

Applied Research Method : The Case Studies

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Introduction

Case study methods are quite controversial yet a popular method of research, they are widely used in social science and science studies especially when in-depth explanations are sought. This article, therefore, discusses several aspects of case studies as a research method. Case study research, through reports of past studies, allows the exploration and understanding of complex issues. There are numerous definitions and understandings of the case study. According to Bromley (1990), it is a “systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest”. The analysis can vary from an individual to a corporation. Data come largely from documentation, archival records, interviews, direct observations, participant observation and physical artifacts (Yin, 1994).

What is Case Study

Case studies are stories. They present realistic, complex, and contextually rich situations and often involve a dilemma, conflict, or problem that one or more of the characters in the case must negotiate. A good case study, according to Professor Paul Lawrence is: “the vehicle by which a chunk of reality is brought into the classroom to be worked over by the class and the instructor. A good case keeps the class discussion grounded upon some of the stubborn facts that must be faced in real life situations.”

Although they have been used most extensively in the teaching of medicine, law and business, case studies can be an effective teaching tool in any number of disciplines. As an instructional strategy, case studies have a number of virtues. They “bridge the gap between theory and practice and between the academy and the workplace” (Barkley, Cross, and Major 2005, p.182). They also give students practice identifying the parameters of a problem, recognizing and articulating positions, evaluating courses of action, and arguing different points of view.

Case studies vary in length and detail, and can be used in a number of ways, depending on the case itself and on the instructor's goals.

1. They can be short (a few paragraphs) or long (e.g. 20+ pages).
2. They can be used in lecture-based or discussion-based classes.
3. They can be real, with all the detail drawn from actual people and circumstances, or simply realistic.
4. They can provide all the relevant data students need to discuss and resolve the central issue, or only some of it, requiring students to identify, and possibly fill in (via outside research), the missing information.
5. They can require students to examine multiple aspects of a problem, or just a circumscribed piece.
6. They can require students to propose a solution for the case or simply to identify the parameters of the problem.

The terms “case study”, “case review” and “case report” are used loosely in the scientific credentials and its evidence base for professional applications. A “case review” might emphasize a critical reappraisal of a case. A “case report” might refer to a summary of a case or to the document reporting a case, as in case law or medicine. Case studies of individuals in health care research (as an example) often involve in-depth interviews with participants and key informants, review of the medical records, observation, and excerpts from patients' personal writings and diaries (Zucker, 2009).

In other words we can say that a case study research paper examines a person, place, event, phenomenon, or other type of subject of analysis in order to extrapolate key themes and results that help predict future trends, illuminate previously hidden issues that can be applied to practice, and/or provide a means for understanding an important research problem with greater clarity. A case study paper usually examines a single subject of analysis, but case study papers can also be designed as a comparative investigation that shows relationships between two or among more than two subjects. The methods used to study a case can rest within a quantitative, qualitative, or mixed-method investigative paradigm.

Category of case study

There are several categories of case study. Yin (1984) notes three categories, namely exploratory, descriptive and explanatory case studies.

Exploratory case studies set to explore any incident in the data which serves as a point of interest to the researcher. For instance, a researcher conducting an exploratory case study on individual's reading process may ask general questions, such as, "Does a student use any strategies when he reads a text?" and "if so, how often?". These general questions are meant to open up the door for further examination of the phenomenon observed. Even In the case study also, prior fieldwork and small scale data collection may be conducted before the research questions and hypotheses are proposed. As a prelude, this initial work helps to prepare a framework for the further study. A pilot study is considered an example of an exploratory case study (Yin, 1984; McDonough and McDonough, 1997) and is crucial in determining the protocol that will be used.

Descriptive case studies set to describe the natural phenomena which occur within the data in question, for example, what different strategies are used by a reader and how the reader use them. The goal set by the researcher is to describe the data as they occur. McDonough and McDonough (1997) suggest that descriptive case studies may be in a narrative form. An example of a descriptive case study is the journalistic description of the Watergate scandal by two reporters (Yin, 1984). The challenge of a descriptive case study is that the researcher must begin with a descriptive theory to hold up the description of the phenomenon or story. If this fails there is the possibility that the description lacks rigor and that problems may occur during the project. An example of a descriptive case study using pattern-matching procedure is the one conducted by Pyecha (1988) on special education children. Through replication, data elicited from several states in the United States of America were compared and hypotheses were formulated. In this case, descriptive theory was used to examine the depth and scope of the case under study.

Explanatory case studies examine the data closely both at a surface and deep level in order to explain the phenomena in the data. For instance, a researcher may ask the reason as to why a student uses an *inferencing* strategy in reading (Zaidah, 2003). On the basis of the data, the researcher may then form a theory and set to test this theory (McDonough and McDonough, 1997). Furthermore, explanatory cases are also deployed for causal studies where pattern-matching can be used to investigate certain phenomena in very complex and multivariate cases. Yin and Moore (1987) note that these complex and multivariate cases can be explained by three rival theories: a knowledge-driven theory, a problem-solving theory, and a social-interaction theory. The knowledge-driven theory stipulates that eventual commercial products are the results of ideas and discoveries from basic research. Similar notions can be

said for the problem-solving theory. However, in this theory, products are derived from external sources rather than from research. The social-interaction theory, on the other hand, suggests that overlapping professional network causes researchers and users to communicate frequently with each other.

When to use Case study Research Method

If the subject of analysis is an incident or event.

In the social and behavioral sciences, the event or incident that symbolize the case to be studied is usually bounded by time and place, with a clear beginning and end and with an identifiable location or position relative to its atmosphere. The subject of analysis can be of a rare or critical event or focus on a typical or regular event. The purpose of studying a rare event is to illuminate new ways of thinking about the broader research problem or to test a hypothesis. Critical incident case studies must describe the method by which we had identified the event and explain the process by which it has determined the validity of this case to inform broader perspectives about the research problem or to reveal new findings. However, the event does not have to be a rare or uniquely significant to support new thinking about the research problem or to challenge an existing hypothesis. For example, Walo, Bull, and Breen conducted a case study to identify and evaluate the direct and indirect economic benefits and costs of a local sports event in the City of Lismore, New South Wales, Australia. The purpose of their study was to provide new insights from measuring the impact of a typical local sports event that prior studies could not measure well because they focused on large "mega-events." Whether the event is rare or not, the methods section should include an explanation of the following characteristics of the event: when did it take place; what were the underlying circumstances leading to the event; what were the consequences of the event

If the subject of analysis is a person

Explain why one has selected this particular individual to be studied and describe what experience he or she had that provides an opportunity to advance new understandings about the research problem. Mention the background about this person which might help the reader understand the significance of his/her experiences that make them worthy for the study. This includes describing the relationships this person had with other people, institutions, or events that supports using him or her as the subject for a case study research paper. It is particularly important to differentiate the person as the subject of analysis from others and to succinctly explain how the person relates to examining the research problem.

If the subject of analysis is a place

In general, a case study that investigates a place suggests a subject of analysis that is unique or special in some way and this exceptionality can be used to build new understanding or knowledge about the research problem. A case study of a place must not only describe its various attributes relevant to the research problem [e.g., physical, social, cultural, economic, political, etc.], but one has to must state the method by which he/she had determined that this place will illuminate new understandings about the research problem. It is also important to articulate why a particular place as the case for study is being used if similar places also exist.] and, if applicable, what type of human activity had involved at these place which makes it a good choice to study.

If the subject of analysis is a phenomenon

A phenomenon refers to a fact, occurrence, or circumstance that can be studied or observed but with the cause or explanation to be in question. In this sense, a phenomenon that forms the subject of analysis can encompass anything that can be observed or presumed to exist but is not fully understood. In the social and behavioral sciences, the case usually focuses on human interaction within a complex physical, social, economic, cultural, or political system. For example, the phenomenon could be the observation that many vehicles used by ISIS fighters are small trucks with English language advertisements on them. The research problem could be that ISIS fighters are difficult to combat because they are highly mobile. The research questions could be how and by what means are these vehicles used by ISIS being supplied to the militants and how might supply lines to these vehicles be cut? How might knowing the suppliers of these trucks from overseas reveal larger networks of collaborators and financial support? A case study of a phenomenon most often encompasses an in-depth analysis of a cause and effect that is grounded in an interactive relationship between people and their environment in some way.

Problems to Avoid**Overgeneralization**

One of the goals of a case study is to lay a foundation for understanding in broader trends and issues applied to similar circumstances. However, one should be careful when drawing conclusions from their case study. It should be must based on the evidences and grounded in the results of the study; otherwise, it may appear as merely speculation.

Failure to Document Limitations

No case is going to reveal all that needs to be understood about a research problem. Therefore, just clearly state the limitations of a general research study, one must describe the

specific limitations inherent in the subject of analysis. For example, the case of studying how women conceptualize the need for water conservation in a village in deserts could have limited application in other cultural contexts or in areas where fresh water from rivers or lakes is plentiful and, therefore, conservation should be understood differently than preserving access to a scarce resource.

Failure to Extrapolate All Possible Implications

It is important that if one doesn't want to over-generalize from the case study findings, one has to be thorough in the consideration of all possible outcomes or recommendations derived from your findings. Otherwise the reader may question the validity of the entire analysis, particularly if one has failed to document an obvious outcome from the case study research. For example, in the case of studying the accident at the railroad crossing to evaluate where and what types of warning signals should be located, if the researcher failed to take into consideration of speed limit signage as well as warning signals. When designing the case study the study will lose its value. Thus be sure to thoroughly address all aspects of the problem and do not leave gaps in the analysis.

Importance of Case Study Method

The importance of case study method in research becomes important when issues with regard to Education (Gulsecen & Kubat, 2006), Sociology (Grassel & Schirmer, 2006) and community based problems (Johnson, 2006), such as poverty, unemployment, drug addiction, illiteracy, communicable diseases etc. were raised. Through case study methods, a researcher is able to go beyond the quantitative statistical results and understand the behavioral conditions through the actor's perspective.

Since case study method receives criticism in terms of its lack of robustness as a research tool, crafting the design of case studies is of supreme importance. Researchers can adopt either a single-case or multiple-case design depending on the issue in question. In cases where there are no other cases available for replication, the researcher can adopt the single-case design. The multiple-case design, on the other hand, can be adopted with real-life events that show numerous sources of evidence through replication rather than sampling logic.

In the case study based research, six steps are proposed,

1. Determine and define the research questions
2. Select the cases and determine data gathering and analysis techniques
3. Prepare to collect the data
4. Collect data in the field
5. Evaluate and analyze the data

6. Prepare the report

Disadvantages of case studies

Despite the advantages, case studies have received criticisms. (Yin 1984) discusses three types of arguments against case study research. First, case studies are often accused of lack of rigour. (Yin 1984:21) notes that “too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions”. Case studies provide very little basis for scientific generalisation since they use a small number of subjects, some conducted with only one subject. The question commonly raised is “How can you generalise from a single case?” (Yin, 1984:21).

Case studies are often labelled as being too long, difficult to conduct and producing a massive amount of documentation (Yin, 1984). In particular, case studies of ethnographic or longitudinal nature can elicit a great deal of data over a period of time. The danger comes when the data are not managed and organised systematically. A common criticism of case study method is its dependency on a single case exploration making it difficult to reach a generalising conclusion (Tellis,1997). Yin considered case methodology ‘microscopic’ because of the limited sampling cases .

Conclusion

Case studies are complex because they generally involve multiple sources of data, may include multiple cases within a study, hence produce large sets of data for analysis. Researchers use the case study method to build upon theory, to produce new theory, to challenge theory, to explain a situation and to explore etc. The advantages of the case study method are its applicability to real-life, contemporary, human circumstances and its public accessibility through written reports. Case study results relate directly to the common readers everyday experience and facilitate an understanding of complex real-life situations. Thus the utility of a case study is that it encourages mentors to consider planning a educational curriculum that emphasizes communication and relationships between human beings (Scott, 2005)

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