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Human Sciences Research Council

Impact Centre

Impact Training Guides and Workshop Series

EVIDENCING IMPACT

IMPACT GUIDE III

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Introduction

This short Impact Guide offers a collection of impact evaluation and reporting methods from various sources. The purpose of the Guide is to present HSRC researchers with research methods they can explore, experiment with and use for impact evaluation such as mapping complex impact causal pathways, comparative analysis, understanding how and why certain impact pathways are effective, and compiling impact case studies. The Guide also offer a suite of additional resources for impact evaluation. The methods offered in this Guide may be familiar to some researchers and unfamiliar to others. To ensure that these methods are indeed of value, the Impact Centre will make efforts to arrange training webinars and workshops on these methods in the near future.

EVALUATING COMPLEX RESEARCH IMPACT

The following three impact evaluation methods were developed by the Centre for the Evaluation of Complexity Across the Nexus (CECAN). Each method is briefly summarised and links to detailed practical guides for each method, as developed by CECAN, are provided. The use of these methods is provided by CECAN under the Creative Commons Attribution 4.0 International License.

1.   PARTICIPATORY SYSTEMS MAPPING

Participatory Systems Mapping is a participatory modelling methodology in which a group of stakeholders collaboratively develop a simple causal map of an issue during the course of a workshop. Stakeholders produce a map made up of factors, which can represent anything as long as they are expressed as a variable (i.e., can in some sense go up and down) and connections which represent causal relationships. The map is intended to represent what stakeholders believe to be the causal structure of their system. The map can be built using a white-board or simple pen and paper materials on a large table. The process of building a map can be hugely valuable to participants, the digitized version of the map can be a useful resource, and additional analysis can be conducted on the map created.

1.1.   *Why use Participatory Systems Mapping?*

These types of models provide **thinking tools** which can be used for discussion and exploration of **complex issues**, as well as **sense checking** the implications of suggested causal links. Such "hands on" complexity science can increase stakeholder **motivation** and **understanding** of the scope of whole systems approaches. The 11-step guide can be found here.

2.   QUALITATIVE COMPARATIVE ANALYSIS (QCA)

QCA is a well-established case-based 'small-N' method of evaluation developed in the fields of comparative sociology and comparative politics. It seeks to bridge the gap between qualitative and quantitative data analysis methods and is particularly valuable where complex causation is at play. That is, where combinations of factors lead to important outcomes, rather than all factors having some averaged and standalone 'net effect'. Key stages include identifying cases (i.e., the things we are evaluating and comparing), defining key attributes and outcomes for these cases, collecting data on these or creating it with stakeholders, and finally, looking for patterns in outcomes and attributes. The method is

relatively easy to use and can be done in a highly-participatory manner. In addition, it can be embedded in the research process rather than being undertaken as a separate activity. implications of their involvement, especially if they are data suppliers. The majority of barriers to engagement can be overcome with effective design and good facilitation. Table 1 provides an overview of key challenges and limitations associated with stakeholder engagement, with a brief list of ways these could be avoided or overcome.

2.1.   Essential features of QCA

Qualitative - as far as possible, a deep qualitative/descriptive knowledge of cases is required. Large numbers of cases can be classified into representative types and any numerical typology algorithm can be used to achieve this.

Comparative - causal accounts are based on systematic comparison using a refined version of the method of differences. If there are differences among similar cases in relation to an outcome, then there is assumed to be a cause for that difference. We want to identify that cause, recognizing that it may not be one thing but a complex combination of things.

Analytical – cases are not analysed in terms of measures on conventional external "variables" but rather, in relation to attributes which can be thought of as traces of sub-systems. Attributes are things which describe the state of the system, rather than forces acting on the system from outside, which is the conventional understanding of the causal power of variables.

Detailed descriptions of QCA can be found here and here. The former includes a step-by-step example of how to undertake an QCA evaluation and the latter also includes an evaluation example and additional resources.

3.   PROCESS TRACING AND BAYESIAN UPDATING

Process tracing and Bayesian updating is a quali-quantitative methodology that uses probative confidence updating to assess the strength of the evidence for a specified story of change or causal mechanism. The method can be used to investigate outcomes that are already known and to measure impacts at macro and micro levels. Process tracing is applied widely in political science, psychology and history studies. This method can inform researchers on **how** and **why** a specific cause produced a particular effect, but it cannot estimate the net effect of an intervention. First, a claim is formulated, i.e., a statement about the contribution research made to an outcome. Next, the method systematically makes use of evidence, logic, prior knowledge, and/or theory, to update the confidence (expressed as a probability) that a claim to impact is true. Researchers are likely to have access to exactly these types of information (evidence, logic, prior knowledge etc), making the approach quick to use. If researchers don't have this information, it would be reasonable to assume that collecting and using it would have additional benefits beyond those of evaluating research impact. The information should be useful in complementing, providing context, and informing other parts of the research. A detailed description of the method, including a worked example can be found here.

4.   RESEARCH EXCELLENCE FRAMEWORK (REF) IMPACT CASE STUDIES

The Research Excellence Framework (REF) is the UK's system for assessing the excellence of research in UK higher education providers (HEPs). The REF outcomes are used to inform the allocation of around £2 billion per year of public funding for universities' research. The REF was first carried out in 2014, replacing the previous Research Assessment Exercise. The Research Excellence Framework was the first exercise to assess the impact of research outside of academia. Impact was defined as 'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'. As part of the 2014 Research Excellence Framework exercise, UK higher education institutions (HEIs) submitted 6,975 impact case studies demonstrating the impact of their research on wider society (cf Research England for more information of REF).

4.1.   What is a REF Impact Case Study?

A **REF Impact case study** (ICS) is a narrative which describes how research, conducted during a specific time-frame at a named institution, resulted in a change, had an effect on or benefited culture, the economy, the environment, health, public policy, quality of life or society using qualitative and quantitative evidence. The impacts must have occurred during the REF census period (5-6 years). The **general criteria** used to assess the impact of research in REF2021 are:

Reach: will be understood as the extent and/or diversity of the beneficiaries of the impact, as relevant to the nature of the impact. Reach will be assessed in terms of the extent to which the potential constituencies, number or groups of beneficiaries have been reached; it will not be assessed in purely geographic terms, nor in terms of absolute numbers of beneficiaries. The criteria will be applied wherever the impact occurred, regardless of geography or location, and whether in the UK or abroad.

Significance: will be understood as the degree to which the impact has enabled, enriched, influenced, informed or changed the performance, policies, practices, products, services, understanding, awareness or wellbeing of the beneficiaries.

4.1.1   Top-scoring case studies from the REF 2014

Examples of how to write a REF impact case study can be found in this <u>archive</u> of all the highest rated 4* case studies submitted to the REF2014. The case studies in this archive also demonstrate the best-practice guidelines for writing a REF impact case study.

4.12.   Best practice guidelines on collecting research evidence and impact

The Higher Education Funding Council for England (HEFCE) commissioned Vertigo Ventures and Digital Science to compile a best practice guide on <u>Collecting Research Evidence and Impact</u>. The guide is based on an analysis of the REF impact case studies and a workshop with REF2014 panel members. The guide helps researchers to better understand what evidence to track and how to track and collect the evidence.

4.1.3   REF 2021 impact types and indicators

The University of Sheffield has compiled lists of impact types and indicators for REF2021 that are organised into the following categories.

<u>Impact on understand, learning and participation</u>	<u>Impact on creativity, culture and society</u>	<u>Impact on social welfare</u>
<u>Impact on commerce and economy</u>	<u>Impact on public policy, law and services</u>	<u>Impact on health, wellbeing and animal welfare</u>
<u>Impact on production</u>	<u>Impact on the environment</u>	<u>Impact on practitioners and professional services</u>

5. ADDITIONAL RESOURCES

The following resources are from CECAN:

Complexity Evaluation Toolkit

Choosing Appropriate Evaluation Methods: A Tool for Assessment and Selection and an Excel Spreadsheet Addendum with additional information and resources can be found here.

Dr Barbara Befani's Bayes Formula Confidence Updater Spreadsheet is a companion to the Bayesian Updating method and it can be found here.

An archive of CECAN training videos.
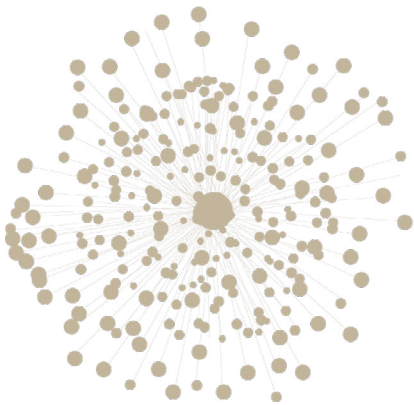
Evaluation and Policy Practice Notes (EPPNs).

The following short articles are from the International Institute for Environment and Development:

A better evidence philosophy for sustainable development.

Quasi-experimental methods.

Theory-based impact evaluation.

Knowledge-based participatory action research.

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