

Demographic Review - Questions for Learned Societies

The ESRC commissioned a review in January 2005 in response to concerns raised over the demographic profile of the social science academic workforce and the long term health of particular disciplines.

The review report, Demographic Review of the UK Social Sciences, was published in early 2006 and revealed considerable variation across the social science disciplines with some disciplines experiencing quite serious difficulties in maintaining their workforce and others being in a healthy state demographically. ESRC would like to refresh the findings of the review to identify how the academic health of the disciplines has developed in the intervening years.

You are therefore invited to complete this questionnaire which will cover information on students, recruitment panels and challenges within the disciplines. Please note that we are primarily interested in academic health of the discipline through these questionnaires.

ESRC recently invited feedback on its future strategic direction and this included feedback on the role ESRC should play in the development of social science capability and skills and the priority areas for developing social science capability. We do not want to duplicate responses already received but would like to invite departments (or equivalent structures) to provide a more detailed view from their perspective particularly around the challenges faced in recruiting and retaining staff.

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Learned society	Royal Statistical Society
Discipline/subject area	Social statistics

If your organisation provided a response to the recent ESRC Strategic Consultation are you happy for your feedback to also be considered as part of the demographic review refresh exercise? YES

Health of your discipline:

How would you describe the current academic health of your discipline? What are the key strengths and the key concerns?

The RSS is concerned with the health of two main areas:

- **Quantitative social science (QSS):** the application of statistical methods in social science research
- **Social statistics (SS):** the development of statistical methods that are motivated

by social science problems and support QSS.

Although these terms have become interchangeable, it is important to make a distinction between these two areas because they draw on different academic groups. Quantitative social scientists would usually identify themselves by the social science disciplines which they studied as students and/or to which they now apply quantitative methods. Social statisticians also identify with social science disciplines (or families of disciplines), but usually studied mathematics or statistics.

The major investment by ESRC and other bodies to strengthen quantitative social science in the UK is very welcome. This has most notably been taking place through the Q-Step initiative, which is supporting quantitative skills training centres for undergraduates in 15 UK universities. Sustained support for methodological research through the ESRC's National Centre for Research Methods (NCRM) has also been important, although NCRM's remit is much broader than QSS and SS. Overall, social statistics has received rather less support than quantitative social science. The severe shortage of statisticians working in the social sciences is of long-standing concern, and this needs to be addressed, especially as their loss will compromise the development of quantitative social science as a whole. Social statisticians have played a major part in the development of methods now considered mainstream and which are widely used across the social sciences and beyond, such as multilevel modelling, structural equation modelling and survey sampling. However, where will such developments come from in the future? The decline in the number of statisticians working in social statistics poses a threat to the ability to build on this strong track record. There is a crucial need to increase the pool of researchers with skills based on deep mathematical understanding alongside social scientific experience and expertise.

Given the scale of recent investment in quantitative social science, social statistics is the focus of the remainder of this response.

Where there are concerns, are these at an undergraduate, postgraduate or postdoctoral level?

Concerns are primarily at postgraduate level and beyond, but there is a difficulty in attracting young graduate statisticians to undertake postgraduate research in social statistics, and this has led to a shortage of sufficiently skilled researchers at postdoctoral level.

Recruitment and retention:

Are there any issues around the recruitment and/or retention of postgraduate students? If so, please describe what they are.

It is difficult to recruit postgraduate students in social statistics, and very few of those recruited are from the UK. Possible reasons are a lack of exposure to social science examples in undergraduate mathematics and statistics degrees, and a lack of awareness of careers opportunities for statisticians in social research.

Advanced Quantitative Methods is a priority area for ESRC and we welcome this. We note however that most of these studentships go to quantitative social scientists to improve their skills, rather than to social statisticians.

Are there any issues around the recruitment and/or retention of staff?
For example, have patterns of recruitment changed over time? Is it different for certain grades or categories of staff? Is there a changing balance between recruiting UK or international candidates?

There are long-standing issues around recruitment of social statisticians at all levels, from postdoctoral researchers to professors. The pool of qualified candidates is so small that it is common to be unable to appoint at all. Where appointments can be made, the successful candidate is usually from overseas.

Research careers:

What are the key challenges in developing a research career in your area?

While there are opportunities for social statisticians at postdoctoral level, there are challenges in developing a career in the area. There are few social statistics groups in the UK, and it can therefore be difficult to find an academic post. There is a risk that a lone statistician working in a social science department may feel isolated and lack suitable mentoring. There should be efforts to improve this with the increase in undergraduate-level quantitative methods teaching in Q-Step centres.

Do you have any suggestions for the development and sustainability of research careers in your area?

Possible initiatives to build capacity in social statistics include:

- Identification of 'Statistics, Methods and Computing' as a priority area
- Earmarking Social Statistics as a priority discipline as was done for Economics and AQM. The primary distinction from AQM PhD studentships is that the projects focus on methodological developments rather than the application of quantitative methods
- Supporting collaboration between social statisticians and statisticians working in mathematics departments and in other disciplines, with the aim of raising the profile of social statistics within the statistics community
- ESRC working with EPSRC MRC, and BBSRC who are also concerned about the health of statistics. EPSRC has prioritised investment in statistics, including postdoctoral and early career fellowships, while MRC has a Methodology Research Programme, and BBSRC has priority funding areas in data-driven biology and in systems approaches that incorporate development of statistical methodology. We

suggest that perhaps a joint scheme could be initiated which includes social statistics, with ESRC providing funding for social statistics fellowships. Collaboration with other research councils could also help to make social statistics more attractive to statisticians working in other fields

- Introduce a specific statistical methods stream in the next phase of the Secondary Data Analysis Initiative

Future priorities:

What do you see as emerging subfields or areas of 'growth' in your discipline?

The emergence of new forms of large-scale datasets is an obvious area in which social statisticians can make a major contribution. Examples include biomedical data, transactional data, new sources of longitudinal data and administrative data. Methodological research in this area could include the development of new approaches for data linkage, tools for data visualisation, and computationally efficient methods for statistical modelling.

Many of the key areas in which data science is already making an impact are of interest to social science – business and economic applications, work on complex social networks, and data-led criminology are just some examples. Much of the methodological progress so far has come from computer scientists, but the future need here will be to incorporate an understanding of social science as well as expertise in statistical methodology, alongside the computational aspects. Social statisticians can and must support this.

Are there capacity issues that need to be addressed to support this?

See above comments on difficulties in recruiting PhD students and staff at all levels in social statistics.

Do you have any suggestions for enhancing the future sustainability of the UK social sciences?

Nothing to add.

Other comments:

Please provide any other comments if relevant.

This response was prepared by the Royal Statistical Society's Academic Affairs Advisory Group.

Thank you very much for your contribution. Please return the questionnaires to Chiaki Beis (Chiaki.Beis@esrc.ac.uk).