

South West England

The South West produced 6% of UK-domiciled PhD graduates and employed 7.5% of the UK PhD workforce in the DLHE survey. The region is one of only two that is a net “importer” PhD graduates. When compared to the national averages, PhD graduates from South West HEIs have lower unemployment rates, are slightly more likely to gain work outside the UK and more than half of them (53%) remain in the South West for work.

Key statistics:

The 435¹ UK-domiciled PhD graduates from South West institutions made up 6% of the UK total:

- 55% were male and 45% female, identical to the UK average
- 31% studied part-time, slightly higher than the UK average of 27%
- The most popular subjects were chemistry, psychology, biology and engineering.

Of the 325 (75%) who responded to the 2004 DLHE² survey:

- 82.5% entered employment in the UK³
- 2.1% were unemployed, lower than the UK average of 3.2%
- 8.9% continued their careers overseas compared to 8.1% across the UK.

Of the 270 PhD graduates from South West HEIs who had entered employment in the UK:

- 48.7% entered the education sector, predominantly in higher education
- 13.1% were employed in manufacturing and 14.6% in the health sector
- 59% remained in the South West and 41% moved to other regions in the UK.

The South West employed 315 (7.5%) of the UK-domiciled PhD graduate workforce:

- 51% gained their PhD at institutions in the South West
- 49% moved to the South West from other regions of the UK
- 49.2% were employed in the education sector: 40% of these as postdoctoral researchers; 42% in university teaching roles, primarily as lecturers
- 21% of all the PhD graduates working in the South West were employed as postdoctoral researchers.

The South West was a net importer (4%) of UK-domiciled PhD graduates: the only other UK region along with London to have a net gain of PhD graduates:

- PhD graduates who left the South West for work were most likely to move to London and the South East
- The South West attracted 10% of the UK-domiciled PhD graduates who left their region of study for known UK locations
- PhD graduates who moved to the region were most likely to come from the South East, West Midlands and the East and work in the education sector (36%).

Overview of South West higher education institutions⁴

There are seven universities and six higher education colleges in the South West of England. In 2004, the regional profile for the South West produced by HEFCE reported the total student population at these institutions to be over 111,000 full-time equivalent (FTE) students. Provision of higher education is varied with institutions ranging in size from the University of the West of England in Bristol (over 22,000 student FTEs) to Dartington College of Arts (under 500 student FTEs).

Of the HE students in the South West, 3.5% were registered for postgraduate research degrees, predominantly at the institutions with a substantial research income; the Universities of Bristol (which dominates the region in terms of research income), Bath and Exeter (see Table One).

Higher education institution	Final year PhD numbers
The University of Bristol	325
The University of Exeter	175
The University of Bath	145
The University of Plymouth	60
University of the West of England, Bristol	45
University of Gloucestershire	15
Bournemouth University	5
Total	770

Table One: Final year PhD researchers by HEI in the South West⁵

The research strengths of higher education institutions (HEIs) in the South West are reflected in Figure One, derived from the results of the 2001 Research Assessment Exercise (RAE)⁶. Further analysis of the RAE results shows that 66% of submissions from South West institutions were rated at 4 or above, with over a third (38.5%) scoring the highest ratings of 5 and 5* – the highest proportion of any UK region. These top rated departments are across the subject spectrum indicating the broad range of research expertise in the region.

¹ All figures are rounded to the nearest five for data protection

² Destination of Leavers from Higher Education – a survey of all UK and EU first and higher degree graduates

³ 71.5% are classified as ‘working in the UK’; 11.0% are ‘working and studying in the UK’. The data throughout WDPDR on employment includes both classifications

⁴ HEFCE 2004 Regional Profiles: South West

⁵ These figures are derived from the HESA student record data for those who were scheduled to complete their enrolment period in 2002/03. They include international PhD researchers who were not included in the DLHE survey www.hesa.ac.uk/pi/0203/research.htm

⁶ Data set available at www.hero.ac.uk/rae/Results

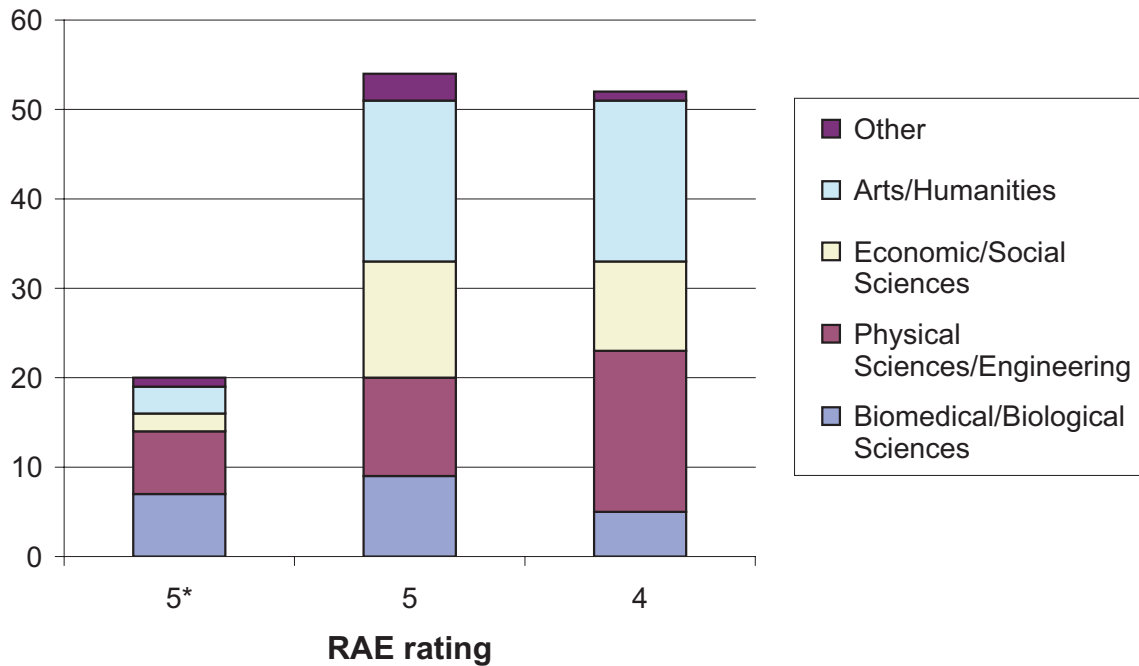


Figure One: Research subjects of top graded RAE submissions in the South West

Economic strengths

The rate of unemployment across the region is 2.7%⁷, significantly lower than the English average of 4.8%. The most economically successful parts of the region are the North and East, where high-tech, financial and industrial companies are based and South Gloucestershire is an important centre for the aerospace industry. Although, the level of Research and Development (R&D) expenditure at 2.3% is higher than the UK average of 2.0%, it is lower than other UK regions such as the East and South East, which have larger high technology industry sectors.

The South West of England Regional Development Agency (South West RDA)⁸ has identified a number of economically important and emerging industries, which are important to the region's future prosperity. These include food and drink, advanced engineering & aerospace, information and communications technology (ICT), the creative industries, marine, tourism, environmental technologies and biotechnologies. If these sectors thrive in the region, there will be an increased demand for the knowledge and skills of researchers.

Profile of PhD graduates from the South West

Of the 7270 UK-domiciled PhDs who graduated in the UK in 2003, 6.0% (435) graduated from HEIs in the South West. Of these PhD graduates, 45% were female and 55% male in line with the UK average. Part time study was more common in the South West than in other regions, accounting for 31% of degrees awarded compared to the UK average 27%.

Figure Two shows the breakdown of PhD graduates by subject groups. More PhD graduates from South West HEIs came from the physical sciences than the UK as a whole (33.7% compared to 32%), but fewer from the arts and humanities (10.1% compared to 13.7%). The other subject groupings are very similar to the national picture, with small variations for the economic and social sciences (12.4% compared to 11.1%) and medical sciences (25.8% compared to 26.9%). The remaining 6% came from education and related subjects and combinations of other subjects (compared to 4% of the national figures).

⁷ HEFCE 2004 Regional Profiles: South West

⁸ www.southwestrda.org.uk

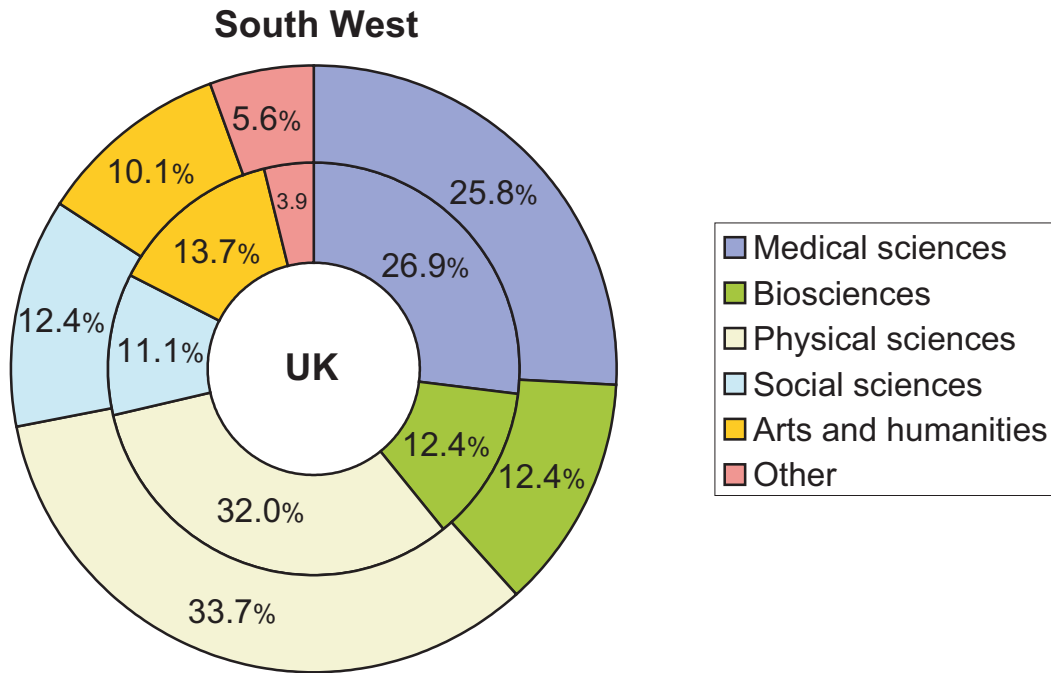


Figure Two: Subject groups of all UK-domiciled PhD graduates from HEIs in the South West (outer ring) compared to all UK HEIs (inner ring) in 2003

The list of the 'top ten' subjects for PhD graduates from the region contains six of the subjects in the UK table (see Table Two). Chemistry is particularly strong in the South West and the table shows a stronger scientific bias than the UK average. Only two non-science and engineering subjects appear, those of business studies and education.

Subject and ranking	South West	Total (and position) in UK
1. Chemistry	10.3%	7.7% (2)
2. Psychology	5.3%	7.6% (3)
3. Biology	5.8%	5.2% (4)
4. Mechanical Engineering	3.9%	2.0% (16)
5. Clinical Medicine	3.7%	8.2% (1)
6. Physics	3.7%	4.4% (5)
7. Molecular biology, biophysics and biochemistry	3.2%	2.5% (10)
8. Business studies	2.6%	2.1% (14)
9. Clinical veterinary medicine and dentistry	2.3%	0.5% (43)
10. Pharmacology, toxicology and pharmacy	2.6%	2.9% (7)
10. Others in education	2.1%	0.6% (39)

Table Two: Top subjects studied by PhD graduates in South West HEIs with comparisons to UK figures

What do PhD graduates from the South West do?⁹

Of the 435 UK-domiciled PhD graduates from South West HEIs in 2003 eligible for the 2004 survey, 325 responded. This is the second highest response rate of any region and at 75% is markedly higher than the UK average 66%.

Figure Three summarises the responses to the DLHE survey. 71.5% of UK-domiciled PhD graduates from South West HEIs had entered the workplace when the survey was conducted, compared to the overall UK figure of 72.7%. A further 11.0% were engaged in work and study simultaneously – higher than the UK average of 8%. Slightly more PhD graduates had moved overseas (8.9%) than for the UK as a whole (8.1%). Unemployment rates for UK-domiciled PhD graduates from South West institutions at 2.1% were lower than the UK average of 3.2%.

⁹ The data in this section refers to PhD graduates from South West HEIs who were working in all regions of the UK

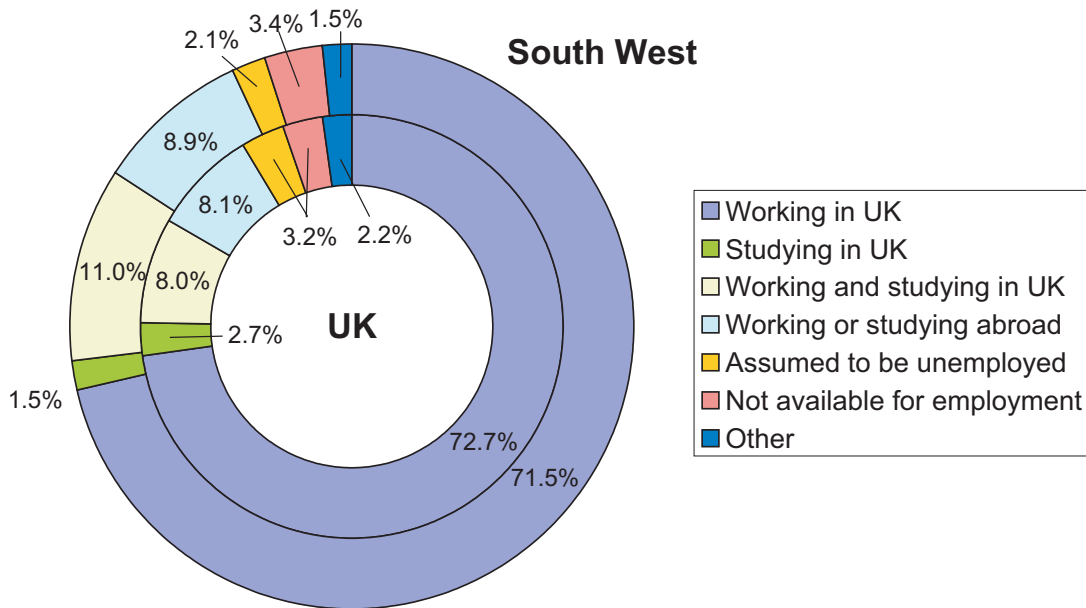


Figure Three: First destinations of UK-domiciled PhD graduates for all subjects from HEIs in the South West (outer ring) compared to all UK HEIs (inner ring) from 2004 DLHE survey responses

Employment sectors

The 82.5% PhD graduates from South West HEIs working or working and studying in the UK were employed in a range of sectors across the UK. Consistent with the UK average of 47.8%, the education sector was the dominant destination, employing 48.7%, predominantly in higher education.

The balance (51.3%) were employed in a range of occupations across all sectors, with minor differences against the UK picture, as Figure Four illustrates.

Manufacturing industries employed fewer South West PhD graduates at 13.1% compared to 16.3% across the UK. 66% of these were employed by the chemical and pharmaceutical industries, accounting for 9% of all South West UK-domiciled PhD graduates compared to a national figure of 11%.

At 13.8% the health service also employed fewer PhD graduates from South West HEIs compared to 15.5% across the UK. This probably reflects the smaller percentage graduating in clinical medicine from the region (see Table Two). A higher percentage were employed by business, finance and IT industries at 11.6% compared to 9.1% across the UK. Other sectors employed similar percentages to the UK averages.

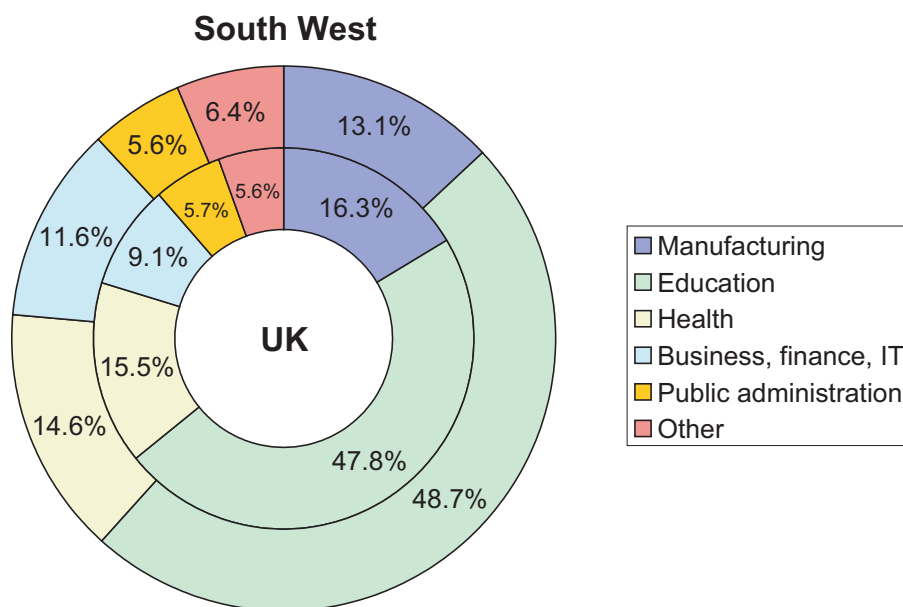


Figure Four: Employment sectors entered by UK-domiciled doctoral graduates from South West HEIs (outer ring) compared to all UK institutions (inner ring), based on Standard Industrial Classifications returned in 2004 DLHE survey

Career occupations

We examined the specific occupations entered by PhD graduates from South West HEIs. As the previous employment sector analysis indicates, a similar picture to the UK average emerged.

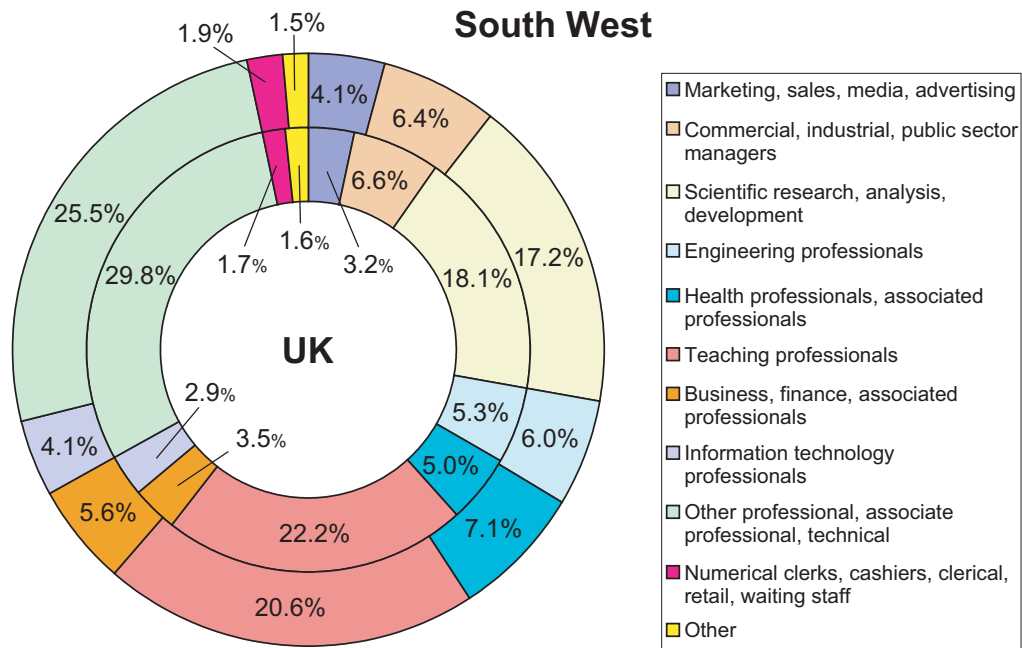


Figure Five: Types of work entered by UK-domiciled PhD graduates from HEIs in the South West (outer ring) compared to all UK institutions (inner ring), based on Standard Occupational Classifications returned in 2004 DLHE survey

The largest variation from the UK average was in “other professions”, which includes some postdoctoral researchers. This sector employed 25.5% of South West PhD graduates compared to the UK average of 29.8%. A slightly higher percentage (7.1%) worked in the health professions compared to the UK average (5.0%). However, the most noticeable differences with the UK averages were in business, finance and associated professions (5.6% compared to a 3.5% UK average) and IT professionals (4.1% compared a 2.9% UK average).

Migration

We examined the migration patterns of UK-domiciled PhD graduates from the South West’s HEIs who were in employment at the time of the survey.

110 PhD graduates (37% of total employed) left the South West for employment in other regions of the UK. This proportion is very similar to the average figure for all UK regions of 38%. PhD graduates from the South West moved across the UK with London and the South East the most popular, attracting 9% and 8% respectively¹⁰.

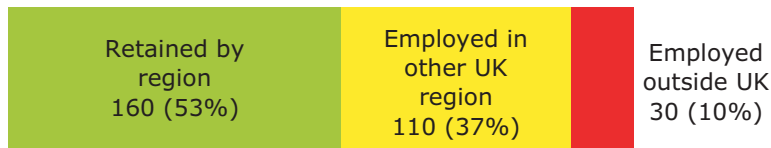
Another 30 PhD graduates (10% of total employed) left the South West for work or work and study abroad (compared to the national proportion of 9%).

155 PhD graduates moved to the South West for employment. Unlike most regions, the South West saw a net gain of PhD graduates with 4.4% more PhD graduates starting work in the region than studied for their PhDs there¹¹.

¹⁰ Data protection prohibits a full analysis of region to region migration

¹¹ The net migration figures should be treated with care. 2.5% of the total DLHE respondents did not identify a specific region of employment. If these respondents are skewed to one region this will impact significantly on the net migration figures

(a) PhDs graduating from the South West



(b) PhDs employed in the South West

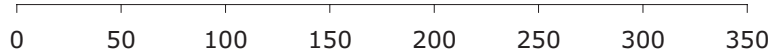


Figure Six: Mobility of South West PhD graduates in employment (a) and origin (region of study) of PhD graduates working in the South West (b)

What do PhD graduates employed in the South West do?¹²

160 PhD graduates from HEIs in the region were working in the South West at the time of the survey, representing 51% of the total PhDs working in the region. These were joined by 155 PhD graduates from elsewhere in the UK who gained employment in the region. Small numbers of PhD graduates came from each of the other UK regions, but the South East provided the most substantial number (12% of those employed into the region), along with the West Midlands (7%) and East of England (6%). The South West was the fourth most popular destination amongst UK-domiciled PhD graduates who left their regions of study for known UK locations: 10% of mobile PhD graduates moved into the region. Along with London, the South West is one of only two regions to see a net in-flow of PhD graduates into the regional labour market.

Employment sectors

The employment sectors for all PhD graduates employed in the South West are compared to the national picture in Figure Seven. In line with the rest of the UK, the education sector employed 49.2% of PhD graduates in the region, compared to 47.8% across the UK. Of these, 42% were employed as university lecturers and 41% as postdoctoral researchers.

The manufacturing sector accounted for a lower proportion of PhD graduates in the South East, employing 12.5% compared to the UK average of 16.3%. Unlike other regions, where the chemical and pharmaceutical industries dominate manufacturing, the aerospace industry is a major employer in the South West¹³. The health sector employed a slightly lower percentage in the South West (13.5%) compared to the UK average (15.5%). The percentages employed in the business, finance and IT sector (10% compared to the 9.1% UK average) and public administration (8% compared to 5.7%) were slightly higher than the UK averages.

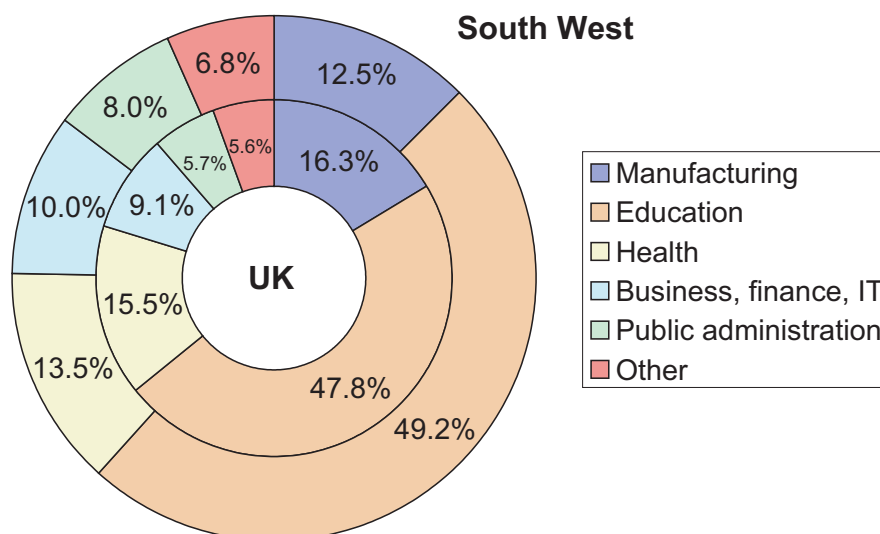


Figure Seven: Employment sectors entered by UK-domiciled PhD graduates employed in the South West (outer ring) compared to all UK regions (inner ring), based on Standard Industrial Classifications returned in the 2004 DLHE survey

¹² The data in this section refers to PhD graduates from all regions of the UK who were working in the South West

¹³ For full definitions of Standard Industrial Classifications, see National Statistics Online www.statistics.gov.uk/

For the 155 PhD graduates who moved to the South West for employment, the largest employment sector was education (36%). Of these, 47% were employed as university lecturers and 27% as postdoctoral researchers¹⁴. However, at 36% the proportion of those moving into the region for employment in the education sector was lower than for many other regions and reflected the depth of the regional PhD labour market, including manufacturing (16%), public administration (14%) and business and finance (12% of those moving in to the region).

Career occupations

We examined the specific occupations entered by UK-domiciled PhD graduates employed in the South West. The picture is similar to the UK as a whole, as outlined in Figure Eight.

The most significant difference between the occupations of PhD graduates employed in the South West and the national picture was the higher proportion of PhD graduates employed as teaching professionals at 25.7% compared to 22.2% across the UK. Slightly fewer were employed in the scientific research classification (15.8% compared to 18.1%), and in the 'other professionals' classification (which includes some postdoctoral researchers) at 27.3% compared to 29.8%. Overall, 21% of all the UK-domiciled PhD graduates employed in the South West were employed as postdoctoral researchers, slightly lower than the UK average of 22%. All of the other classifications for the region were close to the national averages.

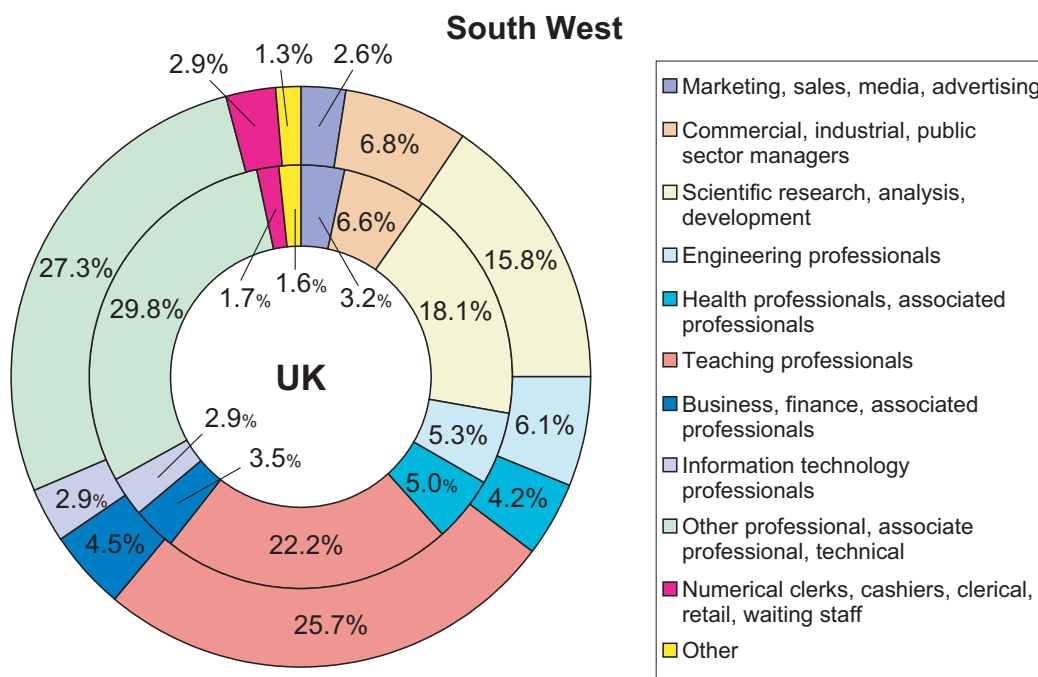


Figure Eight: Types of work entered by UK-domiciled PhD graduates employed in the South West (outer ring) compared to all UK regions (inner ring), based on Standard Occupational Classifications returned in 2004 DLHE survey

¹⁴ 'What Do PhDs Do?' methodology describes the process of identifying postdoctoral researchers in universities www.grad.ac.uk/wdps