

Nice to know, but do we know what you know?

A plea for methodological rigor in SDI-research

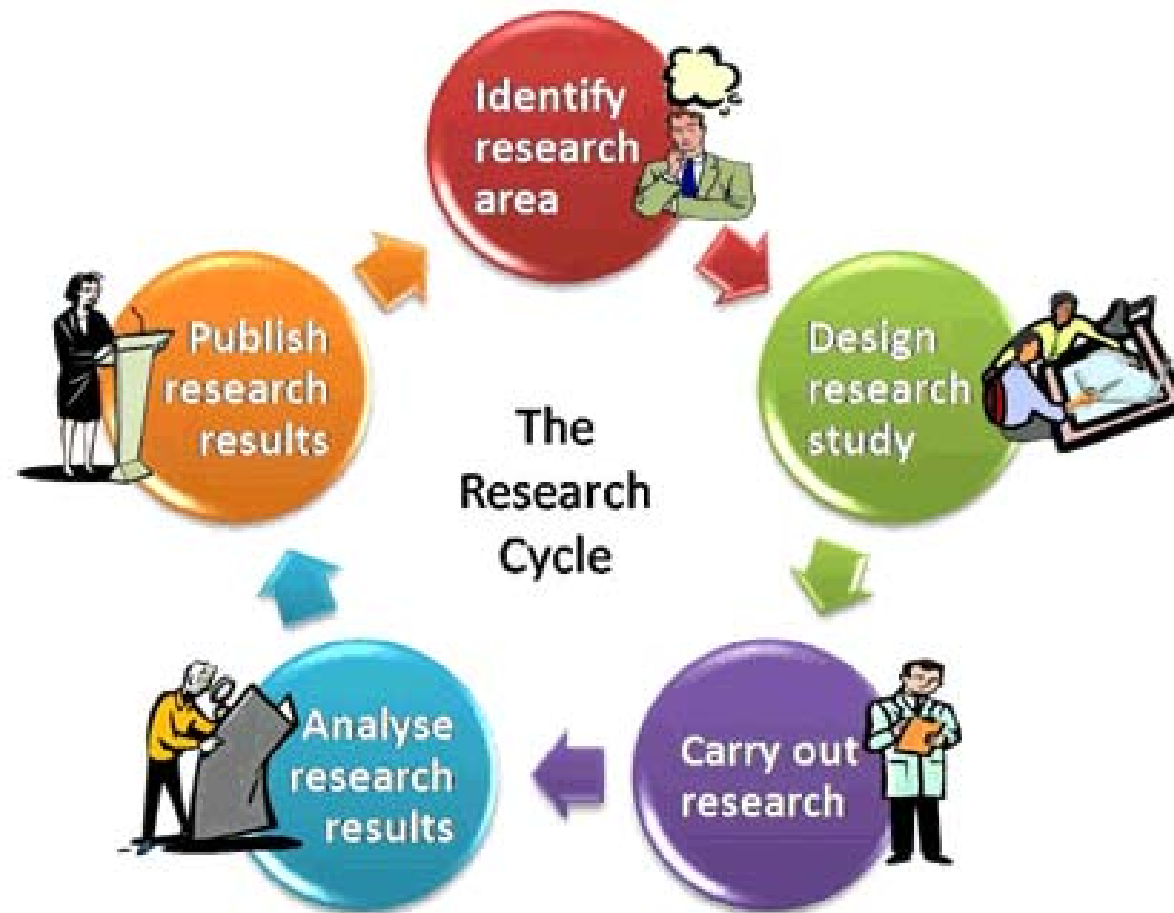
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Background



- Research Group ‘Work and Organisation’
 - Centre for Sociological Research, Faculty of Social Sciences, University of Leuven, Belgium
 - Topics: work organisation, organisational change, division of labour, quality of work
 - Both applied and fundamental research
- ‘Spatialist’
 - Spatial Data Infrastructure and Public Sector Innovation
 - Strategic Basic Research
 - Multidisciplinary Research
 - Focus on (inter)organisational structures

Research cycle



(Source: www.ukdrn.org)

Identify research area



- Formulate research question
 - Exploration
 - Description
 - Explanation
 - Forecasting
- Formulate hypotheses (if any)

Conceptual model



- Theory-based construct
 - Set of concepts (variables)
 - Set of relations between concepts
- Refers to research question and hypotheses
- Goal: focus research

→ 'Keep it simple!'

Research design



- Based on research question and conceptual model
 - Type of research
 - Population research
 - Sample survey research
 - Case studies
 - Small to large number of units of analysis
 - Qualitative / quantitative data
- Choices impact research activities

Case study



- Methodologically well developed within social sciences (sociology, economics...)
- How- and why-questions regarding contemporary, complex phenomena in their real-life context
- SDI as complex phenomenon
- Much applied in SDI-research

Overview



- Case study as a method impacts:
 - Research cycle course
 - Research design
 - Representativity
 - Data collection
 - Method of analysis
 - Validity and reliability
 - Reporting results

Research cycle course

- Iterative, non-linear course



(Adapted from: www.ukdrn.org)

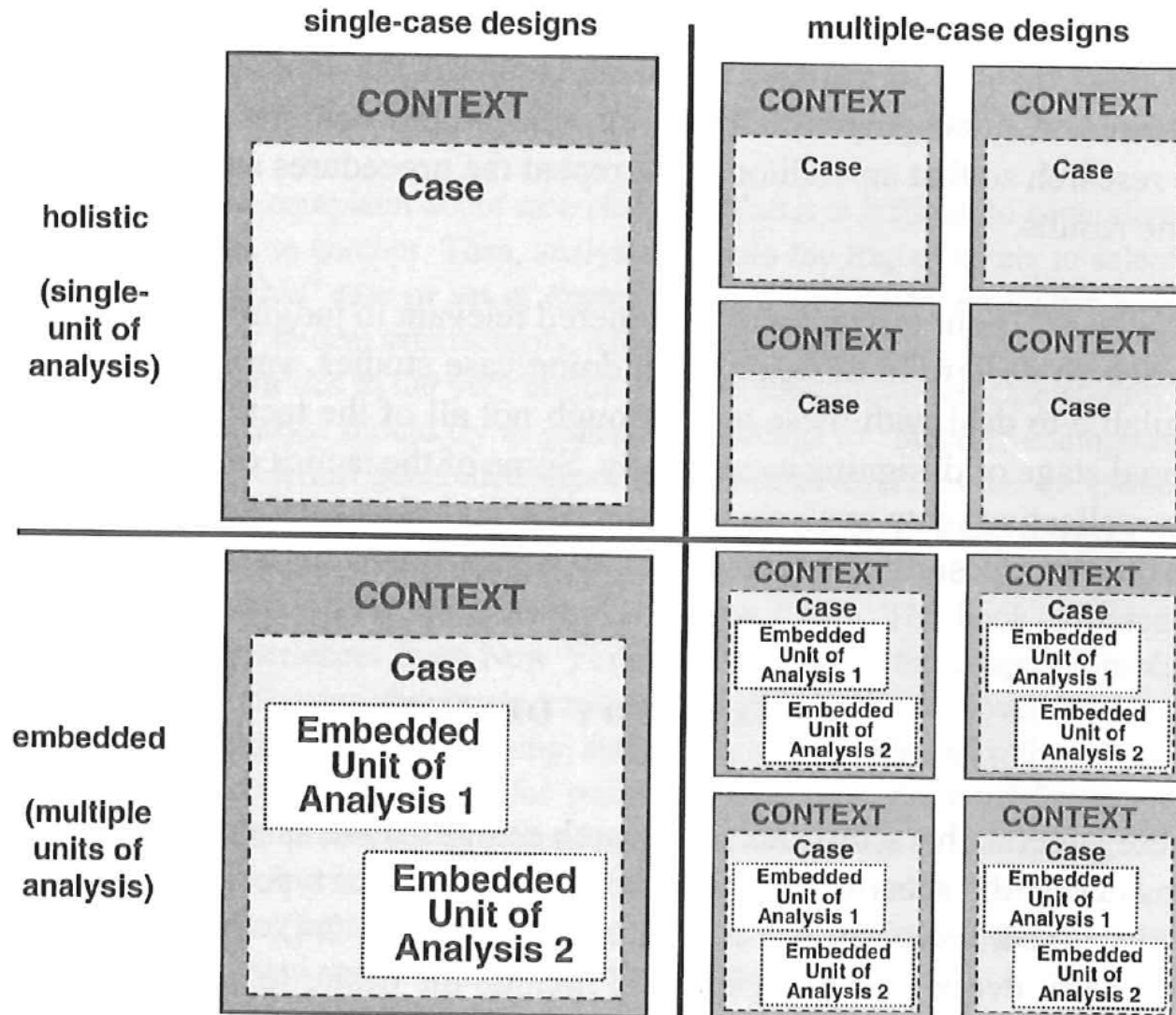
Research design (1)



- What is a case a case of?
 - Individuals, events, decisions, organisations, programs... .
- What is the unit of analysis?

→ Need to be well defined

Research design (2)



(Source: Yin, 2003)

Research Design (3)



■ Case selection

- Different criteria possible
 - typical, diverse, extreme, deviant, influential, most similar, most different... cases.
- Not: random sampling

Representativity



- Case selection does not aim for statistical, but for analytical representativity
 - Single-case: theory
 - Multiple-case: theory and replication logic (as with experiments)

Data collection



- Indirect data collection
 - ‘The SDI can not be interviewed’
- Resulting in a large collection of ‘messy’ data
 - Interview recordings / transcripts
 - Various documents
 - Maps, images, video, ...

Methods of analysis

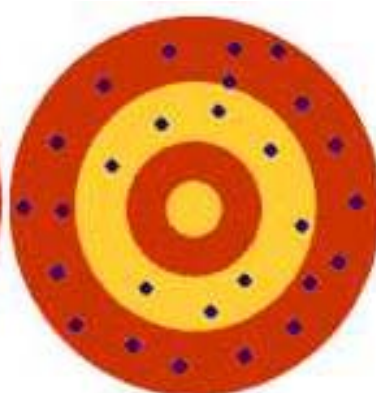


- Quantitative statistical methods are mostly not applicable
- Various techniques
 - Narrative, descriptive
 - Coding, matrices
 - Qualitative Comparative Analysis (QCA)

Validity and reliability



Reliable, not Valid



Valid, not Reliable



**Neither Valid,
nor Reliable**



**Both Valid,
and Reliable**

Validity and reliability (2)



	Tactic
Construct validity	<ul style="list-style-type: none">■ Use multiple sources of evidence■ Establish a chain of evidence■ Have key informants review draft case report
Internal validity	<ul style="list-style-type: none">■ Do pattern-matching■ Do explanation-building■ Address rival explanations■ Use logic models
External validity	<ul style="list-style-type: none">■ Use theory■ Use replication logic in multiple-case studies
Reliability	<ul style="list-style-type: none">■ Use case study protocol■ Develop case study database

(Source: Yin, 2003)

Reporting results



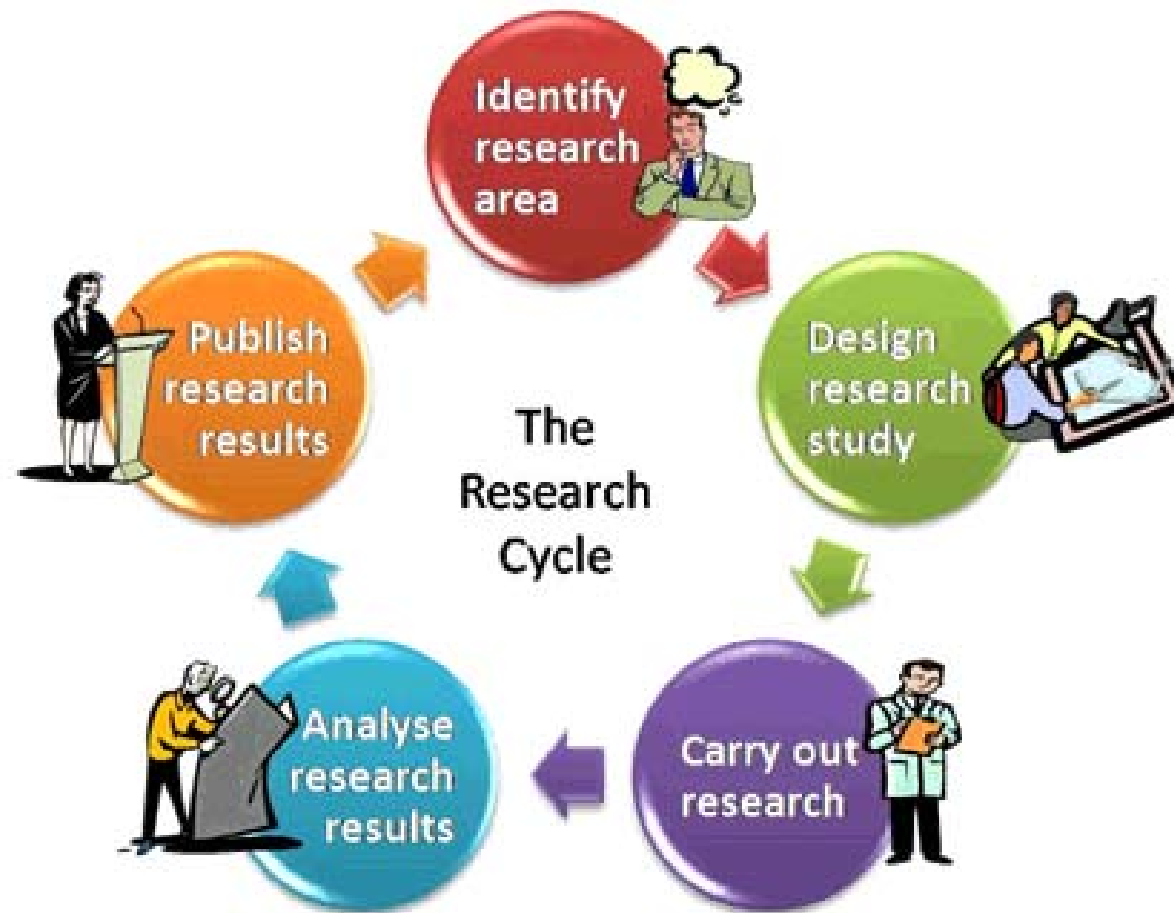
- One of the most challenging aspects
- Typically ignored until the very end
→ start early!
- Not the main way to store evidentiary base
→ use a case study database
- Structure of case report is different from chronological report of research activities

Reporting results



- Choose a suited compositional structure (comparative, chronological, linear-analytical, ...)
- The report should be engaging!

Research cycle



(Source: www.ukdrn.org)

Conclusion



- Two main strategies should guide all steps of the research cycle
 - Formalisation
 - Make decisions explicit

Literature



- Yin R.K., 2003, Case Study Research. Design and Methods.
- Miles, M.B. and M.A. Huberman, 1994, Qualitative data analysis. An expanded sourcebook.
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- Fiss, P.F., 2007, A Set-theoretic Approach to Organizational Configurations. In: Academy of Management Review, 32 (4) 1180-1198.
- Van Hootehem G., 2000, De Draaglijke Traagheid van het Management.