

Case Study Design

Single and Multiple-Case Study Designs

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Designs IS493

Some Basic Considerations

Research Strategies

- ◆ Basic oppositions
 - ◆ **Survey research** versus **Case study**
 - ◆ quantitative versus qualitative
- ◆ The whole gamut
 - ◆ Experiment
 - ◆ Survey
 - ◆ Archival analysis
 - ◆ Historical research
 - ◆ Case study

Basic Conditions

Strategy	Type of Question	Control of Behavioural Events	Focus on Contemporary Research
Experiment	How, why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Archival Analysis	Who, what, where, how many, how much	No	Yes/No
History	How and why	No	No
Case study	How and why	No	Yes

Driving Forces

Case study, History and

Survey and Archival analysis

Establish the operational link between one set of conditions (causes) and their effects

Establish the incidence or prevalence of an event, phenomenon or state of affairs

How and Why questions

What, Who and Where
How much, How many

Causalities

Frequencies, Correlations

Explain by disclosing the mechanism by which a set of relation has come to being

Describe often by recourse to quantitative relations

Definition

- ◆ A case study is an empirical inquiry that
 - ◆ investigates a contemporary phenomenon within its real life context especially when
 - ◆ The boundaries between phenomenon and context cannot be drawn clearly or unambiguously.

The Research Ladder

- ◆ Research Strategy versus Research Design
 - ◆ One Strategy (i.e. Case Study) but Various Designs (i.e. Single or Multiple Case Study Design)
- ◆ Strategy
- ◆ Design
- ◆ Data Collection
- ◆ Data Analysis

Research Design (1)

- ◆ Research Design
 - ◆ The logical sequence that connects the empirical data to a study's initial research questions and conclusions
 - ◆ Design as a way of addressing four basic sets of research issues
 - ◆ What questions to study
 - ◆ What data are relevant
 - ◆ What data to collect
 - ◆ How to analyse the results

Research Design (2)

- ♦ The Research design is not just a work plan
- ♦ A successful design should provide guidance as to how to match empirical evidence to the research questions asked
 - ♦ What kind of evidence is needed to address the questions the research raises?
 - ♦ The research design thus addresses a *logical* not a *logistical* problem

Components of Case Study Research Design

- ◆ A Study's Questions
 - ◆ How and Why (strategy)
- ◆ The Propositions of the Study
- ◆ The Unit of Analysis
- ◆ The Logical Steps Linking Data to the Propositions
- ◆ Criteria for Interpreting the Findings

The Propositions of the Study

(1)

- ◆ Propositions Provide Direction
 - ◆ Where to look for relevant evidence
 - ◆ What data to collect
- ◆ The Development of Propositions is a Key to a Successful Case Study
 - ◆ Propositions are derived from theory or other relevant research

The Propositions of the Study

(2)

- ◆ Explorative versus Descriptive and Explanatory Case Studies
 - ◆ Exploratory by definition lack the development of well articulated propositions derived from theory and/or prior research
 - ◆ Hunches, tentative statements, and a purpose
- ◆ Other views
 - ◆ Inductive approaches to case study research downplay (if not reject) the role of theory at an early stage of empirical research

Unit of Analysis

- ◆ Individuals versus More Inclusive Phenomena,
 - ◆ e.g. Programmes, Decisions, Technologies,
 - ◆ Groups, Departments, Organizations, Regions, Nations
- ◆ The Slippery Nature of the Unit of Analysis
 - ◆ Studying groups or organizations instead of programmes or technologies
 - ◆ E.g. implementation of particular technologies as an occasion for studying group and decision making processes
 - ◆ How are technologies to be studied?

Linking Data to Propositions

- ◆ How to reduce the variety of data to the general-abstract character of theoretical propositions?
 - ◆ Thematic blocks
 - ◆ Relationships between events
 - ◆ Pattern matching
- ◆ Criteria for Interpreting the Findings

The Role of Theory in Design Work

- ◆ Case Studies versus Ethnography and Grounded Theory
- ◆ The Key Role of Theory
 - ◆ An hypothetical (and provisional) account about why acts, events, structure etc. are related
 - ◆ Description versus explanation
 - ◆ The level of theory development and the design of the case study

Generalizing from Case Study

- ◆ Theory is the level at which generalization of the results will occur
- ◆ Analytic versus Statistical Generalization
- ◆ The Two Levels of Inference Drawing
 - ◆ Case studies are not sampling points
 - ◆ A theory used as template to which compare the empirical results of the case study

Research Design Quality

- ◆ Construct Validity
 - ◆ Operationalising concepts
- ◆ Internal Validity
 - ◆ Excluding alternative explanations and spurious relationships
- ◆ External Validity
 - ◆ The domain to which the findings of the study can be generalized
- ◆ Reliability
 - ◆ Replicating the study by providing detailed accounts of data collection procedures

Case Study Research Designs

Case Study Designs

- ◆ Single versus Multiple-Case Study Research
- ◆ Single case study
 - ◆ A decision prior to data collection
 - ◆ Identifying, delimiting the case and its context
 - ◆ Distinguishing between the phenomenon studied (the case) and its context

Rationales for Choosing a Single Case

- ◆ Critical case
 - ◆ A critical test for a significant theory
- ◆ Extreme or unique case
 - ◆ Documenting the precise nature of a phenomenon not well understood
- ◆ Representative or typical case
 - ◆ Capturing the conditions of a commonplace situation
- ◆ Revelatory case
 - ◆ Previously non-accessible phenomenon
- ◆ Longitudinal case
 - ◆ Establishing change over time, causal mechanisms, patterns of transition, etc

Holistic and Embedded Designs

♦ Single Case Study

- ♦ Studying a case in its totality (holistic)
- ♦ Studying units or processes or projects within a single case (embedded)

♦ Multiple Case Studies

- ♦ Studying and comparing cases in their totality (holistic)
- ♦ Studying various units within identifiable cases (embedded)

Multiple Case Study Research

Design (MCSR D)

- ◆ Evidence from more case studies is more compelling
- ◆ Yet, a multiple case-study design by definition does not involve critical, unusual or revelatory cases.
- ◆ The Replication Logic of MCSR D
 - ◆ Replication corroborates, qualifies and/or extends the findings of the first case(s)
 - ◆ Multiple cases as repeated experiments

Sampling versus Replication

- ♦ Sampling (survey) versus replication (experiment) logics revisited
 - ♦ The case study does not involve generalising from a sample to population
 - ♦ Case studies do not establish the frequency or prevalence of a phenomenon but the mechanisms by which it is brought to being, sustained or changed
 - ♦ If a sampling logic had to be applied to all types of research many important topics could not be empirically investigated

Replication Logics

- ◆ Literal versus Theoretical Replication

- ◆ Predicting similar (literal) versus contrasting (theoretical) results

A Theoretical Framework as a Precondition

- ◆ Making the decision about which replication logic (literal or theoretical) to follow
- ◆ Generalizing to the theory

- ◆ Theory Development and Modification

The Basic Steps of the MCSR

- ◆ Theory Development
- ◆ Selection of Cases and Design of Data Collection Protocol
- ◆ Conduct the Empirical Investigation
- ◆ Write Individual Case Reports
- ◆ Draw Cross-Case Conclusions
- ◆ Bring Cross-Case Conclusions to Bear on the Theory
- ◆ Summary Report

Hybrid Realities

- ◆ Redesigning the Study on the Basis of Empirical Evidence or Other Problems
 - ◆ Redesigning the empirical investigation
 - ◆ Design or protocol
 - ◆ Reconsidering the theoretical foundations of the study
- ◆ How Many Cases?
- ◆ Exploratory Research and the Logic of Replication

Further Considerations

- ◆ Holistic or Embedded Multiple Case Studies
 - ◆ Issues and problems
- ◆ Multiple-Case Designs to be Preferred over Single-Case Designs unless there are compelling reasons for a single- case study design