Case Study Design: A Refresher

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Research Methodology Group
Agenda

- An overview about case study
- Major issues related to case study
- Case study design
- Answer your questions
Definition of the Case Study

“An empirical inquiry that investigates a contemporary phenomenon (e.g., a “case”) within its real-life context; when the boundaries between phenomenon and context are not clearly evident” (Yin, 2014, p.16)

“A case study is an in-depth description and analysis of a bounded system” (Merriam, 2015, p.37).

“The “what” is a bounded system (Smith, 1978), a single entity, a unit around which there are boundaries” (Merriam, 2015, p.38)/(Stake, 2005).
Definition of the Case Study

The most defining characteristics of case study is delimiting the object of the study: the case (Merriam, 2015)

• The goal is to understand one thing well: a person, a program, a group, or specific policy; examples: one playground, one band.
• Research question must be aligned/define the case/unit of analysis.

A noun, seldom a verb, a functioning (Stake, 2006). Real things to visualize. Examples: not training, managing, giving birth but training modules, managers, labor rooms.
The “Case”

Bounded context

The Case

The context
Examples

A study of how older adults learn to use computers. The case/unit of analysis: learners’ experience. Indefinite number of adult leaders can be selected for this study.

• Not a case study but a qualitative study

One particular program, or classroom of learners (a bounded system), or one particular learners selected based on success uniqueness, etc.

• A case study
When to use the Case Study

Type of Research Questions relevant to the Case Study

• Explanatory/explanatory/descriptive questions
  • How or why did something happen?

Not Appropriate Questions

• Cause and effect questions (experimental/quasi-experimental design)
• How often something has happened (survey design)
When to use the Case Study

Data collection in “natural setting” not “derived" data (Bromley, 1986, p. 23); you want to cover contextual conditions relevant to the phenomenon (Yin, 2014)

• Examples:
  • How and why a high school principal did an exceptionally good job
  • What are the dynamics of a successful negotiation with severe consequences
  • Not responses to just one survey/instrument
  • Incorporate fieldnotes to better understand the situations
When to use the Case Study

You cannot manipulate the behavior of those involved in the study (Yin, 2014)
When to use the Case Study

Conducting evaluations

- U.S. Government Accountability Office (e.g., 1990, 2008)
- Yin (1997, 2009)
Research design definition

Research Design: An action plan for getting from here (research Questions) to there (Answers/results)
Steps in Designing Case Studies

1. Research questions
2. Propositions, (the purpose for exploratory case)
3. Defining a “case”/unit of analysis
   - Select one of the four designs
4. The logic linking the data to the propositions (data analysis)
5. The criteria for interpreting the findings
6. Note: Use theory in design work
Propositions

Increase the likelihood that the researcher place limit on the scope of the study

Increase feasibility of completing the study

Developed based on literature, personal/professional experiences, theories, generalization based on empirical data

Example: Staff is promoted based on their skills in an organization.
Types of Case Studies (Yin, 2014)

Descriptive; to describe an intervention or phenomenon at the real-life context

- Tolson, Fleming, & Sehartau (2002). Coping with menstruation: Understanding the needs of women with Parkinson's disease, *Journal of advanced Nursing*

Exploratory; to explore those situations in which the intervention being evaluated has no clear, single set of outcome


Explanatory; to explain the presumed causal link in real life intervention that are too complex for the survey or experimental strategies.

- Joia (2002). Analyzing a web-based e-commerce learning community: A case study in Brazil. *Internet Research*
Types of Designs for Case Studies Designs

Retrieved from https://www.sagepub.com/sites/default/files/upm-binaries/41407_1.pdf
Examples

Why an organization implemented certain staff promotion policies? In one organization, holistic single case study.

In two or more organizations, holistic multiple case study.

Add data from a group of employees (embedded level). In one organization embedded single case study.

In two or more organizations, embedded multiple case study.
Case Study Data Collection

A hallmark of a case study is the use of multiple data sources; which also enhanced the credibility (Baxter & Jack, 2008; Merriam 2015; Yin, 2014)

- Potential data sources:
- Documentation, archival record, interviews, observations, artifacts, Survey

Each data sources is a pieces of “puzzle”; Converge in the analysis (not separately analyzed)
Case Study Data Collection

Data Management

Computer Assisted Qualitative Data Analysis Software, CAQD

- Content searching tools
- Coding tools
- Linking tools
- Mapping or networking tools
- Query tools
# Case Study Data Management

## Computer Assisted Qualitative Data Analysis Software, CAQDS

<table>
<thead>
<tr>
<th>Software</th>
<th>Platform Type</th>
<th>License Type</th>
<th>Accessibility</th>
<th>Media Formats</th>
<th>Operating Systems</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedoose</td>
<td>Web-based</td>
<td>Proprietary</td>
<td>Closed</td>
<td>Text, Audio, Video</td>
<td>All (web browser)</td>
<td>Coding, Query, Visualisation, Statistical Tools</td>
</tr>
<tr>
<td>ELAN</td>
<td>Client</td>
<td>Free</td>
<td>Open</td>
<td>Video, Audio</td>
<td>Windows, macOS, Linux</td>
<td>Coding</td>
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<td>KH Coder</td>
<td>Client</td>
<td>Free</td>
<td>Open</td>
<td>Text</td>
<td>Windows, Linux, macOS</td>
<td>Coding, Aggregation, Query, Visualisation</td>
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<tr>
<td>NVivo</td>
<td>Client</td>
<td>Proprietary</td>
<td>Closed</td>
<td>Text, video, audio, pictures, webpages</td>
<td>Windows, macOS</td>
<td>Coding, Aggregation, Query, Visualisation</td>
</tr>
<tr>
<td>Quantitative Discourse Analysis Package</td>
<td>Client</td>
<td>Free</td>
<td>Open</td>
<td>Text</td>
<td>Windows, macOS, Linux</td>
<td>Word extracting, statistical analysis, visualization</td>
</tr>
<tr>
<td>RQDA</td>
<td>Client</td>
<td>Free</td>
<td>Open</td>
<td>Text</td>
<td>Windows, macOS, Linux</td>
<td>Coding, Aggregation, Query, Visualisation</td>
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Case Study Data Analytical Techniques

- Pattern matching (compare empirically based pattern with a predicate done); linking data to propositions,
- Explanation building (Iterative nature of explanation building)
- Time-series analysis (detailed and precise tracing of events)
- Logic models (specify a complex chain of events over time)
- Cross case synthesis (pattern matching using word tables) (Yin, 2014)
Role of Theory in Case Studies

- Essential to construct a preliminary theory
- Help generalize from case study to theory
- Analytical generalization not statistical generalization (Yin, 2014)
Case Study Concerns

(Yin, 1993, 2014)

- Lack of rigor
- Little basis for generalization
- Too long, massive data, unmanageable documents
Validating data

Construct validity: Correct operational measure/concepts
- Use the triangulation of multiple sources of evidence, chain of evidence, member checking

Internal validity: Establishing a relationship (only for explanatory)
- Use established analytic techniques such as pattern matching

External validity: Establishing the domain for generalization
- Use theory in single case studies/use replication logic in multiple case studies

Reliability: Repeatability of operations of the case study
- Use case study protocol and databases. (Yin, 2014)
## Case Study Report

<table>
<thead>
<tr>
<th>Structure</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Linear</td>
<td>Problem- lit review- methods- findings-conclusion- implications</td>
</tr>
<tr>
<td>Comparative</td>
<td>Repeat the case study two or more times/compare</td>
</tr>
<tr>
<td>Chronological</td>
<td>Present the evidence in chronological order</td>
</tr>
<tr>
<td>Theory Building</td>
<td>Chapters follow theory building logic.</td>
</tr>
<tr>
<td>Suspense</td>
<td>Explain conclusions in chapters</td>
</tr>
<tr>
<td>Unsequenced</td>
<td>Sequence chapters with no specific importance.</td>
</tr>
</tbody>
</table>

*(Yin, 2014)*
Up comings

- Ongoing
  - Participate in the asynchronous discussion threads

- March 15, 4-5 pm Arizona Time
  - Next meeting: Content Analysis
### References

<table>
<thead>
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<th>Title</th>
<th>Publication Details</th>
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Questions?
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