

Embedded Case Study Methods

TYPES OF CASE STUDIES

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TYPES OF CASE STUDIES

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The case study approach presented is an empirical inquiry that investigates a contemporary problem within its real-life context. Understanding the problem and its solution requires integrating a myriad of mutually dependent variables or pieces of evidence that are likely to be gathered at least partially by personal observation.

Although a common definition of case studies exists, one may encounter various types of case studies (see Table 2.1). In order to make clear to which type of case study the introduced methods of knowledge integration should be applied, we will briefly describe different types of case studies. A detailed review of case studies is given by Yin (1994).

DESIGN

Holistic Versus Embedded

A crucial distinction must be made between holistic and embedded case studies (Yin, 1994, p. 41). A holistic case study is shaped by a thoroughly qualitative approach that relies on narrative, phenomenological descriptions. Themes and hypotheses may be important but should remain subordinate to the understanding of the case (Stake, 1976, p. 8).

Embedded case studies involve more than one unit, or object, of analysis and usually are not limited to qualitative analysis alone. The multiplicity [p. 10 ↓] of evidence is investigated at least partly in subunits, which focus on different salient aspects of the case. In an organizational case study, for example, the main unit may be a company as a whole, and the smallest units may be departments or even groups of individuals, such as owners and employees. In a clinical, neuropsychological case study, the units may be organized along biographically critical events in the childhood or the vocational world

of the case. In case studies on regional or urban planning, the units may be different interest groups that are involved or affected by the project.

Table 2.1 Dimensions and Classifications of Case Studies

<i>Dimensions</i>	<i>Classifications</i>
Design	Holistic or embedded Single case or multiple case
Motivation	Intrinsic or instrumental
Epistemological status	Exploratory, descriptive, or explanatory
Purpose	Research, teaching, or action/application
Data	Quantitative or qualitative
Format	Highly structured, short vignettes Unstructured or groundbreaking
Synthesis	Informal, empathic, or intuitive Formative or method driven

Note that an embedded case study allows for a multiplicity of methods that may be applied within the subunits. Thus, hypotheses may be formulated, quantitative data sampled, or statistical analyses applied (see Bortz & Döring, 1995; Campbell & Stanley, 1963). As the title of the book suggests, this book presents methods of embedded case studies (see Part III).

Single Case Versus Multiple Case

Another design characteristic of a case study is whether the design is single case or multiple case. There may be different reasons for choosing a [p. 11 ↓] single-case design. A case may be considered unique, prototypical, salient, or revelatory to the understanding of a phenomenon or problem. Analogous to Newton's *experimentum crucis*, it may even be the critical case in testing a well-formulated theory. Although there is no common understanding of how to integrate separate single-case studies into a joint multiple-case design, it is most important to note that the synthesis process between the single cases does not follow a statistical sampling rationale. As Yin (1994) notes, "Every case should serve a specific purpose within the overall scope of inquiry. Here, a major insight is to consider multiple cases as one would consider multiple experiments—that is, to follow a 'replication' logic" (p. 45).

MOTIVATION

The case study researcher often feels intrinsically motivated to investigate a certain case for nonscientific reasons. This may hold true for a new type of educational or public health program, or a specific project in urban development. If there is intrinsic interest, the study team usually takes responsibility and is accountable for the analysis and its consequences (see Gibbons et al., 1994). But if the objective of the study is something other than understanding the particular case, then the inquiry is an instrumental case study.

To illustrate the difference between these types of studies, consider the characters of two different physicians. A physician with an intrinsic motivation is personally interested in and feels responsible for the patient. A physician with an instrumental motivation is primarily interested in using anamnestic and laboratory data to further scientific or financial objectives, and is less interested in the case itself.

EPISTEMOLOGICAL STATUS

The label *case study* is most frequently associated with the exploratory case study. It usually precedes a final study, which can, itself, be a case study, but it can also have a different research design (Boos, 1992). Exploratory case studies help to gain insight into the structure of a phenomenon in order to develop hypotheses, models, or theories. An exploratory study very much resembles a pilot study; the research design and data collection methods usually are not specified in advance.

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A descriptive case study differs from an exploratory study in that it uses a reference theory or model that directs data collection and case description. In some respects, a descriptive case study tests whether and in what way a case may be described when approaching it from a certain perspective. Many Formative Scenario Analyses may be considered typical of this type of study (see Chapter 9).

Explanatory case studies can also serve to test cause-and-effect relationships. Clearly, according to conventional understanding of theory testing, a single case can only falsify a theory. However, a case may also be used for theory testing, either if the case is used for quantitative data sampling (see Petermann, 1989), or, in a replication logic, if the research team investigates “whether similar causal events—within each case—produce these positive outcomes” (Yoon & Hwang, 1995, p. 12). Note that the theory testing is done in a qualitative manner. However, as in traditional hypothesis testing, specifications for the cause-impact chain have to be formulated before case analysis.

PURPOSE

A case study may be used as a method of research, teaching, or action/ application. For instructional purposes, case studies are commonly used in business, law, and medical schools. The case encounter quite often changes the traditional educational approach into a discussion pedagogy. Thus, the case method is a variation on the Socratic method, which is another name for proactive interaction between teachers and students (Ronstadt, 1993). Unfortunately, when teaching by case studies (see Barnes et al., 1994), the primacy of data and of situation analysis is often not respected as a principle. This is due to the fact that a prepared, written case offers only limited access to data, and, therefore, teaching case studies are based on a virtual process of case analysis.

FORMAT

Several basic formats for case studies exist (Ronstadt, 1993, pp. 17–18). The first two types are teaching cases and are always provided in written form.

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DATA COLLECTION AND METHODS OF KNOWLEDGE INTEGRATION

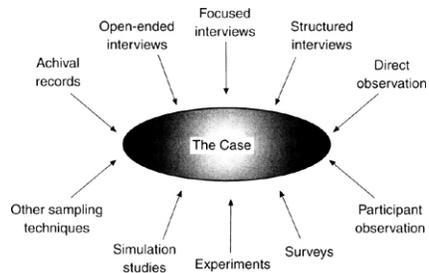
In principle, each case study should use multiple sources of information. All methods should employ direct and participant observations, structured interviews, and surveys, and they can also include experimental design, focused interviews, open-ended interviews, archival records, documents, and scientific data from field and laboratory (see Box 2.1). (A detailed description of data gathering is given in Yin, 1994, p. 93, and Stake, 1995, p. 49.) This remains true regardless of case design. The main distinction for case studies is whether they have a holistic or embedded design.

Knowledge integration within a holistic design is ruled almost exclusively by the principles of qualitative research. The synthesis process is [p. 14 ↓] informal (avoiding reductionism and elementalism), empathic, and mostly intuitive. Thus, the research report is narrative in nature.

Box 2.1 Using Multiple Sources of Data and Evidence

In all phases of the case, a wide variety of data from different sources have to be integrated (Yin, 1994, p. 91). The source and type of data depend on the case and its nature.

Documents, archival records, and open-ended interviews are typical sources used in the beginning of most studies. In an embedded case design, structured or focused interviews are often used, but this design also allows for surveys, questionnaires, and even the sampling experimental data. In neuropsychological or environmental case studies, laboratory data or simulation studies are also helpful in gaining insight into the case. The following figure illustrates the potential sources of evidence and techniques for data sampling that can be integrated in case analysis.



The embedded case design allows for both qualitative and quantitative data and strategies of synthesis or knowledge integration. The methods provided in Part III of this volume may be used to interrelate and integrate the variables, findings, evaluations, and soon from the various facets of the case or subunits of case inquiry. Thus, the methods of knowledge integration help explain the data under consideration, thereby making data and inferential processes more transparent. The global statements and conclusions are usually derived by an intuitively qualitative process based on both experiential understanding and a more or less formative synthesis process that is supported by the methods introduced.

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