



BENCHMARKING SKILLS AND PRODUCTIVITY

NOVEMBER 2018

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INTRODUCTION

This report is about people. The report is focused on the qualities of the workforce and how these might interact with Smart Specialisation strategies. In particular, it examines how different characteristics of the workforce are correlated with labour productivity, since this is where skills strategies are likely to have the greatest impact. It is supposed that productivity is enhanced by innovation, which should be associated with Smart Specialisation. Hence the report should help Local Enterprise Partnerships (LEPs) and Devolved Administrations (DAs) to identify areas of skills and characteristics of the population, which aid the implementation of Smart Specialisation strategies.

Correlations do not in themselves direct policy measures – the direction of causation is unclear and, indeed, both could be correlated with other factors. So, for example, the education level of the population could cause greater productivity or more productive regions could attract people with higher educational levels and proximity to London or other major cities could be a factor in both productivity and education levels. Nonetheless, examining correlations is useful because it gives some indication of the regions which are performing less well, relative to the norm, and suggests that those areas are where actions taken are most likely to have an immediate effect (because the issue could be one which is not primarily structural and where policy measures could have a short-term impact).

This benchmarking report is organised into the following sections:

1. **The current workforce, its skills and occupations** – what is it possible to achieve with the current workforce and does it need reskilling?
2. **The potential for change based on entrepreneurial qualities** – is the workforce prepared to work in an entrepreneurial way?
3. **Where new skills will come from** – where do students move to and from?
4. **Implications for smart specialisation.**

In this report 'productivity' is calculated as the Gross Value Added (GVA) of the area divided by the resident population who are economically active. This allows comparisons with previous years and avoids them being biased by changes in the size of the economically active population or the employment rate. While there may be distortions caused by commuting (GVA is created by people working in an area rather than being resident), it is assumed that LEP boundaries largely follow travel to work and functional economic areas and therefore the spillover should not affect any general conclusions. It is worth noting that several LEP boundaries are due to be redrawn shortly.

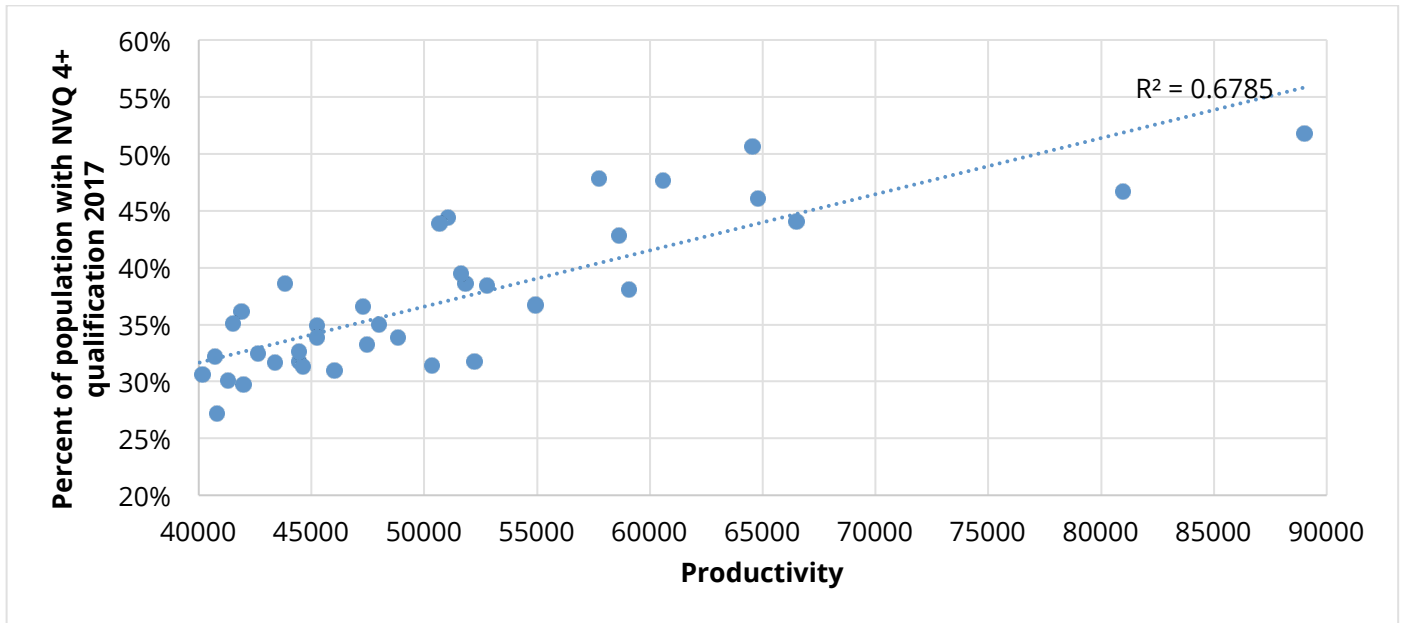
This work contains statistical data from ONS, which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

Devolved Administration (DAs) data is included where it is available but should not be regarded as analogous to LEP areas; and where inadequate data exists DAs are excluded.

1.1 Higher Education Qualifications

There is a clear correlation between the number of people with NVQ 4+ qualifications and average productivity (Figure 1).

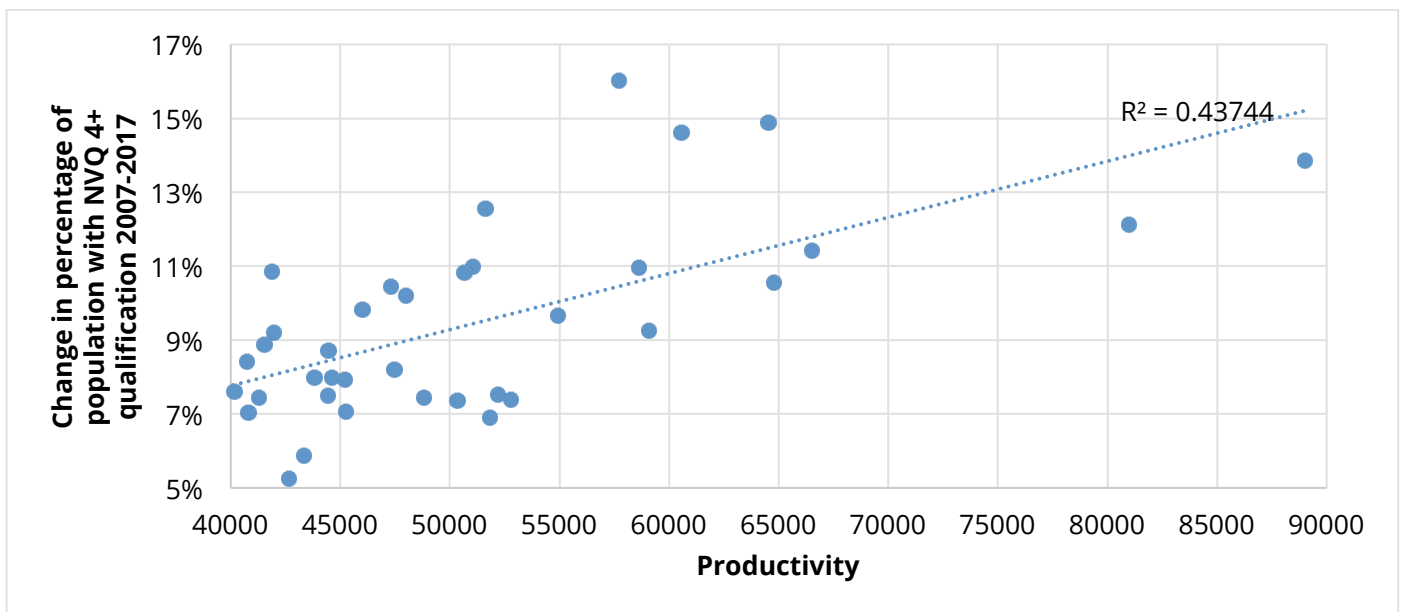
Figure 1. – Correlation of productivity and higher education qualifications



Source: ONS

A significant but less clear correlation is seen between productivity and the rate of increase in NVQ4+, suggesting that the polarisation between the best and worst performing areas is increasing (Figure 2).

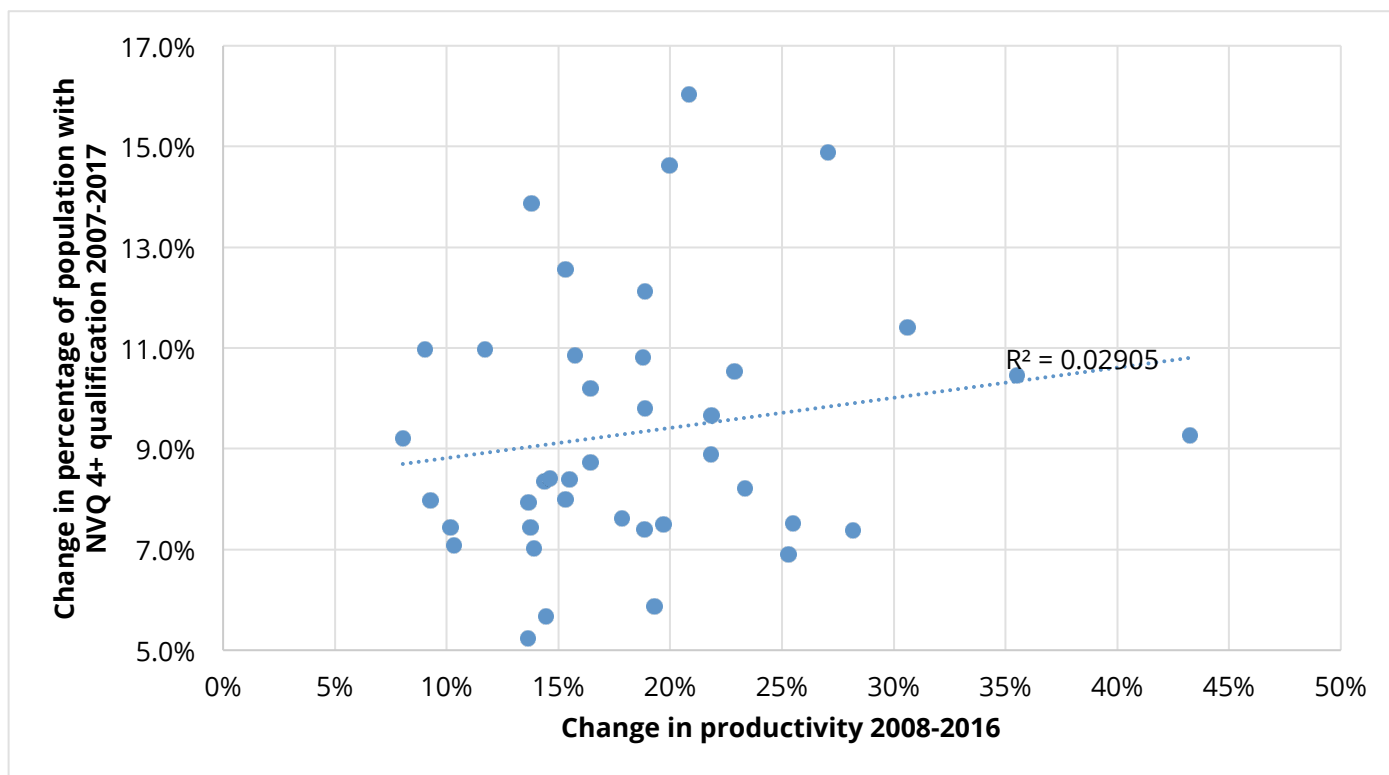
Figure 2. – Correlation of productivity and change in higher education qualifications



Source: ONS

Nonetheless, the direct link between qualifications and productivity is more complex than this would suggest. Plotting changes in productivity against changes in qualifications show very little correlation at all (Figure 3).

Figure 3. – Correlation of change in productivity and change in higher education qualifications



Source: ONS

From this it can be supposed that increasing the qualifications of the workforce will not *on its own* increase productivity.

The correlation is much less clear for other NVQ levels. A general tendency can be seen with all LEP areas showing an increase towards higher qualification levels, particularly in NVQ4+ level qualifications and a decreasing proportion of the population with no qualifications (Figures 4 and 5).

Figure 4. – Educational qualifications by LEP and DA

LEP/DA	Highest qualification					
	NVQ4+	NVQ3	NVQ2	NVQ1	Other	None
Black Country	24%	16%	19%	13%	11%	16%
Buckinghamshire Thames Valley	48%	20%	15%	10%	4%	3%
Cheshire and Warrington	44%	16%	20%	9%	4%	6%
Coast to Capital	44%	19%	18%	9%	5%	4%
Cornwall and Isles of Scilly	34%	24%	22%	12%	4%	5%
Coventry and Warwickshire	38%	18%	17%	10%	8%	8%
Cumbria	31%	24%	19%	12%	5%	8%
Derby, Derbyshire, Nottingham & Nottinghamshire	32%	20%	19%	13%	8%	9%
Dorset	35%	22%	19%	12%	6%	6%
Enterprise M3	46%	18%	17%	9%	5%	4%
Gloucestershire	39%	21%	19%	11%	6%	5%
Greater Birmingham and Solihull	32%	20%	17%	11%	9%	10%
Cambridge and Peterborough	38%	18%	17%	12%	7%	6%
Greater Lincolnshire	27%	18%	22%	15%	10%	8%
Greater Manchester	35%	20%	18%	11%	6%	10%
Heart of the South West	36%	23%	20%	12%	4%	4%
Hertfordshire	43%	16%	20%	11%	4%	6%
Humber	30%	20%	19%	13%	9%	8%
Lancashire	32%	21%	21%	12%	6%	7%
Leeds City Region	34%	20%	18%	11%	7%	10%
Leicester and Leicestershire	33%	21%	17%	13%	8%	8%
Liverpool City Region	31%	19%	22%	11%	5%	11%
London	52%	14%	11%	7%	9%	7%
New Anglia	31%	22%	19%	14%	6%	8%
North East	32%	21%	21%	12%	6%	9%
Oxfordshire	51%	18%	14%	9%	4%	4%
Sheffield City Region	33%	18%	20%	14%	7%	9%
Solent	34%	24%	18%	12%	6%	6%
South East	33%	20%	20%	14%	5%	7%
South East Midlands	37%	19%	18%	12%	7%	8%
Stoke-On-Trent and Staffordshire	31%	21%	21%	13%	8%	7%
Swindon and Wiltshire	39%	19%	19%	11%	6%	5%
Tees Valley	30%	20%	19%	11%	7%	12%
Thames Valley Berkshire	47%	17%	15%	9%	7%	4%
The Marches	33%	21%	20%	12%	7%	7%
West of England	48%	19%	15%	9%	4%	4%
Worcestershire	37%	20%	20%	7%	7%	10%
York, North Yorkshire and East Riding	39%	21%	19%	10%	6%	6%
Scotland	44%	16%	16%	9%	6%	9%
Wales	35%	19%	20%	11%	6%	9%

Figures show percentage of population for 2017. Source: ONS

Figure 5. – Change in educational qualifications by LEP and DA

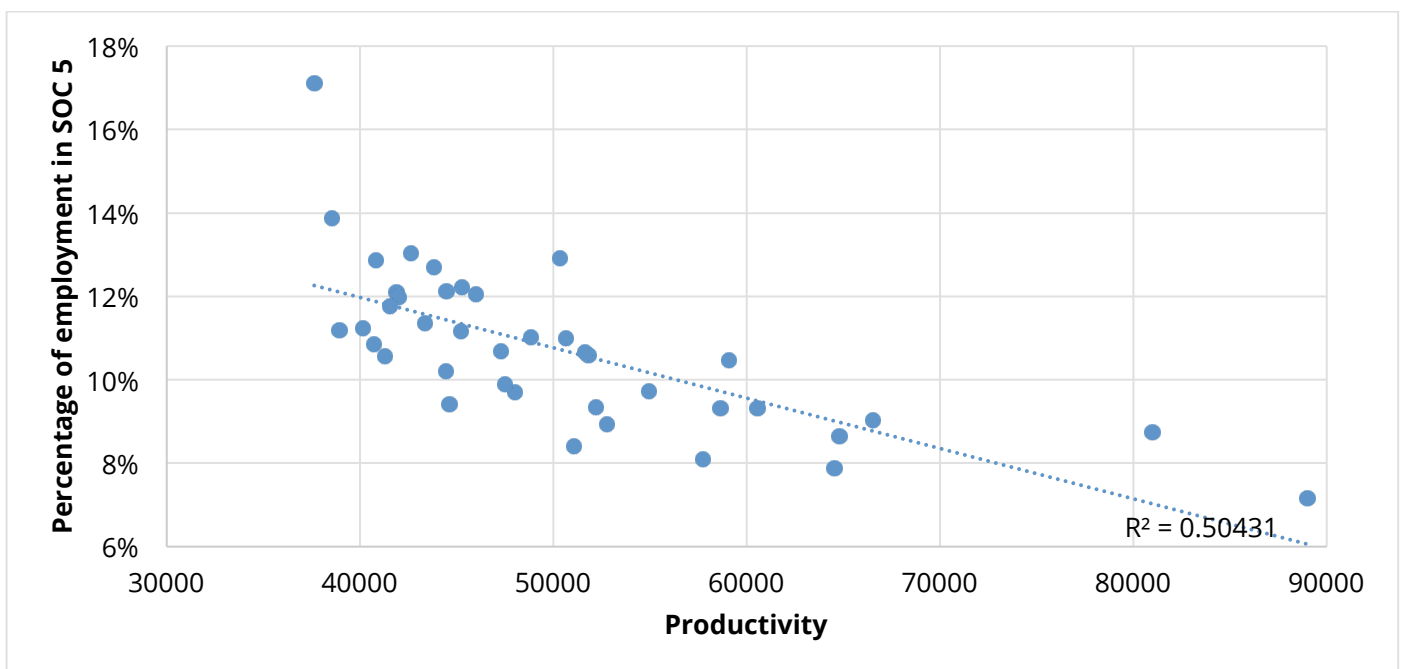
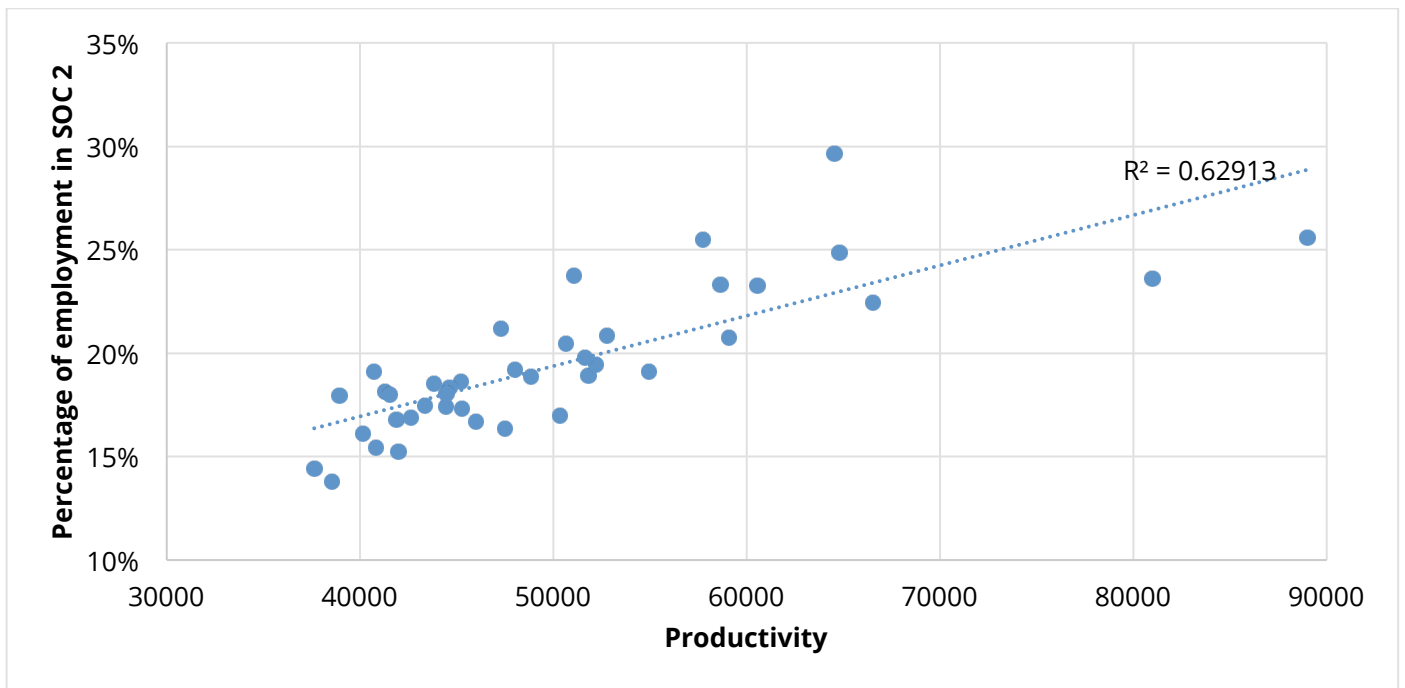
LEP/DA	Change in highest qualification					
	NVQ4 +	NVQ3	NVQ2	NVQ1	Other	None
Black Country	5.7%	1.0%	-0.6%	-3.4%	3.1%	-5.8%
Buckinghamshire Thames Valley	14.6%	2.4%	-1.4%	-4.0%	-5.2%	-6.5%
Cheshire and Warrington	11.4%	0.1%	0.6%	-3.7%	-2.4%	-5.9%
Coast to Capital	11.0%	0.7%	0.3%	-4.6%	-2.0%	-5.4%
Cornwall and Isles of Scilly	8.4%	2.9%	2.9%	-3.5%	-3.5%	-7.2%
Coventry and Warwickshire	9.3%	-0.6%	-0.6%	-3.0%	0.0%	-5.1%
Cumbria	7.4%	6.7%	-3.7%	-2.9%	-3.6%	-3.9%
Derby, Derbyshire, Nottingham and Nottinghamshire	5.9%	2.8%	1.0%	-3.2%	-0.7%	-5.7%
Dorset	7.1%	2.1%	-0.9%	-2.6%	-2.2%	-3.5%
Enterprise M3	10.5%	0.0%	-0.5%	-3.4%	-1.9%	-4.9%
Gloucestershire	6.9%	3.2%	-2.9%	-3.1%	-0.6%	-3.5%
Greater Birmingham and Solihull	7.5%	3.8%	-1.1%	-3.1%	0.9%	-8.0%
Cambridge and Peterborough	7.4%	3.3%	0.1%	-2.0%	-4.2%	-4.7%
Greater Lincolnshire	7.0%	-0.9%	1.6%	-3.3%	-0.6%	-3.9%
Greater Manchester	10.2%	1.7%	-0.8%	-2.5%	-1.8%	-6.8%
Heart of the South West	10.9%	1.2%	1.2%	-4.5%	-3.3%	-6.3%
Hertfordshire	11.0%	-1.2%	1.8%	-3.8%	-4.1%	-3.9%
Humber	9.2%	0.6%	-0.9%	-2.9%	0.2%	-6.3%
Lancashire	7.5%	2.0%	2.7%	-2.3%	-1.7%	-8.2%
Leeds City Region	7.9%	1.4%	0.3%	-3.7%	-2.0%	-3.9%
Leicester and Leicestershire	8.2%	3.9%	-1.7%	-0.3%	-2.0%	-8.1%
Liverpool City Region	8.0%	1.4%	0.6%	-2.2%	-0.3%	-7.5%
London	13.9%	1.3%	-1.0%	-3.2%	-5.1%	-5.9%
New Anglia	9.8%	4.2%	-0.3%	-3.9%	-3.4%	-6.4%
North East	8.4%	1.5%	-0.2%	-2.6%	-1.7%	-5.4%
Oxfordshire	14.9%	-2.1%	-0.4%	-4.9%	-4.8%	-2.6%
Sheffield City Region	8.4%	1.3%	0.9%	-2.1%	-0.2%	-8.4%
Solent	7.4%	4.5%	-2.0%	-4.3%	-1.3%	-4.3%
South East	8.7%	1.8%	0.3%	-2.5%	-2.1%	-6.7%
South East Midlands	9.7%	2.7%	-0.3%	-4.2%	-2.7%	-5.2%
Stoke-On-Trent and Staffordshire	7.6%	2.0%	0.5%	-3.8%	2.7%	-9.2%
Swindon and Wiltshire	12.6%	0.6%	-2.2%	-6.3%	-1.1%	-3.6%
Tees Valley	7.4%	-0.7%	-1.7%	-1.9%	1.6%	-4.8%
Thames Valley Berkshire	12.1%	-0.4%	-0.2%	-2.8%	-4.6%	-4.1%
The Marches	5.2%	4.1%	0.1%	-4.1%	0.3%	-5.5%
West of England	16.0%	0.4%	-2.3%	-5.2%	-3.8%	-5.2%
Worcestershire	10.5%	1.0%	-0.9%	-5.8%	-0.9%	-3.9%
York, North Yorkshire and East Riding	8.0%	1.0%	-0.5%	-2.8%	-1.2%	-4.5%
Scotland	10.8%	-2.6%	-1.1%	-0.9%	-1.0%	-5.2%
Wales	8.9%	1.2%	0.0%	-2.0%	-1.4%	-6.6%

Figures show change in percentage of population between 2007 and 2017. Source: ONS

1.2 Occupational Categories

One of the key areas, which would make a difference to both productivity and to NVQ levels, is that of occupational categories. In particular, it can be hypothesised that Standard Occupational Classification (SOC) category 2 (professional and technical) would be important in innovation. Obviously, causation can be in both directions here – it is possible that professionals are attracted to places where innovation happens, rather than that innovation happens because of the professionals in a location. Analysis shows that there is a good correlation between SOC category 2 and productivity and a negative correlation with SOC category 5 (skilled trades) – see Figures 6 and 7.

Figure 6. – Correlation between productivity and occupational classifications



Source: ONS

Figure 7. – Occupational categories by LEP and DA

LEP/DA	Standard Occupational Category								
	1	2	3	4	5	6	7	8	9
Black Country	9%	14%	12%	12%	14%	9%	8%	9%	13%
Buckinghamshire Thames Valley	16%	23%	17%	10%	9%	7%	7%	4%	6%
Cheshire and Warrington	15%	22%	15%	10%	9%	7%	8%	6%	9%
Coast to Capital	13%	24%	16%	11%	8%	10%	7%	3%	8%
Cornwall and Isles of Scilly	11%	14%	11%	10%	17%	10%	7%	5%	14%
Coventry and Warwickshire	9%	21%	16%	10%	10%	10%	6%	6%	12%
Cumbria	12%	17%	12%	8%	13%	10%	6%	8%	13%
Derby, Derbyshire, Nottingham & Nottinghamshire	10%	17%	13%	11%	11%	10%	7%	8%	11%
Dorset	13%	17%	14%	11%	12%	10%	8%	4%	10%
Enterprise M3	13%	25%	16%	11%	9%	8%	6%	4%	8%
Gloucestershire	11%	19%	16%	11%	11%	8%	8%	8%	10%
Greater Birmingham and Solihull	11%	19%	14%	10%	9%	9%	8%	8%	11%
Cambridge & Peterborough	12%	21%	15%	11%	9%	9%	7%	7%	10%
Greater Lincolnshire	12%	15%	9%	8%	13%	10%	7%	10%	14%
Greater Manchester	8%	19%	14%	11%	10%	10%	9%	7%	11%
Heart of the South West	12%	17%	13%	9%	12%	11%	8%	6%	11%
Hertfordshire	14%	23%	17%	10%	9%	8%	6%	4%	8%
Humber	10%	15%	13%	10%	12%	10%	8%	10%	13%
Lancashire	9%	17%	13%	12%	10%	12%	9%	7%	10%
Leeds City Region	9%	19%	14%	10%	11%	9%	8%	7%	12%
Leicester and Leicestershire	11%	16%	15%	11%	10%	8%	9%	7%	11%
Liverpool City Region	9%	18%	15%	11%	9%	9%	8%	7%	13%
London	12%	26%	18%	10%	7%	7%	7%	4%	9%
New Anglia	12%	17%	12%	10%	12%	10%	8%	7%	12%
North East	8%	19%	12%	11%	11%	10%	10%	8%	11%
Oxfordshire	14%	30%	17%	8%	8%	6%	6%	4%	8%
Sheffield City Region	10%	18%	11%	10%	11%	10%	8%	7%	13%
Solent	10%	19%	14%	10%	11%	10%	8%	7%	11%
South East	12%	18%	15%	11%	12%	9%	7%	6%	9%
South East Midlands	11%	19%	15%	11%	10%	8%	7%	8%	11%
Stoke-On-Trent and Staffordshire	10%	16%	13%	12%	11%	9%	7%	8%	12%
Swindon and Wiltshire	11%	20%	16%	10%	11%	8%	8%	7%	11%
Tees Valley	8%	18%	12%	11%	11%	12%	9%	8%	11%
Thames Valley Berkshire	12%	24%	18%	10%	9%	8%	7%	4%	8%
The Marches	12%	17%	13%	9%	13%	11%	6%	7%	12%
West of England	10%	25%	17%	10%	8%	8%	7%	4%	10%
Worcestershire	15%	21%	12%	9%	11%	8%	7%	6%	11%
York, North Yorkshire & East Riding	12%	19%	14%	10%	13%	8%	7%	7%	11%
Scotland	8%	20%	14%	10%	11%	10%	8%	7%	11%
Wales	9%	18%	13%	11%	12%	10%	8%	7%	11%

Figures show percentage of working population in each occupational category in 2018. Source: ONS

Clearly LEPs do not have direct control over the occupations in their region, even if they can assist in planning for skills and attracting or supporting investment. Therefore, it is important to understand the way in which the workforce is changing with regard to occupational classifications. This shows a similar pattern across the country with classes 1, 2, 3 and 6 rising and classes 4, 5, 7, 8 and 9 falling.

It seems likely that areas with the least change are those that are being left behind – either because they do not have the people to fill these occupations or because the lack of such posts means that people with appropriate qualifications are migrating elsewhere, see Figure 8.

Figure 8. – Change in occupational categories by LEP and DA

LEP/DA	Standard Occupational Category								
	1	2	3	4	5	6	7	8	9
Black Country	0.7%	0.2%	1.6%	-1.0%	0.0%	0.4%	-0.3%	-1.1%	-0.3%
Buckinghamshire Thames Valley	1.0%	2.6%	1.1%	-2.3%	-0.5%	-3.0%	3.7%	-0.5%	-1.5%
Cheshire and Warrington	3.7%	2.9%	1.0%	-2.7%	-0.6%	0.6%	-1.9%	-0.3%	-2.2%
Coast to Capital	0.8%	4.1%	0.6%	-2.0%	-2.1%	1.7%	-0.8%	-0.6%	-1.8%
Cornwall and Isles of Scilly	-1.6%	0.1%	-0.8%	-0.9%	1.3%	1.1%	0.7%	-1.7%	2.2%
Coventry and Warwickshire	-0.2%	3.1%	2.9%	-3.9%	-1.4%	2.1%	-1.2%	-0.8%	-0.5%
Cumbria	1.1%	2.8%	1.3%	-2.2%	-2.7%	1.5%	-2.6%	-2.5%	3.3%
Derby, Derbyshire, Nottingham & Nottinghamshire	0.2%	1.6%	1.5%	-0.7%	-1.4%	1.6%	-1.3%	-0.4%	-0.9%
Dorset	1.6%	0.5%	1.9%	-1.0%	-1.8%	1.1%	-0.6%	-1.0%	-1.0%
Enterprise M3	2.1%	2.4%	-0.2%	-0.7%	-1.2%	0.1%	-2.2%	-0.1%	-0.4%
Gloucestershire	-1.0%	1.8%	0.3%	-1.0%	-2.8%	0.4%	0.3%	2.1%	0.3%
Greater Birmingham and Solihull	1.1%	2.6%	0.4%	-2.1%	-1.1%	0.7%	-0.6%	-0.5%	-0.7%
Cambridge and Peterborough	1.8%	0.0%	0.4%	0.7%	-2.8%	1.4%	0.3%	-0.3%	-1.2%
Greater Lincolnshire	1.8%	3.3%	-1.1%	-3.9%	0.2%	1.3%	-1.2%	-0.6%	-0.2%
Greater Manchester	-0.6%	2.9%	0.6%	-1.6%	-1.0%	2.0%	-0.7%	-1.9%	0.4%
Heart of the South West	2.1%	1.3%	1.7%	-2.2%	-1.2%	2.1%	-0.7%	-1.7%	-1.1%
Hertfordshire	2.3%	0.5%	0.8%	-2.1%	-1.6%	0.7%	-0.9%	-0.2%	0.2%
Humber	1.4%	2.1%	1.3%	-1.8%	-2.2%	1.0%	-0.7%	-1.1%	0.4%
Lancashire	0.0%	0.2%	0.4%	-1.9%	-1.1%	3.0%	0.9%	-1.4%	-0.7%
Leeds City Region	-0.2%	3.3%	2.1%	-2.2%	-0.7%	1.1%	-1.5%	-1.6%	-0.3%
Leicester and Leicestershire	1.5%	-0.5%	2.6%	-0.5%	-1.6%	-0.8%	1.3%	-1.6%	-1.7%
Liverpool City Region	1.3%	2.1%	2.3%	-2.2%	-0.4%	0.5%	-1.6%	-1.5%	0.1%
London	1.4%	3.8%	-0.3%	-3.2%	-1.0%	0.2%	-0.1%	-0.2%	-0.1%
New Anglia	0.8%	1.3%	1.0%	-2.0%	-1.8%	2.0%	0.0%	-0.7%	-0.3%
North East	-0.4%	2.8%	0.0%	-1.4%	-0.7%	1.5%	0.7%	-0.7%	-1.4%
Oxfordshire	3.3%	8.0%	0.7%	-2.5%	-3.0%	-1.1%	-0.7%	-2.9%	-1.9%
Sheffield City Region	0.7%	2.2%	-0.4%	-1.2%	-0.7%	2.3%	-2.1%	-2.3%	1.0%
Solent	1.6%	1.2%	0.0%	-1.6%	-0.8%	1.7%	-1.1%	-1.3%	-0.2%
South East	2.1%	1.0%	2.0%	-1.2%	-0.9%	0.1%	-1.3%	-0.3%	-1.7%
South East Midlands	1.3%	3.2%	1.5%	-1.5%	-1.4%	-0.5%	-0.3%	-0.8%	-1.6%
Stoke-On-Trent and Staffordshire	1.8%	1.1%	1.2%	-1.0%	-1.2%	0.7%	-1.7%	-0.8%	-0.4%
Swindon and Wiltshire	-0.1%	5.5%	0.2%	-1.9%	-2.0%	-0.2%	-0.7%	-0.1%	-0.7%
Tees Valley	-0.1%	2.0%	0.5%	-0.8%	-1.0%	3.9%	-1.5%	-1.0%	-1.7%
Thames Valley Berkshire	0.6%	1.6%	1.8%	-2.9%	0.2%	1.8%	-0.3%	-0.8%	-1.9%
The Marches	0.6%	-0.3%	0.6%	-0.8%	-1.8%	3.1%	-1.5%	-0.7%	0.9%
West of England	0.0%	5.7%	3.0%	-2.9%	-1.8%	-0.1%	-2.3%	-1.3%	-0.4%
Worcestershire	5.1%	5.3%	-0.6%	-5.3%	-2.7%	0.9%	-1.0%	-2.5%	1.3%
York, North Yorkshire and East Riding	0.5%	2.0%	0.0%	-1.1%	0.1%	-1.0%	-1.0%	-0.1%	-0.3%
Scotland	-0.4%	2.7%	1.2%	-1.6%	-1.0%	0.5%	-0.5%	-0.5%	-0.3%
Wales	0.3%	1.6%	1.4%	-0.7%	-1.0%	0.4%	-0.3%	-1.3%	-0.4%

Figures show change in percentage of working population in occupational categories from 2008 to 2018. Source: ONS

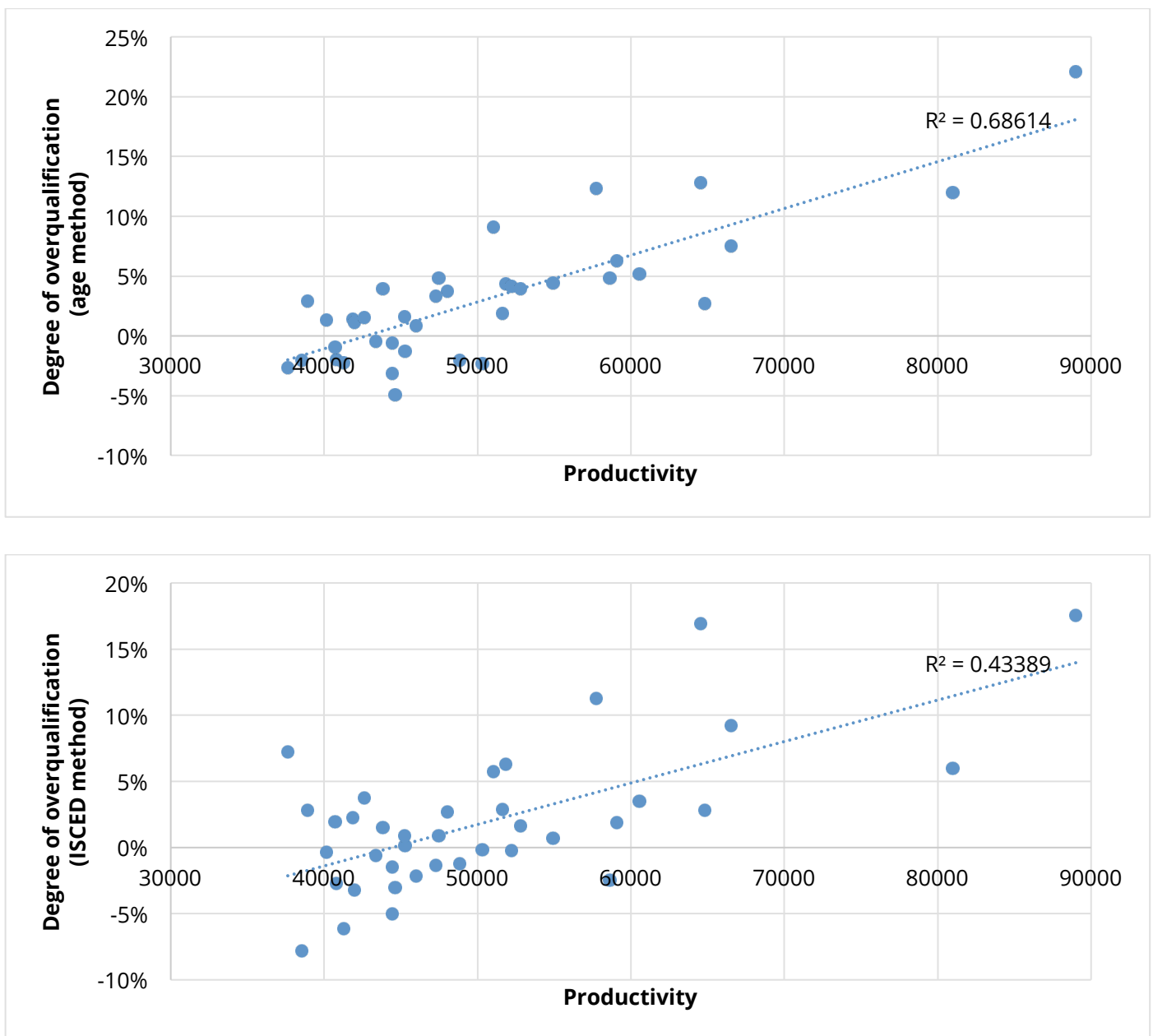
This suggests that LEPs wishing to increase levels of productivity should prioritise industries and companies which bring technical and professional occupations over those concentrating on skilled trades or administration.

1.3 Comparison of Occupations and Qualifications

An important question for skills strategies is the degree to which existing qualifications match the requirements of existing occupations. An ILO methodology is used to make an estimate here based on over and under qualification being defined as more than one standard deviation away from the mean for the relevant detailed occupational classification. Since qualifications are not a linear measure, this was calculated in two ways: on the basis of the level of the qualification (using the first digit of the ISCED level) and based on the age on leaving full time education.

This shows that productivity is correlated with the degree of over qualification (defined as the percentage of people overqualified, less the percentage of people underqualified) using both methodologies, see Figure 9.

Figure 9. – Correlation of productivity and overqualification



Source: ONS

This suggests that training has an impact on productivity in existing jobs – people who are properly qualified for the occupation are more productive. Nonetheless, the picture shows a wide variation between different areas, which would require more detailed examination to come to a definitive conclusion – see Figure 10.

Figure 10. – Over and under qualification by LEP and DA

LEP	Age method			ISCED method		
	Over	Correct	Under	Over	Correct	Under
Black Country	9%	81%	11%	9%	73%	17%
Buckinghamshire Thames Valley	16%	73%	11%	19%	66%	15%
Cheshire and Warrington	16%	76%	8%	22%	64%	13%
Coast to Capital	19%	71%	10%	22%	63%	16%
Cornwall and Isles of Scilly	8%	82%	11%	17%	72%	10%
Coventry and Warwickshire	19%	69%	12%	17%	68%	15%
Cumbria	9%	80%	11%	12%	75%	12%
Derby, Derbyshire, Nottingham & Nottinghamshire	10%	80%	10%	14%	71%	15%
Dorset	12%	75%	13%	17%	67%	17%
Enterprise M3	14%	75%	11%	18%	66%	16%
Gloucestershire	16%	72%	12%	20%	66%	14%
Greater Birmingham and Solihull	15%	75%	10%	16%	68%	16%
Cambridge and Peterborough	15%	75%	11%	19%	64%	17%
Greater Lincolnshire	10%	77%	12%	12%	72%	15%
Greater Manchester	14%	76%	10%	16%	71%	13%
Heart of the South West	13%	76%	11%	15%	71%	13%
Hertfordshire	15%	74%	10%	16%	65%	19%
Humber	11%	78%	10%	12%	72%	16%
Lancashire	9%	79%	12%	13%	72%	15%
Leeds City Region	13%	75%	12%	15%	70%	14%
Leicester and Leicestershire	14%	77%	9%	15%	71%	14%
Liverpool City Region	9%	78%	14%	12%	73%	15%
London	28%	65%	6%	29%	60%	11%
New Anglia	11%	79%	10%	13%	73%	15%
North East	10%	78%	11%	15%	72%	13%
Oxfordshire	21%	71%	8%	27%	64%	10%
Sheffield City Region	12%	79%	9%	15%	73%	12%
Solent	9%	79%	11%	15%	70%	16%
South East	12%	75%	13%	14%	67%	19%
South East Midlands	16%	73%	11%	16%	68%	15%
Stoke-On-Trent and Staffordshire	11%	78%	10%	14%	72%	14%
Swindon and Wiltshire	14%	75%	12%	16%	71%	13%
Tees Valley	9%	80%	11%	11%	73%	17%
Thames Valley Berkshire	18%	75%	6%	20%	67%	14%
The Marches	10%	81%	9%	15%	73%	12%
West of England	22%	69%	9%	23%	66%	12%
Worcestershire	13%	77%	10%	13%	73%	14%
York, North Yorkshire and East Riding	13%	78%	9%	15%	72%	13%

Figures extracted and analysed from ONS LFS Household April-June 2017.

1. THE POTENTIAL FOR ENTREPRENEURSHIP

As well as skills in existing jobs and as employees, innovation is connected with entrepreneurship and therefore it is interesting to consider how entrepreneurial the workforce is. The Global Entrepreneurship Monitor (GEM) research consortium has been measuring the entrepreneurial activity of working age adults across a wide range of countries in a comparable way since 1998. In 2017, the study conducted surveys in 54 sovereign nations and represented the world's most authoritative comparative study of entrepreneurial activity in the general adult population. GEM's primary focus is on the study of three areas:

- To measure differences in the level of entrepreneurial activity between countries
- To uncover factors leading to appropriate levels of entrepreneurship
- To suggest policies that may enhance the national level of entrepreneurial activity.

Examining the data from GEM shows some variation across England at a LEP level, in terms of the level of entrepreneurship and attitudes to it (Figure 11).

Figure 11. - Entrepreneurial characteristics by LEP

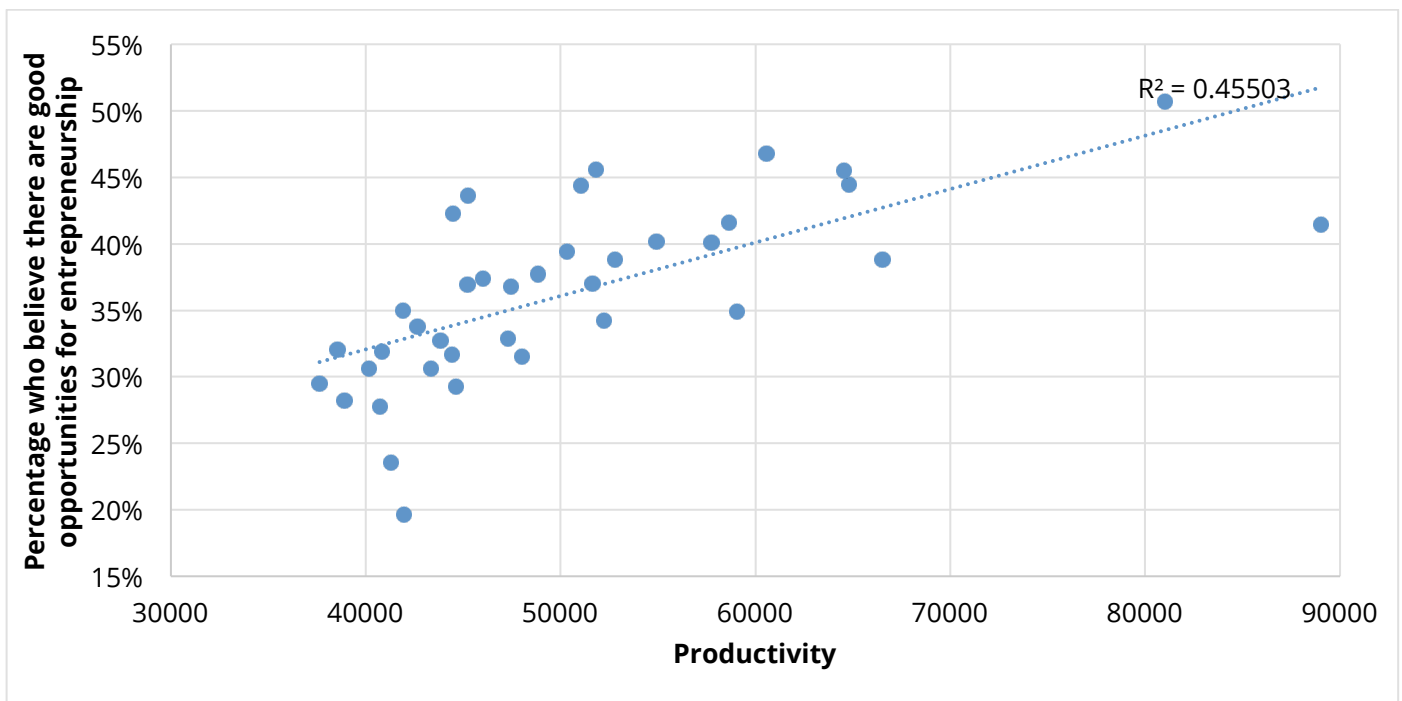
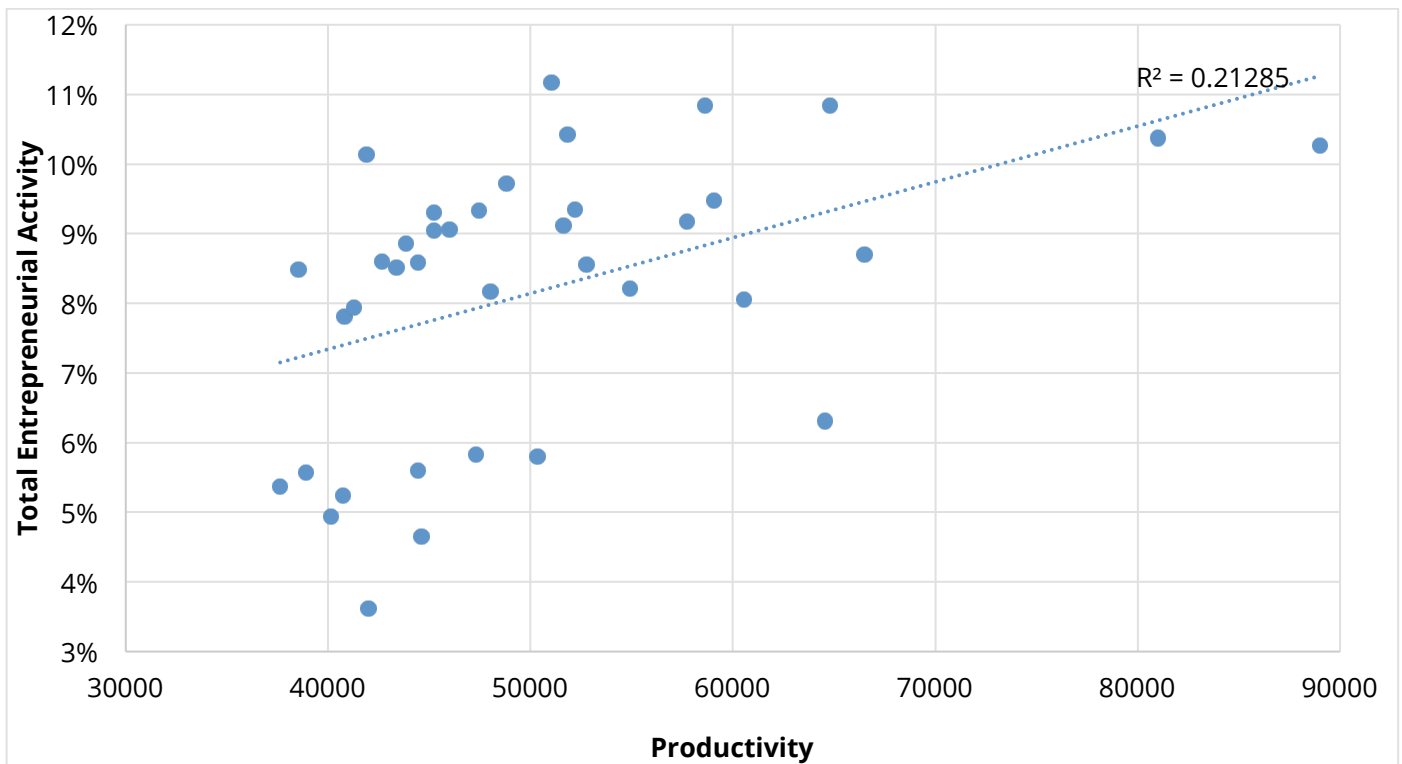
LEP	Total Entrepreneurial	Intend to start up business	Know a start up business	Believe there are good opportunities	Believe they have the right skills	Fear of failure would not prevent	Starting business is a good career	Successful entrepreneurs have high status	The media portrays entrepreneurs positively
Black Country	8%	10%	20%	32%	37%	39%	61%	81%	55%
Buckinghamshire Thames Valley	8%	15%	23%	47%	43%	37%	59%	81%	51%
Cheshire and Warrington	9%	8%	26%	39%	37%	46%	58%	77%	57%
Coast to Capital	11%	10%	24%	44%	42%	39%	57%	75%	51%
Cornwall and Isles of Scilly	5%	6%	31%	29%	41%	39%	55%	78%	55%
Coventry and Warwickshire	9%	7%	22%	35%	37%	49%	58%	79%	58%
Cumbria	6%	7%	30%	39%	40%	36%	51%	81%	48%
Derby, Derbyshire, Nottingham and Nottinghamshire	9%	9%	25%	31%	35%	36%	57%	77%	56%
Dorset	9%	9%	26%	44%	44%	38%	53%	75%	57%
Enterprise M3	11%	11%	27%	44%	45%	46%	56%	83%	61%
Gloucestershire	10%	14%	28%	46%	42%	39%	53%	80%	49%
Greater Birmingham and Solihull	9%	13%	24%	34%	41%	32%	58%	80%	58%
Cambridge and Peterborough	9%	10%	28%	39%	43%	39%	58%	73%	57%
Greater Lincolnshire	8%	8%	23%	32%	39%	36%	50%	72%	50%
Greater Manchester	8%	9%	25%	31%	37%	38%	57%	82%	58%
Heart of the South West	10%	8%	25%	35%	41%	43%	50%	75%	49%
Hertfordshire	11%	11%	27%	42%	39%	41%	61%	81%	55%
Humber	4%	4%	21%	20%	36%	41%	64%	83%	66%
Lancashire	6%	5%	27%	32%	44%	43%	52%	78%	53%
Leeds City Region	9%	11%	27%	37%	38%	42%	57%	79%	54%
Leicester and Leicestershire	9%	9%	28%	37%	41%	41%	61%	77%	57%
Liverpool City Region	5%	4%	23%	29%	32%	41%	53%	74%	56%

LEP	Total Entrepreneurial	Intend to start up business	Know a start up business	Believe there are good opportunities	Believe they have the right skills	Fear of failure would not prevent	Starting business is a good career	Successful entrepreneurs have high status	The media portrays entrepreneurs positively
London	10%	15%	30%	41%	41%	45%	60%	78%	58%
New Anglia	9%	9%	26%	37%	39%	29%	51%	76%	52%
North East	5%	8%	26%	28%	35%	37%	55%	78%	56%
Oxfordshire	6%	7%	29%	46%	38%	43%	49%	82%	55%
Sheffield City Region	6%	8%	28%	28%	35%	40%	56%	75%	54%
Solent	10%	9%	26%	38%	39%	48%	53%	80%	55%
South East	9%	8%	28%	42%	39%	42%	54%	77%	52%
South East Midlands	8%	9%	27%	40%	38%	40%	53%	80%	54%
Stoke-On-Trent and Staffordshire	5%	6%	27%	31%	37%	37%	56%	76%	53%
Swindon and Wiltshire	9%	7%	25%	37%	35%	37%	58%	81%	57%
Tees Valley	8%	8%	26%	24%	40%	30%	58%	83%	60%
Thames Valley Berkshire	10%	17%	29%	51%	40%	44%	58%	80%	51%
The Marches	9%	9%	23%	34%	43%	40%	58%	79%	63%
West of England	9%	7%	24%	40%	39%	49%	46%	77%	54%
Worcestershire	6%	7%	23%	33%	42%	46%	53%	69%	55%
York, North Yorkshire and East Riding	9%	6%	25%	33%	35%	53%	55%	78%	57%

Source: GEM survey 2017

There is limited correlation here with productivity – in any case this might be difficult to measure because today's entrepreneurship will only have an impact some time into the future. Nonetheless, there is some correlation with total entrepreneurial activity (TEA), and with perception that there are good opportunities for entrepreneurship in the area, see Figure 12.

Figure 12. - Correlation of productivity and entrepreneurial characteristics



Interestingly, the degree to which people consider that they have the skills for entrepreneurship does not seem to be correlated with productivity.

This pattern suggests that entrepreneurship does have some impact on productivity. Therefore, areas with very low rates both of entrepreneurship and productivity should consider whether specifically promoting entrepreneurship and new business opportunities would have a beneficial impact.

2. HIGHER EDUCATION

Data from HESA on leavers from higher education gives an opportunity to track individual students: where they were domiciled, where they went to university and where they started work. Many areas fear the 'brain drain': that students from the area leave and move to other parts of the country where they stay. Analysing the figures shows a much more complex position, see Figure 13.

Figure 13. – Student mobility by LEP and DA

	Those from the area				Those who work in the area				Retention of those who studied in the area
	Left	Studied and left	Studied elsewhere came back	Never left	From area and studied there	From elsewhere studied there	From area but studied elsewhere	From elsewhere	
Black Country	18%	12%	17%	53%	18%	2%	6%	74%	77%
Buckinghamshire Thames Valley	52%	18%	15%	15%	21%	6%	21%	52%	38%
Cheshire and Warrington	38%	22%	15%	25%	26%	8%	16%	50%	42%
Coast to Capital	15%	4%	38%	43%	5%	2%	4%	88%	81%
Cornwall and Isles of Scilly	43%	12%	17%	28%	40%	16%	24%	20%	41%
Coventry and Warwickshire	29%	12%	22%	37%	9%	4%	5%	81%	44%
Cumbria	39%	7%	19%	35%	45%	6%	25%	24%	66%
Derby, Derbyshire, Nottingham and Nottinghamshire	28%	15%	18%	40%	40%	18%	18%	24%	45%
Dorset	38%	11%	19%	32%	37%	15%	22%	26%	38%
Enterprise M3	42%	17%	19%	22%	18%	7%	16%	58%	42%
Gloucestershire	39%	12%	19%	30%	34%	11%	21%	34%	52%
Greater Birmingham and Solihull	19%	10%	19%	52%	26%	9%	9%	56%	61%
Cambridge and Peterborough	35%	8%	25%	31%	11%	5%	9%	76%	55%
Greater Lincolnshire	41%	12%	16%	31%	43%	12%	22%	22%	51%
Greater Manchester	19%	12%	18%	52%	42%	17%	14%	27%	65%
Heart of the South West	36%	10%	17%	37%	44%	13%	20%	22%	47%
Hertfordshire	42%	20%	17%	20%	26%	6%	22%	46%	38%
Humber	38%	32%	10%	20%	48%	4%	25%	23%	28%
Lancashire	28%	17%	13%	43%	54%	10%	16%	20%	51%
Leeds City Region	20%	7%	19%	54%	35%	14%	12%	38%	62%
Leicester and Leicestershire	30%	16%	18%	36%	38%	18%	18%	26%	36%
Liverpool City Region	19%	17%	10%	54%	53%	16%	10%	21%	57%
London	11%	8%	23%	58%	37%	14%	15%	34%	82%
New Anglia	35%	10%	17%	38%	49%	11%	22%	18%	66%
North East	17%	10%	10%	63%	61%	17%	10%	12%	58%
Oxfordshire	38%	14%	20%	27%	23%	17%	17%	43%	36%
Sheffield City Region	25%	12%	16%	47%	34%	15%	12%	39%	52%
Solent	31%	11%	17%	41%	35%	20%	14%	31%	45%
South East	35%	17%	15%	33%	48%	7%	22%	22%	53%
South East Midlands	33%	12%	23%	32%	24%	4%	17%	56%	62%
Stoke-On-Trent and Staffordshire	35%	35%	9%	21%	41%	5%	17%	38%	29%

	Those from the area				Those who work in the area				Retention of those who studied in the area
	Left	Studied and left	Studied elsewhere came back	Never left	From area and studied there	From elsewhere studied there	From area but studied elsewhere	From elsewhere	
Swindon and Wiltshire	46%	14%	18%	22%	29%	3%	24%	44%	58%
Tees Valley	25%	15%	10%	50%	55%	6%	11%	27%	64%
Thames Valley Berkshire	39%	16%	20%	25%	23%	7%	19%	51%	44%
The Marches	41%	16%	16%	27%	39%	4%	24%	34%	48%
West of England	27%	12%	21%	40%	28%	25%	14%	33%	44%
Worcestershire	38%	20%	14%	28%	38%	8%	19%	35%	47%
York, North Yorkshire and East Riding	41%	19%	16%	24%	31%	16%	21%	31%	41%
England averages	32%	14%	17%	36%	34%	11%	17%	38%	51%
Northern Ireland	56%	2%	6%	36%	84%	1%	14%	2%	94%
Scotland	4%	7%	5%	84%	81%	9%	4%	6%	86%
Wales	17%	9%	12%	62%	68%	11%	13%	9%	68%

Figures from Destination of Leavers from Higher Education survey 2016/2017.

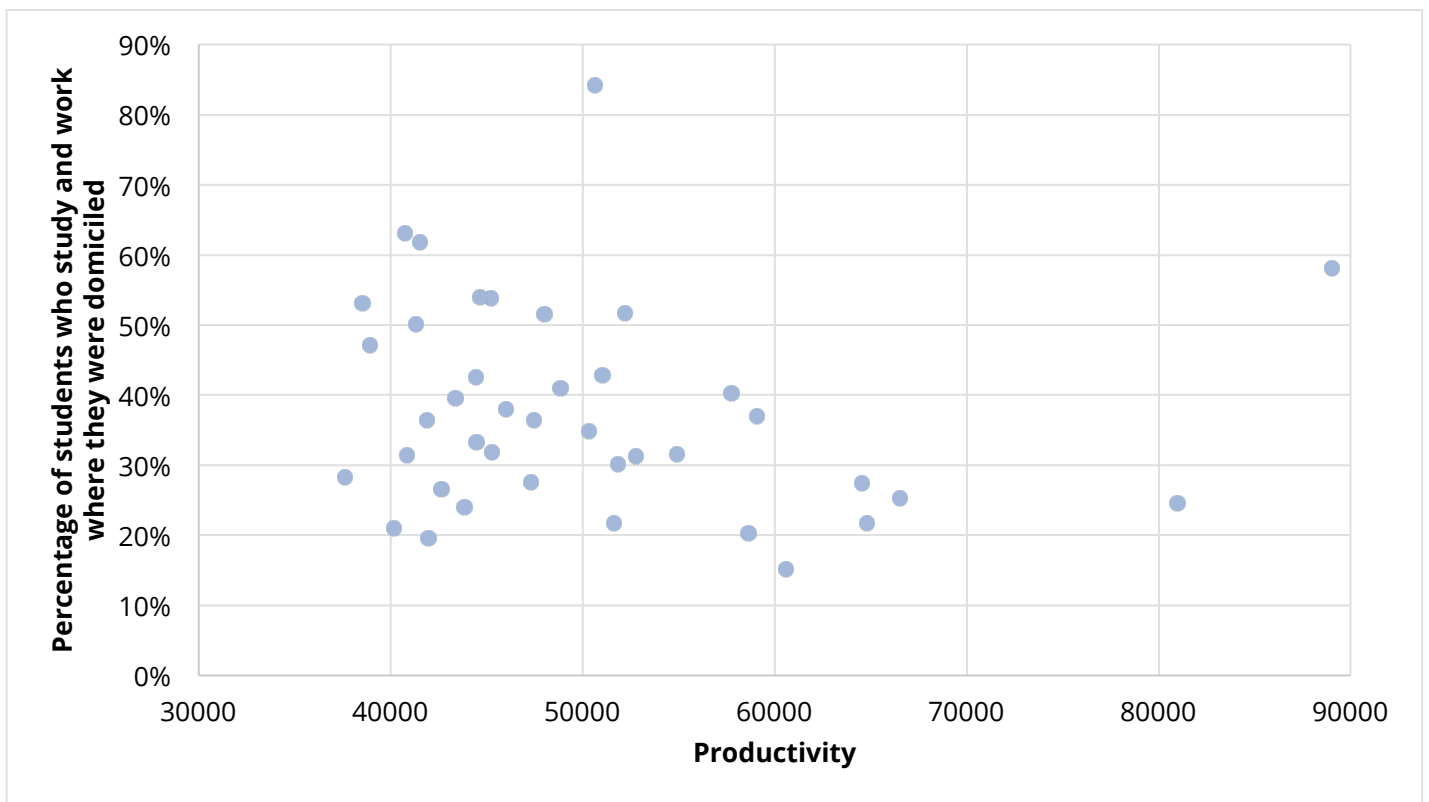
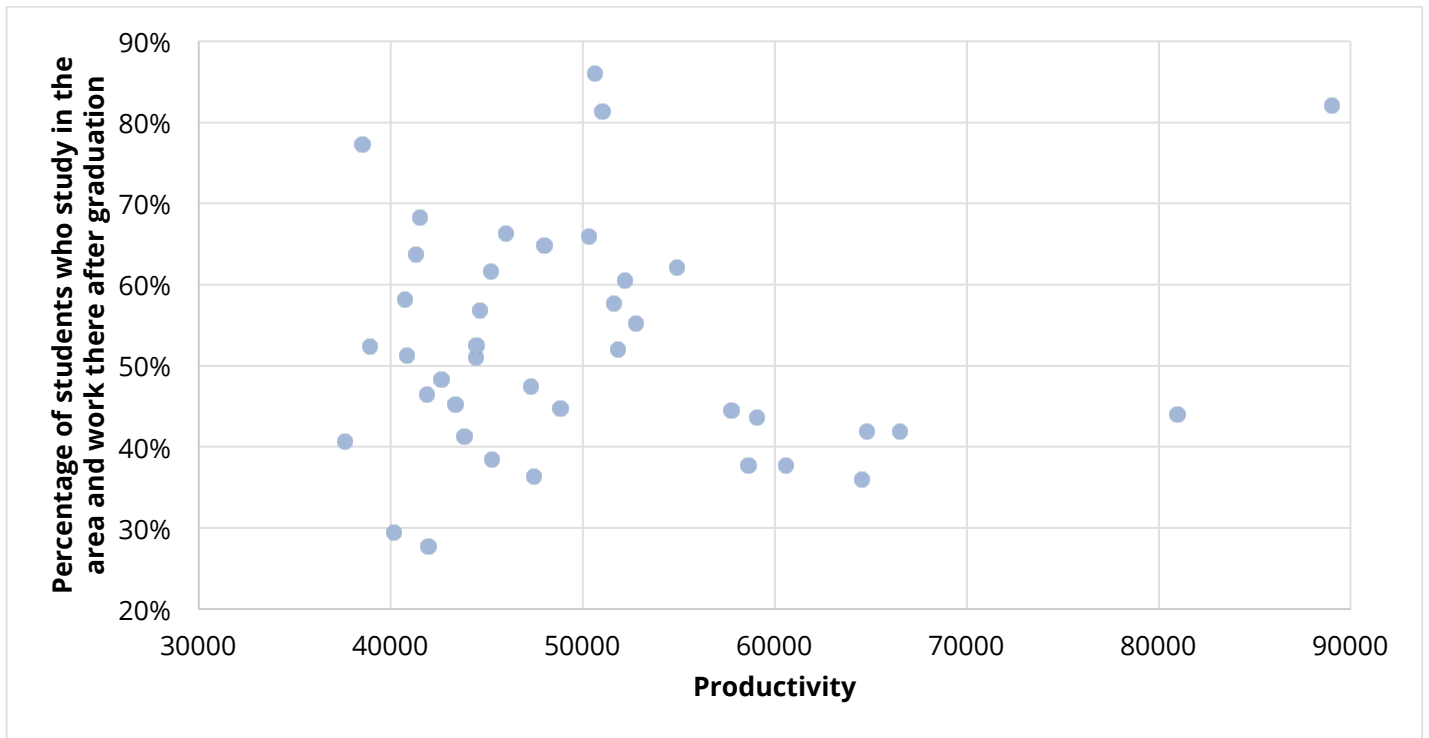
The area students come from is defined by local authority but that where they work is defined on a county basis.

Figures for those working in a particular LEP can therefore relate to a wider geographical area than the other figures.

Student retention relates to the percentage of students studying in an area who work there.

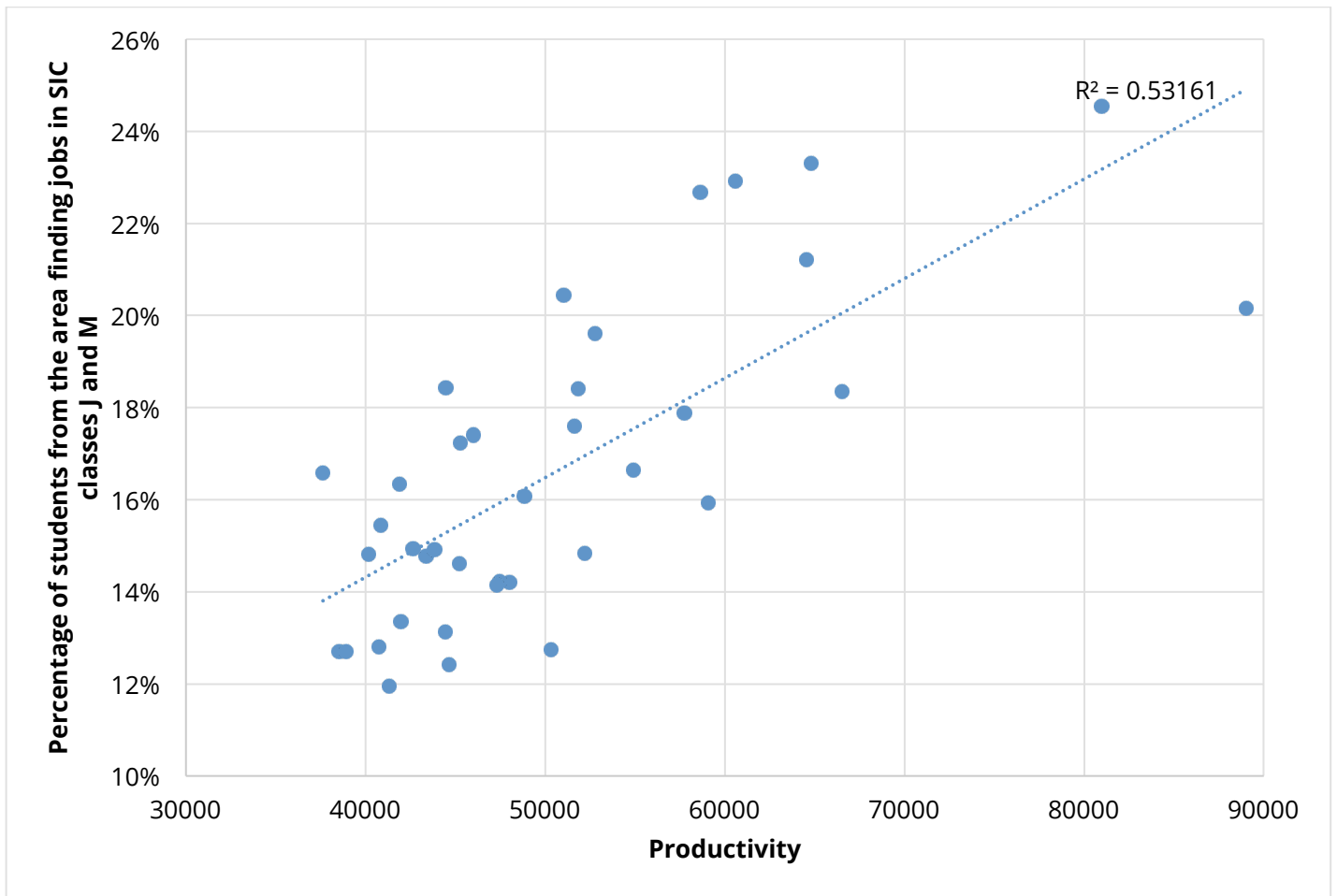
In particular, it can be noted that the degree to which students who study in an area continue to work in the same area is not well correlated with productivity. This also applies to those who never leave the region (i.e. are domiciled, study, and work in the same area) – see Figure 14.

Figure 14. – Correlation between productivity and student mobility



This suggests that simplistic attempts to retain graduates in the region are not likely to be successful. A different approach might be to look at what industries students from the region go into. Exploration on this basis shows a correlation between the percentage of students from the area ending up in industries in SIC codes J (information) and M (business services) and the productivity of the area in general (Figure 15). Therefore, it is possibly more important to encourage potential students to study the right subjects rather than to try to keep all students after they have graduated.

Figure 15. – Correlation between productivity and industrial classification of student jobs



3. IMPLICATIONS

Clearly the interaction between skills, the labour market and productivity is a complex one and correlations do not give a direct indication of appropriate policies to follow. Nonetheless, the following points can be made from the analysis above:

1. While LEPs can, and should, look at ways to predict skills demands into the future (for example using the Working Futures model), in order to raise productivity, it is important also to look at the skills people are using in existing jobs.
2. Unsurprisingly, the type of occupation has an impact on productivity and again, for this purpose, it is important to look for ways that increase professional and technical occupations rather than administrative and skilled trade ones. This has implications for investment promotion.
3. While skills with direct applicability to employment are important, skills related to entrepreneurship should not be ignored, particularly in those areas where there is a low level of entrepreneurship.
4. While it is tempting to worry about a "brain drain" of students, with the idea that students only study in an area but then leave it, the evidence that this has a negative effect is limited. Rather it would seem important to consider aspects such as the subjects which students originally domiciled in the area choose to study, and continued promotion of higher education as a good choice.



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