Data enriched research, data enhanced impact: the importance of UK data infrastructure.

blogs.lse.ac.uk/impactofsocialsciences/2015/11/17/the-importance-of-uk-data-infrastructure/

Matthew Woollard *discusses the importance of UK data infrastructure and how the systematic management and sharing of research data can lead to many benefits for the research community and the public. Here he introduces #DataImpact2015 where a panel of leading data innovators will explore data re-use in policy and research, sharing their experiences of demonstrating data enhanced impact.*

The UK Data Service is trusted to manage the UK's largest collection of UK and international social and economic research data, spanning major UK government-sponsored surveys, cross-national surveys, longitudinal studies, UK census data, international aggregate data banks, business microdata and qualitative and mixed methods data.

The data in our collection reflect the issues that affect all our lives and experiences, both close to home and internationally, covering every continent, from birth through education, employment and on to old age. The data cover a wide range of topics, such as housing, the economy, quality of life and people's attitudes to their work, health and finances and many more. Users can browse the data online and register with us to analyse and download them and download our Open Data collections without registration.

Image Credit: UK Data Service

Each year we help more than 20,000 registered users – plus numerous other users who don't need to register – gain access to a wealth of data. Approved Researchers can access data in our Secure Lab which provides controlled access to data that are too detailed, sensitive or confidential to be made available under our standard End User or Special Licences. More and more researchers from the government and public sectors are accessing the

data in our Secure Lab, and we're about to trial access to some data, to commercial users. We also provide supporting resources that include dedicated user guides, learning materials and a rich training programme in a range of formats. We've facilitated nearly 800,000 data analyses / downloads / exports since the UK Data Service launched in October 2012 with over 7.5 million web accesses internationally.

Source: RCUK Guidance on best practice in the management of research data

We ensure that data are properly prepared for access in a consistent and robust manner, according to international best practices. In turn this helps to promotes research integrity, since we can guarantee that what one user accesses is exactly the same as what another researcher accesses in five years' time, and can always be found – or we tell them what's changed! You really can't say that for much of the data you can find on the web, where 'persistence' is unpredictable.

We also ensure that the data that we hold on behalf of others is always usable. This means that the return on investment can accrue over decades. The fact that the service is underpinned by a curation philosophy also means of course that there is social, cultural and intellectual impact, and not just economic impact.
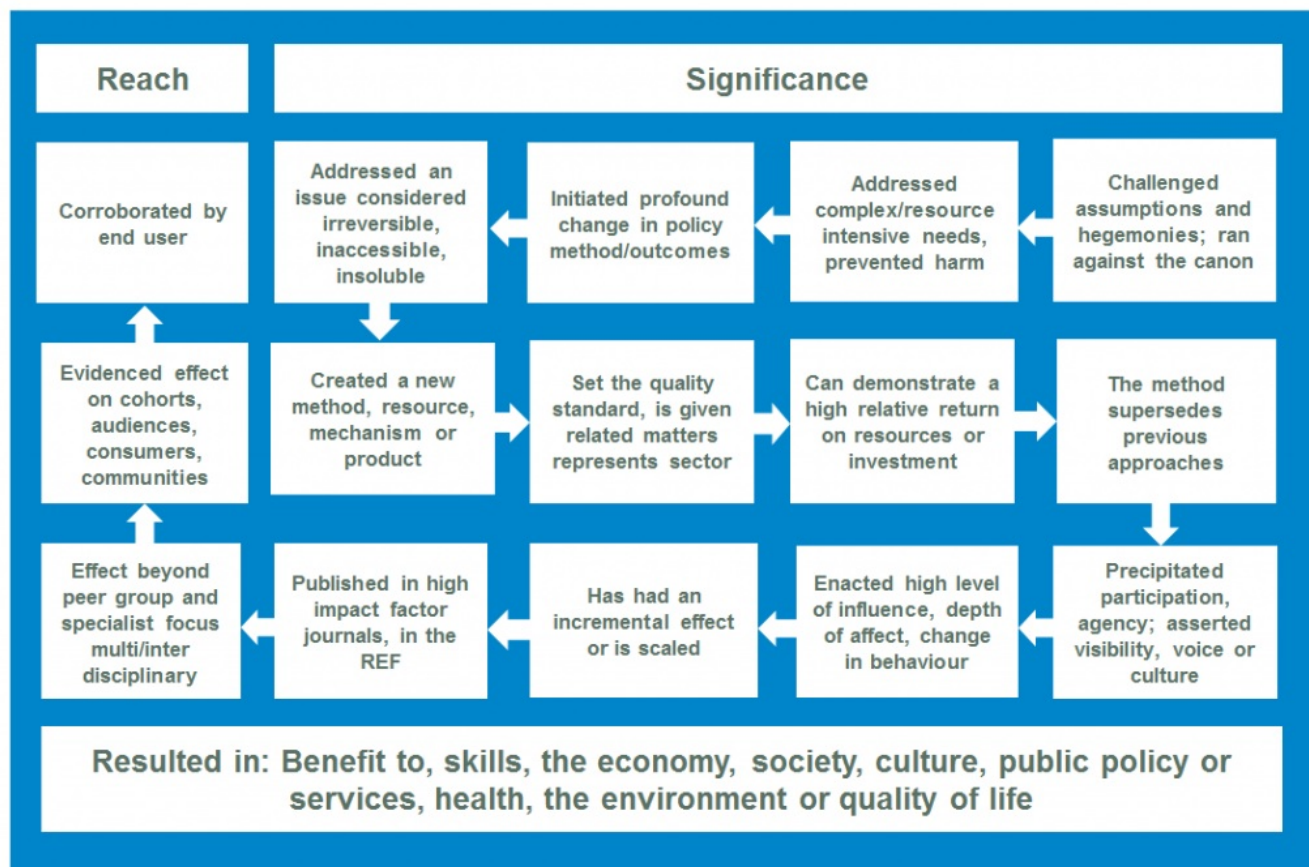
Widening participation in data use

Data made available for reuse, such as those in the UK Data Service collection have huge potential. They can unlock new discoveries in research, provide evidence for policy decisions and help promote core data skills in the next generation of researchers. By being part of a single infrastructure, data owners and data creators can work together with the UK Data Service – rather than duplicating efforts – to engage with the people who can drive the impact of their research further to provide real benefit to society. As a service we are also identifying new ways to understand and promote our impact, and our Impact Fellow and Director of Impact and Communications, Victoria Moody, is focusing on raising the visibility of the UK Data Service holdings and developing and promoting the use and impact of the data and resources in policy-relevant research, especially to new audiences such as policymakers, government sectors, charities, the private sector and the media.

Distributed infrastructure/capacity	One portal for the UK – once, for all
Efficiency/SROI of research process	Trusted status - secure to open
Set standards in data infrastructure	Advise international services
Leading data policy consultancy	Expertise in data management
Support, skills focus, a Service	Promotion of data citation
Assurance of long-range research	Geographical scope of data

We are improving how we demonstrate the impact of both the Service and the data which we hold, by focusing on generating more and more authentic user corroboration. Our emphasis is on drawing together evidence about the reach and significance of the impact of our data and resources, and of the Service as a whole through our infrastructure and expertise. Headline impact indicators through which we will better understand our impact cover a range of areas (outlined above) where the Service brings efficiency to data access and re-use, benefit to its users and a financial and social return on investment.

We are working to understand more about how Service data contributes to impact by tracking the use of Service data in a range of initiatives focused on developing impact from research and by developing our insight into usage of our data by our users. Data in the collection have featured in a range of impact case studies in the Research Excellence Framework 2014. We are also developing a focus on understanding the specific beneficial effect, rather than simply that data were used in an output, that is – as it *appears* in policy, debate or the evidential process (although important). Early thoughts in developing this process are where (ideally) cited data can be tracked through the specific beneficial outcome and on to an evidenced effect, corroborated by the end user.

Reach	Significance			
Corroborated by end user	Addressed an issue considered irreversible, inaccessible, insoluble	Initiated profound change in policy method/outcomes	Addressed complex/resource intensive needs, prevented harm	Challenged assumptions and hegemonies; ran against the canon
Evidenced effect on cohorts, audiences, consumers, communities	Created a new method, resource, mechanism or product	Set the quality standard, is given related matters represents sector	Can demonstrate a high relative return on resources or investment	The method supersedes previous approaches
Effect beyond peer group and specialist focus multi/inter disciplinary	Published in high impact factor journals, in the REF	Has had an incremental effect or is scaled	Enacted high level of influence, depth of affect, change in behaviour	Precipitated participation, agency; asserted visibility, voice or culture

Resulted in: Benefit to, skills, the economy, society, culture, public policy or services, health, the environment or quality of life

Our impact case studies demonstrate how the data have supported research which has led to policy change in a range of areas including; the development of mathematical models for Practice based Commissioning budgets for adult mental health in the UK and informing public policy on obesity; both using the Health Survey for England. Service data have also informed the development of impact around understanding public attitudes towards the police and other legal institutions using the Crime Survey for England and Wales and research to support the development of the national minimum wage using the Labour Force Survey. The cutting-edge new Demos Integration Hub maps the changing face of Britain's diversity, revealing a mixed picture in the integration and upward mobility of ethnic minority communities and uses 2011 Census aggregate data (England and Wales) and Understanding Society.

Data creators testify the importance of the UK Data Service in supporting the development of impact:

> "Understanding Society currently has 1500 users. It's absolutely essential to have the UK Data Service ensure that such a wide range of people, mainly in the UK but also internationally can use the data." Michaela Benzeval, Director Understanding Society.
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> "For us, it's not just about doing the research, it's about the impact of the research, so for NatCen, the UK Data Service is absolutely crucial, because as a charity, we pride ourselves on impact and a big part of that impact is getting the data out there. Without the UK Data Service there would be a hugely fragmented data landscapes and fundamentally, many datasets wouldn't see the light of day and even datasets that were available would be hugely underused." – Kirby Swales, Director of the Survey Centre at NatCen Social Research

We are hosting a panel session and networking event on the evening of 2 December 2015 from 6pm at the Digital

Catapult Centre, London. Hosted by Jane Elliott, Chief Executive of the ESRC, and Matthew Woollard, Director of the UK Data Service, a panel of leading data innovators will explore data re-use in policy and research, sharing their experiences of demonstrating data enhanced impact.

This short early evening event will showcase the impact of data infrastructure such as the UK Data Service, with a focus on our stakeholders and the benefit such infrastructure can bring in the achievement of their objectives. We also hope to learn how data infrastructure an increase the impact of data access and re-use in research and policy, resulting in more impact and an increased social and financial return on investment.

Places are limited and booking up fast – to reserve your place please register here.

The panel will be led by Jane Elliott, Chief Executive of the ESRC, and Matthew Woollard, Director of the UK Data Service. Confirmed speakers include:

Andrew Collinge is the Greater London Authority lead for the Smart City Agenda, driving a programme of work in partnership with business, academia and other cities. He is also responsible for the GLA's city data agenda and the development of data driven products and services across London.

Paul Maltby is Director of Data, leads teams in the Government Digital Service in the Cabinet Office responsible for making better use of data, data infrastructure and data policy and governance, supporting a cross-Government Data Programme.

Will Moy is the director of Full Fact, an independent fact-checking charity, which checks claims made by politicians, pressure groups and the media.

Dan Sheldon is the digital strategy lead at the Department of Health, working to improve digital engagement, content and capability in the department.

Sharon Witherspoon is the former Director of the Nuffield Foundation, which aims to improve social well-being by funding research and innovation projects in education and social policy, and building research capacity in science and social science.

You can find out more about the UK Data Service here, by subscribing to our Quarterly Newsletter, following us on Twitter @UKDataService @UKDsImpact @UKDSCensus @UKDSIntdata @UKDSBigData and on our Data Impact Blog.

Note: This article gives the views of the author, and not the position of the LSE Impact blog, nor of the London

School of Economics. Please review our Comments Policy if you have any concerns on posting a comment below.

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About the Author

Matthew Woollard is the Director of the UK Data Service. He provides strategic direction for the Service and leads on data curation, archiving and preservation activities.