.0	30.2	16.9	7.7	46.7	28.7
Cambridgeshire	20.3	11.2	41.8	26.7	22.6	7.7	52.6	17.1	19.2	6.3	54.5	20.1
Hertfordshire	16.4	15.7	36.3	31.5	19.8	10.0	46.5	23.7	17.4	7.2	50.6	24.7
Norfolk	4.7	44.4	30.0	20.9	11.9	31.7	42.1	14.3	15.1	14.8	48.8	21.3
Suffolk	11.7	32.7	33.0	22.6	30.3	14.4	35.7	19.5	25.2	8.1	48.9	17.8
Central London	4.8	11.2	38.3	45.8	9.6	8.5	44.1	37.8	9.2	4.5	49.3	37.0
North London	6.3	31.8	31.4	30.5	7.5	20.8	48.1	23.6	11.1	10.6	54.5	23.7
East London	5.3	30.6	30.7	33.5	22.8	16.6	28.0	32.5	14.1	7.9	39.2	38.7
West London	5.0	14.6	37.8	42.6	26.6	9.1	39.0	25.3	22.2	6.4	48.3	23.1
South London	18.4	4.9	42.0	34.7	19.5	5.4	43.4	31.7	10.6	2.5	38.4	48.5
Surrey	6.5	20.3	40.5	32.7	19.2	13.2	45.7	21.9	15.7	8.1	54.5	21.7
E-W Sussex and Brighton & Hove	20.0	19.9	29.9	30.2	25.6	11.3	44.5	18.6	21.3	8.0	50.9	19.8
Oxfordshire Milton Keynes Bucks	3.6	17.8	43.8	34.8	18.1	10.8	49.0	22.0	16.8	6.0	45.9	31.3
Kent and Medway	16.6	15.7	41.3	26.5	21.2	16.5	40.0	22.4	22.4	11.3	45.5	20.8
Hampshire IoW Portsmouth Soton	25.6	8.0	36.6	29.8	25.9	5.3	43.6	25.2	18.7	5.2	54.6	21.6
Berkshire	11.2	10.1	37.4	41.2	14.3	6.6	57.3	21.8	14.3	7.5	58.4	19.8
Devon and Cornwall	20.0	20.4	43.4	16.1	35.6	9.5	42.6	12.4	24.7	6.0	52.5	16.7
Somerset	19.9	36.1	11.3	32.6	21.0	45.7	20.4	12.9	26.0	23.2	35.1	15.6
Gloucestershire	9.9	23.3	21.5	45.3	36.2	12.6	30.0	21.3	24.8	7.9	49.3	18.0
Bournemouth Dorset and Poole	14.5	14.6	64.3	6.6	12.0	12.2	64.2	11.6	8.9	6.0	73.8	11.3
Wiltshire and Swindon	7.9	26.5	25.3	40.4	22.2	12.6	40.1	25.1	19.4	12.3	39.5	28.8
Avon	22.9	11.0	25.3	40.7	25.9	10.9	40.1	23.1	18.4	6.5	54.8	20.4
Total	13.2	20.3	33.8	32.8	20.9	13.1	42.7	23.2	17.8	8.4	49.7	24.1

Table 11: Skill-shortage vacancies as a percentage of employment by occupation by LLSC area

Area - LLSCs (by region)		Level 1	Level 2	Level 3	Level 4
North West	Cumbria	0.3	0.2	0.2	0.1
	Merseyside-Halton	0.1	0.9	0.5	0.5
	Lancashire	0.2	1.0	0.2	0.1
	Cheshire-Warrington	0.3	1.3	0.2	0.6
	Greater Manchester	0.2	1.2	0.5	0.3
North East	Tyne and Wear	0.3	0.4	0.4	0.3
	County Durham	0.3	0.2	0.7	0.2
	Tees Valley	0.6	1.1	0.2	0.7
	Northumberland	0.1	0.3	0.0	0.7
West Midlands	Birmingham and Solihull	0.3	1.8	0.4	0.5
	Staffordshire	0.3	1.3	0.4	0.4
	Shropshire	0.6	0.7	0.1	0.1
	Herefordshire and Worcestershire	0.4	1.4	0.5	0.4
	The Black Country	0.4	0.7	0.3	0.2
	Coventry and Warwickshire	0.9	0.6	0.8	0.2
Yorks. & Humber	North Yorkshire	0.5	0.5	0.5	0.3
	South Yorkshire	0.3	0.8	0.2	0.4
	West Yorkshire	0.2	1.2	0.8	0.4
	Humberside	0.1	1.6	0.5	0.2
East Midlands	Lincolnshire	0.3	1.8	0.3	0.2
	Northamptonshire	0.5	0.5	0.7	0.8
	Leicestershire	0.4	1.3	0.3	0.3
	Derbyshire	0.5	0.4	0.4	0.3
	Nottinghamshire	0.1	2.4	0.3	1.0
Eastern	Bedfordshire	0.3	4.5	0.1	0.4
	Essex	0.6	1.5	0.5	1.1
	Cambridgeshire	0.9	1.0	1.1	0.6
	Hertfordshire	0.9	1.8	0.9	0.8
	Norfolk	0.1	1.3	0.3	0.2
	Suffolk	0.2	1.5	0.4	0.3
London	Central London	0.4	1.5	0.7	0.6
	North London	0.3	4.5	0.7	0.7
	East London	0.2	3.1	0.4	0.4
	West London	0.3	2.2	1.0	1.1
	South London	1.1	0.5	0.9	0.6
South East	Surrey	0.4	2.6	0.9	0.7
	East-West Sussex and Brighton & Hove	1.3	2.4	0.8	0.8
	Oxfordshire Milton Keynes and Bucks	0.1	1.1	0.7	0.5
	Kent and Medway	0.4	0.9	0.6	0.4
	Hants. I. of Wight Portsmouth & So'ton	0.8	0.4	0.6	0.4
	Berkshire	0.9	1.7	1.2	1.3
South West	Devon and Cornwall	0.5	0.9	0.6	0.2
	Somerset	0.3	1.2	0.1	0.4
	Gloucestershire	0.2	1.2	0.3	0.6
	Bournemouth Dorset and Poole	0.6	1.1	1.1	0.1
	Wiltshire and Swindon	0.2	1.4	0.5	0.7
	Avon	1.1	1.0	0.6	0.8
Total		**0.4**	**1.3**	**0.6**	**0.5**

4.6 Reasons for vacancies

The ESS 1999 data set records reasons for skill-shortage and hard-to-fill vacancies. A list of these reasons is presented in Box 3.

Box 3: Reasons for skill-shortage and hard-to-fill vacancies

- too much competition
- not enough people interested
- company does not pay enough
- low number of applicants with skills
- low number of applicants with motivation
- low number of applicants generally
- lack of work experience
- lack of qualifications
- company location
- irregular hours
- unattractive conditions of work
- other
- DK/NS

Since a relatively large number of reasons are identified, information is not presented here for individual LLSC areas. Instead, Figure 15 shows the percentages of establishments[11] reporting different reasons for skill-shortage vacancies in 'high', 'medium' and 'low' unemployment rate areas (defined using the 'unemployment rate' categorisation outlined in Section 4.3). Figure 16 displays similar information for hard-to-fill vacancies[12].

Figures 15 and 16 show that across all 'unemployment rate categories', the most important single reason given for both skill-shortage vacancies and hard-to-fill vacancies, but especially the former, was a 'low number of applicants with skills'. In general, the reasons forthcoming to explain hard-to-fill and skill-shortage vacancies were similar across 'low', 'medium' and 'high' unemployment rate areas.

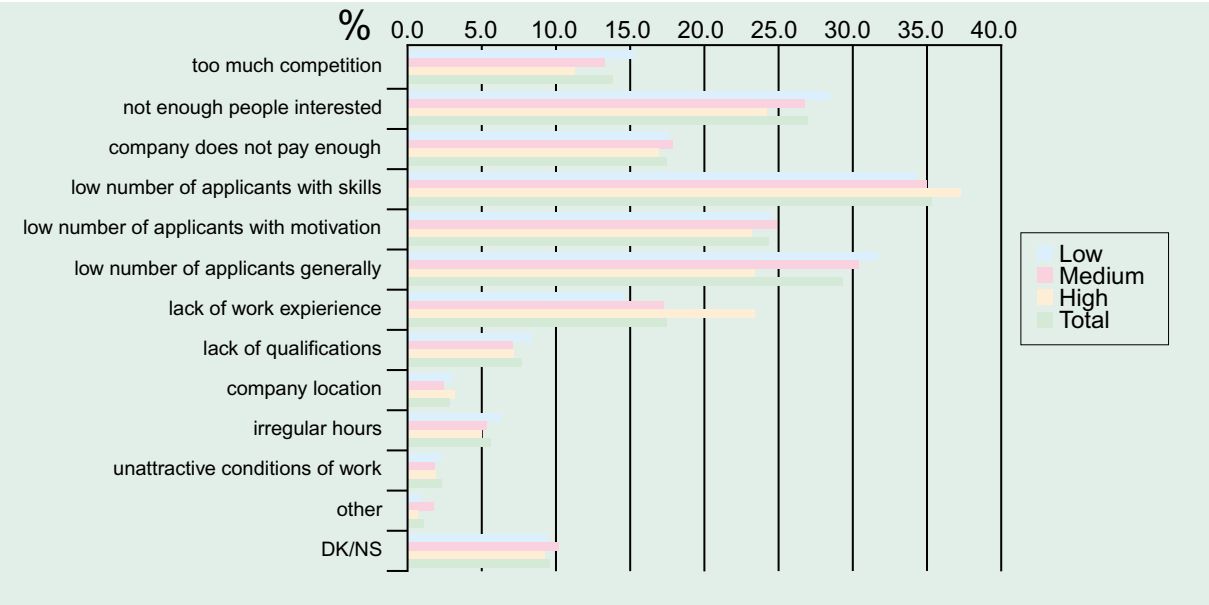
The most notable difference between area types, however, is perhaps the greater propensity for a 'lack of work experience' to be offered as a reason in 'high' unemployment areas than elsewhere; especially compared with 'low' unemployment rate areas. This suggests that periods out of the labour market may be a particular problem in such areas. At the level of individual LLSC areas, approximately half of establishments in Central London, North London, Central London and Merseyside-Halton, cited 'lack of work experience' as a reason for skill-shortage vacancies, compared with less than a third in areas with the greatest proportions of establishments reporting skill-shortage vacancies.

11 The base for this information on skill-shortage vacancies is all establishments with skill-shortage vacancies. In the ESS 1999 establishments were asked for each occupational group for which they had skill-shortage vacancies the causes of these vacancies. Here, these occupational responses have been collapsed into an establishment response, rather than distinguishing different reasons for skill-shortage vacancies in different occupations. For example, if an establishment reported "too much competition" as a cause for skill-shortage vacancies in at least one occupation, the establishment is recorded as reporting "too much competition" as a cause of skill-shortage vacancies.

12 The base for this information on hard-to-fill vacancies is all establishments with hard-to-fill vacancies.

Figure 15: Reasons for skill-shortage vacancies in low, medium and high unemployment rate areas

Figure 16: Reasons for hard-to-fill vacancies in low, medium and high unemployment rate areas



Similarly, in 'high' unemployment areas, 'too much competition' and 'not enough people interested' were reasons forwarded by a lower proportion of establishments than in 'low' unemployment rate areas.

4.7 Spatial distribution of skill gaps

As outlined in Section 4.1, a 'skill gap' occurs when employers perceive their employees' current skills as insufficient to meet current business objectives. Here, two measures of internal skill gaps are used:

- an *establishment based* measure providing an estimate of the number of establishments reporting that not 'all' or 'nearly all' existing staff were fully proficient in any occupation
- an *employee based* measure (analogous to the 'density' measure in Section 4.2) providing an estimate of the number of employees who are less than fully proficient; (this is based on applying estimates of the proportions of employment in each occupational category regarded as less than fully proficient and summing over all occupations).

(For further details of the operationalisation of these measures see Bosworth et al., 2000).

Table 12 ranks LLSC areas first on the percentage of establishments reporting a skill gap, and secondly on skill gaps as a percentage of employees. Figures 17 and 18 display this information in map form, with LLSCs grouped into quartiles.

A comparison of the rankings and the two maps shows somewhat less correspondence on the establishment-based and employee-based skill gaps measures than on the establishment-based and density measures of skill-shortage vacancies. Some LLSC areas, including a 'block' of areas in the 'Western Crescent' (Berkshire, Wiltshire & Swindon, West London, South London, Surrey and Oxfordshire/Milton Keynes/ Buckinghamshire), along with Cambridgeshire, are ranked in the top quartile on both skill gaps indicators.

However, in other LLSC areas there is a greater difference in the rankings. For instance, Hertfordshire is ranked in the top quartile on the employee based skill gaps measure but has a slightly lower than average proportion of establishments reporting skill gaps. Conversely, East-West Sussex/ Brighton/Hove is ranked fourth on the establishment-based measure but has only slightly higher than average score on the employee-based measure. In the West Midlands, Coventry & Warwickshire displays a slighlty higher than average percentage of establishments reporting skill gaps, but is in the lowest quartile on the employee-based measure, while Birmingham/Solihull is in the top quartile on the establishment-based measure but has a lower than average score on the employee-based measure.

Overall, taking both skill gap measures into account, there is again some evidence for a 'North-South divide':

- the majority of LLSC areas in the highest quartile (i.e. with the highest percentages of establishments reporting skill gaps) are located south of a line from the Severn to the Wash
- the majority of the LLSC areas in the lowest quartile (i.e. with the lowest percentages of establishments reporting skill gaps) are located in northern England and the Midlands - but there are some notable exceptions, such as Avon and East London.

There are also important intra-regional differences - most notably:

- the greater preponderance of skill gaps in the western part of south-eastern England, as noted above (particularly apparent in Figure 18), with East London and Essex displaying a lower incidence of skill gaps than adjacent areas.

Table 12: Ranking of LLSC areas on (a) percentage of establishments reporting skill gaps and (b) skill gaps as a percentage of employees

Area - LLSCs	% estabs with skill gap	Area - LLSCs	skill gaps as % employees
Berkshire	26.1	Wiltshire and Swindon	7.9
West London	25.2	Berkshire	7.2
Cambridgeshire	25.0	Bedfordshire	6.9
E-W Sussex, Brighton & Hove	24.9	Surrey	6.6
Surrey	24.6	Hertfordshire	6.2
Oxfordshire, MK and Bucks	24.2	South London	6.2
South London	23.7	West London	6.1
Suffolk	23.6	Oxfordshire, MK and Bucks	5.9
North London	22.3	Lancashire	5.7
Wiltshire and Swindon	22.2	Cambridgeshire	5.6
Birmingham and Solihull	22.2	Derbyshire	5.4
Gloucestershire	22.1	Nottinghamshire	5.4
Central London	22.0	North London	5.4
Kent and Medway	21.1	Gloucestershire	5.4
Mersyside-Halton	20.7	South Yorkshire	5.4
Cheshire-Warrington	20.7	Suffolk	5.1
Coventry and Warwickshire	20.6	Lincolnshire	5.1
Herefordshire and Worcestershire	20.4	Kent and Medway	5.1
Nottinghamshire	20.3	E-W Sussex, Brighton & Hove	5.0
Total	**20.0**	Central London	5.0
Bedfordshire	19.8	Northamptonshire	4.9
Hertfordshire	19.6	**Total**	**4.9**
Derbyshire	19.4	Shropshire	4.8
Hants IoW Portsmouth, Soton	19.3	Cheshire-Warrington	4.8
Greater Manchester	19.2	Herefordshire and Worcestershire	4.7
Devon and Cornwall	18.6	Staffordshire	4.7
West Yorkshire	18.3	Birmingham and Solihull	4.7
County Durham	18.2	Somerset	4.5
Lancashire	18.1	Greater Manchester	4.5
South Yorkshire	18.1	Essex	4.5
Bournemouth Dorset and Poole	17.7	Norfolk	4.4
The Black Country	17.5	Hants IoW Portsmouth, Soton	4.3
Northamptonshire	17.0	Devon and Cornwall	4.3
Essex	16.9	North West	4.3
Tees Valley	16.7	Bournemouth Dorset and Poole	4.3
Leicestershire	16.6	Mersyside-Halton	4.2
East London	16.5	Leicestershire	4.2
North Yorkshire	16.4	West Yorkshire	4.2
Staffordshire	16.3	The Black Country	4.2
Tyne and Wear	16.2	East London	4.2
Avon	15.5	North Yorkshire	4.0
Lincolnshire	15.0	Coventry and Warwickshire	4.0
Norfolk	14.6	Avon	3.9
Humberside	14.6	Tyne and Wear	3.8
Cumbria	14.4	Humberside	3.8
Northumberland	13.9	Tees Valley	3.6
Somerset	13.8	Northumberland	2.9
Shropshire	11.5	County Durham	2.9

Source: ESS - weighted data.

Figure 17: Percentage of establishments reporting skill gaps - LLSC areas

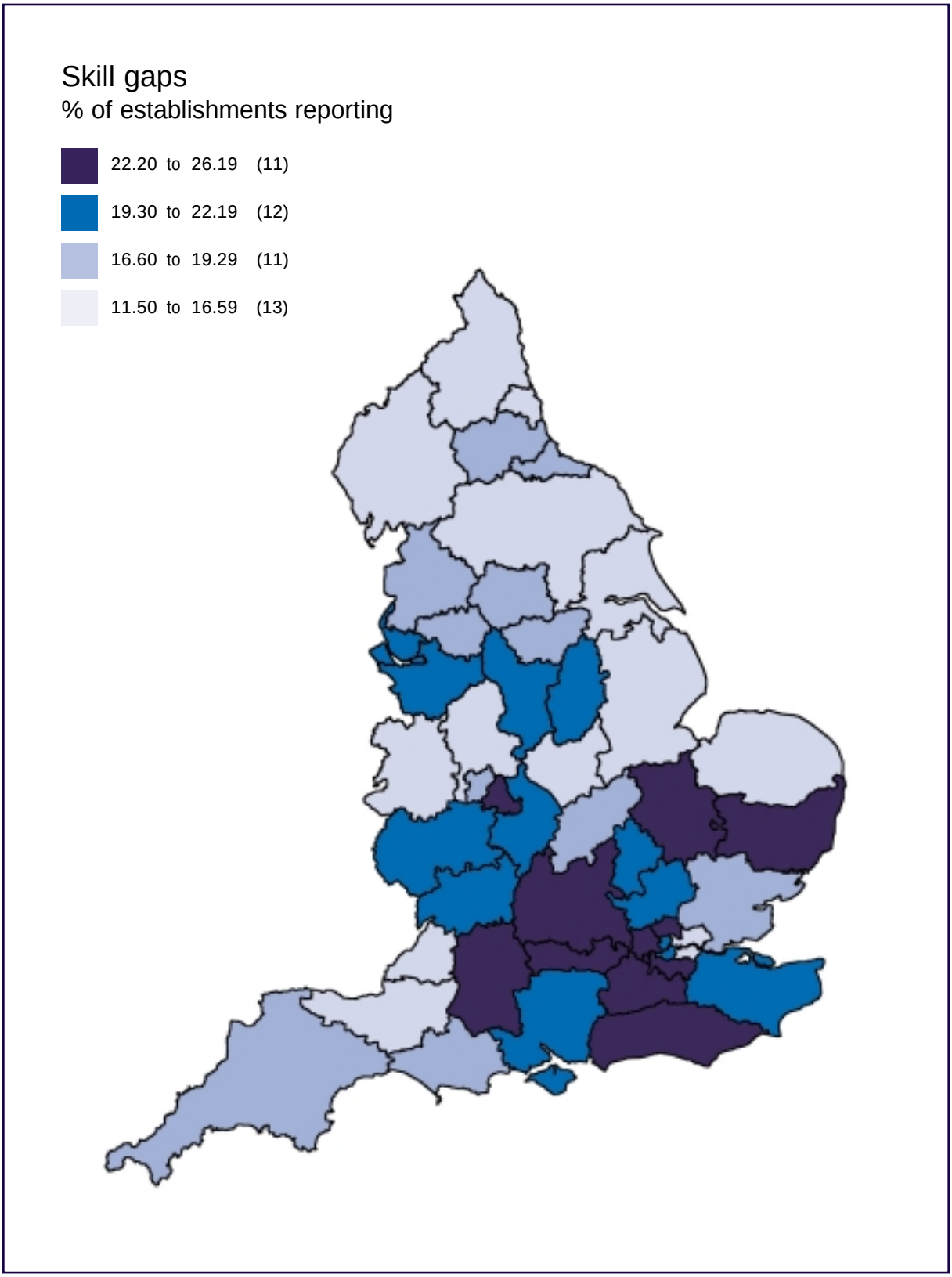
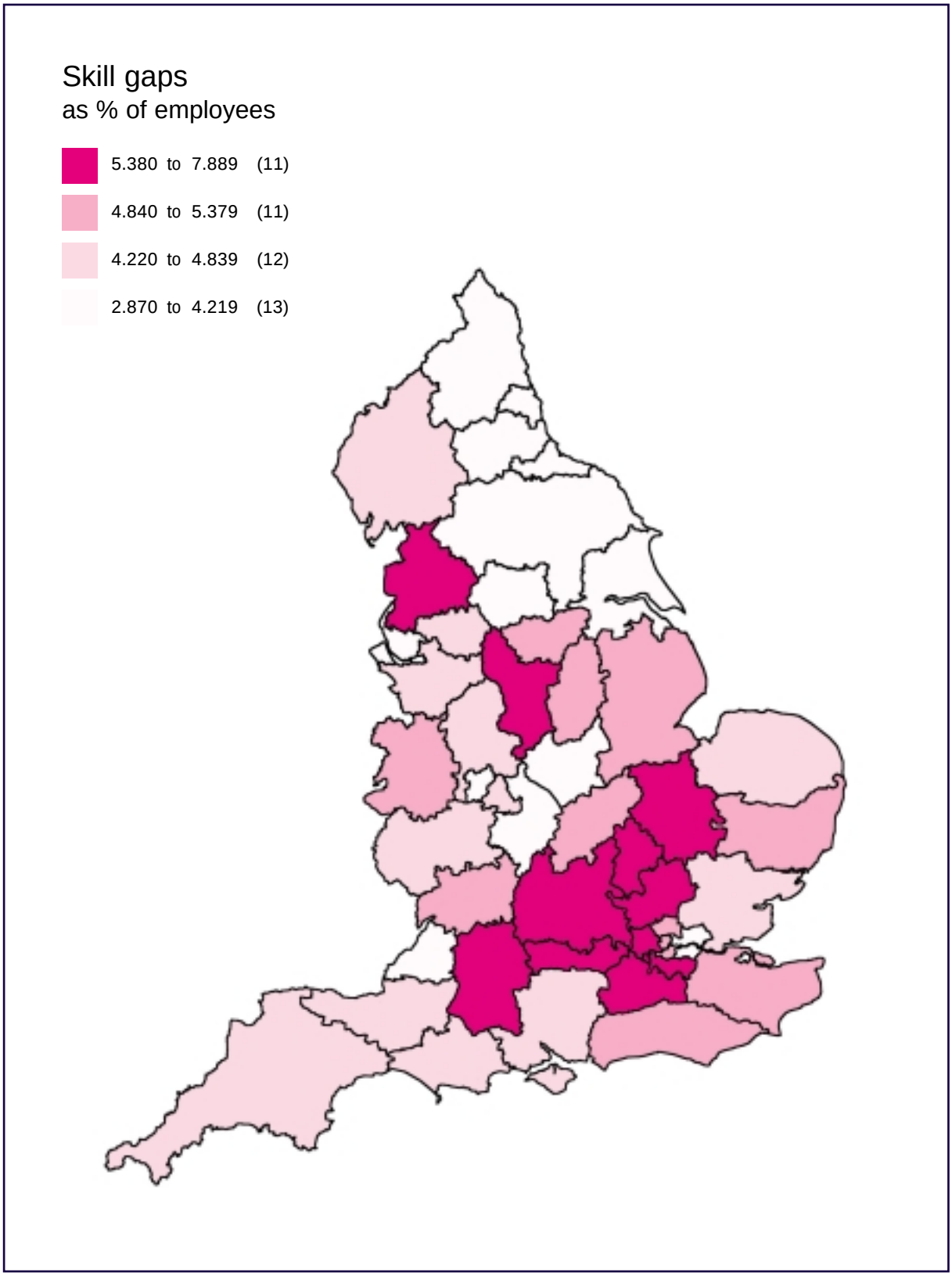


Figure 18: Skill gaps as a percentage of employees - LLSC areas



Some high unemployment rate areas, notably South Yorkshire, are ranked higher on the indicators of skill gaps in Table 12, than on the analogous measures of external skill shortages. Other high unemployment rate areas, such as Tyne & Wear, display a low rank on skill gaps indicators, as on skill-shortage vacancies.

5. Conclusions and Issues

Skill deficiencies at regional and local level

It is clear from the analyses presented in this report that there are important regional and local variations in the scale of skill deficiencies. At a broad regional level, the incidence of skill deficiencies is greater in the 'South' than the 'North'. Analyses at a more detailed geographical scale reveal that many localities in southern England tend to record a higher than average incidence of both skill-shortage vacancies and skill gaps. However, the pattern is more complex than this, since most regions also contain areas in which the incidence of skill shortages is both relatively high and relatively low. Only in the North East is there a relatively uniform pattern of a lower than average incidence of skill deficiencies.

The analyses confirmed the *a priori* expectations of a negative relationship between skill deficiencies and the unemployment rate, and a positive relationship between skill-shortage vacancies and the rate of recent employment growth. However, these relationships are relatively weak.

Local areas with the highest incidence of skill deficiencies

The ESS 1999 analyses suggest that in many areas in south-eastern England - particularly those in a 'Western Crescent' to the west, north and south of London, and most notably in the Thames Valley - skill deficiencies are fairly widespread. Such deficiencies are evident not only in skill-shortage vacancies, but also in a higher than average incidence of internal skill gaps. There is a block of contiguous LLSC areas, including Wiltshire & Swindon, Berkshire, Oxfordshire/Milton Keynes/Buckinghamshire, West London, South London and Surrey, with a particularly high incidence of skill gaps relative to other areas. Multivariate analyses reported in Bosworth et al. (2001) confirm that this higher than average incidence of skill deficiencies remains evident once local differences in employment structure and local labour market conditions are taken into account. These deficiencies are evident not only in higher level occupational groups, but also for craft & related workers and in occupations generally associated with lower levels of skill. There is evidence that skill deficiencies can have adverse effects on businesses and the development of local and regional economies in terms of output, productivity, operating costs, innovation and employment (Haskel and Holt, 1999; Blake et al., 2000; Bosworth et al., 2000; Hogarth and Wilson (2001). This raises issues about how balanced development, both within, and also between, regions can be achieved.

Skill deficiencies and unemployment in London

Analyses of the ESS 1999 data have revealed the distinctiveness of London, relative to other parts of England. The capital displays a generally higher than average incidence of skill-shortage vacancies. Reference has been made to the existence of 'west-east' intra-regional differentials within the 'Greater South East', and it is salient to note that a similar 'west-east' contrast was found within London. Skill shortages were more prevalent in the west, and less so on the eastern side of London. Overall, the density of skill-shortage vacancies is generally higher than expected, given the generally higher than average unemployment rates prevailing in the capital. This could result from a situation of

'mismatch' between the skills demanded by employers located in London and the skills of workers living in London (Gordon, 1999, Fieldhouse, 1999; Green and Owen, 2000). Rates of in-commuting to London are extremely high. Workers commute from surrounding areas to fill the more highly skilled jobs located in the capital, and thus the more poorly-skilled residents suffer relatively high unemployment rates, despite the existence of relatively high numbers of vacancies.

Local areas with a lower than average incidence of skill deficiencies

In many large urban areas, particularly in the three northern-most regions in England, but also in the metropolitan West Midlands, the prevalence of skill-shortage vacancies is higher than expected (although lower than the average for England) given the higher than average unemployment rates which prevail. In such 'high' unemployment areas there is a greater propensity for a 'lack of work experience' to be offered as a reason for skill-shortage and hard-to-fill vacancies than elsewhere; especially compared with 'low' unemployment rate areas. This suggests that periods out of the labour market may be a particular problem in such areas, and indicates the importance of education and training initiatives being linked with work experience. Moreover, rankings of local areas on the incidence of skill gaps, reveals that some 'high' unemployment rate areas face a relatively high preponderance of skill deficiencies amongst those in employment. Although there is a negative relationship between the incidence of skill-shortage vacancies and skill gaps, the relative weakness of the relationship suggests that interactions between unemployment and skills at the local level are complex.

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APPENDIX 1: Details of Coding to Other Geographical Units

The initial matching exercise

A combined unit postcode to higher level areal unit lookup table was created, by merging:

1. A list of LLSC areas, defined in terms of unit postcodes.

2. The ONS *AFPD*.

This exercise revealed that 34 of the postcodes in dataset (1) could not be matched with dataset (2). This was mostly because the unmatched codes from dataset (1) were incorrect - usually because an invalid character had been used (e.g. the letter "O" appeared in the outward [second] part of the code, which is not allowed, or the outward part started with a letter, rather than a number). It was also necessary to correct for errors in regional coding in dataset (1).

The ESS 1999 database was:

1) Matched with the AFPD lookup table

and then the merged file was

2) Matched with the list of LLSC areas defined in terms of unit postcodes

and then the merged file was

3) Merged with another lookup table containing the ONS 1991 Census ward classification derived by Denham et al. (1996). (The ward code was derived from the first four characters of the enumeration district code in the AFPD lookup table.)

Completeness of coding

Table A1.1 provides details of the completeness of geographical coding. A total of 53 cases (0.2 per cent) had missing OS national grid coordinates, TTWA, local education authority, LLSC, GOR and ward classification codes. However, for 589 cases (2.2 per cent), one of more of these codes was missing, and 264 (1 per cent) were missing one geographical code.

Table A1.1: Percentage of cases with geographical codes

	Valid	Missing	% missing
Region (variable=BKD)	26952	0	0.0
OS national grid coordinates	26749	203	0.8
1998 Travel-to-Work Area	26680	272	1.0
Local Education Authority	26685	267	1.0
Learning and Skills Council	26685	267	1.0
Government Office Region	26741	211	0.8
ONS ward cluster	26580	372	1.4
ONS ward cluster group	26580	372	1.4
1991 Census ward	26835	117	0.4
Local authority or Unitary authority district	26744	208	0.8

The missing values on the local education authority and LLSC codes were entirely the result of missing postcodes in the file containing the list of LLSC area postcodes. The variable number of missing values on the travel to work area, OS grid coordinates, GOR and UALAD codes reflects variations in the completeness of coding within the AFPD lookup table. The larger number of missing values for ward clusters is because not all wards could be classified, due to suppression of data for those wards in the Local Base Statistics.

Comparison of regional variables

Every case in the ESS 1999 data file contains a postcode and a region code (BKD). This region code was compared with the region codes merged in from the two geographical look-up tables.

The LLSC region codes (from the LLSC postcode listing) and Government Office Region codes (from the AFPD) matched precisely for each of the 26,681 cases in the merged file to which both variables could be assigned. However, the regional variable in the ESS 1999 data set (BKD) matched the government office region code much more poorly.

Table A1.2 reveals that the greatest problem of mismatch in coding appears to be in the South East and Eastern regions, with nearly a tenth of cases coded to the former in the BKD code actually falling within a different government office region, according to their postcode. In all 800 cases (3 per cent) were coded to different regions on the BKD and GOR codes.

Table A1.2: Comparison of region code from ESS (BKD) and GOR

BKD region	total	unmatched	per cent
East Midlands	2399	16	0.7
Eastern	2958	221	7.5
London	3354	81	2.4
North East	2032	20	1.0
North West	3702	24	0.6
South East	3734	360	9.6
South West	2958	6	0.2
West Midlands	2854	37	1.3
Yorkshire & the Humber	2750	35	1.3
All	26741	800	3.0
Matches	25941	97.0	
Unmatched	800	3.0	

Table A1.3: Percentage of cases coded to regions on BKD in each GOR

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & the Humber	Wales	Scotland	Total
East Midlands	99.3	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	100.0
Eastern	0.6	92.5	6.6	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	100.0
London	0.0	0.1	97.6	0.1	0.1	2.1	0.0	0.0	0.0	0.0	0.0	100.0
North East	0.0	0.0	0.1	99.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	100.0
North West	0.0	0.1	0.0	0.1	99.4	0.0	0.0	0.1	0.3	0.1	0.0	100.0
South East	0.1	0.1	9.2	0.0	0.0	90.4	0.2	0.1	0.0	0.0	0.0	100.0
South West	0.0	0.0	0.0	0.0	0.0	0.1	99.8	0.1	0.0	0.0	0.0	100.0
West Midlands	0.6	0.0	0.1	0.0	0.2	0.0	0.0	98.7	0.0	0.2	0.0	100.0
Yorkshire & the Humber	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	98.7	0.0	0.0	100.0
All	9.2	10.3	14.3	7.6	13.8	12.9	11.1	10.6	10.3	0.0	0.0	100.0

Table A1.3 details the regional mismatches, by presenting the distribution across government office regions of cases coded to each region on the BKD variable in the ESS 1999 data file. It is apparent that the bulk of the problem is accounted for errors in regional coding around the London government office region. Additionally, a tiny percentage of cases in the North West and West Midlands on the BKD variable were actually in Wales (10 in total) and 1 case in the North West was actually in Scotland.

APPENDIX 2: Variables Generated from External Data Sources

From 1998 Annual Labour Force Survey

Rates from NOMIS *LFSA* data set - i.e. Annual LFS for 1998 (this is the latest year available)

Geographies - ualad91, lsc, gor

A wide selection of variables are included in these data files, but in some cases data are missing, and for some of the variables a good deal of the data are suppressed; (this is particularly the case for UALADs).

In the data files a *count* and a *rate* are provided for each variable - in accordance with the key specified below.

Variable	Description
16	Economic activity rate for persons of working age
30	Percent of persons of working age in employment
59	ILO unemployment rate for all persons 16+
98	% all in employment in manufacturing (sec D)
99	% all in employment in construction(sec F)
100	% all in employment in service industries (sec G-Q)
101	% all in employment in distribution, hotels and catering (sec G-H)
102	% all in employment in transport, storage & communications (sec I)
103	% all in employment in finance, real estate, renting, etc (sec J,K)
104	% all in employment in public admin., education, health (sec L-N)
105	% all in employment in other services (sec O-Q)
106	% all in employment working as managers & administrators
107	% all in employment working in professional occupations
108	% all in employment working in associate professional & technical occupations
109	% all in employment working in clerical & secretarial occupations
110	% all in employment working in craft & related occupations
111	% all in employment working in personal & protective service occupations[13]
112	% all in employment working in sales occupations
113	% all in employment working as plant & machine operators
114	% all in employment working in other occupations
119	% of persons of working age who hold NVQ level 3 or above[14]
128	% of persons of working age who hold NVQ level 4 or above

Rates from *LFSAR* data set - i.e. Rates for 1998 TTWAs from 1998 Annual LFS.
Only three variables are included in the data file, (reflecting the restricted number of variables available).

Item	Description
2	Economic activity rate - working age
5	Percent in employment - working age
7	ILO unemployment rate - aged 16+

13 All cases of this variable are unavailable.

14 All cases of this variable are unavailable.

For the ILO unemployment rate variable, the data are suppressed in many instances.

Therefore, it is suggested that for TTWAs and UALADs only economic activity rate and employment rate variables are used.

From JUVOS Unemployment Data Sets

From NOMIS *US* data set
Geographies - ttwa98, ualad91, gor, lsc

• *Annual average unemployment rate,* 1999
(Described in NOMIS as 'Claimant count - with rates, Jan. 1999 - Dec. 1999 [Average]; rate: workforce base; Wholly unemployed claimants)

Due to suppression of LFS data on ILO unemployment rates for several of the geographies in question, it is suggested that the claimant count rates are used in analyses - at least for TTWAs and UALADs (where a decision has been made not to use ILO unemployment rates [see above]). However, it should be borne in mind that for UALADs, use of the workforce base rate is likely to be 'misleading' in some instances.

From 1998 Annual Employment Survey

From NOMIS *AESE* data set
Geographies - ttwa98, ualad91, gor, lsc

• *Percentage of total employees from various industrial sectors,* 1998

The industry sector codes used in the spreadsheet are as follows[15]:

Variable	Description
C	Mining and quarrying
D	Manufacturing
E	Electricity, gas and water supply
F	Construction
G	Wholesale/retail trade; repair
H	Hotels and restaurants
I	Transport, storage and communication
J	Financial intermediatio
K	Real estate, renting and business activities
L	Public admin/defence; social security
M	Education
N	Health and social work
O	Other community, social/personal service

• *Change in total employees, 1993-8*
• *Change in full-time employees, 1993-8*

15 Some codes (including those relating to agriculture and fishing) are excluded.

From New Earnings Survey

Earnings - Average Gross Weekly Earnings of Full-time Employees on Adult Rates - from 1999 New Earnings Survey (Office for National Statistics, 1999)
Geographies - ttwa98,[16] ualad91,[17] gor

- *Average gross weekly earnings of full-time employees on adult rates, whose pay for the survey period was not affected by absence*

Other Data Sets - GDP

GDP - GDP Factor Cost at current prices (£ per head), 1996 - from ONS dataset; also expressed as an index (EU=15).
Geography - NUTS 3 areas[18]

16 Data are available for 136 TTWAs out of 208 TTWAs - for the remaining TTWAs data are suppressed due to sample size constraints. For these TTWAs for which data are missing, district or county level data have been included so that there are no missing observations in the data set.

17 As for TTWAs, so for UALADs areas with small sample sizes have their data suppressed, and county level (or neighbouring area) data has been inserted in these instances.

18 These represent aggregations of ualad91 areas.

APPENDIX 3: Characteristics of ESS Sample at LLSC level

Table A3.1 provides details of the total number of interviews conducted in each LLSC area and of the proportions of telephone and face-to-face interviews.

Table A3.1: Information on numbers and types of interviews by LLSC area

Area - LLSCs	no. of cases	weighted number	phone	face -to-face	% phone	% face -to-face
Cumbria	269	5725	251	18	93.3	6.7
Merseyside-Halton	651	12160	566	85	86.9	13.1
Lancashire	836	15456	682	154	81.6	18.4
Cheshire-Warrington	522	10400	475	47	91.0	9.0
Greater Manchester	1472	27818	1248	224	84.8	15.2
Tyne and Wear	951	11673	781	170	82.1	17.9
County Durham	344	3978	307	37	89.2	10.8
Tees Valley	519	6039	431	88	83.0	17.0
Northumberland	228	2969	227	1	99.6	0.4
Birmingham and Solihull	571	11156	538	33	94.2	5.8
Staffordshire	499	9675	396	103	79.4	20.6
Shropshire	287	6095	246	41	85.7	14.3
Herefordshire and Worcestershire	414	8634	400	14	96.6	3.4
The Black Country	594	11345	503	91	84.7	15.3
Coventry and Warwickshire	500	10118	384	116	76.8	23.2
North Yorkshire	440	8825	365	75	83.0	17.0
South Yorkshire	726	13567	661	65	91.0	9.0
West Yorkshire	1310	24226	1114	196	85.0	15.0
Humberside	305	6197	236	69	77.4	22.6
Lincolnshire	355	6892	325	30	91.5	8.5
Northamptonshire	401	7277	372	29	92.8	7.2
Leicestershire	531	10632	436	95	82.1	17.9
Derbyshire	545	9905	459	86	84.2	15.8
Nottinghamshire	625	10987	522	103	83.5	16.5
Bedfordshire	310	5037	271	39	87.4	12.6
Essex	744	14625	621	123	83.5	16.5
Cambridgeshire	423	8124	309	114	73.0	27.0
Hertfordshire	577	11021	466	111	80.8	19.2
Norfolk	360	6500	360	n/a	100.0	n/a
Suffolk	352	6679	325	27	92.3	7.7
Central London	1367	36559	1178	189	86.2	13.8
North London	361	9217	267	94	74.0	26.0
East London	894	20967	796	98	89.0	11.0
West London	789	19107	653	136	82.8	17.2
South London	435	11026	364	71	83.7	16.3

Table A3.1: Information on numbers and types of interviews by LLSC area continued

Area - LLSCs	no. of cases	weighted number	phone	face -to-face	% phone	% face -to-face
Surrey	490	11337	400	90	81.6	18.4
East-West Sussex and Brighton & Hove	560	13156	522	38	93.2	6.8
Oxfordshire Milton Keynes and Bucks	627	15144	551	76	87.9	12.1
Kent and Medway	607	14039	523	84	86.2	13.8
Hampshire Isle of Wight Portsmouth & Southampton	744	16676	688	56	92.5	7.5
Berkshire	439	9477	303	136	69.0	31.0
Devon and Cornwall	933	17559	834	99	89.4	10.6
Somerset	289	4944	249	40	86.2	13.8
Gloucestershire	396	6451	355	41	89.6	10.4
Bournemouth Dorset and Poole	402	7153	335	67	83.3	16.7
Wiltshire and Swindon	375	6544	309	66	82.4	17.6
Avon	583	10629	466	117	79.9	20.1
Total	**26952**	**533723**	**23070**	**3882**	**85.6**	**14.4**

Tables A3.2 shows the proportions of establishments by size category in each LLSC area. Tables A3.3 provides similar information on employment by establishment size.

Table A3.2: Percentage of establishments by size category - LLSC areas

Area - LLSCs	5-24	25-49	50-99	100-199	200- 499	500-999	1000+
Cumbria	80.4	9.1	6.1	1.9	2.2	0.2	0.2
Merseyside-Halton	72.8	12.4	9.1	3.2	1.9	0.4	0.2
Lancashire	73.6	13.2	7.9	2.6	2.1	0.4	0.2
Cheshire-Warrington	75.8	12.3	7.6	2.4	1.6	0.2	0.1
Greater Manchester	75.3	12.1	7.2	2.7	2.2	0.4	0.1
Tyne and Wear	75.2	12.3	7.6	2.3	2.0	0.5	0.1
County Durham	74.3	13.1	7.1	3.3	1.5	0.1	0.5
Tees Valley	72.5	13.6	7.5	3.3	2.5	0.4	0.2
Northumberland	75.1	9.6	9.7	2.5	2.3	0.8	n/a
Birmingham and Solihull	73.4	12.5	8.1	3.5	2.1	0.3	0.2
Staffordshire	72.6	14.3	8.6	2.4	1.7	0.3	0.1
Shropshire	78.3	9.9	6.5	3.0	1.5	0.9	n/a
Herefordshire and Worcestershire	75.7	12.9	6.7	3.2	1.2	0.2	0.1
The Black Country	72.4	13.9	7.8	3.1	2.1	0.5	0.
Coventry and Warwickshire	74.2	14.1	6.1	2.9	2.0	0.6	0.1
North Yorkshire	78.2	11.2	6.7	2.2	1.6	0.1	0.1
South Yorkshire	74.2	11.8	9.2	2.8	1.5	0.3	0.
West Yorkshire	73.1	13.0	8.0	3.1	1.9	0.6	0.2
Humberside	77.4	12.0	6.4	2.4	1.5	0.2	0.2
Lincolnshire	76.6	11.8	6.0	2.5	2.5	0.4	0.2
Northamptonshire	74.5	11.8	8.1	2.7	2.1	0.5	0.2
Leicestershire	77.0	10.7	7.8	2.8	1.4	0.3	0.0
Derbyshire	73.5	16.0	5.5	2.7	1.7	0.5	n/a
Nottinghamshire	72.6	15.0	6.7	3.2	2.0	0.3	0.3
Bedfordshire	70.9	10.6	11.6	4.7	1.7	0.2	0.3
Essex	75.9	11.8	7.6	2.3	1.6	0.5	0.2
Cambridgeshire	75.1	12.4	7.8	2.4	1.9	0.3	0.1
Hertfordshire	75.8	11.3	7.8	2.8	2.0	0.2	0.0
Norfolk	75.3	11.9	7.3	3.0	1.9	0.4	0.2
Suffolk	72.7	14.2	8.1	2.7	1.7	0.4	0.2
Central London	75.6	11.9	6.3	3.1	2.5	0.5	0.2
North London	75.8	12.5	6.6	2.9	1.8	0.2	0.2
East London	73.0	12.5	7.7	3.0	2.8	0.5	0.5
West London	74.6	12.5	7.4	3.0	1.9	0.3	0.2
South London	76.4	11.4	7.4	2.5	1.7	0.5	0.2
Surrey	74.2	12.0	7.8	3.1	2.4	0.5	0.1
East-West Sussex and Brighton & Hove	78.1	9.9	6.9	2.9	1.8	0.3	0.2
Oxfordshire Milton Keynes and Bucks	76.0	11.5	7.5	2.4	2.1	0.5	0.1
Kent and Medway	73.2	12.5	9.3	2.6	2.0	0.2	0.2
Hampshire I.of Wight Portsmouth & So'ton	74.7	12.3	7.9	2.8	1.8	0.5	0.1
Berkshire	70.4	13.4	10.5	3.3	1.7	0.5	0.2

Table A3.2: Percentage of establishments by size category - LLSC areas continued

Area - LLSCs	5-24	25-49	50-99	100-199	200- 499	500-999	1000+
Devon and Cornwall	78.0	12.4	5.5	2.4	1.3	0.3	0.1
Somerset	75.9	10.5	7.1	3.2	2.4	0.5	0.3
Gloucestershire	73.0	11.8	9.7	3.2	1.9	0.3	0.1
Bournemouth Dorset and Poole	77.9	10.3	6.9	2.5	2.0	0.3	0.1
Wiltshire and Swindon	76.7	10.1	7.6	3.0	2.1	0.4	0.1
Avon	75.5	14.0	5.8	2.8	1.5	0.2	0.2
Total	**74.9**	**12.3**	**7.5**	**2.8**	**1.9**	**0.4**	**0.2**

Source: ESS - weighted data.

Table A3.3: Percentage of employment in establishments by size category - LLSC areas

Area - LLSCs	5-24	25-49	50-99	100-199	200- 499	500- 999	1000+
Cumbria	29.7	10.1	13.9	8.1	19.5	3.6	15.0
Merseyside-Halton	23.4	11.7	16.5	11.9	14.5	7.2	14.9
Lancashire	25.7	13.3	16.3	10.3	18.0	8.5	7.8
Cheshire-Warrington	28.8	13.7	16.7	10.3	16.0	5.3	9.2
Greater Manchester	26.6	12.6	14.8	10.8	19.6	6.9	8.7
Tyne and Wear	27.3	13.4	17.0	10.2	17.9	10.4	3.8
County Durham	22.2	11.4	12.1	11.4	12.6	3.0	27.3
Tees Valley	21.6	12.1	13.2	11.3	20.7	5.8	15.2
Northumberland	23.6	9.2	19.4	10.4	22.3	15.1	n/a
Birmingham and Solihull	25.5	12.8	16.3	13.7	17.5	6.3	7.8
Staffordshire	26.5	16.3	18.6	10.7	15.0	6.9	6.0
Shropshire	28.6	10.5	14.4	13.8	15.0	17.8	n/a
Herefordshire and Worcestershire	31.6	15.7	15.0	15.2	12.7	4.4	5.4
The Black Country	22.4	12.5	14.1	11.0	17.1	8.3	14.7
Coventry and Warwickshire	26.3	15.0	12.7	11.9	18.6	10.8	4.7
North Yorkshire	32.8	14.0	17.3	10.8	17.3	4.0	3.9
South Yorkshire	25.4	12.6	19.2	11.9	14.1	5.7	11.1
West Yorkshire	24.2	12.2	15.3	11.6	15.4	10.1	11.2
Humberside	32.9	13.5	13.9	10.2	14.5	4.2	11.0
Lincolnshire	27.6	12.1	12.2	10.1	20.7	8.5	8.8
Northamptonshire	24.5	11.9	16.5	11.0	20.2	7.9	8.0
Leicestershire	33.1	13.2	18.2	14.0	14.1	5.2	2.1
Derbyshire	29.3	18.4	12.8	13.1	16.6	9.8	n/a
Nottinghamshire	25.0	14.6	12.5	12.2	16.3	5.5	13.9
Bedfordshire	24.6	9.7	19.8	16.1	13.9	3.5	12.4
Essex	26.1	12.4	15.4	9.3	14.4	10.4	12.0
Cambridgeshire	28.8	13.0	16.3	10.1	16.9	5.9	9.0
Hertfordshire	30.6	12.8	17.6	12.6	20.7	4.3	1.2
Norfolk	25.7	12.3	14.6	11.4	18.3	7.5	10.1
Suffolk	25.8	15.3	16.8	10.8	13.7	7.3	10.4
Central London	25.4	11.8	12.0	11.9	20.3	8.8	9.8
North London	29.0	14.3	14.0	12.5	16.7	3.5	10.0
East London	21.8	9.8	11.7	9.5	18.8	7.6	20.9
West London	28.3	13.5	15.2	12.3	17.2	7.1	6.5
South London	26.3	12.2	15.5	10.6	14.9	10.6	9.9
Surrey	25.3	12.4	16.2	12.7	21.9	8.7	2.9
East-West Sussex and Brighton & Hove	31.4	11.5	14.2	12.0	15.9	5.7	9.3
Oxfordshire Milton Keynes and Bucks	26.9	11.9	15.9	10.1	19.6	9.2	6.4
Kent and Medway	26.0	12.7	19.8	10.4	17.4	3.7	10.1
Hampshire I.of Wight Portsmouth & So'ton	27.5	13.1	16.3	11.3	15.9	9.6	6.3
Berkshire	23.0	12.6	18.9	12.4	13.5	8.7	10.8

Table A3.3: Percentage of establishments by size category - LLSC areas continued

Area - LLSCs	5-24	25-49	50-99	100-199	200-499	500-999	1000+
Devon and Cornwall	31.2	15.6	13.5	11.7	13.5	6.6	7.8
Somerset	23.7	9.7	13.5	11.3	20.7	9.9	11.3
Gloucestershire	26.1	12.8	19.7	13.0	18.3	6.4	3.7
Bournemouth Dorset and Poole	30.4	11.5	14.0	10.7	17.7	5.0	10.7
Wiltshire and Swindon	27.3	10.4	14.6	12.0	20.0	8.5	7.0
Avon	29.0	15.5	12.4	12.7	15.3	4.9	10.2
Total	**26.6**	**12.7**	**15.2**	**11.4**	**17.2**	**7.5**	**9.4**

Source: ESS - weighted data.

Tables A3.4 shows the proportions of establishments by broad sector category in each LLSC area.

Table A3.4: Percentage of establishments by broad sector category - LLSC areas

Area - LLSCs	energy	manufacturing	construction	private services	public services
Cumbria	0.1	8.2	4.2	58.9	28.7
Merseyside-Halton	0.4	10.4	5.2	47.6	36.5
Lancashire	0.2	15.2	4.5	53.9	26.2
Cheshire-Warrington	0.0	10.7	5.6	58.7	24.9
Greater Manchester	0.2	17.5	5.0	56.5	20.8
Tyne and Wear	0.1	11.2	4.2	56.4	27.9
County Durham	0.0	16.8	4.2	45.4	33.6
Tees Valley	0.2	9.8	7.3	57.0	25.8
Northumberland	0.5	10.5	7.6	41.3	40.1
Birmingham and Solihull	0.0	16.2	5.6	56.1	22.1
Staffordshire	0.5	19.6	4.3	47.3	28.3
Shropshire	0.2	13.4	3.4	49.7	33.4
Herefordshire and Worcestershire	0.6	15.0	5.0	54.3	25.1
The Black Country	0.1	29.6	5.2	45.6	19.5
Coventry and Warwickshire	0.1	15.9	5.0	56.4	22.6
North Yorkshire	1.0	7.0	6.4	61.2	24.4
South Yorkshire	0.1	14.5	4.9	53.6	26.9
West Yorkshire	0.4	18.5	5.2	51.7	24.3
Humberside	0.6	12.7	5.7	54.4	26.6
Lincolnshire	0.0	15.9	4.7	50.7	28.7
Northamptonshire	0.0	21.0	4.1	55.5	19.4
Leicestershire	0.5	22.5	5.8	49.1	22.1
Derbyshire	0.2	18.5	3.7	52.0	25.5
Nottinghamshire	0.1	16.1	7.5	51.0	25.4
Bedfordshire	0.0	17.3	5.8	57.6	19.3
Essex	0.1	10.7	5.7	59.1	24.3
Cambridgeshire	0.0	15.3	2.3	55.5	26.9
Hertfordshire	0.0	13.4	6.1	53.8	26.7
Norfolk	1.3	13.9	7.1	58.0	19.7
Suffolk	0.1	17.0	3.6	55.1	24.2
Central London	0.5	8.3	2.7	63.9	24.6
North London	0.3	12.3	4.3	54.0	29.1
East London	0.2	9.9	2.7	64.6	22.7
West London	0.2	9.5	4.9	64.5	21.0
South London	0.0	8.9	5.5	60.2	25.4

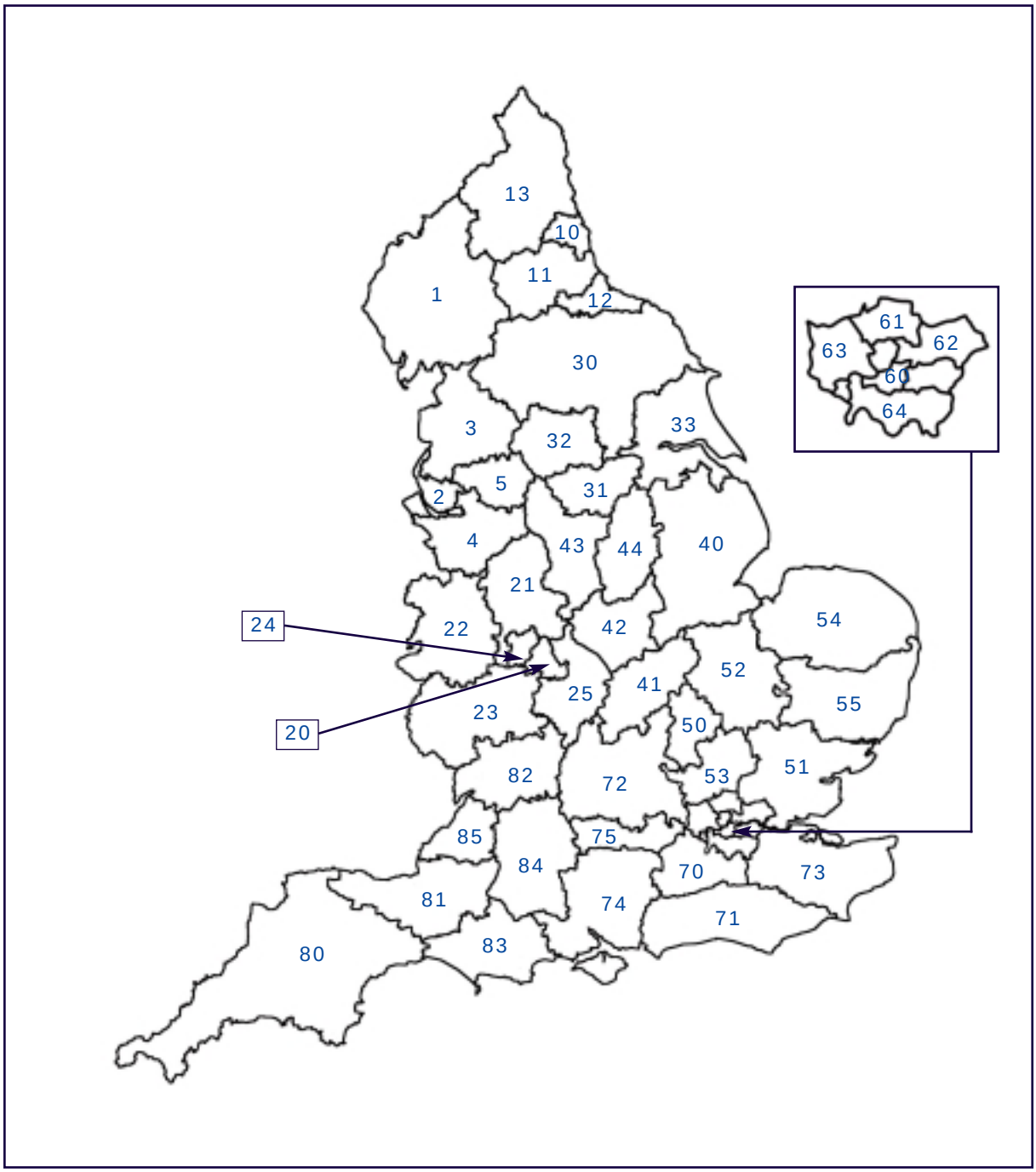
Table A3.4: Percentage of establishments by broad sector category - LLSC areas continued

Area - LLSCs	energy	manufacturing	construction	private services	public services
Surrey	0.6	8.8	5.9	62.0	22.8
East-West Sussex and Brighton & Hove	0.5	12.2	5.5	54.4	27.4
Oxfordshire Milton Keynes and Bucks	0.1	12.7	3.7	60.4	23.1
Kent and Medway	0.1	13.0	5.6	53.4	28.0
Hampshire IoW Portsmouth & Southampton	0.1	11.5	6.0	57.4	25.2
Berkshire	0.6	12.7	3.5	61.0	22.2
Devon and Cornwall	0.2	9.5	4.0	51.6	34.6
Somerset	0.7	13.1	5.6	58.2	22.4
Gloucestershire	0.4	17.3	4.8	49.7	27.7
Bournemouth Dorset and Poole	0.4	12.9	4.1	55.6	26.9
Wiltshire and Swindon	0.0	14.2	7.5	57.4	20.9
Avon	0.0	9.1	5.8	64.7	20.4
Total	**0.3**	**13.5**	**4.8**	**56.2**	**25.2**

Source: ESS - weighted data.

APPENDIX 4: Key to LLSC Areas

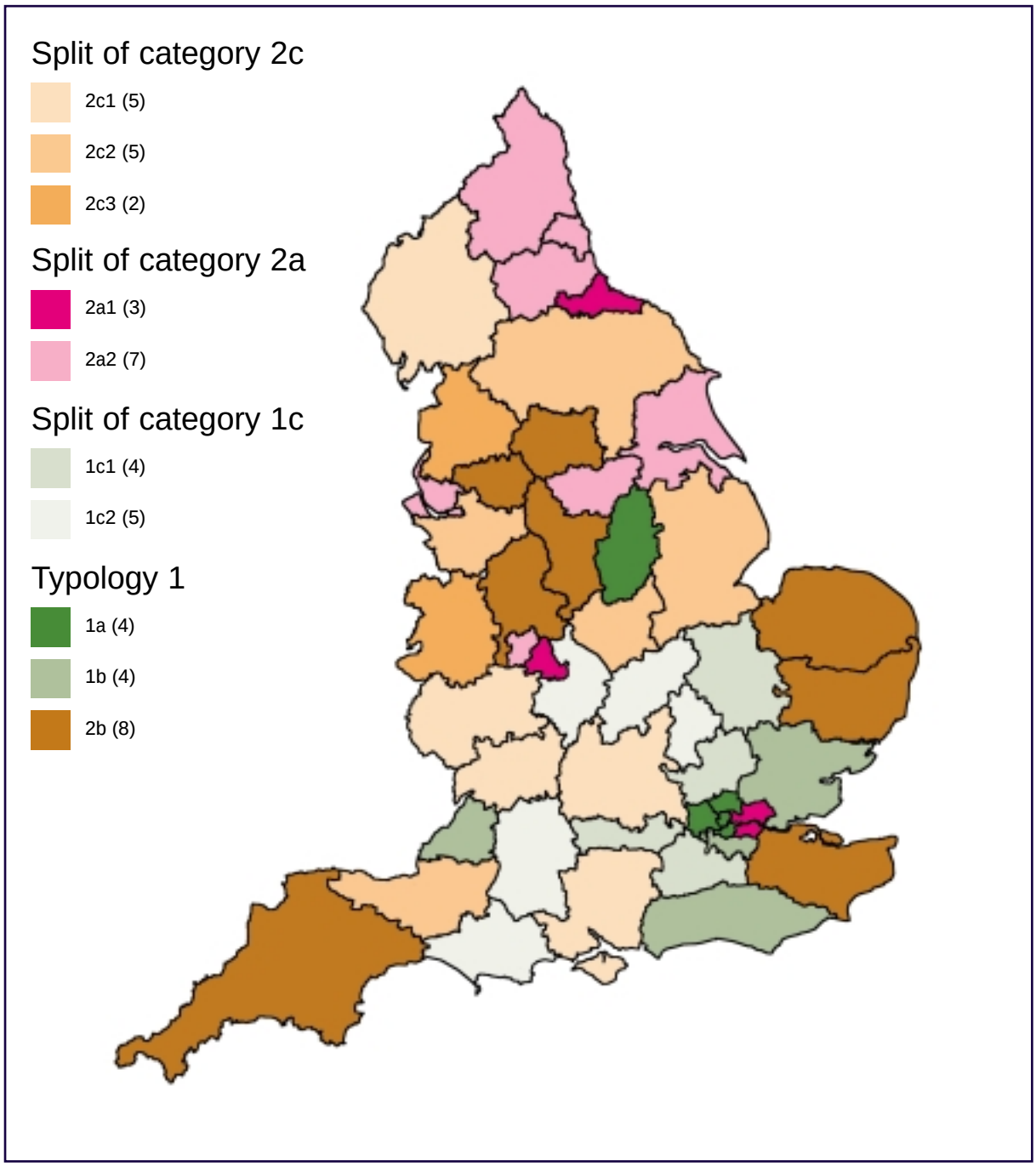
Figure A4.1: Map showing LLSC areas



Region	Key to Map	Area - LLSCs
North West	1	Cumbria LLS
	2	Merseyside-Halton LLS
	3	Lancashire LLS
	4	Cheshire-Warrington LLSC
	5	Greater Manchester LLS
North East	10	Tyne and Wear LLS
	11	County Durham LLS
	12	Tees Valley LLS
	13	Northumberland LLS
West Midlands	20	Birmingham and Solihull LLS
	21	Staffordshire LLS
	22	Shropshire LLS
	23	Herefordshire and Worcestershire LLS
	24	The Black Country LLS
	25	Coventry and Warwickshire LLS
Yorkshire & the Humber	30	North Yorkshire LLS
	31	South Yorkshire LLS
	32	West Yorkshire LLS
	33	Humberside LLS
East Midlands	40	Lincolnshire LLS
	41	Northamptonshire LLS
	42	Leicestershire LLS
	43	Derbyshire LLS
	44	Nottinghamshire LLS
Eastern	50	Bedfordshire LLS
	51	Essex LLS
	52	Cambridgeshire LLS
	53	Hertfordshire LLS
	54	Norfolk LLS
	55	Suffolk LLS
London	60	Central London LLS
	61	North London LLS
	62	East London LLS
	63	West London LLS
	64	South London LLS
South East	70	Surrey LLS
	71	East-West Sussex and Brighton & Hove LLS
	72	Oxfordshire Milton Keynes and Bucks LLS
	73	Kent and Medway LLS
	74	Hampshire Isle of Wight Portsmouth & Southampton LLS
	75	Berkshire LLS
South West	80	Devon and Cornwall LLS
	81	Somerset LLS
	82	Gloucestershire LLS
	83	Bournemouth Dorset and Poole LLS
	84	Wiltshire and Swindon LLS
	85	Avon LLSC

APPENDIX 5: Detailed Typology of LLSC Areas

Figure A5.1: Detailed typology of LLSC areas



Note: For key to categories see Tables 7 and 8.

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