The International School
on Research Impact Assessment

Case Studies

Dr Claire Donovan,

HERG, Brunel University

Brunel
UNIVERSITY
L O N D O N

Session overview

- Why use case studies?

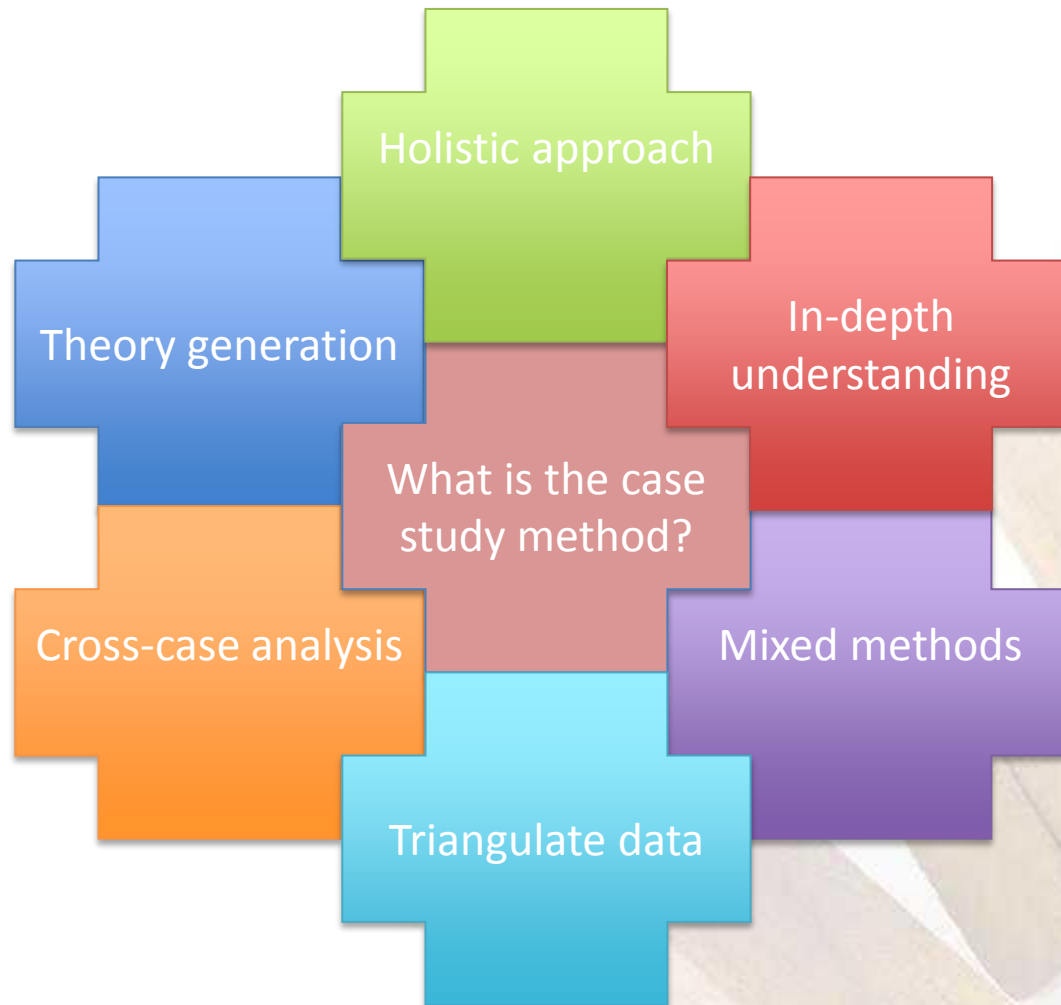- Key methodological issues

- Group work using examples

Key learning outcomes

- Identify when to use case studies to evaluate the impact of biomedical and health sciences research

- Know that the case study method can range from a single case to multiple cases, and can use quantitative and qualitative data

- Recognise the advantages and challenges of using the case study method

- Understand the key methodological issues involved in using the case study method, including:
  - Sampling
  - Data collection
  - Data analysis
  - Quality control/validity/reliability

Why use case studies?

Holistic approach

Theory generation

In-depth understanding

What is the case study method?

Cross-case analysis

Mixed methods

Triangulate data

4

Key methodological issues

Sampling

Challenges

Data collection

What are the key methodological issues?

Advantages

Data analysis

Quality control

5

Sampling

Sampling

- Not the same as a statistical sample

- Random sampling:
  - Could miss examples of high impact
  - May not gain co-operation of low impact research teams

- Purposive:
  - Select high impact cases by types of impact and cover all funding mechanisms (purposive, stratified)
    - e.g. drug development, impacts on policy and clinical practice
    - e.g. basic applied grants, fellowships, translational research grants

Data collection

Data collection

- Must be governed by high scientific standards

- Must be as rigorous as quantitative methods

- Use an analytical or conceptual framework to guide data collection and analysis

  - e.g. Payback Framework, CAHS Framework, SIAMPI
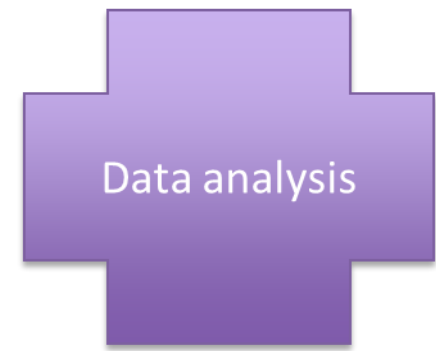
Data analysis

Data analysis

- Use an analytical or conceptual framework

- Triangulating data sources = more rigour

- Do not conduct data analysis in isolation
    - double coding, member checking, solicit feedback from case study participants

- Do not generalise results – case studies are not statistical samples
    - Can generalise theory generation (as with a single experiment), but not for populations or universes

- Data reporting
    - display data and interpretation separately

8

Quality control

Quality control

- ## Construct validity

  - Identify valid measures of impact (e.g. bibliometric data, economic data)

- ## Internal validity

  - Only for explanatory/causal case studies

    - Establish causal relationship where condition A leads to Condition B

- ## External validity

  - Define the domain to which a study's finding can be generalised

- ## Reliability

  - Same data collection procedures = same results
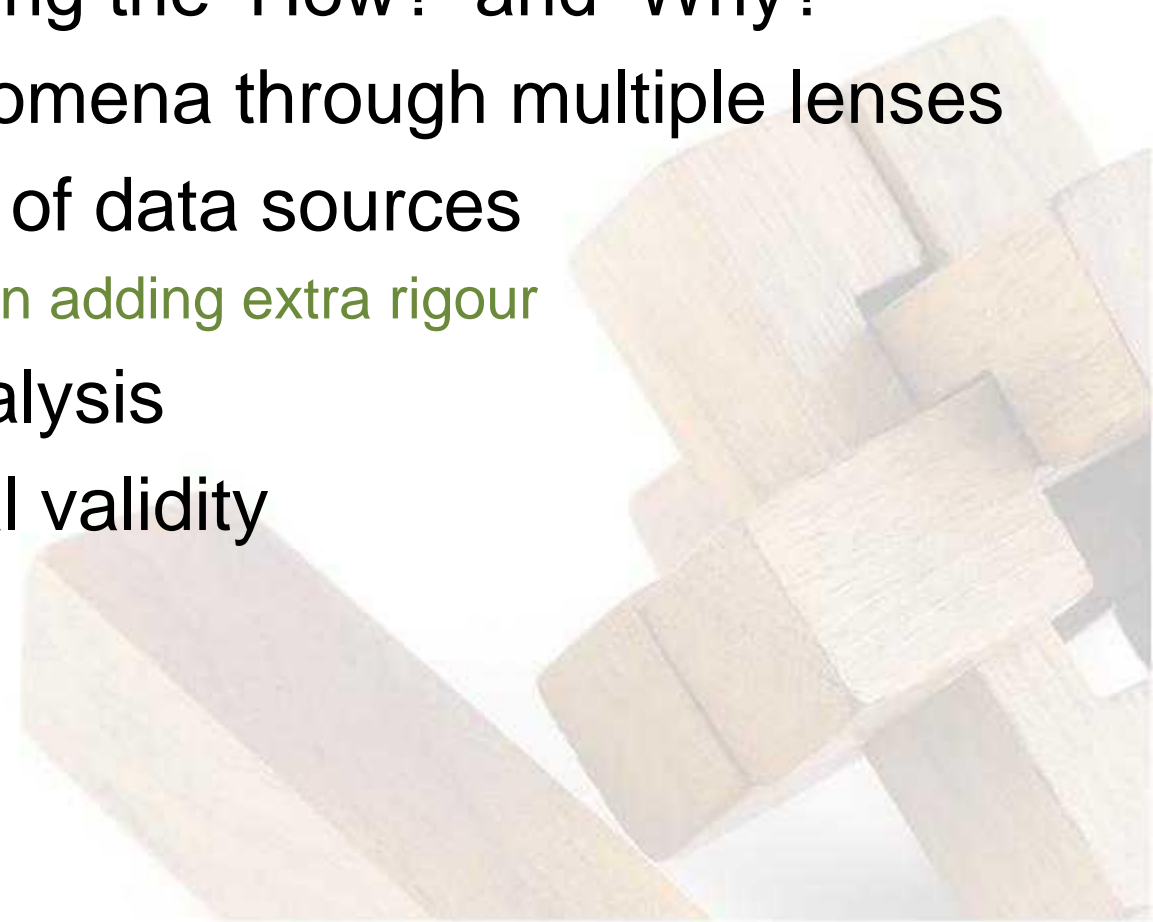
Challenges

Challenges

- Subjective bias
  - Interview respondents
  - Researcher interpretations
- Time consuming for researchers & subjects
  - A 'craft industry' compared to metrics as 'mass production' (Martin, 2011)
- Possible low external validity

Advantages

Advantages

- Understanding the 'How?' and 'Why?'
- Views phenomena through multiple lenses
- Rich variety of data sources
  - Triangulation adding extra rigour
- In-depth analysis
- High internal validity

Group work using examples

You have been provided with case studies of high impact research

- In groups select one case study:
  - What are the strong and weak points of the impact narrative?
  - What are the methodological challenges for providing robust evidence of impact in this case?
  - Explain why you would or would not choose to use case studies to assess the impact of biomedical and health sciences research?

BARCELONA 2013
The International School on Research Impact Assessment

Thank you!

Further reading:

Claire Donovan (Ed.) (2011) 'State of the Art in Assessing Research Impact: Special Issue of Research Evaluation' 20(3)

Robert K. Yin (2009) Case Study Research: Design and Methods (4th Edition). Thousand Oaks, CA: Sage Publications

John Gerring (2007) Case Study Research: Principles and Practices. New York, NY: Cambridge University Press