ESRC National Centre for Research Methods

Assessment of research methods training needs among UK academic social scientists

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Acknowledgements

Our thanks to

List of abbreviations

- AQMeN   Applied Quantitative Methods Network
- CAQDAS   Computer Aided Qualitative Data Analysis Software
- ESRC   Economic and Social Research Council
- HEFCE   Higher Education Funding Council for England
- HEFCW   Higher Education Funding Council for Wales
- NCeSS   National Centre for e-Social Science
- NCRM   National Centre for Research Methods
- NDeSS   National Strategic Directorate for e-Social Science
- Quads   Qualitative Archiving and Data Sharing Demonstrator Scheme
- RDI   Researcher Development Initiative
- RMP   Research Methods Programme
- SFC   Scottish Funding Council
- TLRP   Teaching and Learning Research Programme
- WISERD   Wales Institute of Social & Economic Research, Data & Methods

Executive summary

A range of initiatives that address capacity building in social science research methods has come on stream since the National Centre for Research Methods (NCRM) last assessed the training needs of academic social scientists (Wiles et al, 2005). This latest assessment is therefore timely. Ongoing concerns of a skills gap in social science research methods persist, particularly in relation to quantitative methods. Initiatives such as NCRM, the Researcher Development Initiative (RDI), the Wales Institute of Social & Economic Research, Data & Methods (WISERD), and the Applied Quantitative Methods Network (AQMeN) continue to work to upskill social science researchers and improve the research methods skills base of UK social science as a whole.

This training needs assessment comprised an online survey of academic social scientists and a content analysis of academic social scientist job specifications. A total of 2,352 ESRC funded researchers responded to the survey and 85 job specifications were analysed.

High levels of demand exist for both qualitative and quantitative training. In contrast with the 2005 assessment, training in mixed methods emerged as a training need but our data showed no consensus on what 'mixed methods' comprises. The demand for quantitative methods training is mostly at introductory level, while the demand for training in qualitative methods is mostly at the intermediate or advanced level. Handling non-response, structural equation modelling and panel data analysis were the three most sought after quantitative topics, while narrative inquiry, action research and ethnographic fieldwork were the most sought after qualitative topics.

Analysis of these data across career level indicated that doctoral students frequently reported a demand for training in 'mathematics for statistics' while 'visual, creative and sensory methods' came near the top of the list for research fellows and senior research fellows. 'Log-linear modelling of tables', and 'instrumental variables methods' were often chosen by lecturers and senior lecturers, along with 'secondary analysis of qualitative data', which was the top choice for readers and professors.

The need for training in quantitative methods is viewed as the most pressing training need by those involved with the supervision or training of social scientists; this mirrors the findings of the 2005 assessment. However, some respondents noted that a focus on quantitative training should not be at the expense of qualitative training. In contrast to the 2005 assessment, training needs across a range of methods, including mixed methods, were also identified. The content analysis of research posts provides some support for the need for researchers to have skills across a range of methods as well as specific skills in qualitative methods.

The most common reason given for undertaking research methods training was to meet the needs arising from a current or planned research project. Research projects define the 'cutting edge' in the acquisition of knowledge, but also define a cutting edge in the field of training in research methods. We recommend that applicants for ESRC-funded research projects should be asked in their proposal to indicate the skills that will be needed by the researchers who will work on the proposed project, the plans they have to assess the skill levels of the researchers hired and the means by which they intend to fill any skills gaps identified.

There was a widespread lack of knowledge about the availability of on-line training and resources but a willingness to use such resources in the future. The level of current use is surprisingly low, but this may be due to the variety of resources available and the perceived variability of their quality and appropriateness. These findings indicate a continued need for the development and promotion of internet-based training and resources. In common with the 2005 assessment, the importance of regional training was noted, particularly for people in Scotland and Northern Ireland who often have to travel long distances to avail themselves of training.

Table of contents

Index of Tables

1. Introduction

Established in April 2004 the ESRC National Centre for Research Methods (NCRM) has for the past seven years been working to enhance the range and quality of research methods used by the UK social science community. A key objective is to play a strategic role in the promotion of high quality research methodology and to this end it has conducted assessments of research methods training needs among academic social scientists in 2005 (Wiles et al., 2005) and social researchers working in non-academic settings in 2008 (Wiles et al., 2008) .

In the period since NCRM's first needs assessment in 2005 the ESRC has funded a range of investments and initiatives designed to promote excellence in research methods[1]. This period also saw the launch of the UK concordat on the career development of researchers and the establishment of Vitae, an organisation tasked with enhancing professional and career development among postgraduate researchers and research staff. The likely combined effect of all these has been to increase awareness of training needs among academic social scientists, encouraging them to reflect on their specific needs and to be proactive in seeking ways to meet those needs. In light of these developments it was felt appropriate that NCRM should once again conduct a formal assessment of the research methods training needs of academic social scientists.

Aims of the training needs assessment

The training needs assessment aims to identify the current and future research methods training needs of academic researchers in the social sciences. It aims to address the needs of the full range of academic researchers, from all social science disciplines and career stages, from doctoral students and early-career researchers to researchers at senior levels.

It will inform NCRM's strategic planning of its training and other capacity building activities as well as the wider national strategy to build up the social science research community's capacity in a broad range of research methods.

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[1] ESRC initiatives in this period include the Research Methods Programme (RMP), the Researcher Development Initiative (RDI), the National Centre for E-Social Science (NCeSS), the National Strategic Directorate for e-Social Science (NDeSS) the Wales Institute of Social and Economic Research, Data and Methods (WISERD), the Applied Quantitative Methods Network (AqMEN), Timescapes, the Qualitative Archiving And Data Sharing Demonstrator Scheme (Quads) and the Teaching and Learning Research Programme (TLRP)

2. Background: the ongoing need for research methods training in social science

ESRC has for some time been concerned with what is seen as a shortfall in research methods skills in the social sciences and as early as 2002 sought to address this issue by establishing the Research Methods Programme (RMP) under the directorship of Angela Dale. RMP aimed to improve methodological quality through the direct funding of research that would enhance research quality and methodological knowledge. The programme also developed tools to this end and disseminated its methodological developments and practices through training courses, on-line resources, seminars and awareness-raising events.

In 2004 ESRC established the National Centre for Research Methods (NCRM) with a view to promoting 'a step change' in the quality and range of methodological skills and techniques used by the UK social science research community. In that same year NCRM first undertook a consultation exercise to gauge national need for training in social science research methods (Beissel-Durrant and Laing, 2004). This was followed by a formal training needs assessment exercise in 2005, focused on UK academic researchers working in the social sciences (Wiles et al., 2005). In the 2005 assessment, data were gathered using two separate surveys: a questionnaire survey of PhD students, project researchers and ESRC fellowship holders; and a survey of ESRC centre directors and holders of large ESRC grants. Further data were gathered from an analysis of the person specifications associated with job advertisements for academic social science research staff.

The report found that researchers in the early part of their careers (especially at PhD level), tended to identify a need for qualitative methods training, whereas researchers at a senior level expressed a need for training in advanced quantitative methods. Academic employers were found to seek researchers with skills primarily in quantitative methods and supported more training in this area. Commonly identified methods training needs were: interviewing; qualitative analysis (including CAQDAS); statistics/quantitative methods (at all levels); use of statistical software; and, longitudinal data analysis. Only rarely did researchers suggest they worked across a range of methods or used mixed methods in their research.

In terms of training delivery, there was considerable demand for regional training, with traditional face-to-face short courses the preferred type, although there was support for on-line training among researchers (but less so among academic employers). Senior researchers identified a lack of time as the primary reason for being unable to avail of training while a lack of funding was identified by contract researchers. In terms of the level of training, the academic employers made a case for basic training, while researchers focused on intermediate and advanced training.

Developments since NCRM's first needs assessment

NCRM is but one of a number of ESRC investments charged with building capacity in research methods within the social science community, with many new investments coming on stream in the period since NCRM conducted its first formal assessment of needs. One of the key strategic objectives of NCRM's first assessment of needs was to inform the first round of ESRC funded Researcher Development Initiative (RDI)

projects, which were launched in 2005. With a mix of 15 funded projects in Phase I this initiative sought to support the training and development of researchers in the social sciences at all stages of their career. Subsequent funding rounds in 2006 and 2007, along with the current funding round in 2010 have brought the total of RDI projects thus far to 56.

In January 2005 ESRC's Training and Development Board commissioned a Demographic review of the UK social sciences (Mills et al., 2006) to identify problems in the field and recommend possible solutions involving more targeted capacity building initiatives. Research capacity in quantitative methods was found to be an issue in specific fields across the social sciences and the review concludes that there needs to be a more strategic approach to capacity building activities, with more flexibility in developing training provision to meet the different needs and challenges of specific disciplines, as well as targeted interventions where these are appropriate.

Scoping studies of needs for quantitative methods capacity building have been conducted in both Wales (Lynch et al., 2007) and Scotland (McVie et al., 2008). The Wales study was undertaken in response to a number of concerns specific to social science research in Wales. These included the concentration of research excellence in one institution (Cardiff University), the failure of Wales as a whole to achieve its target 5% share of total ESRC grant values and perceived weaknesses in a number of large scale grant applications submitted from Wales. The scoping study aimed to review the position of quantitative methods teaching and research in Wales, identify particular needs, consider different delivery modes, suggest how any gaps in need might be met and make recommendations on what future activities would be most applicable in Wales. Questionnaires, interviews and round-table discussions were used to gather data and the conclusions drawn and recommendations made covered a range of issues and noted the necessity to balance regional and national measures to address quantitative methods needs in Wales.

The study found quantitative methods training needs in Wales at basic as well as advanced levels, and these needs varied between disciplines. Its findings point to demands for training mainly in multilevel modelling / MLwiN, structural equation modelling / LISREL, loglinear, non-linear, generalised linear modelling and STATA. Needs were identified in qualitative as well as quantitative methods and the recommendations included a call to break down the barriers between quantitative and qualitative methods. The study recommended a flexible approach to meeting a variety of needs from across social science disciplines, a greater emphasis on training provision in research grant applications and a drive to bring mixed methods more to the fore, particularly in MSc training. The study also called for an ongoing assessment of research methods needs in social sciences.   A consequence of the scoping study in Wales was the formation of WISERD in 2008, an interdisciplinary research centre co-funded by ESRC and HEFCW encompassing a programme of data integration, primary research and capacity building in Wales.

The scoping study of quantitative methods needs in Scotland (McVie et al., 2008) resulted from a specific set of circumstances, including the lack of any Scottish centres of expertise named in the demographic review of the UK social sciences and the under representation of Scottish institutions within UK initiatives to build capacity in social science research methods. The study found a serious shortage of people with adequate quantitative skills (particularly in advanced methods) and found training needs even in disciplines that are well serviced with skilled quantitative methods researchers. Low levels of quantitative skills were often found among both undergraduates and the lecturing staff teaching them and the study concluded there was a need for some remedial training in quantitative methods both for researchers

and lecturing staff. A general recommendation was for more support for academic staff teaching research methods, both in the teaching itself and through increased opportunity to train and increase their own skill levels.

Needs in Scotland were found to vary between disciplines and it was felt that training interventions should be tailored to meet specific needs within disciplines. It was also concluded that there was a need to redress what was seen as a cultural bias favouring qualitative methods in some disciplines. Funding grants (particularly funding for masters and PhDs) were seen as one way to encourage the development of quantitative methods, with a recommendation that more of these should specify quantitative methods and that some should be linked to Scottish social survey datasets. More e-learning support was called for along with more support for IT in general and for the use of online resources, such as data sets. It was recommended that 'train the trainers' initiatives should also extend to IT support staff.

In terms of training needs the study identified multilevel modelling, longitudinal analysis, classification techniques and structural equation modelling, as well as unidimensional and multidimensional scaling. Some researchers reported a need for descriptive statistical techniques. Specific questions were asked about the use of UK data sets and Scottish data sets and the study recommended more training and support in the use of data sets, with a recommendation that courses be specifically organised around Scottish data sets. In a similar vein to the Welsh scoping study, the Scottish study directly informed the establishment of the Applied quantitative Methods Network (AQMeN) in 2009, a joint venture between ESRC and the Scottish Funding Council (SFC) designed to promote continuing professional development in advanced quantitative methods in Scotland.

ESRC also jointly funded an international review of best practice in undergraduate quantitative methods teaching in social sciences (Parker et al., 2008). A range of undergraduate pilot projects resulted from this, looking at new approaches to teaching quantitative methods in the social sciences. In 2009 ESRC appointed Professor John MacInnes as strategic advisor on the undergraduate teaching of quantitative methods in the social sciences and sought to develop a programme of activity that built upon the undergraduate pilot projects. Professor MacInnes's final report was published in December 2009 (MacInnes, 2009).

Finally, on a UK-wide level, the five-year UK grad programme came to a close in 2007 and a result of its work 2008 saw the launch of a revised UK concordat, setting out the expectations and responsibilities of researchers, their managers, employers and funders in the career development of researchers. In addition the Vitae organisation was launched in the same year, with a remit to enhance the professional and career development of both postgraduate researchers and research staff.

3. Methods and data

The training needs assessment used two distinct methodologies:

1. An online survey of academic researchers.

2. A content analysis of job specifications for all posts for social and economic researchers in academic settings advertised on the website http://www.jobs.ac.uk/, over a four week period.

These methods were chosen to maintain comparability with the 2005 needs assessment while providing the flexibility to address new and emerging issues. The rationale for undertaking these two linked strands was that the survey would give us a good indication of the perceived training needs of researchers, while the analysis of job adverts would provide more 'objective' data on the current skills being demanded in the academic labour market.

Online survey of ESRC funded researchers

Development of the online survey

The questionnaires from previous NCRM assessment of needs in 2005 and 2008 formed the starting point for discussion, along with the Scottish scoping study questionnaire, which inspired some of the fixed format questions. The main aim in developing the questionnaire was to determine which research methods academic researchers felt they needed training in, along with the levels of training needed, (i.e., introductory, intermediate, or advanced). Lists of qualitative and quantitative methods were compiled from consultation with staff across NCRM's hub and nodes and these formed the basis of two fixed-response questions (see Appendix 1 questions 14 & 15). Both were followed by open–ended questions asking respondents to list any 'other research methods' they wanted training in (see Appendix 1 question 18).

This combination of fixed-response and open-ended questions replaced the solely open-ended response format that had been used in previous needs assessments in 2005 and 2008. It had been found that the open-ended format facilitated the identification of broad, general topics and presented some problems of interpretation. The combination of fixed-response and open-ended questions used in this survey, although far from straightforward, proved somewhat easier to analyse and interpret.

It was felt that in addition to this core issue of what training is needed and at what levels, the questionnaire should also seek information on the difficulties researchers experienced accessing research methods training, the importance placed on locally-based training and the willingness of researchers to use internet based training and resources.

While NCRM has an interest in 'training the trainers' as a means of building capacity we did not ask trainers what training they needed in their role as trainers. This is an important issue but to try to do it justice in this survey would have increased the duration of the survey for those concerned and would have shifted the focus away from research training needs. The topic is however sufficiently important to merit its own survey.

Once the final set of questions was agreed the online survey was created using LimeSurvey®, a free, open source software package that can be used to design and implement online surveys. Cognitive testing of the draft online survey was conducted and modifications were made on the basis of the feedback received.

Selection of the sample

The sample for the online survey was composed of:

    a. ESRC funded researchers who were contacted directly and asked to participate in a 'closed-access' version of the survey.
    b. Researchers who participated in an 'open-access' version of the survey that was advertised on NCRM's website and e-bulletin and through various email lists.

ESRC funded researchers

NCRM contacted ESRC to request contact details for the following funded researchers:

- ESRC registered Doctoral students
- ESRC registered postdoctoral researchers, research fellows and first grant holders
- Researchers employed under an ESRC contract
- Directors of research centres
- Directors of resource centres
- Principal investigators of projects over £30,000

ESRC supplied 3,114 contacts, containing names, titles and email addresses for researchers in receipt of ESRC funding in October 2010. Only those researchers who received a personalised email invitation were able to participate in this 'closed-access' survey.

Researchers who completed an open-access version of the survey

ESRC does not routinely keep the contact details of researchers employed on ESRC funded research projects. In order to target this group it was decided that a second open-access copy of the online survey be produced. ESRC funded researchers were then asked to forward an email to researchers working on their projects, asking them to participate in this 'open-access' survey.

With an open access form of the survey available it was decided to utilise this opportunity to increase the survey sample further. Doctoral students funded by ESRC were asked to forward an invitation to participate to non-ESRC funded doctoral students. An open invitation to participate was also included in NCRM's e-bulletin (approx. 3,400 subscribers), posted on the NCRM website and sent out on the quantitative methods teaching mailing list (approx. 200 subscribers).

It is clear that the sample was not a random sample of the entire academic social science research community. Such a sample would have been difficult to obtain in the absence of a sampling frame for that group, and compiling such a sampling frame would have been prohibitively expensive and beyond the resources of NCRM. ESRC's contact list does however represent a sampling frame for ESRC funded researchers and since this group forms an important constituency within the community as a whole the conclusions drawn here are likely to have broad applicability to that wider academic social science research community.

Running the survey

Personalised invitation emails were sent to all of the contacts supplied by ESRC on October 25[2] 2010 inviting them to participate in the survey[2]. Personalised email reminders were sent one week later to all those who had yet to complete the survey. Final reminders were sent on November 8th 2010. LimeSurvey® provides the option for respondents to save a partially completed questionnaire and return to it at some point in the future. Reminders were sent to all whose who had availed of this feature but were yet to complete their survey. These were sent on the morning of November 11th, giving respondents two working days before the survey closed.

Content analysis of job specifications

The purpose of this sub-study was to identify the research skills that employers view as necessary for posts in social and economic research, with the aim of identifying training needs. This study was intended to complement the data gathered through the survey.

The project comprised a content analysis of job specifications for all posts for social and economic researchers in academic settings advertised on the website jobs.ac.uk, over a four week period from 18th October 2010 to 12th November 2010. The search criteria were for jobs in all areas of the UK under the heading of academic/research relating to the following disciplines: business and management studies; economics; education studies; law; politics and government; psychology; social sciences and social care[3]; and, statistics. The employer type was restricted to 'UK and Irish HE Institutions'.

The criteria for inclusion in the analysis were that posts should:

- Identify a social scientist or social science skills as appropriate
- Be primarily or exclusively research (i.e., where the research element comprises the major part of the post; this excluded lectureships and teaching fellowships)
- Be located within an academic institution
- Be located in a division or school of social science or a social science discipline (as defined by the ESRC list of social science disciplines; this excluded posts in departments/schools of medicine, health, engineering, and science).

Research professorships and fellowships were excluded from the analysis as the research skills necessary for these posts tend not to be stated and the research focus tends to be broader, or unspecified.

For each post identified, further particulars were obtained (via the institution's website). The person specification for each post was examined to identify the specific research skills sought. Where inadequate information was available in the person specification, the job description was examined to identify the skills being sought. A data extraction form was created to extract the information for each post.

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[2] These emails inviting researchers to participate in the survey were sent on the morning of October 25th 2010. Later that day some reports were received that some participants were unable to open the embedded link to the survey. It was therefore decided to send a follow-up invitation the following day which contained the full long form of the URL to the survey.

[3] On the jobs.ac.uk website 'Social sciences and social care' includes the subcategories: Anthropology, Human and Social Geography, Social Policy, Social Work, Sociology and Other Social Sciences.

Data were extracted in relation to the following issues: discipline in which the post is located; qualifications necessary; specific research/ methodological skills; general research skills; other research-related skills. Given that the skills sought for posts are likely to differ according to the grade of the post, these data were analysed in three groups: research assistant posts, research fellow/associate posts and senior research fellow posts. The results of this component are described in Section 4.2

4. Results

4.1 Online survey of ESRC funded researchers

Response and breakoff rates

Table 1 shows the survey completion and breakoff rates for the online surveys

Table 1: Survey completion and breakoff rates

	Partially completed	Fully completed	All	Breakoff rate
Invitation	149	1,173	1,322	11%
Open access	185	845	1,030	18%
Totals	334	2,018	2,352	14%

With respect to the Invitation survey, a total of 3,114 invitations were sent to ESRC funded researchers in four separate email shots over the course of the study. Any invalid email addresses were therefore expected to generate four separate 'undeliverable' messages, one for each email shot. A total of 802 'undeliverable' messages were received in response to these four email shots suggesting that approximately 200 of the contacts in the initial list were invalid.

Working with an estimate of 2,914 receiving the invitations and 1,173 completing the survey, the estimated response rate for the invitation survey is 40%. It is not possible to estimate a response rate for the open access survey, since the number of individuals who were made aware of the survey by various means is unknown. The breakoff rates[4] of 11% for the 'invitation' survey and 18% for the 'open access' survey are in line with median breakoff rates of 16% reported in the literature (see Musch and Reips 2000).

Sample characteristics

Of those who responded to the questionnaire, approximately three fifths were female (60.7%) and approximately two fifths (39.3%) were male. 43.4% were in the 26-35 yr old age band (see Table 2).

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[4] Survey breakoff occurs when a respondent starts the survey but stops prior to completing it. The breakoff rate is calculated as the number of incomplete survey responses divided by the total number of survey responses (see Peytchev 2009).

Table 2: Age breakdown

Age bands (yrs)	Frequency	Valid percent
18-25	269	13.3%
26-35	881	43.4%
36-45	434	21.4%
46-55	274	13.5%
56-65	152	7.5%
66+	18	0.9%
No response	324	
Total	2,352	100.0%

Table 3 shows the regional breakdown of the sample, with the largest proportion of respondents (21.6%) based in Greater London. Responses from Scotland were 10.5% while Wales had 4.5% of respondents.

Table 3: Regional breakdown

Region	N	Valid percent
Greater London	437	21.6%
North west	233	11.5%
South east	225	11.1%
Scotland	212	10.5%
South west	177	8.7%
Yorkshire and the Humber	160	7.9%
East of England	127	6.3%
East midlands	115	5.7%
West midlands	107	5.3%
North east	96	4.7%
Wales	91	4.5%
Northern Ireland	31	1.5%
Other[5]	14	0.7%

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[5] Other are ESRC funded researchers who work outside the UK.

Region	N	Valid percent
No response / incomplete	327	
Total	2,352	100%

Table 4 shows the composition of the sample in terms of career stage. Doctoral students make up the bulk of the sample (53.7%) with the vast majority of these (93.0%) indicating they were full time students.

Table 4: Breakdown of the sample by career stage

Career stage	N	Valid percent
Masters student	40	1.7%
Doctoral student	1,246	53.7%
Research assistant/research officer	125	5.4%
Research fellow/senior research fellow	223	9.6%
Lecturer/senior lecturer	310	13.4%
Reader/professor	363	15.6%
Other	14	0.6%
No response / incomplete	31	
Total	2,352	100.0%

This dominance of doctoral students in the sample reflects the large proportion of ESRC funding devoted to doctoral studies and echoes the earlier point that the sampling frame is ESRC funded researchers rather than the academic social science research community as a whole. Despite this limitation, the sample has achieved good coverage across key constituent groups within the social science community, with 363 reader/professors, 310 lecturer/senior lecturer and 223 research fellows and senior research fellows.

The large proportion of doctoral students in the sample meant that masters degrees were the most commonly held 'highest qualification' (57.8%) followed by doctorates (35.8%). The number of years for which doctoral qualifications had been held ranged within the sample from less than one year to forty five years, with an average of eleven years and four months. As one might expect the average duration for which doctorates were held varied depending upon whether the respondent was a Reader / Professor ($\bar{X}$ = 20, S.D. = 9), Lecturer / Senior Lecturer ($\bar{X}$ = 7, S.D. = 5), Research Fellow / Senior Research Fellow ($\bar{X}$ = 5, S.D. = 5) or a Research Assistant / Research Officer (X = 2, S.D. = 2). Career stage therefore does provide a basic measure of research experience, but the range of experience within each career stage should also be noted.

Respondents were asked whether they were responsible for the training or supervision of social scientists. While 54.7% of research fellows / senior research

fellows indicated they were the field is overwhelmingly dominated by lecturers, readers and professors, with 95.7% of reader/professors and 89.2% of lecturers / senior lecturers indicating that they were. Smaller proportions of more junior researchers also reported responsibility for the training or supervision of social scientists, namely 30.9% of research assistant / officers, 20.3% of doctoral students and 12.8% of master's students.

A breakdown of the sample by discipline in Table 5 shows a good overall coverage of the main social science disciplines, with each of the 18 identified disciplines represented. The single largest group of respondents chose sociology as their discipline (14.2%), followed by psychology (13.9%) and economics (8.9%), these three making up over one third of the sample.

Table 5: Breakdown of the sample by discipline

Discipline	N	Valid percent
Sociology	326	14.2%
Psychology	317	13.9%
Economics	204	8.9%
Political science and international studies	187	8.2%
Management and business studies	177	7.7%
Education	168	7.3%
Human geography	156	6.8%
Social policy	111	4.9%
Social anthropology	101	4.4%
Linguistics	86	3.8%
Science and technology studies	76	3.3%
Statistics, methods and computing	69	3.0%
Economic and social history	53	2.3%
Socio-legal studies	51	2.2%
Demography	43	1.9%
Environmental planning	37	1.6%
Social work	36	1.6%
Area studies	29	1.3%
Other	61	2.7%
No response / incomplete	64	
Total	2,352	100.0%

Respondents were asked to classify themselves in terms of their general approach to research and Table 6 provides a breakdown of responses[6]. Qualitative researchers predominate within the sample overall with 57.5% indicating they use only qualitative methods (28.3%) or mixed methods that are mostly qualitative (29.2%). This contrasts with 39.6% who use only quantitative (19.4%) or mixed methods that are mostly quantitative (20.2%).

Table 6: Approach to research

Approach to research	N	Valid percent
Qualitative only	641	28.3%
Mixed methods (mostly qualitative)	663	29.2%
Mixed methods (mostly quantitative)	458	20.2%
Quantitative only	439	19.4%
Quantitative and qualitative equally	53	2.3%
Other	14	0.6%
No response / incomplete	84	
Total	2,352	100.0%

Table 7: Approach to research by career stage

Career Stage	Qualitative or Mostly Qualitative	Quantitative or Mostly Quantitative
Reader / Professor	49.8%	50.2%
Lecturer / Senior Lecturer	53.9%	46.1%
Research Fellow / Senior Research Fellow	52.0%	48.0%
Research Assistant / Research Officer	46.2%	53.8%
Doctoral Student	64.6%	35.4%
Masters Student	62.2%	37.8%

The preponderance of qualitative researchers in the sample is related to the high proportion of doctoral students. Table 7 provides a breakdown of responses by career stage and shows a fairly even split between qualitative and quantitative approaches at each career stage within the sample, apart that is from doctoral students, two thirds of whom reported a qualitative approach compared to just over

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[6] A total of 53 respondents chose 'Other' in response to the question and classified themselves as 'Quantitative and qualitative equally'. It was decided that these should be presented as a new category in Table 6 rather than simply be classified simply as 'Other', since they formed a small but distinct classification that was clearly separate from the otherwise heterogeneous mix of responses in the 'Other' category

one third who reported a quantitative approach. We recognise that not all capacity building activity is trainer-led. Self-teaching has always played a large part in building the capacity of social science researchers, whether it is simply through reading, or through the use of specially designed self-teach materials. Table 8 shows the reported balance between formal training and self-teaching within the sample and indicates clearly the importance of both self teaching and formal training in building capacity. Most of those responding report roughly equal amounts of formal training and self-teaching (34.2%), with slightly more reporting a dominance of self-teaching over formal training (29.1% and 8.0% for mostly or fully self teaching).

Table 8: The balance between formal training and self-teaching

Training history	N	Valid percent
Formal training with little or no self-teaching	78	3.4%
Mostly formal training with some self-teaching	560	24.7%
Roughly equal amounts of formal training and self-teaching	776	34.2%
Mostly self-teaching with some formal training	660	29.1%
Self-teaching with little or no formal training	182	8.0%
Other	11	0.5%
No response / incomplete	85	
Total	2,352	100%

When the balance of self-teaching and formal training is looked at for researchers at different stages of their career it is clear that within this sample self-teaching tends to predominate within those in more senior positions. By contrast, and perhaps unsurprisingly, research assistants / research officers and doctoral students most often reported roughly equal amounts of formal training and self-teaching with Masters students most often citing formal training with some self-teaching.

Demand for research methods training

The core of the questionnaire addresses the demand for research methods training, i.e., which research methods academic researchers felt they needed training in, along with the levels (introductory/intermediate/advanced) of training needed.

Respondents were asked whether they would be interested in receiving training in quantitative, qualitative and mixed methods research training. 71.0% of respondents said they wanted quantitative methods training, 70.7% of respondents wanted qualitative methods training and 42.7% wanted mixed methods research training.

While the demand for quantitative and qualitative methods training is equally high in the sector as a whole, the demand varies with career stage and tends to be greater among less experienced researchers, as one would expect. Table 9 shows a breakdown of the demand for training by career stage and type of training and shows that the demand for qualitative methods training tends to be highest in early career stages, among masters and doctoral students and among Research assistants / research officers. At later career stages (Research fellow/senior research fellow and

above) a high demand for qualitative methods training is accompanied by higher demand for quantitative methods training.

A demand for mixed methods training is expressed by just under half of respondents, although again this varies across the career stage, with more than half of those in research assistant/officer posts stating that they would like to have training in this area. The relatively low demand for mixed methods training shown in Table 9 may reflect some confusion on the part of respondents as to what is meant by mixed methods; responses to the open question on mixed methods suggest this may be the case (responses to this question on mixed methods are discussed on p.31)

Table 9: Expressed demand for training by career stage and type of training sought

Career stage	Qualitative	Quantitative	Mixed Methods
Masters student	35 (97.2%)	29 (80.6%)	15 (41.7%)
Doctoral student	924 (77.1%)	839 (70.0%)	527 (45.2%)
Research assistant/research officer	99 (81.1%)	101 (82.8%)	66 (56.9%)
Research fellow/senior research fellow	143 (65.0%)	177 (80.5%)	97 (44.9%)
Lecturer/senior lecturer	199 (66.3%)	219 (73.0%)	126 (43.0%)
Reader/professor	170 (49.0%)	214 (61.7%)	90 (26.4%)
Other	12 (85.7%)	10 (71.4%)	8 (72.7%)
Total	1,582 (70.7%)	1,589 (71.0%)	929 (42.7%)

Table 10: Expressed demand for training by approach to research and type of training sought

Approach to research	Qualitative	Quantitative	Mixed Methods
Qualitative only	532 (84.0%)	282 (44.5%)	242 (39.0%)
Mixed methods (mostly qualitative)	549 (83.2%)	471 (71.4%)	355 (55.3%)
Mixed methods (mostly quantitative)	313 (69.9%)	401 (89.5%)	213 (49.2%)
Quantitative only	140 (32.3%)	385 (88.9%)	89 (21.0%)
Quantitative and qualitative equally	40 (75.5%)	45 (84.9%)	27 (55.1%)
Other	9 (69.2%)	6 (46.2%)	3 (25.0%)

Table 10 shows the demand for qualitative, quantitative and mixed methods training from those respondents who classified themselves as qualitative, quantitative and mixed methods researchers. Not surprisingly the demand for training runs true to type (i.e., those who see themselves as qualitative researchers want mostly qualitative training, etc.). However, it is interesting to note that 44.5% who see themselves as 'qualitative only' expressed a desire to have quantitative training, as

did 71.4% of those who classified themselves as 'mixed methods (mostly qualitative)' researchers. The same is true, albeit to a slightly lesser extent for researchers who see themselves as quantitative researchers; 32.3% of those who classified themselves as 'quantitative only' expressed a desire to have qualitative training, as did 69.9% of those who classified themselves 'mixed methods (mostly quantitative)' researchers.

While there may be some debate (and some confusion) as to what is meant by 'mixed' in the term 'mixed methods' these data would seem to indicate that there is at least a fair degree of willingness to cross over between methodological approaches and develop a skill set that is both qualitative and quantitative.

The survey found that a greater proportion of women than men in our sample expressed a demand for training of all three types. 77.9% of women expressed a demand for qualitative training compared to 59.3% of men. 72.4% of women wanted quantitative training compared to 69.0% of men and 48.3% of women indicated a need for mixed methods training compared to 34.1% of men.

<u>Qualitative research methods</u>

Those respondents who said they wanted qualitative research methods training were subsequently presented with a list of topic areas and asked to indicate whether they required introductory, intermediate or advanced training in each one. Demand for qualitative research methods training overall was found to be very evenly distributed; 33.3% of responses were for introductory training, 34.4% for intermediate level training and 32.3% for advanced training.

Table 11 shows the list of qualitative methods sorted by the frequency with which these were chosen. 'Narrative inquiry' was the most commonly reported training need with 62% choosing it in the form of either 'introductory' (12%), 'intermediate' (24%), or 'advanced' (26%) training.

Table 11: Expressed Demand for Qualitative Training by Topic

Training topic	Valid percent requesting training	Introductory	Intermediate	Advanced
Narrative inquiry	62%	12%	24%	26%
Action research	56%	17%	19%	20%
Ethnographic fieldwork	49%	10%	18%	21%
Biographical research	48%	14%	19%	15%
Secondary analysis of qualitative data	47%	18%	15%	14%
Visual, creative and sensory methods	47%	15%	18%	14%
Phenomenology	46%	15%	16%	15%
Documentary analysis	45%	16%	15%	14%
Interpretative phenomenological analysis	45%	11%	16%	18%

Training topic	Valid percent requesting training	Introductory	Intermediate	Advanced
Life history	44%	12%	16%	16%
Grounded theory	43%	12%	16%	15%
Participatory methods	42%	15%	16%	11%
Focus groups	42%	15%	15%	12%
Evaluation methods	36%	13%	13%	10%
Qualitative comparative analysis	35%	15%	11%	9%
Case study	35%	14%	11%	10%
Discourse analysis	35%	14%	10%	11%
CAQDAS Computer-assisted qualitative data analysis software	34%	14%	11%	9%
Qualitative GIS Geographic Information System	33%	14%	11%	8%
Conversation analysis	29%	17%	6%	6%

It is interesting to note from Table 11 how responses indicating a need for advanced training in qualitative methods predominate, in that the three most frequently chosen topics are chosen mostly at an advanced level and only two of the top twelve most chosen topics are chosen mostly at introductory level. This may indicate that introductory level training in specific qualitative approaches is fairly well covered, in undergraduate, postgraduate and in-service provision but that there is a lack of opportunity for higher level training.

To get a better sense of what was chosen most in 'introductory', 'intermediate', or 'advanced' training Table 12 provides a breakdown of which topics were chosen in each of these three categories, sorted by the frequency with which they were chosen. For 'introductory' training 'secondary analysis of qualitative data' proved most popular (18%), followed by 'action research' (17%), and 'conversation analysis' (17%). For 'intermediate' level training 'narrative inquiry' proved most popular (24%), followed by 'action research' (19%) and 'biographical research' (19%). For 'advanced' level training 'narrative inquiry' proved most popular (26%), followed by 'ethnographic fieldwork' (21%) and 'action research' (20%). Two particular approaches emerge as training needs across levels. There appears to be a demand for training in action research methods across all levels, while narrative inquiry appears to be a training need specifically at intermediate and advanced levels.

Table 12: Expressed demand for Qualitative methods training (sorted by frequency)

Introductory	Intermediate	Advanced
Secondary analysis of qualitative data (18%)	Narrative inquiry (24%)	Narrative inquiry (26%)
Action research (17%)	Action research (19%)	Ethnographic fieldwork (21%)
Conversation analysis (17%)	Biographical research (19%)	Action research (20%)
Documentary analysis (16%)	Visual, creative and sensory methods (18%)	Interpretative phenomenological analysis (18%)
Participatory methods (15%)	Ethnographic fieldwork (18%)	Life history (16%)
Qualitative comparative analysis (15%)	Participatory methods (16%)	Phenomenology (15%)
Visual, creative and sensory methods (15%)	Phenomenology (16%)	Biographical research (15%)
Focus groups (15%)	Life history (16%)	Grounded theory (15%)
Phenomenology (15%)	Grounded theory (16%)	Secondary analysis of qualitative data (14%)
Biographical research (14%)	Interpretative phenomenological analysis (16%)	Documentary analysis (14%)
Qualitative GIS Geographic Information System (14%)	Secondary analysis of qualitative data (15%)	Visual, creative and sensory methods (14%)
CAQDAS Computer-Assisted Qualitative Data Analysis Software (14%)	Documentary analysis (15%)	Focus groups (12%)
Case study (14%)	Focus groups (15%)	Participatory methods (11%)
Discourse analysis (14%)	Evaluation methods (13%)	Discourse analysis (11%)
Evaluation methods (13%)	Qualitative comparative analysis (11%)	Case study (10%)
Narrative inquiry (12%)	Qualitative GIS Geographic Information System (11%)	Evaluation methods (10%)
Life history (12%)	CAQDAS Computer-Assisted Qualitative Data Analysis Software (11%)	Qualitative comparative analysis (9%)
Grounded theory (12%)	Case study (11%)	CAQDAS Computer-Assisted Qualitative Data Analysis Software (9%)
Interpretative phenomenological analysis (11%)	Discourse analysis (10%)	Qualitative GIS Geographic Information System (8%)
Ethnographic fieldwork (10%)	Conversation analysis (6%)	Conversation analysis (6%)

Quantitative research methods

Those who said they wanted quantitative research methods were also presented with a list of quantitative training topics (see Table 13) and were asked to indicate whether they required introductory, intermediate or advanced training in any of these.

In terms of demand overall, 52.4% of respondents indicated a need for introductory level training, 27.7% were for intermediate level training and 19.9% were for advanced level training. The higher level for introductory training compared to qualitative research methods may in part reflect the breadth of our list of possible training needs. Many of these will inevitably have been new to academic researchers working within a research environment where narrow specialisation in a few specific methods is the norm. In such circumstances the long list of training topics presented may have appealed to researchers' desires to broaden their skill bases with introductory training in areas of study that were new to them.

Table 13 shows the list of quantitative methods sorted by the frequency with which they were chosen. 'Handling Nonresponse' was the most commonly chosen training topic with 51% indicating a need for either 'introductory' (24%), 'intermediate' (15%), or 'advanced' (12%) training. 'Structural equation modelling' and 'Panel data analysis' were the next most frequently expressed need. It is interesting to note though that while the profile of expressed need for 'Handling Nonresponse' and 'Panel data analysis' is similar, with most respondents expressing a need for introductory training, the profile for 'Structural equation modelling' is somewhat different and is shifted more to intermediate and advanced level training.

Table 13: Most requested training, including breakdown by level

Training topic	Valid percent requesting training	Introductory	Intermediate	Advanced
Handling Nonresponse	51%	24%	15%	12%
Structural equation modelling	50%	16%	18%	16%
Panel data analysis	50%	26%	13%	11%
Modelling of rates and counts	48%	18%	17%	13%
Mathematics for statistics	45%	17%	18%	10%
Log-linear modelling of tables	44%	18%	16%	10%
Network analysis	43%	18%	15%	10%
Event history modelling	43%	27%	11%	5%
Instrumental variables methods	41%	20%	12%	9%
Data mining	41%	22%	11%	8%
Multi-level modelling	42%	21%	11%	10%
Geographically weighted regression	39%	24%	9%	6%
Survey sampling	38%	20%	10%	8%
Growth curves	35%	17%	8%	10%

Training topic	Valid percent requesting training	Introductory	Intermediate	Advanced
Causal analysis	36%	17%	12%	7%
Longitudinal data analysis	32%	19%	7%	6%
Agent-based modelling	31%	21%	6%	4%
Spatial analysis	32%	19%	9%	4%
Generalised linear models (logit/probit)	31%	18%	7%	6%
Statistical simulation	28%	18%	6%	4%
Correspondence analysis	27%	14%	6%	7%
Survival analysis / life tables	25%	16%	6%	3%
Linear regression	24%	15%	6%	3%
Analysing complex survey designs	24%	14%	6%	4%
Time-series analysis	23%	14%	6%	3%
Latent class analysis	23%	14%	6%	3%
Factor/principal components analysis	21%	14%	4%	3%
Bayesian analysis	20%	15%	3%	2%

To get a better sense of what was chosen most in 'introductory', 'intermediate', or 'advanced' training Table 14 provides a breakdown of what topics were chosen in each of these three categories, sorted by the frequency. For 'introductory' training 'event history modelling' proved most popular (27%), followed by 'panel data analysis' (26%) and 'handling nonresponse' (24%). For 'intermediate' level training 'mathematics for statistics' proved most popular (18%), followed by 'structural equation modelling' (18%), and then by 'modelling of rates and counts' (17%). For 'advanced' level training 'structural equation modelling' proved most popular (16%), followed by 'modelling of rates and counts' (13%), and then by 'handling nonresponse' (12%).

In contrast to qualitative methods training most researchers in the study appear to see their quantitative training needs as being at an introductory level, rather than an advanced level. This may, at least in part, reflect the complexity of many quantitative methods and the fact that the range and depth of quantitative methods covered in undergraduate and postgraduate provision is limited. Those who wish to develop their skills in quantitative methods must often begin therefore with introductory training.

Table 13 shows that 'handling nonresponse' is the most popular quantitative topic at 51%, but its top ranking stems mostly from that fact that 24% of respondents felt they needed it in the form of introductory training, twice as many as wanted advanced training.

It is interesting also to note from Table 14 how advanced training in 'structural equation modelling' was requested by 16% of respondents, making it the most popular of the advanced training topics. This however is only 2% more than requested the least popular 'introductory' training topics. The results of this study suggest therefore that in the quantitative training field 'introductory' training topics are perhaps of necessity more in demand than advanced ones.

Table 14: Expressed demand for Quantitative methods training (sorted by frequency)

Introductory	Intermediate	Advanced
Event history modelling (27%)	Mathematics for statistics (18%)	Structural equation modelling (16%)
Panel data analysis (26%)	Structural equation modelling (18%)	Modelling of rates and counts (13%)
Handling Nonresponse (24%)	Modelling of rates and counts (17%)	Handling Nonresponse (12%)
Geographically weighted regression (24%)	Log-linear modelling of tables (16%)	Panel data analysis (11%)
Data mining (22%)	Handling Nonresponse (15%)	Mathematics for statistics (10%)
Agent-based modelling (21%)	Network analysis (15%)	Network analysis (10%)
Multi-level modelling (21%)	Panel data analysis (13%)	Growth curves (10%)
Instrumental variables methods (20%)	Instrumental variables methods (12%)	Log-linear modelling of tables (10%)
Survey sampling (20%)	Causal analysis (12%)	Multi-level modelling (10%)
Longitudinal data analysis (19%)	Data mining (11%)	Instrumental variables methods (9%)
Spatial analysis (19%)	Multi-level modelling (11%)	Survey sampling (8%)
Log-linear modelling of tables (18%)	Event history modelling (11%)	Data mining (8%)
Network analysis (18%)	Survey sampling (10%)	Causal analysis (7%)
Statistical simulation (18%)	Geographically weighted regression (9%)	Correspondence analysis (7%)
Generalised linear models (logit/probit) (18%)	Spatial analysis (9%)	Longitudinal data analysis (6%)
Modelling of rates and counts (18%)	Growth curves (8%)	Geographically weighted regression (6%)
Growth curves (17%)	Longitudinal data analysis (7%)	Generalised linear models (logit/probit) (6%)
Mathematics for statistics (17%)	Generalised linear models (logit/probit) (7%)	Event history modelling (5%)
Causal analysis (17%)	Agent-based modelling (6%)	Spatial analysis (4%)

Introductory	Intermediate	Advanced
Structural equation modelling (16%)	Survival analysis / life tables (6%)	Statistical simulation (4%)
Survival analysis / life tables (16%)	Linear regression (6%)	Analysing complex survey designs (4%)
Bayesian analysis (15%)	Statistical simulation (6%)	Agent-based modelling (4%)
Linear regression (15%)	Analysing complex survey designs (6%)	Time-series analysis (3%)
Factor/principal components analysis (14%)	Time-series analysis (6%)	Latent class analysis (3%)
Latent class analysis (14%)	Correspondence analysis (6%)	Factor/principal components analysis (3%)
Analysing complex survey designs (14%)	Latent class analysis (6%)	Survival analysis / life tables (3%)
Time-series analysis (14%)	Factor/principal components analysis (4%)	Linear regression (3%)
Correspondence analysis (14%)	Bayesian analysis (3%)	Bayesian analysis (2%)

Diversity of training needs within social science

Different priorities for training have emerged from these data for different groups within social science, i.e. those at different career stages, those responsible for training social scientists and those in different disciplines within the social science field.

I terms of career stage 'narrative inquiry', 'action research', 'structural equation modelling', 'mathematics for statistics' and 'ethnographic fieldwork' were the five training topics in highest demand from doctoral students. For research assistants/research officers it was, 'narrative inquiry', 'action research', 'handling nonresponse', 'phenomenology' and 'visual creative and sensory methods'. For research fellows/senior research fellows it was, 'narrative inquiry', 'visual creative and sensory methods', 'secondary analysis of qualitative data', 'action research' and 'panel data analysis'. For lecturers/senior lecturers it was, 'handling nonresponse', 'panel data analysis', 'log linear modelling of tables', 'secondary analysis of qualitative data' and 'instrumental variables methods'. For readers/professors it was, 'secondary analysis of qualitative data', 'narrative inquiry', 'panel data analysis', 'handling nonresponse' and 'action research'.

For Lecturers & Senior Lecturers, Readers & Professors involved in training social scientists the most commonly identified methods were: 'Secondary analysis of Qualitative Data', 'Handling Nonresponse', 'Panel data analysis', 'Narrative Inquiry', 'Action Research', 'Instrumental Variables Methods', 'Modelling of rates and counts', 'Log linear modelling of tables', 'Documentary Analysis' and 'Ethnographic Fieldwork'. It should be noted though that those involved in training social scientists were not asked to distinguish training to meet their research needs from training to meet their teaching needs, and so these expressed demands are demands in a general sense.

Table 15 shows the topics that were most often chosen by researchers in the three most commonly represented social science disciplines within the sample: Sociology Psychology and Economics. It is clear from the table that the perceived need for training varies considerably between disciplines. Table 15 shows both qualitative and quantitative topics. In the case of sociology, qualitative topics feature very strongly, with thee qualitative topics (narrative inquiry, ethnographic fieldwork and action research) featuring above the most popular quantitative topic (handling nonresponse) and only five quantitative topics in total among the twenty most popular topics listed in Table 15. By contrast, quantitative topics appear to predominate within economics where only four of the twenty most popular topics listed are qualitative. Psychology exhibits a greater degree of balance between the demands for qualitative and quantitative topics, with eleven quantitative and nine qualitative topics in the top 20.

These data suggest though that quite a sharp division persists between the social science disciplines in terms of the methods used, with qualitative methods dominant in some disciplines and quantitative methods dominant in others.

Table 15: Expressed demand for training among Sociology Psychology and Economics (Top 20 sorted by frequency)

Sociology	Psychology	Economics
Narrative Inquiry (63.7%)	Panel data analysis (68.2%)	Growth curves (57.1%)
Ethnographic Fieldwork (60.8%)	Instrumental Variables Methods (64.3%)	Geographically weighted regression (54.0%)
Action Research (60.0%)	Modelling of rates and counts (62.0%)	Phenomenology (48.8%)
Handling Nonresponse (59.7%)	Structural equation modelling (60.5%)	Instrumental Variables Methods (47.8%)
Visual Creative and Sensory Methods (52.7%)	Narrative Inquiry (57.6%)	Correspondence analysis (46.6%)
Focus Groups (51.8%)	Handling Nonresponse (56.2%)	Narrative Inquiry (45.2%)
Documentary Analysis (51.8%)	Log linear modelling of tables (55.8%)	Modelling of rates and counts (38.5%)
Discourse Analysis (51.8%)	Biographical research (53.9%)	Longitudinal data analysis (38.5%)
Multi level modelling (51.7%)	Action Research (52.1%)	Survey sampling (38.5%)
Network analysis (51.2%)	Geographically weighted regression (51.9%)	Event History modelling (37.9%)
Biographical research (50.2%)	Interpretative Phenomenological Analysis (51.5%)	Generalised Linear Models (logit/probit) (36.6%)
Event History modelling (49.3%)	Participatory Methods (48.5%)	Mathematics for statistics (36.0%)
Life History (49.0%)	Secondary analysis of Qualitative Data (48.5%)	Documentary Analysis (35.7%)
CAQDAS Computer-Assisted Qualitative Data Analysis (49.0%)	Mathematics for statistics (48.4%)	Log linear modelling of tables (34.8%)
Grounded Theory (49.0%)	Qualitative Comparative Analysis (47.3%)	Visual Creative and Sensory Methods (33.3%)
Secondary analysis of Qualitative Data (49.0%)	Phenomenology (44.2%)	Data mining (32.9%)
Interpretative Phenomenological Analysis (46.9%)	Data mining (42.6%)	Panel data analysis (32.9%)
Panel data analysis (46.3%)	Visual Creative and Sensory Methods (41.8%)	Handling Nonresponse (31.1%)
Case Study (46.1%)	Survey sampling (39.9%)	Multi level modelling (30.4%)
Structural equation modelling (45.8%)	Multi level modelling (39.5%)	Spatial analysis (28.6%)

Respondents who indicated a desire to have mixed methods training were asked in an open question to explain what training in mixed methods they would like and at what level. Responses indicated a broad range of understandings of what constitutes mixed methods and included the quantification of qualitative data, the analysis of open-ended questions in surveys as well as the integrated use of different methods in a single study. In some cases respondents noted a lack of understanding of mixed methods but nevertheless that this was an area in which they felt they needed training. The following responses illustrate this view:

> *I need introductory training in how to work with data and mixed methods. I don't even know how to describe what I need at this point.*

> *I don't really know what they are and therefore I cannot describe what I would like to be taught. I'm still at the early stage of defining my research topic and research design. My topic involves quantitative growth and productivity analysis and also involves many socio-political factors so this is why I will need to use mixed methods research although I didn't even know this thing had a name.*

Around one third (n=224, 34%) of respondents who identified a need for mixed methods training wanted training in mixed methods at a general level. These respondents included those who lacked a clear understanding of mixed methods but nevertheless wanted training to enhance their understanding and skills as well as those who had experience of mixed methods but wanted to broaden their knowledge. Some respondents had specific interests in mixed methods training, such as how to work together in teams and how to publish mixed methods papers. Others expressed an interest in training that would explore epistemological questions underlying mixed approaches. The majority of respondents identifying a general need for training in mixed methods identified the level at which they needed training (73%). Those identifying the level of training need viewed these as being mostly at the introductory (47%) or intermediate (37%) levels. A minority wanted training at an advanced level (16%). This perhaps is a reflection of the high numbers of research students in the sample. The following responses illustrate the types of general training respondents wanted:

> *I would like training in how to develop mixed methods research; justifying the needs for mixed methods, how to really mix the methods… How to design research questions to be answered with mixed methods, how to write research findings drawn from mixed methods.*

> *I have collected several mixed methods datasets and find it challenging to bring them into article format … A course on publishing mixed methods research would be really great.*

A virtually identical proportion of respondents identified a specific need for mixed methods training in relation to mixing qualitative and quantitative approaches (n=226, 34%). The methods cited were primarily integrating qualitative interview, observational or focus group data with survey data.   The level of training need was identified by 67% of respondents identifying a need in this area. Those identifying the level of training need viewed these as being mostly at the introductory (36%) or intermediate (45%) levels. A minority wanted training at an advanced level (19%).

Typical comments about training needs involving mixed qualitative and quantitative approaches were:

> *Advanced training – I am using focus group data and survey data. I would especially like to learn more about approaches towards reconciling the two.*

A small proportion of respondents wanted training in mixing different types of qualitative or quantitative methods. More needs were identified in relation to mixing different qualitative approaches compared with quantitative approaches. In relation to mixed qualitative approaches, 76% of those identifying needs in this topic (n=28) identified the level of training needed. Most wanted training at an intermediate level (n=16, 57%). In relation to mixing different types of quantitative approaches, 65% (n=11) specified the level at which they wanted training with the majority wanting training at an introductory (n=5, 45%) or advanced (n=4, 36%) level. The following responses illustrate the types of training desired:

> *How to combine survey and experimental methods*
>
> *I would in principle be interested in combining various qualitative methods, including ethnography, narrative analysis and discourse analysis, for example. These would probably need to be intermediate or advanced*

Respondents were given the opportunity to inform us of any other research methods not included in the preceding lists that they would like to receive training on, including whether the training should be introductory, intermediate or advanced. One fifth of respondents (n=464, 20%) provided information in response to this question. In many cases, responses related to items in the lists that they had already been presented with; topics such as interviews, survey methods and focus group facilitation were frequently identified. One of the most frequently identified areas related to visual, creative and sensory methods, an item included in the list of qualitative topics. This topic was identified as an 'other' research need by 8% (n=37) of people providing responses to this question. The items identified that are additional to the preceding tables of topics are listed in Table 16. Only limited information was provided in these responses in relation to the level of training needed but a small number of respondents did report a need for a general introductory course on quantitative (n=10, 2%) or qualitative methods (n=9, 2%). Similar numbers also reported a need for training in advanced qualitative and quantitative methods.

Table 16: Expressed demand for 'Other' research methods training topics

Topic	N (% of question respondents)
Quantitative software packages	28 (6%)
Online research methods (web surveys, online interviews)	19 (4%)
Physiological indicators/neuroscience methods	15 (3%)
Computer programming	13 (3%)
Digital technologies for data collection	13 (3%)
Graphical Information System (GIS)	13 (3%)
Historical/archive methods	12 (3%)
Experimental methods	12 (3%)
Introductory quantitative methods	10 (2%)
Introductory qualitative methods	9 (2%)
Advanced quantitative methods	9 (2%)
Advanced qualitative methods	8 (2%)
Research synthesis	8 (2%)
Research ethics	8 (2%)

The most important training needs for social science as a whole

Those respondents who indicated they were responsible for the training or supervision of social scientists (45%, n=1050) were asked what they believed to be the most important training needs for the social science sector as a whole. Respondents typically identified more than one area in their responses.

The most common need identified was in quantitative methods training (11%, n=113) and statistics (6%, n=66). Other respondents specifically identified a need for

training in statistics at a specific level; 6% (n=58) identified a need in relation to basic statistics and 3% (n=27) in advanced statistics. Maths, programming and training in the use of quantitative software such as SPSS, R and STATA were also identified. In terms of specific quantitative methods, modelling techniques, skills in the use of existing datasets, econometrics, experimental methods, survey skills and linear regression were all identified as needs by seven or more respondents. The frequencies for these responses are set out in Table 17.

Respondents' comments indicated considerable concern about the low level of quantitative skills within the researcher community. The following comments are illustrative:

> *Being able to conduct, and also read and understand, basic quantitative research. Too many researchers/students have an aversion to numbers that I think limits their potential as researchers*

> *The numerical skills of most students are very poor. Basic maths and statistics training is essential*

> *Developing confidence among young social scientists in quantitative methods. Many are deterred due to ignorance, lack of interest and overly-elementary training at undergraduate level.*

Table 17: Most important quantitative training needs as perceived by supervisors and trainers

Training need	N (% of question respondents)
Quantitative methods	113 (11%)
Statistics	66 (6%)
Basic statistics	58 (6%)
Advanced statistics/quantitative methods	27 (3%)
Skills using existing datasets	25 (2%)
Maths	24 (2%)
Modelling techniques	19 (2%)
Econometrics	17 (2%)
Experimental methods	13 (1%)
Programming	11 (1%)
Survey skills	11 (1%)
Quantitative software	10 (1%)
Linear regression	7 (1%)

A smaller number of respondents identified needs for training in qualitative methods across the social science community. While a number of respondents who identified needs in this area recognised that the pressing need was in quantitative training, it

was noted that this should not be to the detriment of training and skill development in qualitative methods:

> *We need a solid appreciation of the benefits of all methods. Despite that, I think that qualitative research needs to be improved overall because the government is always inclined towards quantitative methods - improved skills in qualitative methods may result in a more nuanced approach to research in general than the government current attitude which elevates RCTs to an exaggerated status.*

Only 4% (n=45) identified a need in general qualitative methods; a further 1% (n=15) identified a need in advanced qualitative methods and 1% (n=13) in introductory qualitative methods. The need for training in reflexivity, in interviewing and in the analysis of qualitative data was also identified. The specific methodological approaches identified were ethnography and participatory methods. The frequencies are set out in Table 18.

Table 18: Most important qualitative training needs as perceived by supervisors and trainers

Training need	N (% of question respondents)
Qualitative methods	45 (4%)
Advanced qualitative methods	15 (1%)
Qualitative analysis	14 (1%)
Introductory qualitative methods	13 (1%)
Reflexivity/rigour	12 (1%)
Ethnography	12 (1%)
Interviewing	12 (1%)
Participatory methods	6 (0.1%)

Skills in mixed methods appeared to be viewed as an important, and growing, training need for the social science community; 5% (n=52) identified the need for training in mixed methods. Respondents frequently provided comments noting the importance of researchers understanding mixed methods approaches:

> *Mixed methods are increasingly needed. Encouraging researchers from both 'sides' to see the value and use of combining qualitative and quantitative methods, showing them what the possibilities are and how to do this work effectively*

Interdisciplinary research was also identified as a training need by a small number of respondents (3%, n=30). Respondents identifying this area of training need noted the necessity of social scientists working with disciplines both inside and outside the social sciences to enable important and complex research questions to be adequately addressed.

The need for broad general training across a range of methodologies and methods, in research design and in the philosophy of social science were identified. Training

in linking theory and methods, in research ethics and in critical thinking were also identified (see Table 19). A small number of respondents noted the need for on-going training for supervisors and trainers in research methods to ensure their level of knowledge is current. Respondents noted the importance of research training providing a good grounding across the range of methods; it was noted by some respondents that there is a need to raise the level of general research methods training provided to doctoral students and early career researchers. The need for training to develop researchers' skills across a range of methods beyond the basic level was also identified as important. Various comments from respondents noted the importance of training providing researchers with research skills that would enable them to select and use the most appropriate method to answer a research question. The tendency for researchers to be either 'qualitative' or 'quantitative' was identified as an important issue that needed to be addressed through training across various stages of researchers' careers. Some typical comments were:

> *On-going training, perhaps being compulsory, in a range of qualitative and quantitative methods for researchers - to ensure they can take on different types of research and are constantly being challenged to move out of their comfort zone in relation to the types of methods they prefer to use or feel are most appropriate for investigating an area of interest.*

> *I think that the unhealthy division in qualitative and quantitative research needs to be addressed in training, and that training therefore could best be project-based, combining training in appropriate methodologies that span the divide. Avoiding the term "mixed methods" would be a great start, as the term essentialises the two as if the divide is normal and "mixed methods" is something odd.*

Table 19: Most important general training needs as perceived by supervisors and trainers

Training need	N (% of question respondents)
Grounding in research methods	65 (6%)
Skills across the range of methods	60 (6%)
Research design skills	48 (5%)
Philosophy of social science	39 (4%)
Linking theory and methods	34 (3%)
Supervisor training/training trainers	13 (1%)
Research ethics	13 (1%)
Critical thinking	11 (1%)

Some respondents identified training needs for the social science community in research-related skills. Most frequently these related to training in academic writing and in communicating research findings. Other training needs related to: preparing grants; developing impact and/or policy relevance; critical reading skills and language skills.

Formal assessments of training needs

Doctoral students and research assistants / research officers were asked whether they have had a formal assessment of their training needs in research methods. Of the doctoral students who responded 48.3% indicated they had, 7.8% indicated one was planned, while 39.7% indicated they had not. Of the research assistants / research officers who responded, 59.6% indicated they have not had a formal assessment of their training needs in research methods, compared to 33.0% who had and 4.6% who indicated one was planned. It is clear from these data that formal assessments of training needs still have a way to go before they are universal for academic researchers. With almost 60% of junior researchers not having a formal assessment of their needs, the task of improving the skills base of social science researchers is made all the more difficult.

Motivations for training

In seeking to determine training needs it is appropriate to consider what is meant by needs and what distinctions might validly be drawn between 'wants' and 'needs'. 'Needs' have an implicit sense of pertaining to one's current work and to a desire to work more effectively. 'Wants' by contrast suggest less concern with immediate utilitarian considerations and more with long-term goals. One of the online survey questions offered a choice of four reasons why they might want training. These were chosen to reflect commonly held views on why training in research methods is needed, as indicated in previous NCRM needs analyses, as well as the 'wants – needs' distinction. Table 20 shows the results for this question by career stage.

Table 20: Reasons for wanting training in research methods by career stage

Career stage	To keep up to date with new developments	To develop skills in a specific area that will help me with a particular research project	To refresh the methods I learned some time ago but have since forgotten	To open up new opportunities for research in the future
Masters student	2 (5.4%)	21 (56.8%)	2 (5.4%)	12 (32.4%)
Doctoral student	126 (10.5%)	769 (64.0%)	66 (5.5%)	241 (20.0%)
Research assistant / research officer	14 (11.5%)	69 (56.6%)	10 (8.2%)	29 (23.8%)
Research fellow/senior research fellow	32 (14.5%)	138 (62.7%)	8 (3.6%)	42 (19.1%)
Lecturer/senior lecturer	51 (16.8%)	185 (61.1%)	18 (5.9%)	49 (16.2%)
Reader/professor	88 (25.3%)	182 (52.3%)	14 (4.0%)	64 (18.4%)
Other	5 (35.7%)	2 (14.3%)	1 (7.1%)	6 (42.9%)
Total	318 (14.2%)	1,366 (60.8%)	119 (5.3%)	443 (19.7%)

Most respondents were motivated to train in specific areas relevant to particular research projects (60.8%). Only 14.2% of respondents chose "to keep up to date with new developments" as their main motivation for training but this proportion increased with seniority, with just over a quarter of reader/professors choosing it compared to only 5% of masters students. As one might expect, the balance shifts slightly as career stage advances, from developing skills for research projects to keeping up with new developments, reflecting no doubt the expertise of PIs and the practice of employing less experienced research assistants to conduct the day-to-day research work.

With the exception of Masters students, broadly similar proportions of researchers across the various career stages chose "to open up new opportunities for research in the future" as their main motivation for training, while very few respondents identified "to refresh the methods I learned some time ago but have since forgotten" as their main motivator.

Barriers to training

Respondents were asked to identify which of five commonly reported barriers to training prevented them from accessing training. Table 21 provides a breakdown of the responses. Lack of funds and lack of time were most commonly reported as being a big problem, with lack of time being the issue that was most often reported to be a problem to some degree. 'Training being available but not when you needed it' was the second most commonly reported problem, but was more often reported as a slight problem rather than a big problem.

Table 21: Barrier issues that prevent researchers accessing training

Barrier issue	A big problem	A problem	A slight problem	Not a problem
Not have funding to pay fees and/or expenses	20.6%	21.2%	18.3%	39.9%
Not being able to spare the time away from your research work	16.7%	21.9%	25.2%	36.1%
Training being available but not when you needed it	7.2%	24.9%	29.7%	38.1%
The training venue being too far way	9.4%	20.9%	19.8%	49.8%
Looking for but not finding any suitable training	8.5%	21.4%	27.5%	42.6%
Training that requires an overnight stay, which you cannot do	7.0%	14.9%	15.2%	62.9%

When responses indicating a barrier is 'a problem' or 'a big problem' are combined a pattern emerges across career stage. 'Lack of time' is reported as a barrier with increasing frequency as seniority increases, and it is the most frequently reported barrier by reader/professors in the sample. Each of the other barriers is reported with fairly uniform frequency by researchers at the various career stages, apart from reader/professors who tend to report these less often. 'Lack of funding' appears to be less of an issue with doctoral students and reader/professors within the sample,

compared to other researchers and especially research assistants and officers, for whom 'lack of funding' was the most commonly reported barrier.

Table 22: Barriers reported as 'a problem' or 'a big problem' by career stage

Career stage	Not have funding to pay fees and/or expenses	Not being able to spare the time away from your research work	Training being available but not when you needed it	The training venue being too far way	Looking for but not finding any suitable training	Training that requires an overnight stay
Masters student	19 (54.3%)	9 (25.7%)	10 (28.6%)	11 (31.4%)	10 (28.6%)	8 (22.9%)
Doctoral student	436 (38.5%)	282 (24.9%)	358 (31.7%)	325 (28.7%)	363 (32.1%)	225 (19.9%)
Research assistant/research officer	66 (60.0%)	49 (44.5%)	38 (34.5%)	40 (36.4%)	34 (30.9%)	24 (21.8%)
Research fellow/senior research fellow	102 (49.0%)	101 (48.6%)	76 (36.5%)	73 (35.1%)	72 (34.6%)	50 (24.0%)
Lecturer/senior lecturer	145 (52.2%)	166 (59.7%)	109 (39.2%)	107 (38.5%)	86 (30.9%)	83 (29.9%)
Reader/professor	101 (31.5%)	192 (59.8%)	79 (24.6%)	74 (23.1%)	57 (17.8%)	62 (19.3%)
Other	5 (45.5%)	9 (81.8%)	4 (36.4%)	4 (36.4%)	3 (27.3%)	5 (45.5%)
Total	874 (41.7%)	808 (38.6%)	674 (32.2%)	634 (30.3%)	625 (29.8%)	457 (21.8%)

Respondents were asked in an open question to identify any other issues that prevented them from accessing training. A lack of time due to teaching and administration duties or carer responsibilities were the most frequently cited issue. Four other issues were frequently identified:

- Researcher's line managers placing little value on training or providing little encouragement to undertake it;
- A lack of knowledge about training opportunities and a lack of awareness of where information about training could be found;
- A lack of understanding about what skills are needed and consequently what training is necessary or appropriate;
- A concern among senior researchers about attending courses that might be attended by their research students.

The importance placed on having locally-based training.

When asked how important is it to have research methods training available within their own region only 19.6% of those who responded said it was 'not important', with 80.4% saying it was 'important' (47.8%) or 'very important' (32.6%)

When responses are broken down by career stage it is clear that for this sample the importance of regional training lessens with seniority.

Table 23: Importance of local training by career stage

Career stage	Not important	Important	Very important
Masters student	3.4%	51.7%	44.8%
Doctoral student	15.6%	47.7%	36.7%
Research assistant/research officer	11.3%	55.7%	33.0%
Research fellow/senior research fellow	25.2%	46.5%	28.2%
Lecturer/senior lecturer	21.0%	47.2%	31.7%
Reader/professor	32.7%	46.5%	20.8%
Other	30.0%	50.0%	20.0%
Total	19.6%	47.8%	32.6%

No clear pattern emerges when responses to the question on importance of local training are broken down by region, as shown in Table 24.

Table 24: Importance of local training by region

Region	Not important	Important	Very important
Northern Ireland	10%	42%	48%
North West	12%	52%	35%
Scotland	14%	40%	46%
Greater London	17%	49%	34%
South West	19%	53%	27%
South East	21%	48%	32%
Wales	21%	48%	31%
Yorkshire and the Humber	22%	48%	31%
West Midlands	24%	48%	28%
East Midlands	24%	50%	26%
North East	27%	41%	32%
East of England	33%	50%	17%

It is true to say that the researchers who most often rated it as 'very important' are based in Northern Ireland, North West and Scotland, regions furthest from the largest UK population centres. One might argue that this perhaps reflects the time it takes to travel from these regions to large centres such as Birmingham and London. This does not appear to be true of respondents based in all such regions though, since those in the North East region were the second only to those in East of England in rating local training as 'not important', while researchers in Yorkshire and the Humber rate local provision less highly than one might perhaps expect if this were true.

Use of internet-based training and resources

One of the ways to overcome some of the problems identified as barriers to training, such as time limitations and accessibility is to make use of internet-based training[7]. When asked whether they had ever used internet-based research methods training resources only a third said 'yes'. The two-thirds who had not used internet-based training and resources were asked why this was the case. The most common reason cited was a lack of knowledge about the availability of internet-based training. Other reasons were a lack of suitable training or resources in the topic areas in which respondents wanted training and a preference for face-to-face training. Some of the same barriers that prevented researchers taking up training outlined in Table 21 were also relevant to why people had not made use of on-line training or resources; a lack of time to locate and make use of on-line training or resources was frequently noted.

The proportions reporting that they use internet-based training varied by career stage. Masters and doctoral students made less use of internet-based research methods training resources, as did readers/professors. By contrast around 40% of researchers and lecturers reported making use of these resources.

Table 25: Use of internet-based resources by career stage

Career stage	Yes	No
Masters student	28.6%	71.4%
Doctoral student	31.8%	68.2%
Research assistant/research officer	40.0%	60.0%
Research fellow/senior research fellow	40.9%	59.1%
Lecturer/senior lecturer	39.6%	60.4%
Reader/professor	29.3%	70.7%
Other	27.3%	72.7%
Total	33.7%	66.3%

These findings may perhaps be explained by the circumstances of individuals within each of these career stages. Masters students are likely to be on taught programmes

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[7] By internet-based training and resources we mean all forms of training supported via the internet. This includes e-learning where complete courses are delivered online but also less formalised internet based materials in the form of websites and resource repositories.

with a full curriculum of traditional instruction and may not feel the need to access internet-based resources. The same may hold, albeit to a lesser extent, for doctoral students. Readers/professors may also not feel the need to access internet-based resources, by virtue of their experience. Researchers and lecturers on the other hand are likely to be relatively less experienced than reader/professors and therefore may need more training in research methods. The do not have the benefit of access however to the same level of traditional training as masters and PhD students. These two factors would explain their greater use of internet-based training and resources. There appears to be little difference in the use of internet-based resources among male and female researchers in the sample, with 34.4% of male respondents and 31.7% of female respondents saying they used them.

Despite many respondents having not as yet used internet-based research methods training resources, 83.9% of respondents said it was very likely (39.2%) or quite likely (44.7%) that they would use high quality online resources in future, if these were available. This compares to 16.1% who said it was not very likely (12.8%) or not at all likely (3.3%) that they would use such resources in future.

Table 26 shows the breakdown of preparedness to use internet-based training and resources in future by career stage. While all express willingness to use internet-based training and resources in future, these data suggest that the likelihood decreases with seniority, though this may be a cohort effect that will become less marked in future.

Table 26: Future use of high quality online resources by career stage

Likelihood of using internet-based training and resources in future	Very likely	Quite likely	Not very likely	Not at all likely
Masters student	44.8%	48.3%	3.4%	3.4%
Doctoral student	45.2%	42.8%	10.1%	1.9%
Research assistant/research officer	38.7%	48.1%	11.3%	1.9%
Research fellow/senior research fellow	40.6%	42.6%	12.9%	4.0%
Lecturer/senior lecturer	34.4%	45.8%	13.9%	5.9%
Reader/professor	20.8%	50.3%	22.8%	6.1%
Other	36.4%	54.5%	9.1%	0.0%
Total	39.2%	44.7%	12.8%	3.3%

There is little difference in the preparedness of male and female researchers to use internet-based training and resources in future, although more females than males (41.1% vs. 35.9%) said it was 'very likely' while more males than females (46.8% vs. 43.5%) said it was 'quite likely'.

Surprisingly perhaps, less than a quarter of those who classified themselves as self-taught (22.4%) said they had used internet-based training and resources, while more than a quarter (26.7%) said they would not use them in future. These proportions are much less than those indicating they had used these resources and would use them in future, but it does suggest a greater reluctance to use these resources than one

might have imagined from a group one might have expected to be strong advocates of internet-based training and resources.

When those who said they would use high quality online resources were asked if they would be prepared to register in order to receive these 96% said they would and this varied little across career stage and gender with greater than 90% of all groups saying they would.

Views on the advantages and disadvantages of e-learning

Respondents were asked to rate a set of advantages and disadvantages of e-learning in terms of their importance. The advantages and disadvantages were chosen to reflect those often reported in the e-learning literature. Table 27 shows how respondents rated the advantages e-learning, with the matching of material to suit one's level of knowledge and the self paced aspect of e-learning being most often rated as important.

Table 27: The advantages of e-learning

E-learning advantage:	Not important	Important	Very important
Training material can be selected to match your level of knowledge	9.0%	54.5%	36.4%
Training is self paced and can take place at times to suit you	15.4%	47.2%	37.4%
Travel time is reduced	17.1%	50.0%	33.0%
Travel costs are reduced	19.5%	56.3%	24.2%
Online training is an interactive experience	37.1%	43.5%	19.4%
Keeping track of your progress is easy	39.3%	46.3%	14.4%

Table 28: The disadvantages of e-learning

E-learning disadvantage:	Not important	Important	Very important
The range of available training courses is limited	17.8%	53.0%	29.2%
Motivation can be difficult without an instructor present	38.9%	32.8%	28.4%
Training is often done alone, rather than in a group	43.8%	31.7%	24.5%
The lack of familiar structure and routine can be hard to get used to	47.3%	33.3%	19.4%
Training is restricted to times when you have access to a computer and the internet	73.9%	17.1%	9.0%

Table 28 shows how respondents rated the disadvantages of e-learning. The limited range of material was most often cited as an important disadvantage, much more so

than the other options. Potential limitations arising from difficulties in accessing a computer or the Internet was least often cited as a disadvantage.

Discussion

With a total of 2,352 respondents, the sample represents a sizeable portion of ESRC's currently funded researchers and an important constituency within the UK social science research community. The sample was mostly female and mostly younger researchers who had held doctorates for less than 10 years. More than half were doctoral students but the remainder represented a good spread across academic career stages. However, junior researchers may be underrepresented in the sample as a result of the way they were approached to participate; contacting junior researchers relied in large part on the goodwill of grant holders who were asked to forward general invitations to all researchers working on their project. This method of contacting researchers may be less effective than direct contact with a personalised invitation to participate.

The sample displays good overall coverage of the main social science disciplines, with each of the eighteen identified disciplines represented. However, the three most commonly represented disciplines (Sociology, Psychology and Economics) make up one-third of the sample. The sample was evenly balanced between those who saw themselves as self-taught or mostly self-taught and those who saw themselves as formally trained or mostly formally trained.

Researchers using qualitative methods predominated in the sample due to the high number of masters and doctoral students. Nevertheless, there was high demand for both qualitative and quantitative training. Greater demand for qualitative training was evident among researchers in the early stages of their career, particularly for post-graduate students but the demand for qualitative training decreased with seniority. Despite this, there was also a high level of demand for quantitative training at junior levels. At the senior level, a greater proportion wanted training in quantitative rather than qualitative methods. There was some evidence of a perceived need for training across the range of methods. There was some demand for mixed methods training but there appeared to be a broad range of understandings about what mixed methods approaches comprise.

In relation to qualitative methods, the greatest demand for training was at the advanced level, with narrative approaches and action research in particular demand. In quantitative methods, the greatest demand for training was at the introductory level where handling nonresponse, structural equation modelling and panel data analysis emerged as the training needs in greatest demand. In drawing these conclusions we recognise that what constitutes 'introductory', 'intermediate' and 'advanced' varies across topic and also that individuals may have different understandings of what these different levels comprise. Certainly some introductory level courses in certain statistical techniques require a high level of existing statistical knowledge and are not 'introductory' in the sense of being suitable for novices in statistics; the same may also be said for some qualitative approaches. We identify these levels and areas of training demand here to help guide providers initially as to what they might expect demand to be in their particular area but recognise that when it comes to planning provision engagement and further discussion with those seeking training will be necessary when designing these courses.

Expressed demand for training differed also for researchers at different stages of their careers and from different disciplines within social science. Providers should

therefore be aware of these differences and should seek to provide training that is tailored to meet the specific needs of their learners rather than assume a 'one-size-fits-all' approach will be suffice.

The perceived needs for training across the social science community as a whole were identified as primarily in quantitative methods and statistics but it was recognised this should not be to the detriment of training in qualitative methods. The need for researchers to have skills across the range of methods was identified.

Mixed methods training featured more prominently in the responses to this study than in previous NCRM assessments. While there is still much debate and perhaps confusion as to what constitutes mixed methods this data suggests there is greater interest in mixing methods, along with a greater willingness to adopt mixed-methods approaches.

On the question of what constitute the most pressing training needs in social science the responses from those who train social scientists indicate a clear concern for the fundamentals of research practice and an ongoing need to improve basic research skills. These data point to the need to continue the work that is being done to enhance the quality of undergraduate research training and provides some pointers to the new doctoral training centres as to what areas of training need they might seek to address in the short and medium term.

Lack of time and lack of funding were seen as the greatest barriers to training for senior and junior researchers respectively. These findings mirror those from earlier NCRM assessments and suggest that the way ahead may be to recognise and manage these barriers rather than completely overcome them. Time and money will always be at a premium and so providers of training will need to ensure that what is on offer makes best use of both.

Formal assessments of training need do not appear to be routinely carried out. Time limitations appeared to be the main barrier to accessing training and locally based training was viewed as important. While an increased use of internet-based training and resources training has the potential to help overcome some of the barriers to training it these were not widely used by respondents due to a lack of knowledge as to what was available and where. However, respondents indicated a willingness to use high quality online resources in the future.

4.2 Content Analysis of Job Specifications

Grade, focus and location of posts

A total of 85 posts were advertised during this period. Of these over half (n=52, 61%) were for research associate or research fellow posts. A further 31% (n=26) were for research assistant posts. Only 7 posts (8%) were for senior research fellows. These posts were located across a range of disciplines. As table 32 shows, the discipline with the largest proportion of research assistant posts was psychology (13 posts, 15%) and the discipline with the largest proportion of research fellow posts was management and business studies (15 posts, 18%).

Overall management and business studies accounted for 21% of all posts advertised during this period and psychology accounted for 19%. Six posts (7%) were located within interdisciplinary research centres and the skills sought were not identified within a particular discipline.

Table 29: Discipline and grade of post advertised

Discipline	Research assistant	Research Fellow	Senior research fellow	Total
Management & business studies	1	15	2	18 (21%)
Psychology	13	3	-	16 (19%)
Education	3	6	-	9 (11%)
Economics	2	6	-	8 (9%)
Political science	1	5	1	7 (8%)
Sociology	2	4	1	7 (8%)
Statistics	-	5	1	6 (7%)
Interdisciplinary social science	1	4	1	6 (7%)
Law/socio- legal studies	3	1	-	4 (5%)
Human geography	-	2	1	3 (4%)
Social policy	-	1	-	1(1%)
Total	26 (31%)	52 (61%)	7 (8%)	85 (100%)

Qualifications sought

Not surprisingly, the level of qualification sought, reflected the level of post advertised with 54% of research assistant posts seeking applicants with degrees only, 96% of research fellow/associate posts seeking applicants with Masters or PhDs and all senior research fellow posts seeking applicants with PhDs.

<u>Data collection and analysis skills</u>

In relation to research skills sought, the data from the further particulars were categorised in relation to the skills sought in broad methodological approaches (i.e.

qualitative, quantitative or both) and then the more specific skills being sought in relation to these specific approaches (e.g., interviewing, focus groups, modelling, SPSS). For those posts that identified specific research skills (76 posts), around one third sought applicants with skills in quantitative methods (30 posts, 39%), a similar number of posts sought researchers with skills in qualitative methods (28 posts, 37%), 22% (17 posts) sought applicants with skills across qualitative and quantitative methods and one post specified policy analysis. An additional 11% (n=9) of all posts sought 'general research skills' but did not specify skills in a particular approach (see Table 30).

Table 30: Broad research skills required

Method	Research assistant	Research fellow	Senior research fellow	Total (% of all posts)
Quantitative	14	13	3	30 (35%)
Qualitative	5	20	3	28 (32%)
Both quantitative and qualitative	4	13	-	17 (20%)
General research skills	3	6	-	9 (11%)
Other (policy analysis)	-	-	1	1 (1%)
Total	26	52	7	85

Qualitative skills were sought more commonly for research fellow grade posts rather than research assistant posts whereas posts for which quantitative skills were sought were distributed across research assistant and research fellow grades.

In relation to specific research skills sought within qualitative approaches, skills in qualitative data analysis (45% of all posts) and qualitative data collection comprising interviewing and running focus groups (32% of all posts) predominated (see Table 31). In relation to specific research skills sought within quantitative approaches, general skills in quantitative analysis (31% of all posts), the use of statistical software such as SPSS, R or Stata (27% of all posts), skills and knowledge of survey methods (20% of all posts) and statistics (20% of all posts) were the most frequent skills sought (see Table 32). Other analytic skills that do not fit into a qualitative or quantitative framework were also identified (systematic review and documentary or policy analysis) and these are displayed in

Table 33).

Table 31: Qualitative skills sought by grade of post advertised*

Method	Research assistant	Research fellow	Senior research fellow	Total
Data analysis	7	28	3	38 (45%)
Interviews/ Focus groups	5	21	1	27 (32%)
General qualitative skills	5	19	2	26 (31%)
Ethnography/ observation	2	8	-	10 (12%)
Video/ visual/digital methods	-	10	-	10 (12%)
CAQDAS	3	4	1	8 (9%)
Methodological approaches[8]	-	4	-	4 (5%)

*Note: *45 posts (53% of all posts) sought skills in qualitative methods (this includes posts seeking qualitative skills only and those seeking qualitative and quantitative skills). The figures in relation to each skill relate to the number of posts identifying the specific skill. Posts typically identified more than one skill. Percentages relate to the % of all posts in which the specific skills were sought.*

Table 32: Quantitative skills sought by grade of post advertised*

Method	Research assistant	Research fellow	Senior research fellow	Total
General quantitative analysis	13	12	1	26 (31%)
Statistical software	11	11	1	23 (27%)
Survey methods	6	11	-	17 (20%)
Statistics	7	9	1	17 (20%)
Modelling	3	9	1	13 (15%)
General quantitative skills	2	7	-	9 (11%)
Experiments	5	3	-	8 (9%)
Use of data sets/ official statistics	3	4	1	8 (9%)
Management of data sets	2	4	1	7 (8%)
Econometrics	-	6	-	6 (7%)
Questionnaire design	-	2	2	4 (5%)

*Note: *47 posts (55% of all posts) sought skills in quantitative methods (this includes posts seeking qualitative skills only and those seeking qualitative and quantitative skills). The figures in relation to each skill relate to the number of posts identifying the specific skill. Posts typically identified more than one skill. Percentages relate to % of all posts in which the specific skills were sought.*

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[8] participatory research, action research, grounded theory and conversation/discourse analysis

Table 33: Other analytic research skills by grade of post advertised*

Method	Research assistant	Research fellow	Senior research fellow	Total
Documentary/policy analysis	2	5	2	9 (11%)
Systematic review	3	2	-	5 (6%)

*Note: *the figures in relation to each skill relate to the number of posts identifying the specific skill. Posts typically identified more than one skill. Percentages relate to % of all posts in which these skills were sought.*

Research-related skills

A range of research-related skills were sought in posts (see Table 34). These included skills in languages (12% of all posts) which were sought primarily for qualitative research posts drawing on specific groups or in research taking place in other countries. Skills in accessing and liaising with hard to reach groups and in conducting sensitive research topics were also skills sought in some qualitative posts (12% of all posts). Advanced computing skills were sought in some quantitative posts (11% of all posts) as were skills in computer programming (9% of all posts). Skills engaging with networks and in effecting change through policy (12% of all posts) were also identified across posts as were skills in web design, editing and management (7% of all posts). Additionally, as would be expected, virtually all posts sought skills in communication and dissemination, in general computing and IT skills and in various personal qualities and attributes, such as teamwork, organisational skills, initiative and interpersonal skills.

Table 34: Research-related skills sought by grade of post advertised*

Method	Research assistant	Research fellow	Senior research fellow	Total
Languages	2	7	1	10 (12%)
Engagement with stakeholders/ policymaker	1	7	2	10 (12%)
Advanced computing skills	4	4	1	9 (11%)
Hard to reach/sensitive topics	2	7	-	9 (11%)
Computer programming	1	6	1	8 (9%)
Web design/ management/ editing	1	5	-	6 (7%)

*Note: *the figures in relation to each skill relate to the number of posts identifying the specific skill. Posts typically identified more than one skill. Percentages relate to % of all posts in which these skills were sought.*

Discussion

Within the period of analysis, the content analysis of job vacancies for research posts in social sciences indicated that skills in both qualitative and quantitative methods are sought and, in each of these approaches, skills in data analysis in particular. However, there is also some indication of employers seeking researchers with skills across a range of methods, both qualitative and quantitative; perhaps reflecting a breakdown in the qualitative/quantitative divide and a growing need for social researchers to have generalist research skills. The sustained demand for skills in survey methods, statistics and statistical software as well as qualitative interviewing and focus group methods is evident across both this and the training needs assessment conducted in 2005 (Wiles et al., 2005). However, there are also some marked differences between the two assessments in terms of the skills identified. In the 2005 assessment, a greater proportion of posts sought skills in quantitative rather than qualitative methods while in this assessment the need for skills in both qualitative and quantitative methods was evident[9]. An increase in skills in simulation/modelling in quantitative research and in visual and digital methods in qualitative research are also evident in this exercise compared with 2005, which perhaps reflects a growth in interest in these methods.

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[9] This may be related to the different inclusion criteria used for identifying posts in this assessment compared to the assessment conducted in 2005. In this assessment posts for researchers with social science skills located in Faculties outside of the social sciences (such as medical sciences or engineering) were excluded; this was not the case in the 2005 assessment. This assessment also focused only on posts advertised on jobs.ac.uk and not additionally on posts advertised in other media as did the 2005 assessment.

Conclusion

Areas of Training Need

It is clear that research training needs within UK social science are varied and differ greatly between social scientists at different stages in their careers and between social scientists from different social science disciplines. The study confirms the great diversity of training needs within social science and the necessity of tailoring provision to meet this diversity of need.

The survey data suggest a desire for training in qualitative methods at the start of one's career (especially at doctoral level), but an increasing need for training in quantitative methods as careers progress. The tendency for junior researchers and doctoral research students to identify training needs primarily in qualitative methods may reflect their use of qualitative methods in their own research. Wiles et al. (2005) discussed a similar finding in the 2005 NCRM Training Needs Assessment and suggested that the dominance of qualitative research in certain disciplines, a lack of advanced mathematics teaching and the narrow range of 'A' levels studies also militate against the interest in, and development of, quantitative research skills in young researchers. Those involved in the supervision and training of social science researchers also stressed the importance of quantitative methods when asked about the main needs of the social science community as a whole. The ESRC have invested in various quantitative initiatives since 2005 but the concern about the lack of quantitative skills appears to persist as does the tendency for doctoral students to report a qualitative approach to research.

The analysis of job advertisements indicated that academic employers seek researchers with skills from across a range of methods, quantitative and qualitative, as well as general research and transferable skills. Reassuringly, the survey data suggests that researchers appreciate the importance of gaining such a wide ranging skill set, with those responsible for training social scientists emphasising an ongoing need to promote training in what might be viewed as the 'fundamental' skills of social science research methods, as well as the need to support training in transferable skills, many of which are IT related. These views are very much in tune with the commitment to transferable skills development within the Postgraduate Training and Development Guidelines (ESRC, 2009).

HEI's have in recent years been acting on the recommendations from the 2002 Roberts review and have been guided by the principles of the UK Concordat to Support the Career Development of Researchers in developing a range of programmes dedicated to the career development and transferable skills training of researchers. These have been promoted through the Vitae organisation and it is clear from our findings that there is an ongoing need for such provision to meet the demands of HEI employers.

The 2005 training needs assessment (Wiles et al, 2005) suggested that the emphasis on quantitative research found in that study may to some extent have reflected the interests and disciplines of those who received funding - predominantly quantitative projects, programmes or centres, in line with to ESRC's ongoing concern regarding the lack of quantitative research. To examine this issue further, the revised 2011 survey asked researchers to classify their approach to research. Interestingly, even among those who classified themselves as qualitative or mostly qualitative

researchers, the lack of quantitative methods training was a concern. The expressed need for quantitative methods training does not appear therefore to just reflect the interests and disciplines of a predominantly quantitative group who currently receive funding, but instead may reflect the desires of some qualitative researchers to use a greater mix of qualitative and quantitative methods in future.

It would appear that researchers increasingly recognise the need for training in a range of methods and researchers appear more comfortable identifying themselves as working across a range of methods, or using mixed methods in their research, more so than was the case in the 2005 survey. It would appear from these data that ESRC funded researchers are in general minded to improve their skills base in quantitative methods, and in the case of qualitative researchers to mix methods or 'cross over' from qualitative to quantitative approaches. Quantitative researchers also showed a willingness to 'cross over' from quantitative to qualitative approaches, albeit to a somewhat lesser extent.

There is some evidence that respondents to the survey did appear to be motivated to train more by short-term needs than more longer-term wants, with 60% expressing a desire for training relevant to specific research projects compared to around only 5% who suggested their prime motivator in training was a desire to open up new opportunities for research in the future. Conversely though, the wide range and large number of training topics selected by respondents as training 'needs' suggests they had more long term and wide-ranging 'wants' in mind. The contrast between needs and wants is difficult to untangle and further research is needed to determine in more detail the contrasting needs and wants of researchers in terms of methods training.

The 2005 needs assessment speculated that researchers responding to that study may have in general, not been aware of the range of research methods or the innovative developments in research methodology and suggested that a more structured questionnaire listing different methods would have resulted in greater specificity of methods being identified. With this in mind the revised 2011 survey provided lists of methods and asked respondents to identify the topics in which they needed training. The indicators as to which research methods are most in demand are clear in that the findings from a reasonably large set of data point to these conclusions. However, while the questions used to gather the data were revised in the light of perceived weaknesses in the previous open ended questions in the 2005, there are two concerns with these new questions.

The first concerns the response requested from the respondent: a choice of 'Introductory', 'Intermediate', 'Advanced' (or the default option 'Not needed'). Of course, there is likely to be some variation in what respondents regard as 'Introductory', 'Intermediate', 'Advanced'. This categorisation involves some subjective judgement based on one's experience of training and one's existing skill levels and as such is prone to introducing a degree of error into the data. The second issue is perhaps more problematic. When the lists were compiled it was assumed that respondents would select only a few of the methods, the ones most closely matching their needs. In the event however the zeal with which respondents selected methods casts some doubt as to how well they had considered their responses. Doctoral students on average selected six topics at introductory level (S.D. 9) four at intermediate level (S.D. 5) and four at adv3anced level (S.D. 5). Fourteen separate topics is a lot more than might be expected as part of a well thought out training plan and similarly large numbers of topics were selected by respondents at the other career stages.

It may be the case therefore that while there are clear pointers as to what respondents regard as the most important training needs, the thought and care with which these choices were made may be less than optimum, and these data supports the case for making formal training needs assessment a more central part of research practice.

Formal Assessments of Training Need

While the practice of having a formal assessment of training needs in research methods is one that is becoming increasingly common in UK HEIs it is clearly not yet universal[10]. Around forty percent of doctoral students who responded to the survey had not had a formal assessment while around sixty percent of junior researchers had not had one. While the practice is to be encouraged as part of a doctoral programme the lack of universality may reflect current perceptions of the flexibility that exists in doctoral programmes. Doctoral study might be seen as an unfolding process where training needs are not clear at the outset and where new needs arise as the research effort meanders its way to the final thesis. If this is so then the findings of this study suggest that doctoral students need more guidance in choosing appropriate training.

Research projects employing junior researchers are by contrast more fixed than doctoral research. While there is likely to be some shifting in emphasis and some flexibility of direction, the path these projects take tends to be more tightly planned and less likely to vary over time compared to doctoral work. Furthermore, if the project is the latest iteration of a long-term research effort then the methods to be used over the course of the project are likely to be much more predictable than would be the case for a doctoral project. A funded piece of research led by an experienced senior researcher should also aim to ensure the optimal use of the planned research methods by its junior researchers and to this end training needs assessments should be encouraged as a matter of course. As with doctoral students, the findings of this survey suggest that junior researchers are not good at narrowing down their training choices to those they need most.

We recommend that future applicants for ESRC-funded research projects should outline within their proposal a project-specific training plan that identifies: a) the skills that will be needed by researchers working on the proposed project, b) the plans to assess the skill levels of those researchers hired to work on the project and c) the means by which any skills gaps that are identified will be filled. These plans should also specify the range of expertise the PI or supervisor will draw upon in determining the answers to these three key questions.

Is there potential in internet-based training?

Estimates of the use of internet-based training resources by those who responded to the questionnaire proved surprisingly low. Most of those who responded said they had not used internet-based training resources. There are a number of possible reasons for this. Firstly the question did not provide illustrative examples of what was meant by internet-based training resources, for fear of priming effects. This left

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[10] We take formal training assessments to be something qualitatively different from and additional to the normal meetings, discussions and supervisory reviews between junior researchers and their line managers or doctoral students and their supervisors. As with any question we rely on the respondents to interpret the term in the way we intend but cannot guarantee that they do so. There is no reason however to suspect that the term 'formal assessment of training' is any more prone to misinterpretation than any other term. In may be prudent however to view the reported low levels of formal assessment with some degree of caution.

respondents to set the limits on what counted as internet-based training resources and what did not. The low level of reported use may reflect a tendency to limit reports to the use of formalised online training that have clearly taken considerable time to develop and exhibit high production values. For example, STATA's NetCourse® http://www.stata.com/netcourse/ was the most commonly mentioned of the highly rated online resources. Respondents also gave high ratings to NCRM's LEMMA II online Multilevel Modelling course http://www.bristol.ac.uk/cmm/learning/course.html, the Economic and Social Data Service (ESDS) online resources http://www.esds.ac.uk/resources/resources.asp and online material from HEIs such as UCLA's online statistics teaching http://www.ats.ucla.edu/stat/

Respondents tended to mention less those single isolated resources such as downloadable PDFs, video clips, photos or data sets, perhaps because these have a smaller profile on the internet, were less memorable at the time the respondents were answering the question or were deemed not to fall into the respondent's definition of internet-based resources. Respondents indicated they would use high quality online resources in future if they were available and would register to use them.

Lack of funding was identified as a key barrier preventing junior researchers accessing training, a finding that points to the importance of funding streams being targeted at this group, in the form of free or low cost training opportunities, as well as training bursaries. Senior researchers by contrast tend to cite lack of time as the key barrier to attending training events. More widely dispersed regional training where travel time is reduced to a minimum would partly address this issue.

Online training is often identified as a way of making best use of scarce time but self-teaching methods in general (either online or using printed material for example) have this advantage. It is clear from our findings that self teaching is as important to social science researchers as formal face-to-face teaching. The bulk of our sample identified themselves as predominantly self taught, rather than formally trained. The implications of this for providers is far reaching as it suggests that a fundamental rethink of what capacity building provision should look like is in order. Providers need to take on board the fact that researchers can and do teach themselves the research methods they use. Providers need to ask themselves, 'How can we best support this process?', 'What resources can we provide?', 'When is face-to-face the best means of delivering training?' and 'How should the objectives of face-to-face training change in light of the synergy that can result from a blend of face-to-face and self teaching?'

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Appendix 1: the survey questions

NCRM training needs survey 2010

This questionnaire seeks your views on the types and format of research methods training that you would like to see supported by ESRC for social scientists. The questionnaire will take about 15 minutes to complete.

Thank you for your time.

Section 1:

About you and your research position.

1. What is your current position? *

Please choose **only one** of the following:

○ Reader / Professor
○ Lecturer / Senior Lecturer
○ Research Fellow / Senior Research Fellow
○ Research Assistant / Research Officer
○ Doctoral Student
○ Masters Student
○ Other

Section 1a

About you and your research position.

2. You have indicated that you are a student.

Are you currently studying part-time or full-time? *

Only answer this question if the following conditions are met:
° answer was 'masters student' or 'doctoral student' at question '1' (what is your current position?)

Please choose **only one** of the following:

○ Part-Time
○ Full-Time

3. Are you involved in the supervision or training of social scientists? *

Please choose **only one** of the following:

○ Yes
○ No

Section 2:

Your highest qualification

4. What is your highest qualification? *

Please choose **only one** of the following:

○ Higher Education below Degree
○ Undergraduate Degree
○ Postgraduate Diploma
○ Masters Degree
○ Doctorate
○ Other

5. For how long have you held your highest qualification? *

Please write your answer here: _____ yrs

Section 3:

Your chosen discipline

6. Into which of these disciplines does your research mainly fall? *

Please choose **only one** of the following:

○ Area Studies
○ Demography
○ Economic and Social History
○ Economics
○ Education
○ Environmental Planning
○ Human Geography
○ Linguistics
○ Management and Business Studies
○ Political Science And International Studies
○ Psychology
○ Social Anthropology

○ Social Policy
○ Social Work
○ Socio-Legal Studies
○ Sociology
○ Science and Technology Studies
○ Statistics, Methods And Computing
○ Other

Section 4:

Your approach to research and your previous training

7. Which of the following categories best describes the kinds of research methods that you use in your current research? *

Please choose **only one** of the following:

○ Qualitative Only
○ Quantitative Only
○ Mixed Methods (Mostly Qualitative)
○ Mixed Methods (Mostly Quantitative)
○ Other

8. Which of the following statements best describes how you acquired your knowledge and understanding of the methods you use in your research? *

Please choose **only one** of the following:

○ Formal training with little or no self-teaching
○ Mostly formal training with some self-teaching
○ Roughly equal amounts of formal training and self-teaching
○ Mostly self-teaching with some formal training
○ Self-teaching with little or no formal training
○ Other

9. You have indicated that you are a doctoral student

have you and your supervisor conducted a formal assessment of your training needs in research methods? *

Only answer this question if the following conditions are met:
° answer was 'doctoral student' at question '1' (what is your current position?)

Please choose **only one** of the following:

○ Yes
○ Not yet, but one is planned
○ No
○ I do not know

10. You have indicated that you are a research assistant / research officer.

Have you and your line-manager conducted a formal assessment of your training needs in research methods? *

Only answer this question if the following conditions are met:
° answer was 'research assistant / research officer' at question '1' (what is your current position?)

Please choose **only one** of the following:

○ Yes
○ Not yet, but one is planned
○ No
○ I do not know

Section 5:

Reasons for wanting training

11. We are interested in the different reasons people have for undertaking training in research methods.

If you were able to undertake some training in research methods in the course of the coming year, which of the following reasons for training would apply most to you? *

Please choose **only one** of the following:

○ To keep up to date with new developments
○ To develop skills in a specific area that will help me with a particular Research project
○ To refresh the methods i learned some time ago but have since forgotten
○ To open up new opportunities for research in the future

Section 5a:

The training you would like to receive

Thinking about the research methods training you might like to undertake in the next year or two:

12. Would you be interested in receiving training in quantitative research methods? *

Please choose **only one** of the following:

○ Yes   ○ No

13. Would you be interested in receiving training in qualitative research methods? *

Please choose **only one** of the following:

○ Yes   ○ No

Section 5b:

Quantitative research methods

14. Please indicate which of the following areas of quantitative methods you would like to receive training in.

Tick one circle only in each row to indicate which level of training (introductory, intermediate, or advanced) would best suit your current needs.

Only answer this question if the following conditions are met:
° answer was 'yes' at question '12' (would you be interested in receiving training in quantitative research methods?)

Please choose the appropriate response for each item:

	Introductory	Intermediate	Advanced	Not needed
Mathematics for statistics	○	○	○	○
Linear regression	○	○	○	○
Generalised linear models (logit/probit)	○	○	○	○
Factor/principal components analysis	○	○	○	○
Latent class analysis	○	○	○	○
Bayesian analysis	○	○	○	○
Network analysis	○	○	○	○
Causal analysis	○	○	○	○
Multi-level modelling	○	○	○	○
Structural equation modelling	○	○	○	○
Modelling of rates and counts	○	○	○	○
Log-linear modelling of tables	○	○	○	○
Spatial analysis	○	○	○	○
Geographically weighted regression	○	○	○	○
Event history modelling	○	○	○	○
Data mining	○	○	○	○
Panel data analysis	○	○	○	○
Instrumental variables methods	○	○	○	○
Time-series analysis	○	○	○	○
Longitudinal data analysis	○	○	○	○
Survival analysis / life tables	○	○	○	○
Statistical simulation	○	○	○	○
Agent-based modelling	○	○	○	○

	Introductory	Intermediate	Advanced	Not needed
Growth curves	○	○	○	○
Correspondence analysis	○	○	○	○
Survey sampling	○	○	○	○
Handling nonresponse	○	○	○	○
Analysing complex survey designs	○	○	○	○

Section 5c:

Qualitative research methods

15. Please indicate which of the following areas of qualitative methods you would like to receive training in.

Tick one circle only in each row to indicate which level of training (introductory, intermediate, or advanced) would best suit your current needs.

Only answer this question if the following conditions are met:
° answer was 'yes' at question '13' (would you be interested in receiving training in qualitative research methods?)

Please choose the appropriate response for each item:

	Introductory	Intermediate	Advanced	Not needed
Ethnographic fieldwork	○	○	○	○
Case study	○	○	○	○
Grounded theory	○	○	○	○
Documentary analysis	○	○	○	○
Discourse analysis	○	○	○	○
Conversation analysis	○	○	○	○
Interpretative phenomenological analysis	○	○	○	○
Secondary analysis of qualitative data	○	○	○	○
Phenomenology	○	○	○	○
Narrative inquiry	○	○	○	○
Biographical research	○	○	○	○
Life history	○	○	○	○
Action research	○	○	○	○
Participatory methods	○	○	○	○
Qualitative comparative analysis	○	○	○	○
Visual, creative and sensory methods	○	○	○	○
Qualitative GIS	○	○	○	○
Focus groups	○	○	○	○
Computer-assisted qualitative data analysis (CAQDAS)	○	○	○	○
Evaluation methods	○	○	○	○

Section 5d:

Mixed methods

16. Some researchers use, or are interested in using, mixed methods. This can involve mixing different types of qualitative or quantitative methods in a single study or mixing both qualitative and quantitative methods in the same study.

Would you be interested in receiving training in mixed methods? *

Please choose **only one** of the following:

       ○ Yes
       ○ No

17. You have indicated that you would like to receive training in mixed methods research.

Please provide details of the type of mixed methods training you would like to receive by typing directly into the box below, including whether you feel you need introductory, intermediate or advanced training in these methods.

> **Only answer this question if the following conditions are met:**
> ° answer was 'yes' at question '16' (some researchers use, or are interested in using, mixed methods. This can involve mixing different types of qualitative or quantitative methods in a single study or mixing both qualitative and quantitative methods in the same study. Would you be interested in receiving training in mixed methods?)

Please write your answer here:

Section 5e:

Training needs for the sector

18. Are there any _other research methods_ you would like to receive training in?

Please provide details by typing directly into the box below, including whether you feel you need introductory, intermediate or advanced training in these methods.

Please write your answer here:

Section 5f:

19. You indicated earlier that you are responsible for the training or supervision of social scientists.

Please tell us what you believe to be the most important training needs for the sector as a whole? *

Only answer this question if the following conditions are met: ° answer was 'yes' at question '3' (are you involved in the supervision or training of social scientists?)

Please write your answer here:

Section 6:

Access to training

## 20. We are interested in the difficulties people experience when trying to access research methods training.

Please indicate the extent to which each of the following have been a problem for you: *

Please choose the appropriate response for each item:

	It's been a big problem for me	It's been a problem for me	It's been a slight problem for me	It's not been a problem for me
Looking for but not finding any suitable training	○	○	○	○
Training being available but not when you needed it	○	○	○	○
The training venue being too far way	○	○	○	○
Training that requires an overnight stay, which you cannot do	○	○	○	○
Not being able to spare the time away from your research work	○	○	○	○
Not have funding to pay fees and/or expenses	○	○	○	○

21. Are there any other difficulties that have prevented you from accessing research methods training? Please provide details below.

Please write your answer here:
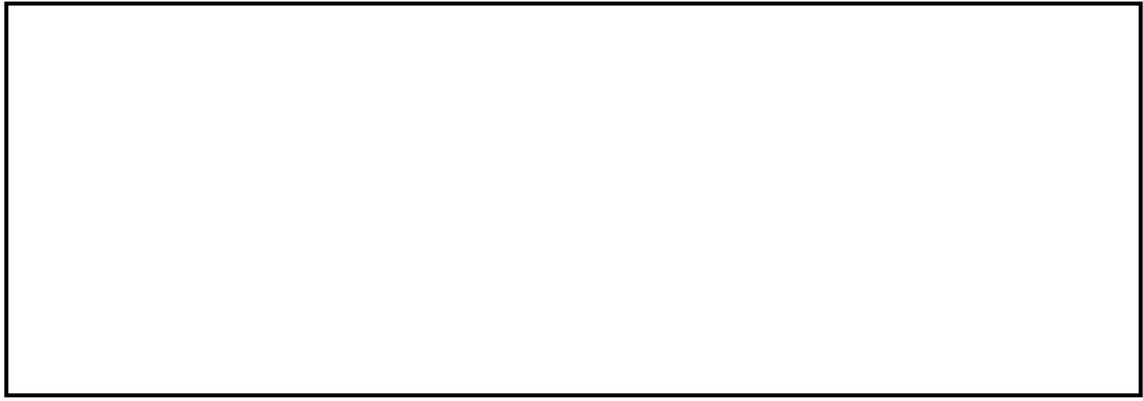
Section 7:

Internet-based training

22. Research methods training resources are increasingly available via the internet and include websites, downloadable resources and interactive online training.

Have you ever used such research methods training resources? *

Please choose **only one** of the following:

○ Yes
○ No

Section 7a

Internet-based training

23. You have indicated that you have not used research methods training resources on the internet.

Please explain why that is? *

Only answer this question if the following conditions are met:
° answer was 'no' at question '22' (research methods training resources are increasingly available via the internet and include websites, downloadable resources and interactive online training. Have you ever used such research methods training resources?)

Please write your answer here:

24. You have indicated that you used research methods training resources on the internet.

Please list the training resources that you have used.

Only answer this question if the following conditions are met:
° answer was 'yes' at question '22' (research methods training resources are increasingly available via the internet and include websites, downloadable resources and interactive online training. Have you ever used such research methods training resources?)

Please write your answer(s) here:

1. _____
2. _____
3. _____
4. _____

5. _____

Section 7b:

Internet-based training

25. How would you rate the usefulness of the resources you've just listed?

Only answer this question if the following conditions are met:
° answer was 'yes' at question '22' (research methods training resources are increasingly available via the internet and include websites, downloadable resources and interactive online training. Have you ever used such research methods training resources?)

Please choose the appropriate response for each item:

	Very useful	Useful	Not useful
Respondent choice no. 1	○	○	○
Respondent choice no. 2	○	○	○
Respondent choice no. 3	○	○	○
Respondent choice no. 4	○	○	○
Respondent choice no. 5	○	○	○

Section 7c:

Internet-based training

26. Please explain the ratings you gave to the internet resources you listed previously.

> **Only answer this question if the following conditions are met:**
> ° answer was 'yes' at question '22' (research methods training resources are increasingly available via the internet and include websites, downloadable resources and interactive online training. Have you ever used such research methods training resources?)

Please write your answer(s) here:

    1. Please explain why you rated ' respondent choice no. 1' as ' respondent rating no. 1'?

    _____

    2. Please explain why you rated ' respondent choice no. 2' as ' respondent rating no. 2'?

    _____

    3. Please explain why you rated ' respondent choice no. 3' as ' respondent rating no. 3'?

    _____

    4. Please explain why you rated ' respondent choice no. 4' as ' respondent rating no. 4'?

    _____

    5. Please explain why you rated ' respondent choice no. 5' as ' respondent rating no. 5'?

    _____

Section 7d:

Online training

Online training has become increasingly popular in recent years.

Even if you've never taken an online training course we would be interested in your views on the issues outlined below.

27. The following are often seen as the 'advantages' of online training.

How important are such considerations to you in a general sense?

Please choose the appropriate response for each item:

	Not important	Important	Very important
Travel costs are reduced	O	O	O
Travel time is reduced	O	O	O
Training material can be selected to match your level of knowledge	O	O	O
Training is self paced and can take place at times to suit you	O	O	O
Online training is an interactive experience	O	O	O
Keeping track of your progress is easy	O	O	O

28. The following are often seen as the 'disadvantages' of online training.

How important are such considerations to you in a general sense?
*

Please choose the appropriate response for each item:

	Not important	Important	Very important
Motivation can be difficult without an instructor present	O	O	O
The lack of familiar structure and routine can be hard to get used to	O	O	O
Training is often done alone, rather than in a group	O	O	O
The range of available training courses is limited	O	O	O
Training is restricted to times when you have access to a computer and the internet	O	O	O

Section 7e:

Internet-based training

29. If there were high quality online resources available in an area of research methods you would like to receive training in, how likely would you be to use them? *

Please choose **only one** of the following:

- ⃝ Very likely
- ⃝ Quite likely
- ⃝ Not very likely
- ⃝ Not at all likely

Section 7f:

Internet-based training

30. You have indicated that you would be likely to use high quality online resources?

Some websites require users to register in order to use the site's resources.

Would you be prepared to provide simple registration information about yourself (e.g., email address, host institution, primary discipline) in order to access high quality online resources? *

Only answer this question if the following conditions are met:
° answer was 'quite likely' or 'very likely' at question '29' (if there were high quality online resources available in an area of research methods you would like to receive training in, how likely would you be to use them?)

Please choose **only one** of the following:

- ⃝ Yes
- ⃝ No

31. You have indicated that you would be unlikely to use high quality online resources.

Please explain why that is? *

Only answer this question if the following conditions are met:
° answer was 'not very likely' or 'not at all likely' at question '29' (if there were high quality online resources available in an area of research methods you would like to receive training in, how likely would you be to use them?)

Please write your answer here:

32. You have indicated that you would not be prepared to register to receive high quality online resources.

Please explain why that is? *

Only answer this question if the following conditions are met:
° answer was 'no' at question '30' (you have indicated that you would be likely to use high quality online resources? Some websites require users to register in order to use the site's resources. Would you be prepared to provide simple registration information about yourself (e.g., email address, host institution, primary discipline) in order to access high quality online resources?)

Please write your answer here:

Section 8:

Some final questions about you

33. Please indicate your age. *

Please choose **only one** of the following:

- ○ 18-25
- ○ 26-35
- ○ 36-45
- ○ 46-55
- ○ 56-65
- ○ 66+

34. Are you: *

Please choose **only one** of the following:

- ○ Female
- ○ Male

Section 8a:

Some final questions about you

35. What region are you based in for work/study purposes?
(note: this should be your home if you mostly work from home)

click here to view a uk regional map **(source: DWP website - © crown copyright 2009)** *

Please choose **only one** of the following:

- ○ East Midlands
- ○ East of England
- ○ Greater London
- ○ North East
- ○ North West
- ○ South East
- ○ South West
- ○ West Midlands
- ○ Yorkshire and the Humber
- ○ Wales
- ○ Scotland
- ○ Northern Ireland
- ○ I do not know / I am not sure

36. You have indicated that you do not know what region you are based in?

Please tell us in your own words where you are based for work/study purposes (e.g., the name of a city or town).

Note: this should be your home city or town if you mostly work from home. *

Only answer this question if the following conditions are met:
° answer was 'I do not know / I am not sure' at question '35' (what region are you based in for work/study purposes? (Note: this should be your home if you mostly work from home))

Please write your answer here:

37. How important is it to you to have research methods training available within your own region? *

Please choose **only one** of the following:

◯ Not important
◯ Important
◯ Very important

Section 9:

Concluding remarks

38. We would like to end this survey by giving you the opportunity to express any final thoughts you may have on the training needs of social science researchers and how these might be met in future.

Please write your answer here:

This is the final question.

Please Click Submit to Finish.