The skills needed in the social sciences to support data-driven research across the lifecourse

ESRC response

Introduction

In 2021, we commissioned our Data-driven Research Skills (DDRS) Steering Group to undertake a scoping study to examine DDRS needs at all career stages post-PhD and identify ways in which ESRC can strengthen support for these. The report was published in 2023 and complements an earlier independent review by Technopolis which focused on training in DDRS at the doctoral stage.[1]

The report presents a careful consideration of the skills needs in the social sciences to undertake data-driven research, the challenges researchers at different career stages face in acquiring these skills, and the opportunities to effect change. It makes a series of recommendations aimed at providing all researchers with opportunities to acquire and enhance their DDRS across the career lifecourse. These fall into three areas:

1. Implementation models and infrastructure.
2. Developing a culture/environment for skills development across the life course.
3. Support for researchers.

ESRC is grateful to the Steering Group for its time and commitment to the scoping study and report. This response to the report sets out:

*   our vision for supporting social scientists' DDRS
*   our approach to addressing the recommendations in the Steering Group's report
*   the principles that will underpin the interventions we put in place to strengthen support.

What is data-driven research?

Definitions of what is considered data-driven research vary. In its report, the Steering Group described data-driven research as:

> "*determined by or dependent on the collection and/or analysis of data. It has acquired new significance given recent changes in the speed, scale and forms of data available for social science research. These changes – accelerated by digitalisation and increasingly ubiquitous computing – provide significant new opportunities for social science research… [including] the increasing volume of large and complex data spanning innovations in textual and visual methods, observational methods, digital technologies, machine learning and AI as well as developments around large and complex data structures and big data.*"

DDRS Steering Group Report, p.6

---

1 The Technopolis review contributed to evidence for ESRC's review of the PhD in Social Sciences, helping to shape both the vision and strategy for our Postgraduate Training and Development Guidelines (2022) and our future investment in doctoral training.

Our vision

Our approach to supporting data–driven research skills in the social sciences is shaped by our vision:

Our vision is that social scientists at all career stages have the skills and capacity to maximise the value of large and complex data available for research purposes. Social scientists should be equipped with both the technical skills and the conceptual and methodological understanding necessary to design and undertake data-driven research in efficient, reproducible, and methodologically responsible ways.

Delivering our vision

Some of the actions from the Report can be addressed in the near term by ESRC and there are already clear pathways for taking them forward. Others will require longer-term engagement with a range of stakeholders across the research and innovation environment.

In the near term we will work with our strategic investments, such as (but not limited to) survey data collections and longitudinal studies, data services, research centres and networks to:

- embed a lifecourse approach to DDRS training and capacity building
- make DDRS training and capacity building opportunities more widely available
- communicate the breadth and benefits of the opportunities DDRS offer

In the longer term we will expand DDRS training and capacity building opportunities in the social sciences by:

- opening up existing provision to broader audiences and enabling new initiatives and resources to be developed

- working with researchers and stakeholders that have a role in the continuing professional development of researchers to develop necessary infrastructure, incentives and cultural shifts. Areas requiring further focus include reward and recognition, contracting practices and disciplinary expectations
- working closely with other councils within UKRI, other funders, research organisations, learned societies and other stakeholders to ensure:
  - social scientists are able to engage with new opportunities for DDRS training and development delivered outside the social sciences, including those beyond academia and/or not funded by ESRC
  - DDRS training offered within the social sciences is available to non-social science disciplines

Our specific areas of work to deliver our vision are outlined below and map broadly to the recommendation areas identified in the Report, as can be seen in diagram 1.

1. We will work in partnership with other research funders, research organisations and other strategic stakeholders to foster a research culture and environment that:
- promotes the development of DDRS at all career stages
- recognises and rewards researchers for sharing their knowledge and expertise through training and capacity building activities to upskill others.

2. We will work with the community to embed DDRS training and capacity building that moves beyond traditional qualitative/quantitative distinctions and discipline-based methods through approaches that are targeted at a variety of career stages.

3. We will work with the social science research community to develop a common understanding of:
   - The additional DDRS requirements that aren't addressed by generic research methods skills training
   - our DDRS training and capacity building expectations, including the role that ESRC strategic research investments and data infrastructure should play in sharing knowledge and good practice

4. We will continue our investment in the training and capacity building activities offered through our portfolio to maintain the high-quality DDRS training and capacity building provision already available, including: our world-leading longitudinal and cross-sectional studies; services to support the use of research, administrative and smart data; and Doctoral Training Network. We will proactively review how we invest in this area to create alignment with our wider DDRS activity.

5. We will use ESRC's Future Data Services Review and other activities to identify the action needed to improve the discoverability and accessibility of DDRS training and capacity provision across career stages. We will support researchers by enhancing knowledge of, and training on, newly available data and technologies (such as biosocial data, linked datasets, administrative and smart data and the use of large-scale computing) to enable researchers to maximise the research potential of these data.

6. We will continue to build capability in the use of administrative data through the implementation of the ADR UK Training Strategy; champion the use of smart data by showcasing their value in social science research, working with Smart Data Research UK; and providing resources to create, access and use these data.
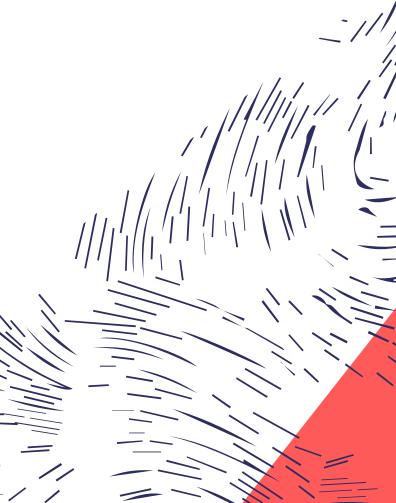
Diagram 1.

Implementation models and infrastructure	Support for researchers	Culture and environment
		1. We will work in partnership with other research funders, research organisations and other strategic stakeholders to foster a research culture and environment that: • promotes the development of DDRS at all career stages • recognises and rewards researchers for sharing their knowledge and expertise through training and capacity building activities to upskill others.
	2. We will work with the community to embed DDRS training and capacity building that moves beyond traditional qualitative/quantitative distinctions and discipline-based methods through approaches that are targeted at a variety of career stages.	
3. We will work with the social science research community to develop a common understanding of: • The additional DDRS requirements that aren't addressed by generic research methods skills training • our DDRS training and capacity building expectations, including the role that ESRC strategic research investments and data infrastructure should play in sharing knowledge and good practice.		
4. We will continue our investment in the training and capacity building activities offered through our portfolio to maintain the high-quality DDRS training and capacity building provision already available, including: our world-leading longitudinal and cross-sectional studies; services to support the use of research, administrative and smart data; and Doctoral Training Network. We will proactively review how we invest in this area to create alignment with our wider DDRS activity.		
5. We will use ESRC's Future Data Services Review and other activities to identify the action needed to improve the discoverability and accessibility of DDRS training and capacity provision across career stages. We will support researchers by enhancing knowledge of, and training on, newly available data and technologies (such as biosocial data, linked datasets, administrative and smart data and the use of large-scale computing) to enable researchers to maximise the research potential of these data.		
6. We will continue to build capability in the use of administrative data through the implementation of the ADR UK Training Strategy and champion the use of smart data by showcasing their value in social science research, working with Smart Data Research UK, and providing resources to create, access and use these data.		

Our vision: underpinning principles

The delivery of our vision will be underpinned by the following principles. Interventions will:

- embed a lifecourse approach spanning doctoral to senior career stages to ensure that DDRS training and capacity building provision is appropriately tailored to and available to social scientists across their careers

- promote and nurture the culture change necessary for researchers at all career stages to be rewarded for engaging in ongoing DDRS development and incentivised to share their knowledge and experience with peers

- interpret data-driven research skills broadly, to include both qualitative and quantitative data and the different stages of the data lifecycle

- build upon the strong foundations already in place, working with training and capacity building providers to strengthen existing provision and maximise the use of ESRC's data infrastructure investments

- strengthen the community's capability to work in interdisciplinary data-driven research environments

- adapt and respond to opportunities, challenges and innovations

- engage with the relevant key stakeholders in the wider sector

- be designed to maximise inclusion and participation with EDI good practice embedded

Next steps

We will now develop a more detailed implementation plan which in the first instance will focus on three parallel workstreams:

- refining and promoting ESRC's expectations
- mapping and adapting our current DDRS training and capacity building provision
- implementing a stakeholder engagement approach that supports the ongoing delivery of work in this area

We will embed robust evaluation into our approach so that ongoing developments can be informed by evidence and to ensure that DDRS are being enhanced in the most effective ways.