

# STAND OUT AND BE COUNTED

A GUIDE TO MAXIMISING YOUR PROSPECTS



for students studying Social Science and Humanities subjects

# WHAT ARE QUANTITATIVE SKILLS?

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## The ability to handle data and use numerical evidence systematically.

Generating and analysing data requires you to be numerate and statistically savvy. Quantitative skills (QS) can include anything from the ability to design surveys or experiments to assessing and using quantitative evidence from surveys, digital media, archives or open data.

I keep saying the sexy job in the next ten years will be statisticians... The ability to take data – to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it – is going to be a hugely important skill in the next decades... Because now we really do have essentially free and ubiquitous data.

*Hal Varian, Google's Chief Economist*

## WHERE CAN QS TAKE ME?

Broad numerical skills are highly prized in careers in business, charities, politics, academia and the public sector. QS are not just transferable between different work places, they translate well overseas too. Global management consulting firm McKinsey has estimated that by 2018 there will be a shortage of 15–200,000 data scientists and up to 1.5m data savvy managers and professionals in the US alone.

## WHY DO THEY MATTER?

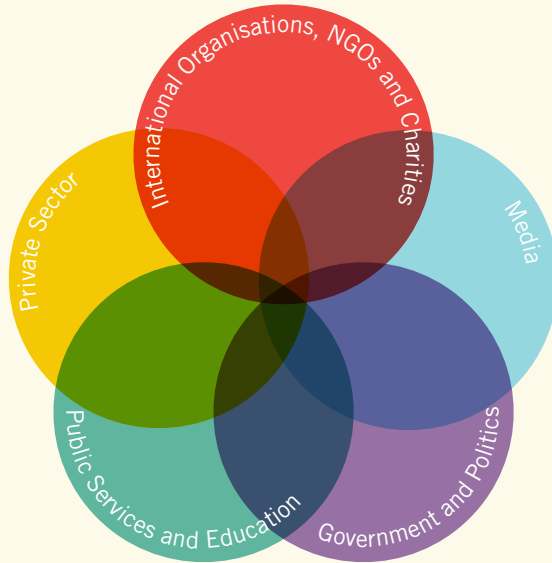
QS underpin effective evidence-based planning and procedure in the public, private and other sectors, as well as 'blue skies' thinking. However there is a QS deficit in the UK, with 55% of employers reporting widespread QS weaknesses amongst their employees.

This guide will show you the steps you could take to learn QS and launch an exciting career.



The CV Snapshot reveals the many paths that our profiles have taken to get comfortable using QS.

# WHICH JOBS USE QUANTITATIVE SKILLS?



- Project coordinators
- Lobbyists and activists
- Fund managers and fundraisers
- Social statisticians
- Club leaders and charity workers

- Investigative journalists
- Researchers for print, TV and online media

- Politicians
- Evidence-based policy makers
- Political aides and opinion pollsters
- Government economists, statisticians and researchers
- Civil Service managers
- Pressure groups
- Trade union representatives
- Watchdog analysts

- Health informatics analysts
- Police teams and prison officers
- Local authority strategists
- Finance and personnel managers
- Teachers and lecturers
- Expert advisors and inspectors
- Neighbourhood planners

- CEO and industry officials
- Entrepreneurs and small business owners
- Finance managers
- PR and market analysts
- Management consultants
- Product designers and architects

*and many more*



If your occupation has any quantitative aspect to it – and very few do not – to get a firm QS grounding will be of immense value. It will also help keep household expenses in line which makes most people sleep better and saves the odd domestic – in itself not to be sniffed at!

### James Daunt CEO, Waterstones


The QS skills I learnt as a banker gave me an ability to assess performance and risk, and to ground this empirically. Without these skills, such assessment is liable to be subjective and therefore more likely to be wrong. I now run a chain of bookshops. QS is central to any retailer's armoury. Flair, talent, instinct and the like matter, but without a firm quantitative basis you'll soon be in trouble.

 History, French and Geography A Levels / History Degree / Investment banker / MBA

### Joe Twyman

Director of Political and Social Research, YouGov

I learnt detailed QS techniques whilst doing market research into tomatoes and wonder bras in my first job. QS gives you the power to interrogate primary data and draw your own conclusions as well as critically interpret other analysis. I am Founding Director of YouGov. As a political pollster I use my QS daily and literally could not do my job without them. Highlights of the job have included co-ordinating election studies in many countries and providing expert analysis for the media.

 Data entry job in the school holidays / Politics, Economics and Maths A Levels / Politics Degree / Graduate trainee at Research Services Limited (now Ipsos-MORI)



When you are applying for jobs in this economic climate, being able to demonstrate quant skills is one of the most positive and effective ways of differentiating yourself from the other candidates – both in my industry and many others.



Being comfortable with numbers sets you apart from many other journalists. It helps you to develop the alarm bells that should go off when PR companies send you bogus research or governments announce figures that do not add up.

## Anthony Reuben

BBC Business Reporter

I did an interesting project for A Level Maths analysing the results of cricket matches between England and Australia. From the stats I was able to conclude that we were experiencing a golden age of test cricket. Since working at the BBC I have developed interactive, data-led applications such as budget and student finance calculators. My analysis of the figures behind the Spending Review won me the Royal Statistical Society's award for excellence in online journalism.

 Maths, History and Economics A Levels /  
Philosophy, Politics and Economics Degree /  
Assistant Producer for Financial Times Television

## Simon Rogers

Guardian DataBlog Editor

I was terrible at maths at school and absolutely hated it. But when I worked with the Guardian graphics team I started collecting data and soon needed ways to bring together and compare datasets. Most data-journalism answers very simple questions: has it got smaller or bigger? How does it compare to something else? So I needed the tools to do those jobs. Now I edit the Guardian Datablog and Datastore, which publishes and analyses the data behind the news – the idea is to make the big stories much more accessible.

 Sociology Degree / A newspaper course / Compiled databases for a branding magazine



Numbers on their own are just numbers. They need context to bring them alive. I always wanted to tell stories with words: I couldn't have imagined telling them with numbers, but that's how it's worked out.



Without numbers, most opinion is just that and much political debate vacuous.

### Lord David Lipsey

Member of the House of Lords, Chair of the All Party Parliamentary Group on Statistics, Trustee of Full Fact

I failed to manage the statistics course in my PPE degree but I have tried to make up for that since. After learning the value of numbers while working on the pay claims of union workers, I worked for an MP who later became Environment and Foreign Secretary. He was an advocate of evidence-based policy before it became fashionable. I now chair the All Party Group on Statistics at Westminster as well as serving on the board of the factchecking organisation, Full Fact which promotes accuracy in public debate.



Philosophy, Politics and Economics Degree /  
Researcher at the General and Municipal Workers  
Union / MP's Assistant

### Elizabeth Spratt

Analyst, Local Government Association

Data is used all around us in society, whether in politics, the media, or academia, and can powerfully affect policy decisions and interventions. It's invaluable to have the skills to understand the source and limitations of the data presented to you, to ensure that decisions are made based on sound evidence. I currently use my QS when designing research projects, and also for deciding the best way to present the data visually, to ensure findings are clearly conveyed to non researchers.



A good knowledge of QS allows me to provide robust statistics that can help to influence key policy developments.




History, Latin and English Literature A Levels /  
History Degree / Temporary Research Assistant at  
the Chartered Institute of Purchasing and Supply where  
I first learnt QS / MA in Sociological Research Methods /  
Research Officer at HMRC

## Jil Matheson

National Statistician, Office of National Statistics

The QS I learnt at school, university and in my working life have provided a unique, and valuable, set of tools to help policy makers and the public better understand the world in which we live. They provide insight into the performance of the economy, the circumstances of different groups in society, and help us evaluate the policy options we are presented with.

 Maths and Sociology A Levels, although I had wanted to do English, Physics, French, Politics and P.E. too / Sociology Degree / Assistant Social Survey Officer at the Office of Population Censuses and Surveys



It's the future!  
Almost any career will require, at least, an ease with numbers. But beyond that, QS will help you participate fully in every aspect of life – from choosing a career to assessing the claims of politicians!




Look for imaginative opportunities to use your skills to the benefit of customers and staff, even if you haven't been asked to. It can be illuminating and keeps your skills fresh.

## Phil Spence

Director of Operations and Services, British Library

I've used QS in all the organisations I've worked at so we could improve our performance. In the Ambulance Service we used QS to establish the best locations for deploying ambulances to improve speed of response and survival rates. With the Police I used them to establish the number of traffic officers needed. Now my QS give me a degree of comfort when working out how many staff it takes to run the Library's reading rooms, or analysing user satisfaction questionnaires.

 Physics, Chemistry, Biology and General Studies A Levels / Psychology Degree with a Diploma in Applied Psychology / Researcher for Ministry of Defence RAF Research Branch / Scottish Ambulance Service / Northamptonshire Police



I remember that many undergraduate students in my classes found the QS elements of the course to be the most challenging. Some chose to simply 'get by' and learn enough to pass their exams. However, I firmly believe that my understanding of QS has given me important advantages in my work thus far.

### Dr Liz Ward

Principal Research Officer, Ministry of Justice

I built my QS confidence during my studies and have used them throughout my career. At the Home Office I analysed police data on violent crime offences to explore the impact of government initiatives to reduce serious youth violence. I currently use QS in many ways, including assessing the QS of social science graduates applying for Government Social Research posts at the Ministry of Justice. I have seen otherwise strong candidates fail in their applications because they were unable to evidence QS.



Maths, English and Psychology A Levels / Psychology BSc Degree / Research Methods in Psychology MSc / Psychology PhD / Senior Research Officer in the Crime, Drugs and Alcohol Research Unit, Home Office / Principal Research Officer in the Analytical Services Directorate, Ministry of Justice

### Dr Clare Griffiths

Lecturer in Criminology, Keele University

When I took a QS module during my MA I realised the potential of quantitative methods to ask and answer 'big' questions on social issues. My PhD investigated whether immigration inevitably disrupts local social order – increasing crime, conflict, and insecurity. Using QS allowed me to dispel some of the myths about immigration and crime.



Politics Degree / Social Research MSc / Political Science PhD



Don't be scared off! Learning quantitative methods is a crucial step to becoming a social scientist.





You don't have to be a mathematician to use QS. So throw away those negative experiences of GCSE maths and dive into some social survey data – you will not be disappointed!

## Dr Luke Sloan

Lecturer in Quantitative Methods,  
Cardiff University

I didn't have much quantitative experience before my Masters, but I now teach QS to all Social Science students, from introductory first year courses to advanced post-graduate modules. QS are central to my research where I am exploring ways of analysing naturally occurring social media data. Because the skills are so transferable I can apply my working knowledge to any large-scale dataset which means that I can be truly interdisciplinary.



Politics Degree / Social Research MSc / Political Science PhD

## Dr Sarah Floud

Epidemiologist and Social Scientist,  
Cancer Epidemiology Unit, Oxford University

I use my QS every day when analysing large datasets or reading and understanding scientific papers. You don't have to be good at maths – I think my Latin and Ancient History A Levels have been most useful for teaching me to think logically and write argumentatively.



Maths, Ancient History and Latin A Levels / Social Policy and Social Psychology Degree / Social Research Methods in Social Policy MSc / Data analyst for a health promotion company / Social Researcher for the Department for Transport / Epidemiology PhD



To use QS you just need to be logical and have an interest in trying to solve questions using data from real people about their lives.



I now work with social scientists from a range of disciplines using QS to research education, the labour market and human development.

## Professor John Micklewright

Professor of Quantitative Social Science,  
Institute of Education, University of London

It wasn't until after my undergraduate studies that I got drawn towards quantitative methods. I got a job as a research assistant and was soon hooked on using sample surveys to inform public policy. I enjoyed both the engagement with topical issues and the intellectual challenges involved. I went on to use QS while working at the UN where I measured child wellbeing and policies affecting it.



Maths A Level / Geography and Economics  
Degree / Research Assistant at LSE / Economics  
PhD / Positions in Economics departments /  
Researcher for UNICEF / Professor of Quantitative  
Social Science

## Andrew Bell

Geography/Advanced Quantative Methods  
PhD Student researching health inequalities

I was reasonably good at maths at school but had always found statistics pretty boring, and didn't go into my degree planning to 'do statistics'. In my third year, however, I took a course which showed how much interesting information stats can actually reveal, and that inspired me to take it further.



Geography Bachelors / Worked for Oxfam  
Campaigns Department



Quantitative methods allow questions about society to be answered that you simply cannot answer (or could get very wrong) without statistics.




## Gitit Kadar- Satat

Education PhD Student investigating the impacts of out-of-school activities

Having at least some understanding of quantitative methods is essential for all students as it could enable them to obtain knowledge from sources that otherwise would be out-of-reach.

I didn't have success with Maths as a teenager and dropped out of school before taking final exams. I was, therefore, concerned that the compulsory undergraduate QS courses would be too hard. But with the help of great teachers and hard work, I managed to get an A in all of these courses.

 Social Sciences BA / Tutored primary school children / Sociology MA / Ran an after-school club

## Rob Oakes

Human Geography PhD Student analysing hurricane evacuations

My current research uses “Q” methodology to understand hurricane evacuation behaviour. “Q” has been described as a combination of both qualitative and quantitative methods. It enables in-depth, reflexive study while also providing plenty of rigorous data which can then be crunched!

 History and Economics Bachelors / English teacher in the UK and Columbia / Environment, Development and Policy MA



The most useful quantitative skill I have developed is to be able to see the bigger picture. This can prevent getting bogged down with the minutiae and brings some perspective.



Quantitative ability is a real future-proof skill.

## Tom Emery

Social Policy PhD Student focussing on how older generations support younger generations through periods of financial uncertainty

My first job was as an intelligence analyst in the shipping industry where I would conduct data analysis on drug trafficking and pirate attacks using QS and computer coding. QS are now a core part of my research and let me collaborate with academics from all over Europe.



History, Maths and Sociology A levels / Politics, Philosophy & Economics BA / Comparative Politics MA / Intelligence Analyst / Worked for the Scottish Government / Quantitative Analysis in the Social Sciences MSc

## Sharon Witherspoon

Director, Nuffield Foundation

I started studying social science because I wanted to change the world! Gradually, I came to see that my interests and strengths were in trying to understand what causes what – which is important if you want to know how to change things. That requires good QS. Numbers help to unpick those complex chains of reasons and enable you to get a sense of the scale of social phenomena.



Studied Maths (because it was compulsory), Biology, History, Literature, and French (at High School in the USA) / Sociology Degree but also courses in economics, political philosophy, history and statistics / Post-graduate researcher in Historical Sociology / Worked for a Market Research firm / Social Survey Researcher at NatCen / Director of the Nuffield Foundation



I now direct a charitable foundation that investigates social issues and the interventions which might make things better, especially for children, families and the disadvantaged. We owe it to them to use the best and widest range of evidence. Having some empirical grit which can disprove cherished beliefs and reveal patterns that weren't obvious before is especially illuminating.



The best parts of my job are knowing that the research we do makes a difference to policy and practice. QS are highly regarded by many employers and really help in making sense of the world around us.

## Jenny Clark

Research Manager, National Council for Voluntary Organisations (NCVO)

After university I applied for social research jobs, mainly because I was curious about the people in the world around me. Whilst working as a research assistant I began a part-time Masters which gave me a solid grounding in QS. It was great to be able to apply the theory I learnt during my Masters in my job at the NCVO and vice-versa.



Maths, English and Geography A Levels /  
Geography Degree / Social Research Assistant /  
Advanced Social Research and Statistics Masters

## Aleks Collingwood

Programme Manager, Joseph Rowntree Foundation

After uni I worked on a project researching the Mediterranean diet's effects on the risk of disease, cancer survival and birth outcomes of refugees. For the World Health Organisation I looked at how the human body reacts to periods of famine. I set up a research office in Vanuatu designing and carrying out surveys on subjects as diverse as family planning methods and turtle conservation. I have spent the last ten years in the UK where I have worked as a child health and medical research analyst and looked into the characteristics of bullying victims. I now work in the areas of Poverty, Place and our Ageing Society – I would say this is one of my favourite jobs yet.



Studying Anthropology and Statistics was the starting block that has enabled me to enjoy a very colourful career.



Anthropology and Statistics Degree / University Researcher / Researcher for the World Health Organisation / Researcher for a Community Educational Theatre Group in Vanuatu / Co-ran Vanuatu Population and Housing Census / MSc in Demography and Health / Child health and medical research analyst at the Office of National Statistics / Research Analyst at NatCen

## Resources

### Starting points and refresher courses

*The Tiger that Isn't* by Michael Blastland and Andrew Dilnot (Profile Books 2007) is a clear and readable introduction to the world of quantitative skills, written by a BBC journalist and the chair of the UK Statistics Authority.

ESRC website on quantitative methods  
[www.quantitativemethods.ac.uk](http://www.quantitativemethods.ac.uk)

The Understanding Uncertainty website provides tools and tutorials for making sense of probability and risk  
<http://understandinguncertainty.org>

Carnegie Mellon University's online 'Probability and Statistics' and 'Statistical Reasoning' courses <https://oli.cmu.edu>

Bristol University Centre for Multilevel Modeling online course  
[www.cmm.bris.ac.uk/lemma](http://www.cmm.bris.ac.uk/lemma)

### Multimedia resources

BBC Radio 4 Series *More or Less*  
[www.bbc.co.uk/programmes/b006qshd](http://www.bbc.co.uk/programmes/b006qshd)

Math Tutor [www.mathtutor.ac.uk](http://www.mathtutor.ac.uk)

Professor Hans Rosling's Gap Minder website and *The Joy of Stats* TV series  
[www.gapminder.org](http://www.gapminder.org)

### Data sources

Economic and Social Data Service  
[www.esds.ac.uk/resources/teachresources.asp](http://www.esds.ac.uk/resources/teachresources.asp)

Office for National Statistics  
[www.ons.gov.uk/ons/index.html](http://www.ons.gov.uk/ons/index.html)

### National statistical literacy programmes

The British Academy  
Quantitative Skills Programme  
[www.britac.ac.uk/policy/Quantitative\\_Skills.cfm](http://www.britac.ac.uk/policy/Quantitative_Skills.cfm)

The Royal Statistical Society's *getstats* Programme [www.getstats.org.uk](http://www.getstats.org.uk)

Nuffield Foundation Quantitative Methods Programme  
[www.nuffieldfoundation.org/QM](http://www.nuffieldfoundation.org/QM)

Higher Education Academy Mathematics, Statistics and Operational Research Focus  
[www.heacademy.ac.uk/disciplines/maths-stats-or](http://www.heacademy.ac.uk/disciplines/maths-stats-or)

Higher Education Funding Council England's STEM Programme  
[www.hefce.ac.uk/whatwedo/crosscutting/sivs/stem](http://www.hefce.ac.uk/whatwedo/crosscutting/sivs/stem)



The [British Academy](#) launched a four year programme in 2011 to support Quantitative Skills in the humanities and social sciences. The Academy's programme is committed to a range of research support, partnerships and other activities, seeking to demonstrate the value and importance of quantitative skills for the health and wellbeing of education, research, individuals and society at large. The British Academy for the humanities and social sciences has been supporting the best in UK and international academic research for over a century. Established by Royal Charter in 1902, the Academy is a Fellowship of over 900 leading UK scholars and social scientists which works to further our understanding of the past, present and future through research, policy reports, publications and public events.



The [Economic and Social Research Council \(ESRC\)](#) has worked to strengthen the quantitative training provided for students, postgraduates and researchers over the last ten years. Most recently, ESRC has commissioned activities under the Quantitative Methods Initiative and as part of the £15.5 million Nuffield Foundation/ESRC/HEFCE Centres in Undergraduate Quantitative Methods Training. The ESRC is the UK's largest organisation for funding research on economic and social issues. It supports independent, high quality research which has an impact on business, the public sector and the third sector. The ESRC's total budget for 2012/13 is £205 million. At any one time the ESRC supports over 4,000 researchers and postgraduate students in academic institutions and independent research institutes.



The [Higher Education Funding Council for England \(HEFCE\)](#) promotes and funds high quality, cost-effective teaching and research, meeting the diverse needs of students, the economy and society. HEFCE is contributing funds in partnership with the Nuffield Foundation and ESRC to address identified skills deficits in quantitative methods.

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