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The International School on Research Impact Assessment

Case Studies

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Hosted by:



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Session overview

- Why use case studies?
- Key methodological issues
- Learning activity using examples



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Overall learning outcomes

- Identify the purpose of using case studies
- Identify when this method is appropriate to use for an assessment



Learning outcomes

- Identify **when**, **why**, and **how** 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

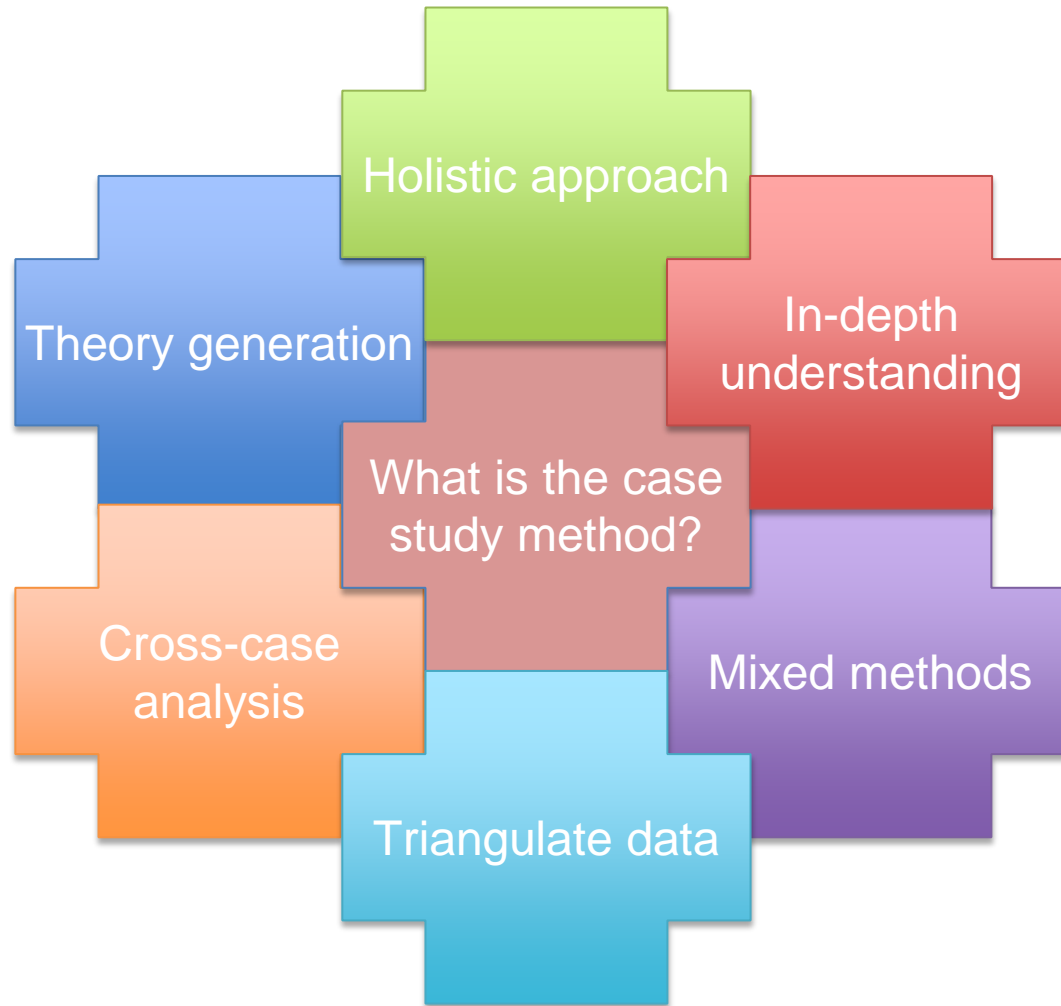


Learning outcomes (*continued*)

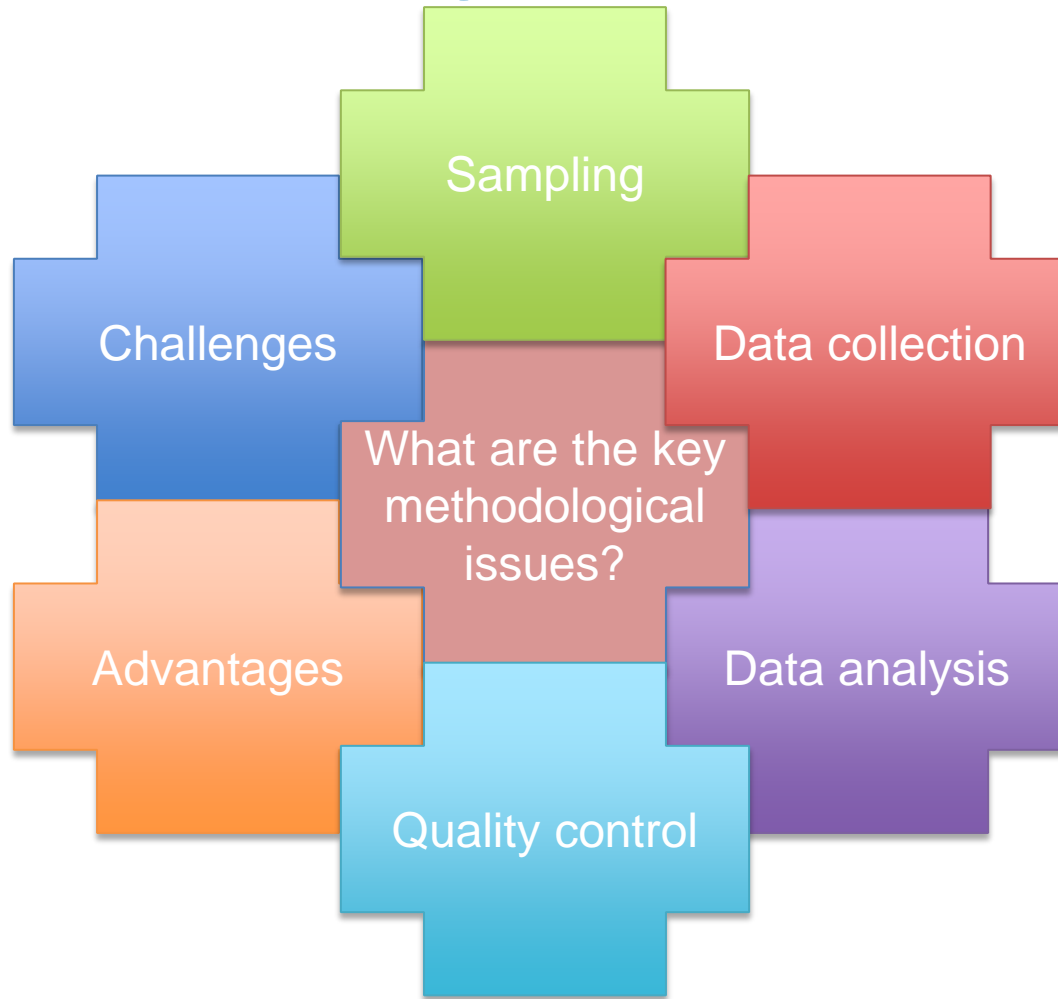
- Understand the key methodological issues involved in using the case study method, including:
 - Sampling
 - Data collection
 - Data analysis
 - Quality control/validity/reliability



Why use case studies?



Key methodological issues



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 vs. applied grants, fellowships, translational research grants



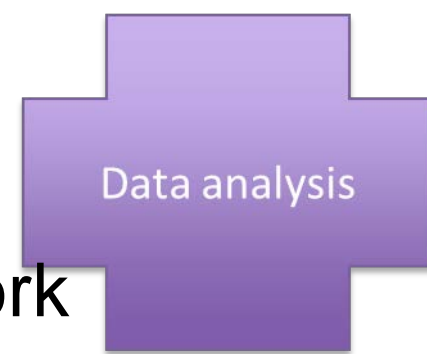
Data collection



- 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



- 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



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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



- 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



- 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



The arc case example

- Why use case studies?
 - Emphasis on long-term benefits from health research
 - Examine the translation of research
- Data collection/methods
 - Document and literature review
 - Semi-structured key informant interviews
 - Bibliometric indicators
 - No survey – case studies only



The arc case example (*cont'd*)

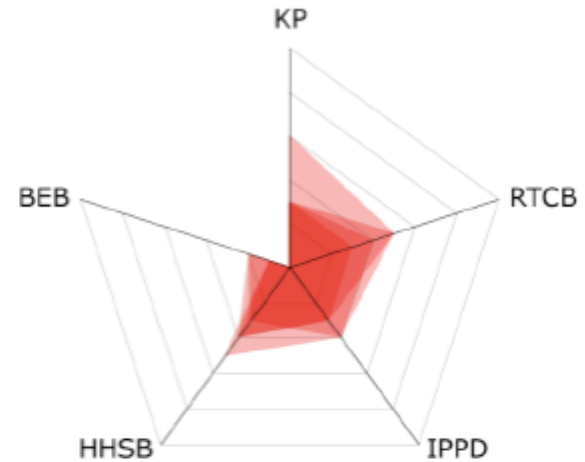
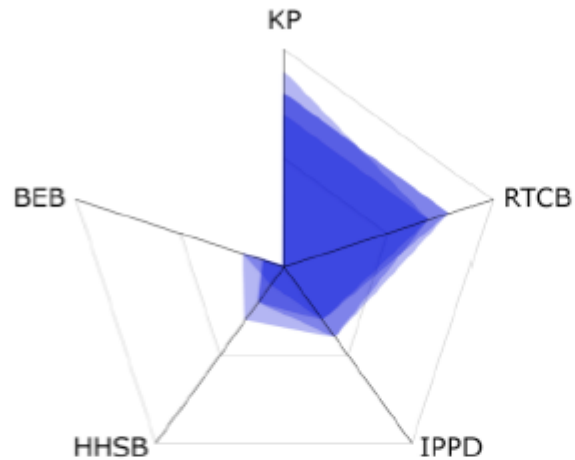
- Case study selection stratified
 - Mode of funding
 - Project grants, programme grants, fellowships, institutes
 - Type of researcher
 - Basic scientists, clinical scientists, allied health professionals
 - Bibliometric impact
 - Citation measures used to identify high-impact and mid-impact researchers



The arc case example (*cont'd*)

- Case study selection purposive
 - 16 case studies selected by Development Committee
- Case study analysis approach
 - Qualitative analysis
 - Quantitative scoring of five payback categories
 - Visual payback profiles





KEY

- KP – Knowledge production
- RTCB – Research targeting and capacity building
- IPPD – Informing policy and product development
- HHSB – Health and health sector benefits
- BEB – Broader economic benefits

The arc case example



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The Australian NBCF example

- Why use case studies?
 - Validation of data collected from payback survey
 - Supply richer data on impacts of NBCF research
- Data collection/methods
 - Payback survey
 - Document, literature and archival review
 - Semi-structured key informant interviews
 - Bibliometric indicators (productivity, citations)
 - Searches for citations in clinical practice guidelines



The Australian NBCF example

- Case study selection stratified
 - Mode of funding
 - Research projects, fellowships, PhD scholarships, national resources
 - Research type
 - Applied, basic, equipment
 - Payback categories
 - High impact identified from survey responses
 - High scientific impact identified by high-impact project publications in Scopus



The Australian NBCF example

- Case study selection purposive
 - 16 case studies selected by NBCF Steering Group
- Case study analysis approach
 - Narrative accounts
 - Organised according to the stages of the payback model
 - Sent to project Chief Investigators for final validation
 - Cross-sectional analysis
 - By grant type



Learning activity



- **Would you want to use case studies within your organisation to assess research impact? Why? Why not?**
- Report back for whole room discussion
- 15 minutes



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Key messages

- Do not underestimate the persuasive power of narratives (or “soft” stories supported by “hard” data) in reporting the findings of research impact assessments to research funders or policy makers
- The more “downstream” an impact is, the more important qualitative methods and case studies are to the evaluation of that impact



Key messages *(continued)*

- It is important to be aware of striking the right balance between the depth of detail an evaluation can offer and the time and resources available
- All data collection and analysis needs to be guided by an analytical or conceptual framework



Recommended readings

Claire Donovan *et al.* (2014) 'Evaluation of the Impact of National Breast Cancer-funded Research', *MJA* 200(4): 214-218

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



Thank you!

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