

SOCIAL SCIENCE BY NUMBERS

careers with quantitative methods



About the guide

"Quantitative methods? The only numbers I deal with are page numbers and my word count!"

This comment by a social science student says a lot. Many social science students graduate with very basic quantitative skills and little confidence in using and applying them.

Yet, skills in quantitative methods (QM) are highly transferrable and marketable, and graduates with quantitative skills are increasingly sought by employers across all sectors – academia, government, charities and business.

The guide looks at the wide range of careers open to quantitative social scientists and aims to combat the weakness in quantitative skills across the social sciences. It will hopefully inspire you to use QM in your studies and careers and show you that quantitative methods are anything but boring and irrelevant!

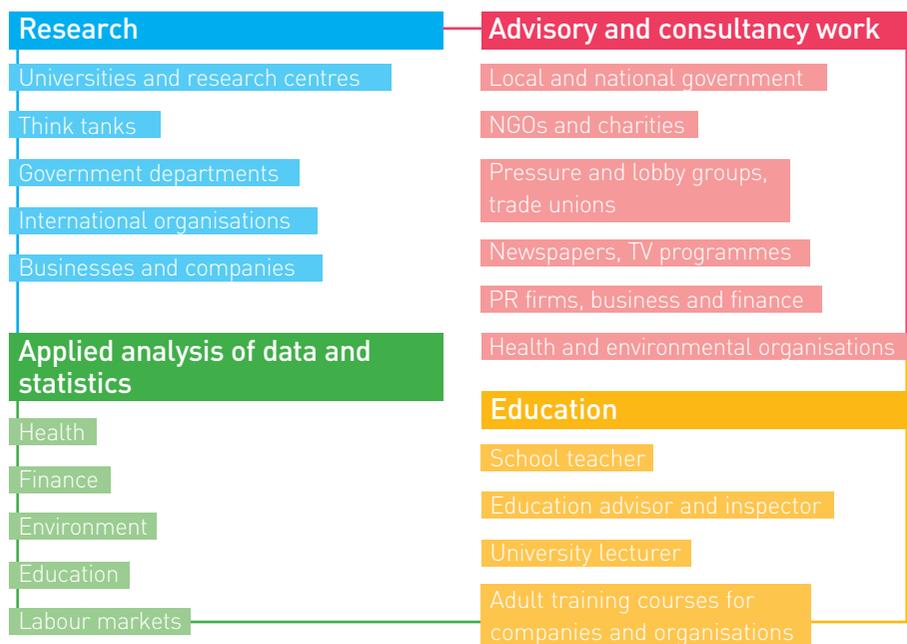
What are quantitative methods

Quantitative methods categorise and measure phenomena. Early achievements of social scientists using QM included understanding the causes of poverty better through a new technique – the social survey – and determining how accurate descriptions and analyses of populations that were far too big to measure could be obtained through taking smaller, manageable random samples.

Today, information technology, the web and computing power have not only revolutionised the amount and quality of data available, but also made analysis simpler and faster. For example, until recently it took years of effort to collect, analyse and publish the main results of a population census – one reason they only took place once a decade. Today the results of sample surveys with much more detailed and useful information are routinely available within a few weeks.

What can you do with quantitative skills?

You find quantitative social scientists working almost anywhere – as advisors and analysts for governmental and non-governmental organisations, in the pharmaceutical industry and health services, business, agriculture and lobby groups, and as lecturers and researchers in academia.



Myths and Truths

Myths

QM is about number crunching

It used to be, but now computers take care of that. QM is more about understanding what we can do with large volumes of information to test out our existing theories about how societies function, and explore new ones.

QM require advanced maths skills

Unless you go on to quite advanced techniques there is hardly any maths in QM beyond GCSE level. If you can count to 100, understand a percentage or a proportion, or make sense of a simple graph, you have the skills you need to start.

QM are only useful in economics and business

QM are used across the social sciences, for example in policy research, in education, in criminology and in labour market studies. And quantitative ability is taken by employers as a sign of other desirable skills.

Quantitative and qualitative methods are mutually exclusive

Increasingly, quantitative and qualitative researchers work together, and many use and combine both methods.

Truths

QM develop strong skills in logical and causal reasoning

The essence of QM lies not in numbers or statistical formulae but in developing logical, consistent rules for evaluating evidence. Developing clear, logical thinking is probably the most transferrable skill there is.

QM are the most marketable transferable skill available

Graduates consistently report that 'my QM skills got me the job'. Employers often see quantitative competence as evidence of skills such as the ability to analyse logically, weigh arguments objectively and separate the essential from the superfluous.

QM are fundamental to locating and evaluating many different kinds of evidence

Perhaps the most important skill QM competence gives you is the ability to judge when conclusions are sound and when they are stretched beyond the limits of what the evidence can reasonably support.

STUDENTS

Clare Jones

PhD Student, Criminology, Keele University



My PhD focuses on the recent immigration from Eastern Europe and on how such social changes are experienced in local communities. The project questions whether immigration is inevitably disruptive for the local social order, increasing crime, conflict, and insecurity amongst 'established' and 'newcomer' groups.

After taking a module in quantitative methods during my Masters degree in Criminology and Research Methods,

I realised the potential of quantitative methods to ask and answer 'big' questions on social issues. Quantitative methods allowed me to answer these questions and to dispel some of the myths; an aspect which makes the use of quantitative methods so appealing and interesting. The use of quantitative methods has provided me with transferable skills beyond my discipline; skills which are rare amongst social scientists, and therefore provide a wider pool of potential jobs available to me.

George MacKerron

PhD Student, Geography and Environment,
London School of Economics



My PhD is at the intersection of environmental economics and the emerging economics of happiness. I'm looking at people's self-reported happiness, and how it's affected by different aspects of the quality of their local environments: for example, by levels of air pollution, traffic noise, and access to green spaces. Quantitative methods are important in this research because everyone agrees, for example, that air pollution is unpleasant and green

spaces are nice: it's no help just to say this again. Instead, it's important to try to work out just 'how' nice green spaces are. The quantitative methods I'm using include web-based surveys, spatial databases and spatial econometric techniques to investigate relationships between happiness and spatial variables. As the last phase of my data collection, I'm about to launch a project called 'mappiness'. This uses a specially-written iPhone application to explore how people's feelings at a specific moment in time are affected by the environment they're in. It's really satisfying to be able to use these quantitative methods to bring together all sorts of different data in answering new and interesting questions.

ACADEMIC

Peter Lynn

Professor of Survey Methodology, Institute for Social and Economic Research, University of Essex



When I chose to study statistics at university I had no idea where it would lead. We once had a guest lecturer from a survey organisation who told us how survey samples were selected. It sounded fascinating so I wrote to the survey organisation asking if they had any vacation jobs for a student. I was invited to interview and the rest, as they say, is history! I worked there for ten weeks and was invited to join permanently once I had graduated. I have worked on surveys for 23 years since then and there has never been a dull moment. Each survey has different challenges. Survey methods is not just about statistics. There are elements of psychology and sociology too. I have worked on projects all round the world. There are many organisations who want to know how they should collect data, so there is no end of work. Survey methodology provides a host of opportunities!

John Micklewright

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



I studied geography and economics at undergraduate level. I had done maths at A-level and some statistics during my undergraduate study, but neither was that important in my being drawn towards use of quantitative methods. That road was more or less an accident – I got a job as a research assistant at the London School of Economics. I was soon hooked on the use of sample surveys to inform public policy, enjoying both the engagement with policy issues of the day and the intellectual challenges in the application of appropriate methods to different data sources. I went on to a PhD in economics and to jobs in economics departments. I then joined the UN to work for UNICEF, applying quantitative methods to measurement of child wellbeing and policies affecting it. Now back in academia, I am in a department with social scientists from a range of disciplines applying quantitative methods to pressing issues to do with education, the labour market and human development.

THIRD SECTOR/CHARITIES

Jenny Clark

Research Manager, National Council for Voluntary Organisations



After studying geography at 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 in Advanced Social Research and Statistics. It really gave me a solid grounding in research methods and practices. I also found it helpful as the theory I learnt during my Masters I could apply in practice in my job and vice-versa.

During my Masters I began working as a research officer at the National Council for Voluntary Organisations (NCVO) and after a couple of years I became a research manager, leading NCVO's quantitative research programme. This involves developing a wide variety of research including large national surveys, analysing data and writing up research for a variety of audiences. The best part of my job is knowing that the research we do makes a difference to policy and practice and to the people I work with, who are enthusiastic and motivating to be around.

Sharon Witherspoon

Deputy 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 understanding how complicated it is to pin down what causes what – and that some of the most interesting issues required good quantitative skills. The pay-off is often wonderful: you can suddenly get a real sense that hidden patterns are being revealed, and that things often are related to each other in

ways that we don't understand when we talk to people. Studying things quantitatively means that you look for unintended consequences. And you can disprove cherished myths about what causes people to act the way they do. At the Nuffield Foundation I oversee a programme of work using social science research on children and families, social justice and economic change. It is fun commissioning work, almost like fitting together a jigsaw puzzle of evidence, and then seeing what politicians or others make of the findings. I still want to use the evidence to change things.

PUBLIC SECTOR

Kate Hills

Research Analyst, Local Government Association



I studied economics at university and went on to work at a consultancy specialising in economic development. Having enjoyed the research aspect of this role, I moved to my current position as an analyst in the research team of the Local Government Association. My job is very varied and involves working on a range of projects in order to provide analytic and research services across the organisation. This involves conducting and commissioning research projects, using a range of quantitative and qualitative approaches. A key part of my role is designing, conducting and analysing online surveys on a wide range of topics, from services like social care to issues like child poverty and the economic downturn. This information can then be used to help develop policy, drive improvement and lobby on behalf of the sector. This type of work provides a great opportunity to work on current, topical and often high profile issues and to see your research having a real impact.

Reannan Rottier

Senior Social Researcher, Department for Culture, Media and Sport



If you had asked me ten years ago what my future career would be, I would not have said 'a government social researcher', but (happily!) here I am. I graduated with a PhD in Sociology and then moved to the UK from Australia with the intention of getting an academic job. That didn't happen, and I found myself applying for a wider range of jobs – almost all of which required strong quantitative research skills. Thankfully I'd had an excellent lecturer who always stressed the importance of quantitative methods as the best way to practically apply theoretical concepts. This turned out to be some of the best advice I've ever had. I currently work at the Department for Culture, Media and Sport on a large-scale government social survey measuring participation in culture and sport in England. I previously worked at the Department of Communities and Local Government. I work in a multi-disciplinary team using tasks such as data analysis, managing and commissioning research and survey management to inform policy-making.

Jennifer Evans

Senior Research Officer, Welsh Assembly Government Social Research Division



My first degree is in economics, but while working as a research assistant in an economics department, I found that research methods were far more interesting! I studied for my Masters part-time and continued to work full-time. Having my own research interests as well as work-based ones has really helped me to think more seriously about my future career and what I would like to achieve. I'm currently responsible for developing

a relationship measurement framework for the Welsh Assembly Government. It's a really interesting piece of work because it looks at all the different relationships across the whole spectrum of government in Wales, from grant funding to strategic policy development. For me, developing questions that will generate the right information to meet the needs of our clients is the most interesting aspect of quantitative methods. Understanding the context in which survey questions are asked is critical, and it's really satisfying when people recognise the value of what we can contribute to surveys through carefully considered questionnaire design.

Deborah Tye

Trainee Research Officer, HM Inspectorate of Prisons



Sociology was the A level I most enjoyed and I chose Sociology and Social Research for my degree. It was the technical, quantitative element of the course that appealed to me when considering how I would translate my degree into the workforce. As part of the course, I did a placement with HM Inspectorate of Prisons, an organisation that carries out independent inspections of all places of custody across England and Wales. I did

not only gain experience carrying out qualitative research in the field, but I also used quantitative methods extensively. It was through the quantitative aspect of the role that I was able to see how integral my role in the organisation was. The data provided essential evidence to the inspection process and allowed for robust comparisons to be made between custodial establishments. It turned an inspection review, which could otherwise be deemed subjective, into a sound evidence-based report that directly influences ministers and the conditions of people living in custody.

PRIVATE SECTOR

Joe Twyman

Special Projects Director, YouGov

|| I was 14 when I started my career as political researcher. During the 1992 elections a group of Essex academics asked for my help with analysing data on the computer. Since then I have worked with quantitative data. Even when the only course in quantitative methods was cancelled at university where I studied politics, I continued integrating QM into whatever I was doing. After graduating, I ended up doing market research into tomatoes and wonder bras at Research Services Limited (now Ipsos-MORI). Today, I am director of political research at YouGov. I have been a project director for the 2001, 2005 and 2010 British Election Studies and have co-ordinated election studies in many countries. Throughout the 2010 UK general election campaign I have provided expert analysis for the media. I don't think of quantitative data as numbers – they are insights into how people think. And to people who think numbers are boring I'd say, you have never worked on an election campaign. It's absolutely crazy and exciting! ||

Martin Wootton

Associate Director, RS Consulting



Martin is part of the senior management team at RS Consulting and is credited with commercialising one of the company's new quantitative research tools. Following graduation with a degree in French language technology, Martin spent a year in France, working in a marketing department. On his return to the UK, he applied to RS Consulting. "The job spec listed good maths and English, a foreign language, an interest in technology and an analytical mind," says Martin. These types of broad job specifications are not unusual in the research industry. His work experience in France was invaluable in securing the first job. "Even though the work I did was not research related, having marketing experience was definitely helpful." But while experience might be advantageous, the only thing Martin believes you really need to be a researcher is an inherent curiosity. And while being good with both words and numbers helps, successful researchers basically only ever try to answer one question, the elusive "why?"

Profile adapted from www.mrs.org.uk

Resources guide

ESRC-funded research centres and surveys

www.esrcsocietytoday.ac.uk/ESRCInfoCentre/research/resources/

ESRC Census Programme

www.census.ac.uk

UK Data Archive

www.data-archive.ac.uk/

UK Longitudinal Studies Centre

www.iser.essex.ac.uk/survey/ulsc

Centre for Longitudinal Studies

www.cls.ioe.ac.uk/

The Cathie Marsh Centre for Census and Survey Research

www.ccsr.ac.uk/

Training

ESRC Advanced Quantitative Methods stipend (Postgraduate students funded by the ESRC can apply for this stipend to allow them undertake training in advanced quantitative methods)

www.esrc.ac.uk/ESRCInfoCentre/opportunities/postgraduate/AQM.aspx

A collection of resources for training, information and data

www.ncrm.ac.uk/TandE/resources/

The Royal Statistical Society's Young Statisticians workshops

www.rss.org.uk/main.asp?page=2569

Courses in Applied Social Surveys

www.s3ri.soton.ac.uk/cass/

Institute of Education short courses in research methods

www.cls.ioe.ac.uk/text.asp?section=0001000100050017

European Social Survey Education Net

essedunet.nsd.uib.no/cms/edunet/about.html

ICPSR Online Learning Center

www.icpsr.umich.edu/OLC/index.html

University of the West of England online quantitative and qualitative data analysis course

hsc.uwe.ac.uk/dataanalysis/index.asp

Bristol Online Surveys

www.survey.bris.ac.uk/

Statsoft Electronic Textbook

www.statsoft.com/textbook/

Blogs and multimedia

Harvard Social Science Statistics Blog

www.iq.harvard.edu/blog/sss/

BBC Radio 4 series on numbers 'More or Less'

news.bbc.co.uk/2/hi/programmes/more_or_less/default.stm

A set of statistics lectures in 10 minute chunks on YouTube

web.mac.com/ddjudge/ddjudge/Statistics_Streaming_Library.html

The Economic and Social Research Council

The Economic and Social Research Council (ESRC) provides funding for research and training in economic and social issues. We fund both research in universities throughout the UK and postgraduate students, ensuring academics have world class skills to do high quality research.

The ESRC is part of Research Councils UK (RCUK), the partnership of the UK's seven Research Councils.

www.esrcsocietytoday.ac.uk

www.rcuk.ac.uk

The Higher Education Funding Council for England

The Higher Education Funding Council for England (HEFCE) distributes public money for teaching, research and related activities. In 2010-11 HEFCE will distribute over £7.4 billion to 130 higher education institutions and 124 further education colleges.

HEFCE is contributing funds in partnership with ESRC and UK funding bodies to a range of initiatives that aim to enhance quantitative skills at each level of the educational lifecourse.

www.hefce.ac.uk