

What Do PhDs Do? Methodology

Introduction

This is a practical guide to the methodology¹ used in the What Do PhDs Do? (WDPD?) series to enable institutions or individuals to apply the same methods to compare their data against the national data. The current publications in this series are: *What Do PhDs Do?* (2004), *What Do PhDs Do? – A Regional Analysis* (2006) and *What Do PhDs Do? – Trends* (2007).

Source data

The raw data come directly from the Destinations of Leavers from Higher Education Survey (DLHE) data, obtained from the Higher Education Statistics Agency (HESA)². The subset for survey response results consists of all those who *responded* to the survey. The subset is further refined by *excluding* those who were *domiciled outside the UK*. The data subset for employment sectors and types of work is further refined by *excluding* all those who were *working outside the UK*.

Survey response categories

Entered work in the UK

Includes those listing their activity as *Full time paid work*, *Part time paid work*, *Voluntary or unpaid work* or *Self-employed*, in the UK.

Working and studying

Includes those listing their activity as *Full time work and full time study*, *Full time work and part time study*, *Part time work and full time study* and *Part time work and part time study*.

Working or studying overseas

Includes those listing their activity as *Full time paid work*, *Part time paid work*, *Voluntary or unpaid work*, *Self-employed* or *Further study overseas*.

Entered study or training in the UK

Includes those listing their activity as *Entered study or training*, in the UK, and describing it as *Higher degree by research*, *Higher degree - taught*, *Diploma or certificate or professional qualification*, *First degree course*, *Private study* or *Other study or training*.

Not available for work or study

Includes those describing their employment circumstances as *Permanently unable to work*, *Temporarily unable to work*, *Retired*, *Looking after the home or family* and *Taking time out in order to travel*.

Believed unemployed

Includes those describing their employment circumstances as *Unemployed, and looking for employment*, *further study or training* or *Due to start a job within the next month*.

¹ This methodology was developed by Dr Charlie Ball of the Higher Education Careers Services Unit (HECSU) based on the methodology developed for the annual first degree destination publication, *What Do Graduates Do?*, produced by HECSU and the Association of Graduate Careers Advisory Services, (AGCAS).

² www.hesa.ac.uk

Other

Includes those describing their employment circumstances as *Not employed, but not looking for employment, further study or training, or Something else*.

The survey response graphs (e.g. *WDPD?* Figure One, p.15) present data referring to all responding PhD graduates domiciled within the UK.

The discipline chapters are grouped by Joint Academic Coding System (JACS) subject codes as defined below.

Responses are categorised by the reported activity, and employment circumstances.

Subject grouping

Subjects are grouped in the discipline chapters by using the JACS codes³ as follows:

- **biological sciences***: subjects C1–D9, excluding C8, and including J7
- **biomedical sciences***: subjects A1–B9, and C8
- **physical sciences**: subjects F0–K9, excluding J7
- **social sciences**: subjects L0–N9
- **arts and humanities**: subjects P0–W9
- **other**: (not covered as a separate area in the publication) refers to subjects in classes X (education) and Y (combined subjects).

[*In *What Do PhDs Do?* (2004) the biological sciences and biomedical sciences were combined as one chapter, **biological and biomedical sciences**.]

Types of work

The ‘type of work’ categories in the *WDPD?* series are built from the Standard Occupational Classification (SOC) codes⁴ as in the following table.

Type of work category	Standard Occupational Classifications
Marketing, sales, media, and advertising occupations	341-344, 354
Commercial, industrial and public sector managers	111-116, 118, 121-123, 23170, 411
Scientific research, analysis and development occupations	211, 23210
Engineering professionals	212
Health professionals and associate professionals	22110-22123, 22130-22160, 321, 322
Teaching professionals	23111-23160, 23190-23194
Business and finance professionals	242, 353, 356
Information technology professionals	213, 313
Other professional, associate professional and technical occupations	22120-22123, 23220, 23290-23292, 241, 243-245, 311, 312, 323, 351, 352, 355
Numerical clerks and cashiers, clerical, retail and bar staff	412-415, 421, 711, 922
Armed forces and public protection service occupation	117, 331, 942
Other occupations	511-629, 712-921, 923, 925
Unknown occupations	No assigned SOC

³ For the full JACS coding go to www.hesa.ac.uk/jacs/jacs.htm

⁴ Data in the *WDPD?* series were built from a customised dataset: SOC codes are at three digit level except where explicitly stated. For the full SOC listing go to www.hesa.ac.uk/manuals/03018/03018a04.htm

[For *What Do PhDs Do?* (2004) some consolidation of smaller type of work categories was applied to each discipline chapter to simplify results as follows:

- **Arts and humanities:** *Scientific research, analysis & development occupations, and Engineering professionals and Information technology professionals* were combined to produce *Scientific research & development, engineering & IT occupations*. *Armed forces & public protection service occupations* were added into the *Other occupations* category
- **Biological and biomedical sciences:** *Engineering professionals and Information technology professionals* were combined to produce *Engineering & IT professionals*
- **Physical sciences and engineering:** all categories were included
- **Social sciences:** *Armed forces & public protection service occupations* were added into the *Other occupations* category. There were no *Engineering professionals*, so this category was removed.]

Employment sector breakdown

The employment sectors were broken down according to Standard Industrial Classification (SIC) codes⁵.

Employment Sector	Standard Industrial Classifications
Education	80
Finance, Business and IT	64-67, 72, 74
Health and Social Work	85
Manufacturing	11, 15, 16, 20, 22-27, 29, 30-36, 40, 41, 73
Public Administration	75
Other Sectors	1, 2, 5, 45, 51, 52, 55, 60, 62, 63, 70, 71, 91, 92, 99, and unknown

Postdoctoral researchers

One of the primary occupations of PhD graduates is postdoctoral research. However, postdoctoral researchers are not explicitly identified in the dataset. They have been identified in WDPD? by cross-referencing available information on industrial (SIC) and occupational (SOC) classifications. The total number of postdoctoral researchers were identified in the data by the total of all PhD graduates working in SIC 80 (Education) who were also classified in the following SOCs:

- 21110 Chemists
- 21111 Research/Development Chemists
- 21120 Biological Scientists and Biochemists
- 21121 Biochemists, Medical Scientists
- 21122 Biologists
- 21124 Botanists
- 21126 Agricultural Scientists
- 21127 Physiologists
- 21130 Physicists, Geologists and Meteorologists
- 21131 Physicists
- 21133 Geologists, Mineralogists etc.
- 21134 Meteorologists
- 21135 Astronomers
- 21136 Mathematicians
- 21210 Civil Engineers

⁵ For the full SIC codes go to www.hesa.ac.uk/manuals/04018/04018a02.htm

- 21220 Mechanical Engineers
- 21221 Aeronautical Engineers
- 21230 Electrical Engineers
- 21240 Electronic Engineers
- 21242 Avionics, Radar and Communications Engineers
- 21250 Chemical Engineers
- 21260 Design and Development Engineers
- 21290 Engineering Professionals (Not elsewhere classified)
- 21291 Metallurgists and Material Scientists
- 213 Information and communication technology professionals
- 22120 Psychologists
- 22121 Education Psychologists
- 22122 Clinical Psychologists
- 22131 Pharmacists
- 22132 Pharmacologists
- 23210 Scientific Researchers
- 23220 Social Science Researchers
- 23290 Researchers (Not elsewhere classified)
- 23292 Researchers (University - unspecified discipline)

Summary

In explaining the methodology behind the figures and tables in the What Do PhDs Do? series we hope that we have increased the value and potential application of the reports and will allow institutions to apply the same analyses to data regarding the destinations of their own PhD graduates.

If you would like more information on the methodology, please contact admin@grad.ac.uk