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Chapter · November 2019

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Chapter 11

Case Study Research

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Abstract

Case study research, most often associated with qualitative inquiry has gained significance as an effective approach to investigate complex issues in real-world settings. Conducting case research is considered to be appropriate when a contemporary phenomenon is to be studied. This chapter covers all related concepts, relating to this unique method of research. The focus is on bringing about rigor in case study research.

Keywords: Qualitative research; case study; interpretivist research; theoretical propositions; literal replication; reliability; Validity

Introduction

Qualitative research involves an interpretive, naturalistic approach to the world which is studying things in their natural settings and attempting to make sense of or interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2005). Creswell (2007) categorizes various approaches into narrative research, phenomenology, ethnography, grounded theory, and case studies in qualitative inquiry. Case study research, most often associated with qualitative inquiry has gained significance as an effective approach to investigate complex issues in real-world settings. Studies have been done using this approach in a wide range of disciplines, especially in social sciences.

Case study research, as an approach for methodological exploration, has a long-standing history with the origins being attributed to the studies done in the disciplines of anthropology and social sciences in the early twentieth century (Harrison, Birks, Franklin, & Mills, 2017; Johansson, 2003). Much of the present day perspective that Johansson (2003) refers to as the second generation of case studies is influenced by the work of Robert Yin, Sharan Merriam, and Robert Stake (Yazan, 2015). Yin's (2009) book *Case Study Research: Design and Methods*

**Methodological Issues in Management Research:
Advances, Challenges and the Way Ahead, 163–179**
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doi:[10.1108/978-1-78973-973-220191011](https://doi.org/10.1108/978-1-78973-973-220191011)

Citation:

Patnaik, S. and Pandey, S.C. (2019), "Case Study Research", Subudhi, R.N. and Mishra, S. (Ed.) *Methodological Issues in Management Research: Advances, Challenges, and the Way Ahead*, Emerald Publishing Limited, Bingley, pp. 163-179

details out case study design and analysis. The focus is on bringing about rigor in case study research. Stake's view of case studies draws from naturalistic, holistic, ethnographic, phenomenological, and biographic research methods. According to him, a case study is expected to catch the complexity of the single case and the focus of his book, *The Art of Case Study Research* (Stake, 1995) is on presenting a disciplined, qualitative mode of inquiry into the single case. Merriam (1998) in the book *Qualitative Research and Case Study Applications in Education* sets out to bring about clarity in what constitutes a case study, how it differs from other qualitative research methods and when it is most appropriate to use it (Yazan, 2015).

The different perspectives on case study research had brought about varied definitions of the approach. In one of the early understandings of the case study, Eisenhardt (1989) defines it as a research strategy that focuses on understanding the dynamics present within single settings and aims at providing a description, testing theory, or generating theory. Stake (1995) defines case study research as the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances. Case study research has been identified as a method of intensively studying a phenomenon. Gerring (2004) emphasizes that a case study is an intensive study of a single unit for understanding a larger class of (similar) units where the unit connotes a spatially bounded phenomenon observed at a single point in time or over some delimited period. According to Creswell (2007), a case study is a good approach when the inquirer has identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases or a comparison of several cases.

Conducting case research is considered to be appropriate when a contemporary phenomenon is to be studied in a natural setting (Benbasat, Goldstein, & Mead, 1987; Yin, 2009). Yin (2009) defines a case study as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. He further elaborates that case studies are the preferred method when "how" or "why" questions are being posed and the investigator has little control over the events. Merriam and Tisdell (2016), in the context of qualitative research, highlight case studies as a research form where the focus is on the search for meaning and understanding, the researcher as the primary instrument of data collection and analysis, an inductive investigative strategy, and the end product being richly descriptive. In fact case study research is supposed to be richly descriptive, because it is grounded in deep and varied sources of information. It employs quotes of key participants, anecdotes, prose composed from interviews, and other literary techniques to create mental images that bring to life the complexity of the many variables inherent in the phenomenon being studied (Hancock & Algozzine, 2016).

Drawing on the different works on case research, Harrison et al. (2017) summarize the fundamental elements of case study research (Table 11.1).

Case research is particularly useful when research and theory are in their early stages (Benbasat et al., 1987) and when proposing new approaches (Eisenhardt, 1989). Benbasat et al. (1987) further emphasize that case research is appropriate for practice-based problems where the experiences of the actors are important and the context of action is critical.

Table 11.1. Case Study Elements, Descriptors, and Focus of Researcher.

Element	Description	Focus of Researcher
The case	Object of the case study identified as the entity of interest or unit of analysis Program, individual, group, social situation, organization, event, phenomena, or process	Choice of adopting case study research is guided by the research question
Selecting the case	Based on the purpose and conditions of the study Involves decisions about people, settings, events, phenomena, social processes	Emphasizes on analytical generalization
A bounded system	Bounded by time, space, and activity Encompasses a system of connections Bounding applies frames to manage contextual variables Boundaries between the case and context can be blurred	Defining boundaries for the case to make the study focused
Studied in context	Studied in its real life setting or natural environment Contextual variables include political, economic, social, cultural, historical, and/or organizational factors	Identifying interplay of other variables with the unit of analysis
Multiple sources of evidence	Multiple sources of evidence for comprehensive depth and breadth of inquiry Methods of data collection: interviews, observations, focus groups, artifact and document review, questionnaires, and/or surveys Methods of analysis: vary and depend on data collection methods and cases; need to be systematic and rigorous Triangulation highly valued and commonly employed	Gathering a rich description of phenomenon
In-depth study	Chosen for intensive analysis of an issue Fieldwork is intrinsic to the process of the inquiry Subjectivity a consistent thread – varies in depth and engagement depending on the philosophical orientation of the research, purpose, and methods Reflexive techniques pivotal to credibility and research process	Managing large chunks of data Selection of suitable method of analysis Going back to data for validation Making analysis robust with multi-level data check

Source: Adapted from [Harrison et al. \(2017\)](#).

Case study is not only a methodology but also a certain type of design in qualitative research, an object of study as well as a product of the inquiry (Creswell, 2007). Cases can be located at the micro (persons and interpersonal relations), meso (organization and institution), or macro levels (communities, democracies, and societies) and involve one actor or multiple actors (Swanborn, 2010 as cited in Schwandt & Gates, 2018).

Components of a Case Study Design

Doing case research remains one of the most challenging of all social science endeavors. As rightly pointed out by Yin (2009), the goal of a case study is to design good case studies and to collect, present, and analyze data fairly. Hence the careful design of the case study becomes more important. Tellis (1997) emphasizes that a case study method must be able to prove that it is the only viable method to elicit data; appropriate to the research question; follows the set of procedures with proper application; the scientific conventions used in social sciences are strictly followed; a chain of evidence is systematically recorded and archived and; the case study is linked to a theoretical framework.

Types of Case Study Design

After satisfactorily investigating the need for a qualitative case study, the researcher must consider what type of case study will best answer the research question identified. The selection of a specific type of case study design is guided by the overall study purpose. The determination of research design is guided by how well it allows investigation of a particular research question. Yin (2009) categorizes case studies as explanatory, exploratory and descriptive while Stake (1995) identifies case studies as intrinsic, instrumental, and collective.

Exploratory case study design: Exploratory case study design attempts to define questions of a subsequent study or to determine the feasibility of research procedures (Hancock & Algozzine, 2016). The exploratory case study typically attempts to answer “what” question. Yin (2013) also maintained that exploratory question can be answered by any of the five research methods: (a) survey, (b) experiment, (c) archival analysis, (d) history, or (e) case study. The exploratory case study also helps in determining the protocol for the subsequent study. For example, a researcher researching the behavior of business leaders in the case of macroeconomic shocks may ask a general question such as, “Do business leaders indulge in political lobbying for their survival and growth when they face macroeconomic shocks?” and “if so, how often?.” This general question can open the floor for further examination of the phenomenon to be observed.

Explanatory case study design: In contrast to the exploratory case study, explanatory case study design seeks to establish cause-and-effect relationships. The primary purpose, in this case, is to determine how events occur and which event can influence one particular outcome of interest. Data in the case of explanatory case studies are examined at both surfaces as well as the deeper levels to explain the relationship. For example, in the case of a macroeconomic shock,

how business leaders engage in political lobbying for political gains? How business success thereby is affected by the extent of political lobbying by certain business leaders.

Descriptive case study design: Descriptive case study design attempts to present a complete description of a phenomenon within its context. The goal set by the researcher is to describe the data as they occur. [Shanahan, Jones, and McBeth \(2018\)](#) suggest that descriptive case studies may be in a narrative form. An example of a descriptive case study could be a journalistic description of all the events in political lobbying by a business leader. One of the important requirements of a descriptive case study is that the researcher must begin with a descriptive theory to support the description of a phenomenon. The depth and scope of the case under study are better explained using a theory.

Intrinsic case study: When the quest of the researcher is to learn more about a particular individual, group, event, or organization, she can engage in an intrinsic case study ([Hancock & Algozzine, 2016](#)). [Stake \(1995\)](#) maintained that when the interest of the researcher is not to learn about some other case or general problem, but in learning about that particular case, intrinsic design can be used. According to [Stake \(1995\)](#), the purpose is not to build theory, although that remains an option.

Instrumental case study: In contrast with an intrinsic case study, instrumental case study design emphasizes on understanding a theoretical question or problem. The case then becomes a vehicle to understand the issue. Unlike an intrinsic case study, an enhanced understanding of a particular issue being examined is of secondary importance and primary importance is to generate greater insight into the theoretical explanation that underpins an issue. For example, a researcher may be interested in understanding how employees acquire technical knowledge in a firm. The case may or may not be seen as typical of other cases.

Collective case study: Collective case study research seeks to address an issue in question while adding to the literature base that helps us better conceptualize a theory. Several instrumental cases can form a basis for the researcher to theorize about a larger collection of cases. [Creswell \(2007\)](#) expanded on the parameters of a collective case study design and maintained that:

[...] in a collective case study, the one issue or concern is again selected, but the inquirer selects multiple case studies to illustrate the issue. The researcher might select to study several programs from several research sites or multiple programs within a single site. Often the inquirer purposefully selects multiple cases to show different perspectives on the issue. (p. 74)

Unit of Analysis

The unit of analysis is a critical factor in the case study. The unit of analysis identifies what constitutes a “case,” that is, what is a case all about. It is the “what” or “whom” being studied ([Yin, 2009](#)). The unit of analysis is critical if we want to understand how the case study relates to a broader body of knowledge

(Dubé & Paré, 2003). The entire case study design and its potential theoretical significance are dominated by the way the unit of analysis is defined. The unit of analysis outlines the breadth of the study, which in turn sets the limitation in applying the theory. In the case of multiple case design, the unit of analysis assists with the replication as well as comparison of cases (Yin, 2009). In the case of theory testing, a clear definition of the unit of analysis ensures that the study is consistent with the boundaries of the theory being tested (Darke, Shanks, & Broadbent, 1998).

Sampling in Case Study Design

Researchers using a quantitative approach strive to arrive at a statistically generalizable sample which is representative of the population on several characteristics such as the distribution of income, gender, age, education, etc. Units in a representative sample are drawn randomly from a larger population by some form of probability or random sampling. The sample is considered random when the chance of being chosen is equal for every unit in the population. The sampling frame from which a sample is drawn can be used for simple random sampling. Similarly, other variants of random sampling such as stratified random sampling, cluster sampling, and systematic random sampling can also be used. Contrary to the quantitative approach, case study research does not focus on statistical generalization instead, it focuses on analytical generalization. There is a general agreement among case study researchers on how cases are selected. The selection of cases is generally guided by the aim of a study. Largely case study researchers follow purposive sampling with a desire to illustrate the phenomenon of an interest which is information rich and present in-depth understanding. Different strategies are proposed in the literature for purposefully selecting information-rich case studies. It is argued that one case is enough to generalize not to a population but to permit analytical generalization to theoretical generalization. This would mean that those cases should be selected which are suitable for illuminating and extending relationships and logic among constructs (Eisenhardt & Graebner, 2007). A single case can clarify obscure theoretical relationships in a given setting. Multiple reasons have been identified for using a single case:

- (a) A critical case may be used to test a well-formulated theory. It can give an account into understanding if propositions are correct or there is a possibility of arriving an alternate set of explanations.
- (b) An extreme or exemplary case, in which the phenomenon of interest is very rare, affording its explanation and documentation. For example, Galunic and Eisenhardt (1996) studied organizational adaptation in an exemplar firm that was the highest performing technology-based company in the world for several years.
- (c) A representative case, with an objective to capture commonplace situations.
- (d) A longitudinal case, in which the case is studied at different points in time to allow capturing variations in the study variable at various time periods.

In contrast to the single case study, when the researcher is mainly concentrating on the use of contrasting observations for the advancement of propositions, a multiple case study approach is found to be appropriate. Multiple case study design allows search for cross-case patterns and themes. Multiple case study also leads to comparisons that can explain if a finding is idiosyncratic in nature or is consistent across multiple cases (systemic). Multiple case study designs not necessarily focus on a number and no precise rule is present to confirm a minimum number of cases required for comparison. However, these numbers in the literature range from 4 to 15, Yin (2013) for example suggests six to ten cases. One of the theoretical sampling approaches for the selection of multiple cases recommended by Eisenhardt and Graebner (2007) states the choice of “polar type” of cases. Researcher in polar-type identification chooses sample extremes such as very high and very low performing firms in order to observe the contrasting pattern in data more easily. This sampling leads to clear pattern recognition of constructions, relationships, and logic of the focal phenomenon. The choice of number of cases in multiple case study design is also guided by the availability of resources and time and trade-off in breadth and depth to be explored. Selection of cases in a case study research design is an important element, hence requiring substantiation in the research reports and proposals. Researchers are required to report the criteria followed for screening and selection of cases (Bleijenbergh & Roggeband, 2007).

Replication in Case Study. Replication seeks to find conformity of a particular case, it aims to look at another case to assess if a research finding from the previous study can be confirmed. With replication procedures, researchers must develop a theoretical framework stating conditions under which a particular phenomenon is likely to be found and conditions when the phenomenon is not likely to be found. Yin (2013) compares the use of the replication strategy for conducting several separate experiments on related topics. Under literal replication stage, cases are selected (as far as possible) to obtain similar results, and under the theoretical replication stage, cases are selected to explore and confirm or disprove the patterns identified in the initial cases. Eisenhardt (1989) suggests that similar results from all or most of the cases can be used for the development of a preliminary theory describing a phenomenon.

Data Collection

Case study research involves data collection from multiple sources of information like observations, interviews, audiovisual material and documents, and reports to achieve deep understanding (Creswell, 2007; Darke et al., 1998; Woodside, 2010). In fact a major strength of case study data collection is the opportunity to use many different sources of evidence. An important advantage is that the multiple sources of evidence help in the triangulation process and increases the richness and quality of the findings (Eisenhardt, 1989; Yin, 2009). So, any case study finding or conclusion is likely to be more convincing and accurate if it is based on several different sources of information (Yin, 2009). Besides, interaction between participants and the researcher is required to generate data, which is an indication

of the researcher's level of connection to and being immersed in the field. We briefly discuss three methods of data collection here.

Interviews

Interviews are crucial sources of information as well as the primary data source for case study research as it is through interviews that researchers can best access case participants view and interpretations of actions and events (as cited in [Darke et al., 1998](#)). Interviews are useful to understand complex issues by examining various ways through which individuals experience, interpret, and shape their responses to particular issues ([Gerson & Horowitz, 2002](#)). It is also particularly useful when we are interested in past events. Interview guides are useful tools in case of case research. The interview guide or schedule is a list of questions a researcher intends to ask in an interview. Depending on how structured the interview will be, the guide may contain dozens of very specific questions or a few topical areas jotted down in no particular order or something in between ([Merriam & Tisdell, 2016](#)).

Focus Groups Discussions (FGDs)

Focus group discussions are organized to explore people's views and experiences on any specific set of issues ([Kitzinger, 1994](#)). FGDs are a good way to gather people from similar backgrounds or experiences to discuss a specific topic of interest. Focus group research is a way of collecting qualitative data engaging a small number of people in an informal group discussion "focused" around a particular topic or set of issues ([Wilkinson, 2004](#)). Focus groups are considered less threatening to many research participants, and this environment is helpful for participants to discuss perceptions, ideas, opinions, and thoughts ([Krueger & Casey, 2000](#) as cited in [Onwuegbuzie, Dickinson, Leech, & Zoran, 2009](#)). [Henink \(2014\)](#) explains that the most unique characteristic of FGDs is the interactive discussion through which data are generated, which leads to a different type of data not accessible through individual interviews.

Archival Data

Documents and artifacts are also an important source of data in qualitative research. A major advantage is that documents are a good source since many documents are easily accessible, free, and contain information which would have otherwise taken the researcher enormous time and effort to gather. These documents have been classified into different categories like public records, personal documents, popular culture documents, visual documents, artifacts, and physical materials and researcher-generated documents ([Merriam & Tisdell, 2016](#)). However, there are limitations of documents like incomplete materials, information not useful or understandable, authenticity, and accuracy since the documents are not prepared for research purposes ([Merriam, 2009](#)).

Qualitative Analysis in Case Study

Qualitative data analysis is not quick and easy. A vast amount of data is generated from multiple sources in case study research implying difficulty in analyzing it. Yin (2014) suggests a general analytic strategy as an approach for analysis of case studies. Three basic types of analysis of case studies are suggested (a) analysis based on theoretical propositions, (b) analysis requiring thinking about contrasting explanations, and (c) analysis based on descriptions and descriptive frameworks.

- (a) Analysis based on theoretical propositions: In this approach, theoretical propositions about causal relationships help to organize the entire case study. This approach also allows select focus on certain data and ignoring others. Pattern matching is a recommended technique when the emphasis is on the theoretical proposition. In pattern matching, the researcher compares an empirical pattern with a predicted pattern based on theoretical propositions. In this view, data analysis is akin to hypothesis testing, typical to a hypothetico-deductive approach.
- (b) Analysis requiring thinking about contrasting explanations: In this type of analysis, the focus is often on explanation building. Explanation building is often done in narrative form to present contrasting outlooks.
- (c) Analysis based on descriptions and descriptive frameworks: This form of analysis relies on time series analysis analogous to experiments conducted in quantitative research tradition. Focus in this case is to capture details in the sequence of processes, events actions, and agents.

Miles and Huberman (1991) suggested the use of matrixes, charts, and other forms of graphic representation in their basic analytic strategy. In the case of quantitative research these matrices are expected to be filled with numbers, in contrast, case study researcher is likely to fill qualitative data matrix with keywords, text fragments, or verbatim quotes coming from key informants. Charts are used to present types of respondents, critical incidents, and cases that are crossed with relevant variables, time, or events. Miles and Huberman (1984) also suggested researchers in qualitative tradition using case studies to construct network drawings, flow charts, and decision charts for visual representation. Readers are more likely to understand the inferences drawn from graphic representations when compared to only text in a case study research. It is recommended that researchers do not use analysis techniques at random instead base their choice on the nature and content of data, the quality of existing theories, the analytic skill of the researcher, and last but not the least, on time available (Mills, Durepos, & Wiebe, 2010).

Structuring a Case Study

Standard format for reporting a case study research is generally missing (Merriam, 1998). The overall objective of the case study largely defines the structure

of the written narrative which is often compositional in nature. Some case studies generate theories, descriptions of situations/events/processes, while others can be seen as more analytical in nature and displaying comparison. One important feature that requires the attention of researchers using case study research design is the audience for the case study reported. Final composition should reflect emphases, details, compositional format, and even a length suitable to the needs of potential reader (Yin, 2013). Stake (1995) recommended opening with a vignette so that readers can develop an empathetic understanding of time and place of study. Opening vignette also immerses the readers in the context. This can be followed by a presentation of the issue, the purpose, and method of the study to give an understanding of the background of the writer and issues surrounding the case. An extensive description of the case follows, allowing the readers to develop a feeling of being in the natural setting of the case. For example, an extensive description of the condition of workers working in the assembly line of an automobile plant will allow the readers to immerse themselves in the context with uncontested data. Issues are presented in the next section, so that the complexity of the case can be understood by readers, this complexity is also built by referring to other related research strands and also researchers' interpretations of them. Issues are probed further in the next step, at this point, too, the researcher brings in both confirming and disconfirming evidence. A summary section of the case study presents the assertions, understanding of the writer about the case and if the initial understanding, generalizations, and assumptions still hold true or not. Conclusions arrived are seen with the lens of earlier writings or offering a newer understanding altogether. Finally, a closing vignette is used to remind the readers' limitations and also cautioning that the report is one person's encounter with a complex case.

Similar to Stake (1995), Lincoln and Guba (1985) also offered a substantive case study report structure. They described a need to first explicate a problem, followed by a thorough and rich description of the context or setting, salient features of the site, description of multiple transactions, and past understanding. Finally, in light of confirming and non-confirming evidence, outcomes of the inquiry are presented in the form of lessons learned.

For example, a case study research attempting to understand the level of engagement and extension of self while using Voice Control and Voice Assisted Smart Devices (VCVASD) a researcher must first elucidate the level of engagement and question that she/he is interested in answering. This should be followed with the description of the growing usage of VCVASD such as Amazon Alexa, Siri, Google Assistant, etc. and engagement of multigenerational population. A researcher may also find it useful to slice the engagement levels further based on the generation of the population. How different people see these devices as an extension of self can be presented for the readers, here the presentation of data schemes and analysis becomes important. Comparisons across generations will help in developing further understanding. Past theories can also help in explaining the extension of self and identification with the devices. Depending upon the confirming and non-confirming evidence, outcomes can be presented by the researcher.

Methodological Issues in Case Research

Continuous criticism of qualitative research has been the assessment of quality. It is often being questioned on the methodological rigor in terms of validity and reliability. Yin (2018) observes that many times, a case study researcher has been sloppy, not followed systematic procedures or allowed ambiguous data to influence the direction of the findings and conclusions.

Gibbert, Ruigrok, and Wicki (2008) highlight lacking rigor in case studies could lead to two major issues. A rigor problem in the early stages of theory development would have ripple effects throughout later stages when relationships between variables are elaborated and tested and secondly less relevance of the knowledge generated.

Case studies use small data sets (single or multiple case studies). Hence a frequent criticism of case study methodology is that the approach is incapable of providing a generalizing conclusion (Tellis, 1997). However, comparisons between case study fail to recognize the inherent value of the approach. Based on the review of methodological descriptions of published case studies, Hyett, Kenny, and Dickson-Swift (2014), rightly point out that case study has been unnecessarily devalued by comparisons with statistical methods. Yin (2018) emphasizes that in case research the goal will be to expand and generalize theories (analytic generalizations) and not to extrapolate probabilities (statistical generalizations). Under analytical generalization, a previously developed theory is used as a template with which the empirical results of the case study are compared.

Another concern had been on the time taken and the amount of data collected in the approach. Case studies can potentially take too long and result in massive, unreadable documents. While data collected are considered as rich, full, holistic, and grounded in the field, there are major weaknesses in terms of collecting and analyzing the data that is highly labor-intensive activity; demanding fieldwork; and flexible or not well-formulated methods of analysis (Stojanov & Dobrilovic, 2013).

It is now widely acknowledged that for the case study research to develop as a principal qualitative methodological approach and make a valued contribution, issues related to methodological credibility must be considered (Hyett et al., 2014). Adequate descriptions of methodological foundations by researchers are required to demonstrate rigor, a lack of which may lead to research being interpreted as lacking in quality or credibility (Morse, 2011). As emphasized by Hyett et al. (2014), the description should include paradigm and theoretical perspectives that have influenced study design, else the reviewers and readers might be confused by the inconsistent or inappropriate terms used to describe case study research approach and methods, and be distracted from important study findings.

Judging the Quality of Case Study Research

Extensive work has also been done to address the issue of rigor in case study as well as qualitative research. In the context of qualitative research, many perspectives, terms procedures have been developed to establish reliability and validity

like internal validity, external validity, reliability, objectivity; credibility, transferability, dependability, conformability (Lincoln & Guba, 1985); and credibility, authenticity, integrity, explicitness, vividness, creativity, thoroughness, congruence, and sensitivity (Whittemore, Chase, & Mandle, 2001 as cited in Creswell, 2012). According to Yin (2009), the quality of research is generally assessed using the tests of construct validity, internal validity, external validity, and reliability.

Construct validity refers to identifying the correct operational measures for the concepts under study (Yin, 2009). It needs to be considered during the data collection phase and refers to the quality of the operationalization of the relevant concepts. Construct validity can be enhanced by establishing a clear chain of evidence to allow readers to reconstruct how the researcher went from the initial research questions to the final conclusions. Further using multiple sources of evidence is considered as one of the ways to ensure construct validity (Gibbert et al., 2008).

Internal validity is mostly concerned about whether the interpretations made by the researcher are correct when the event cannot be directly observed (Yin, 2009). Also called as “logical validity,” it looks at whether the researcher provides a logical reasoning that is powerful and compelling enough to defend the research conclusions (Gibbert et al., 2008). It generally refers to the data analysis phase. To ensure internal validity, Yin (2009) suggests triangulating the evidence and comparing the results with extant literature. Multiple data sources also help in ensuring data triangulation. Besides citations and quotes can be used, that can be referred back to the raw data. Through pattern matching, researchers should compare empirically observed patterns with either predicted ones or patterns established in previous studies (Eisenhardt, 1989).

External validity in case research is concerned with the extent to which the findings of one particular study are generalizable beyond the immediate case study (Yin, 2009). External validity can be achieved in multiple case studies through replication logic by analytic generalization and review of the findings by experts. Multiple case studies and cross-case analysis can help to ensure external validity. Eisenhardt (1989) argues that case studies can be a starting point for theory development and suggests that a cross-case analysis involving four to ten case studies may provide a good basis for analytical generalization.

Reliability in case research can be demonstrated by ensuring that the operations of a study, such as the data collection procedures can be repeated with the same results (Yin, 2009). The goal of reliability is to minimize the errors and biases in a study. Reliability in case study research can be increased by following two strategies, that is, using a case study protocol and developing a case study database (Yin, 2009). A case study protocol specifies how the entire case study has been conducted. A case study database should include the case study notes, the case study documents, and the narratives collected during the study, organized in such a way as to facilitate retrieval for later investigators.

Credibility in qualitative research can be ensured through number of techniques like prolonged engagement, persistent observation, triangulation, peer debriefing, and thick description (Pandey & Patnaik, 2014). Triangulation involving multiple sources of data or multiple investigators or multiple theories is considered to be a

powerful strategy for increasing the credibility of qualitative research (Merriam & Tisdell, 2016). Patton (1999) suggests four kinds of triangulation: (1) methods triangulation – checking out the consistency of findings generated by different data collection methods; (2) triangulation of sources – examining the consistency of different data sources within the same method; (3) analyst triangulation – using multiple analysts to review findings; and (4) theory/perspective triangulation – using multiple perspectives or theories to interpret the data.

Drawing largely from the work of Stake (1995) and integrating the recent work of Merriam and Creswell, Hyett et al. (2014) present a checklist for assessing the quality of case study report (Table 11.2).

Table 11.2. Framework for Assessing Quality in Qualitative Case Study Research.

Checklist for Assessing the Quality of a Case Study Report
Relevant for all qualitative research
1. Is this report easy to read?
2. Does it fit together, each sentence contributing to the whole?
3. Does this report have a conceptual structure (i.e., themes or issues)?
4. Has the writer included the contextual variables?
5. Are its issues developed in a series and scholarly way?
6. Have quotations been used effectively?
7. Has the writer made sound assertions, neither over- or under-interpreting?
8. Are headings, figures, artifacts, appendices, indexes effectively used?
9. Was it edited well, then again with a last minute polish?
10. Were sufficient raw data presented?
11. Is the nature of the intended audience apparent?
12. Does it appear that individuals were put at risk?
High relevance to qualitative case study research
13. Is the need for case adequately presented?
14. Is the case adequately defined?
15. Is there a sense of story to the presentation?
16. Is the reader provided some vicarious experience?
17. Has adequate attention been paid to various contexts?
18. Were data sources well-chosen and in sufficient number?
19. Do observations and interpretations appear to have been triangulated?
20. Is the role and point of view of the researcher nicely apparent?
21. Is the analysis presented in easy to understand format?

Table 11.2. (Continued)

Checklist for Assessing the Quality of a Case Study Report

22. Has adequate attention paid in bringing out differences/similarities with past work?
 23. Is empathy shown for all sides?
 24. Are personal intentions examined?
 25. Is the case study particular?
 26. Is the case study descriptive?
 27. Is the case study heuristic?
 28. Are researcher conclusions defensible?
 29. Was study design appropriate to methodology?
-

Source: Adapted from Hyett et al. (2014).

Conclusion

Case study research has resulted in a pragmatic, flexible research approach, capable of providing a comprehensive in-depth understanding of a diverse range of issues across a number of disciplines (Harrison et al., 2017). It is gaining popularity as an approach in qualitative research that provides methodological flexibility through the incorporation of different paradigmatic positions, study designs, and methods. One advantage of case study research is that it can be utilized for both theory testing and theory building (Saunders, Lewis, & Thornhill, 2009). However, a frequent criticism of the approach has been that findings cannot be generalized. But as pointed by (Gerring, 2004), a case study may be understood as the intensive study of a single case where the purpose of that study is – at least in part – to shed light on a larger class of cases.

There are also continuous debates on rigor in case study research. As aptly pointed out by Rowley (2002), the most challenging aspect of the application of case study research is to lift the investigation from a descriptive account of “what happens” to a piece of research that can lay claim to being worthwhile. But as discussed earlier numerous methods and techniques can be adopted to establish validity and reliability in case research. A combination of these techniques can be used to serve the purpose of establishing rigor and acceptance in the approach. Researchers who use case study should carefully work on the research design and adequate description for methodological justification.

Key Points

- The purpose and rationale for case study is dependent upon the significance of the question and phenomenon of interest. Research questions also play a defining role in choice of method.
- Case study research design is based on the unit of analysis and overall study purpose.

- Exploratory case study typically attempts to answer “what” question.
- Explanatory case study design seeks to establish case-and-effect relationships.
- Descriptive case study design attempt to present a complete description of a phenomenon within its context.
- Case study is characterized by multiple sources of evidence for comprehensive depth and breadth of inquiry.
- Case study research focuses on analytical generalization. Selection of cases is generally guided by aim of a study.
- Replication seeks to find conformity of a particular case.
 - In literal replication, cases are selected (as far as possible) to obtain similar results.
 - Under theoretical replication, cases are selected to explore and confirm or disprove the patterns identified in the initial cases.
- Methods of data collection such as personal interviews, direct observation, focus groups, and archival records are common in case studies.
- Occasionally quantitative data is also collected through questionnaires depending on the need of the study.
- General analytic strategy is a commonly accepted approach for analysis of case studies.
 - Matrixes, charts, and other forms of graphic representation is considered to be a basic analytic strategy.
 - Also, network diagrams can also be used to explain the relationships.
 - Comparing and contrasting matrixes can be used for ease of readers to understand the complexities easily.
- Reporting a case study requires presentation of a problem, rich description of context, setting, and phenomenon. In light of past theories and studies, judgments can be made about conformity or non-conformity leading to the presentation of findings.
- Measures to establish the validity and reliability of qualitative data are important to determine the stability and quality of the data obtained.

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