

Revisiting the Case Study Method in Social Research: A Reflective and Argumentative Review for Novice Researchers

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Abstract

This article provides a qualitative review of case study method in social research. The core purpose of this paper is to guide novice researchers in doing case study to explore complex social phenomenon. It begins by clarifying foundational concept of case study and its purpose. It highlights the historical evolution of case study research beginning from Frederic Le Play during 18th century to three key methodologists, Robert K. Yin, Robert E. Stake, and Sharan B. Merriam. It further presents definition, purpose, and philosophical stance of case study from these key philosophers' perspectives. Based on general qualitative research design it provides detailed exploration of philosophical underpinnings including ontology, epistemology and axiology to guides researcher on making better choice of design and interpretation of case studies. Key features that distinguish case study, like intensive focus on bounded system, holistic exploration, rich description, multiple sources of evidence, and flexibility in design types as defined by Yin and Stake are highlighted. Further, it provides the overview of data collection tools, analysis procedures, and strategical considerations to be followed. Finally, it examines this methodology critically to mention inherent challenges and limitation of case study. This paper integrates theoretical insight with methodological guidance that can serve as the foundational source for early-career researchers. It can be helpful to those researchers who wants to adopt or better understand case study method in social inquiry.

Keywords: *Qualitative research, case study, social research, novice researchers, reflective review*

Introduction

If you are trying to understand complex social phenomena, then a case study can be the best choice for you. Doing a case study is like taking a very close look at some specific situation, group, event, or person in its natural setting. This is an argumentative and reflective review on the case study method, where you will get an opportunity to explore its methodological foundation, philosophical orientation, and practical application. You will get to know how you can collect data while doing your case study research, along with how you can produce knowledge from your data using a case study-specific data analysis method. This paper will not only limit your understanding to its methodological details, rather you will also explore several challenges you might face while doing case study research. Also, it will provide some insight into the criticisms of the case study method. Now, let's begin with the meaning of the case study in the research world.

Methodology

This paper is based on general qualitative research design with aim to explore and reflect upon case study method. The focus of this study is to understand case study method in depth, diversity, and complexity drawing from ideas of several scholars. Descriptive method has been used to present key aspects of case study research including its origins, purpose, characteristics, variations in data collection and analysis and some interpretation. The data for this paper were gathered entirely from secondary sources. It includes published books; academic journal articles and credible online resources related to case study methodology. This paper provides multiple perspectives together from classical definitions to recent developments. For data analysis and interpretation, verbal and thematic analysis approach has been followed. It follows deeply interpretive and reflective process where we aimed to capture multiple aspects of case study methodology.

Understanding the Case Study in Research

Case study methodology is a cornerstone of qualitative research (Starman, 2013). It offers us an overwhelming approach to understand complex phenomena within our real-life context (Crowe et al., 2011). A case study enables us to perform in-depth analysis, understand phenomena within their real-world context, and derive rich interpretations from complex situations. It is a philosophically neutral methodology that can be used for both qualitative and quantitative research projects (Miller et al., 2023). Rather than being a basic or inferior one, it offers a strong and valuable way to explore complex issues, develop theories, and evaluate programs related to social sciences, education, and health services. At its core, a case study is a method that focuses on closely studying specific cases in detail. It is an in-depth investigation of a bounded system (case) or multiple bounded systems (cases) over time through detailed data collection from multiple sources.

What is the case?

A case represents a bounded system, an object of study (Johansson, 2007), or a unit of analysis (Patnaik & Pandey, 2019). Case binding in a case study defines the boundaries of a case, allowing researchers to stay focused and avoid too much information at once. Boundaries of a case can be defined based on time, place, activity, definition, and context, as explained by separate philosophers. We have extracted the way to define boundaries of a case in a different way from the paper by Njie and Asimiran (2014), and added one reflective example for each scenario for your better understanding (**Table 1**).

Table1

Defining Boundaries of the Case in a Case Study

Defining Case	Examples
By Time and Place (Creswell, 2003)	Studying the effectiveness of the smart classrooms in the ABC school from 2019-2023.
By Time and Activity (Stake, 1995)	Observing how students engage in reflective discussion forums on Moodle during one academic year.
By Definition and Context (Miles & Huberman, 1994)	A case is defined as “a synchronous online course conducted via Zoom” in the context of the university’s ICT capacity-building project post-COVID-19.

Why is it necessary to bind our case?

While doing case study research, we must define the boundaries of our study. The boundary makes our study focused, doable, credible, and analytically clear. It helps in the prevention of scope creep means the researcher might try to study everything when there is no boundary. It helps us as researchers to ensure who, what, when, and where we are studying. Also, it helps our readers to understand the limits of our findings.

Intent of the Case Study Method

The fundamental intent of the case study methodology lies in the development of an in-depth, multifaceted, and holistic understanding of complex phenomena within a real-world context (Crowe et al., 2011; Njie & Asimiran, 2014). We can use a case study approach if we want to understand “what”, “how,” or “why” something happens in a real-life situation, particularly when it is complicated and hard to separate some phenomena from their surroundings. A crime investigation scenario is a prime example of a case study. It aims to explore what exactly happened, how the crime occurred, and why it was committed. So, the purpose and rationale of the case study method can be identified through different situations where we can use this approach.

It is especially useful when researchers seek to answer descriptive questions like what is happening or has happened. Or, more importantly, it can be used to answer explanatory questions like how or why something happened. A case study can also serve as a powerful tool for theory building, and rarely for theory testing as well (Coombs, 2022). We can use case studies to explore and develop new ideas about how things work, or to check if an existing idea is true in a real-life situation.

Also, it is very useful when the boundaries between context and phenomenon are not evident (Njie & Asimiran, 2014). It refers to the scenario where the thing we are studying (phenomenon) is deeply connected to its real-life setting or circumstances (the context). In such a situation, we can't understand that phenomenon properly without understanding its surrounding context. For example, if we want to study how a new teaching method affects student engagement, then our case could be a specific classroom (a bounded system). Here, the classroom can be the context, and how the teaching method affects engagement can be the phenomenon.

Overall, this method helps us to provide a holistic understanding of our research setting. It provides a rich and thick description of the phenomenon under study through multiple

sources. However, the actual intent of a case study can vary a little bit based on the introduction and its types, categorized by several key proponents.

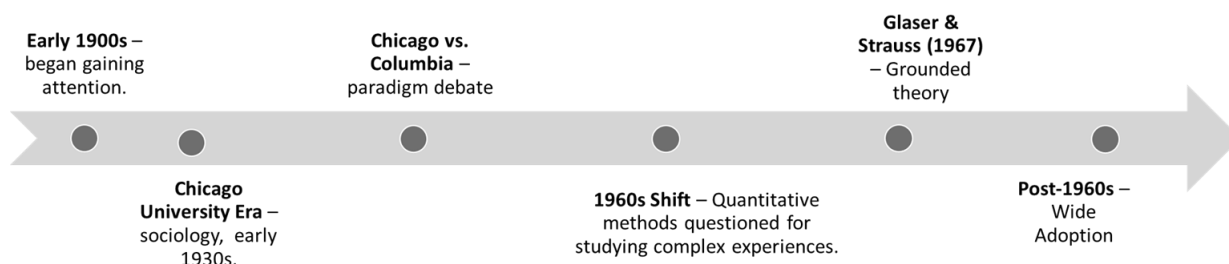
Tracing the Historical Evolution of Case Study

The root of the case study can be traced back to the 18th century when Frederic Le Play first introduced the case study approach to social science in 1829 (Freemantle, 2016). He has explored European working men, including 57 family case studies, in his book *Les Ouvriers européens* (Nair et al., 2023). It has started gaining popularity since the early 1900s. That time has reflected the emergence of a “first generation” of case studies, predominantly in anthropology and social sciences (Johansson, 2007). Chicago University has widely used qualitative case study research in sociology until quantitative methods became more prominent in the early 1930s. The paradigm debate between Chicago and Columbia universities has contributed to qualitative case study research losing some acceptance as a methodology. However, during the 1960s, researchers became concerned that quantitative methods could not be suitable for exploring the complex issues of personal experience.

Then, the “second generation” of case study methodology began to take shape in the late 1960s by bridging the gap between positivism and hermeneutics as philosophical foundations (Johansson, 2007). Hermeneutics views research as an interpretive journey into meaning and human experience. However, Positivism treats it more like a scientific quest for objective facts and measurable truths. This key evolution was guided by the emergence of the Grounded Theory of Glaser and Strauss in 1967. This work has used a case study methodology and helped the case study regain its popularity. Since the 1960s, case studies have been widely used in education for evaluating programs.

Figure:1

Historical Evolution of a Case Study



Source: (Miller et al., 2023)

Today, Robert K. Yin, Robert E. Stake, and Sharan B. Merriam are widely recognized as prominent methodologists for contemporary case study research (Patnaik & Pandey, 2019). **Table 2** lists the definitions of case study from different contributors along with their purpose, philosophical stance, and their generalizability.

Table2

Key Contributors of a Case Study

Contributors	Robert K. Yin	Robert E. Stake	Sharan B. Merriam
Definition	A case study is an empirical inquiry that investigates a phenomenon in depth and	Defines case study primarily by the researcher's intrinsic interest in individual cases.	A case study is an intensive, holistic description and analysis of a bounded phenomenon.

	within its real-life context.		
Purpose	For addressing “how” or “why” questions when the boundaries between phenomenon and context are not evident.	Helps understand unique cases, gain insight into the issue and generalize that, and understand multiple cases jointly.	Focuses on a specific situation, provides rich descriptions, and illuminates the reader's understanding.
Philosophical Stance	Positivist philosophy that emphasizes objectivity, validity, and generalizability.	It aligns with constructivist epistemology that values multiple perspectives of reality.	Also adopts a constructivist orientation, leading to multiple interpretations of reality.
Generalization	Promotes analytical generalization than statistical generalization.	Not chosen for statistical but naturalistic generalizations.	It also focuses on naturalistic generalizations.

Source: (Njie & Asimiran, 2014; Miller et al., 2023; Yazan, 2015)

Philosophical Stance of a Case Study Research

Understanding the philosophical orientation, like ontology, epistemology, and axiology, is important for any research. It helps shape the chosen method and the interpretation of the findings. It can guide you towards the selection of topic, data collection and data analysis strategies.

Ontological Orientation

Ontology talks about the nature of reality (Aliyu et al., 2015). It answers questions like, what kind of world do we believe exists? It informs what a researcher believes can be known or is real in the world. The ontological foundation of case study research varies significantly depending on the researcher’s philosophical orientation. Ontological beliefs, guided by Robert Yin’s approach, can be referred to as realist ontology. It assumes that phenomena exist independently of our knowledge of them. They can be studied objectively through empirical inquiry. This is mostly an appropriate view for a researcher who wants to conduct their study following a post-positivist approach (Harrison et al., 2017).

However, most of the qualitative research ontological assumptions are guided by the idea of Robert Stake and Sharan Merriam. They view reality as socially constructed and contextually dependent. This ontological assumption often posits that reality is subjective and multiple, as constructed by individuals in various social and cultural contexts (Chowdhury & Shil, 2021). This idea contrasts with the assumptions of quantitative research. That focuses on the objective and singular reality. However, the constructive reality values the meanings and interpretations of participants. It emphasizes the subjective nature of experience. Also, it prioritizes the importance of multiple perspectives in social research.

Epistemological Orientation

Epistemology deals with our understanding of knowledge itself (Aliyu et al., 2015). It focuses on the nature of knowledge along with how it is acquired and how it is validated. The epistemological stance of the researcher has a direct impact on their methodological choices

and how they gather and interpret data. The epistemological orientation of the case study can lie between the positivist and interpretivist paradigms.

Yin's epistemological position demonstrates the mix of positivist and post-positivist philosophy. It emphasizes objectivity, validity, and generalizability (Yazan, 2015). Positivist researchers seek to identify patterns and relationships from data. The post-positivist philosophy accepts that knowledge is uncertain. However, it emphasizes the methodological rigor and triangulation to ensure the validity of knowledge.

However, Robert Stake and Merriam support epistemology for qualitative case study research. They argue for an interpretivist and constructivist orientation as a guiding philosophy for case study (Miller et al., 2023; Yazan, 2015). The constructivist epistemology believes that knowledge is primarily constructed rather than discovered. Researchers are the interpreters who gather data and present interpretations of constructed realities through research findings. It values naturalistic generalization of findings. This is to ensure the transferability of research over statistical generalization. Then, interpretivist researchers focus on understanding subjective influence and reflective practices. They believe that knowledge is an insight from participants' perspectives. They present it through rich and descriptive details in research reports. This thick description also supports the naturalistic generalization of research findings.

Axiological Orientation

The axiological consideration focuses on the role of value and ethics in research. It determines how researchers integrate value into their study. It places strong emphasis on the researcher's reflexivity to acknowledge and reduce personal biases. They should make sure that the study is fair. Yin's (2003) axiological assumptions emphasize the importance of being honest and truthful in research. Positivism and post-positivism follow methodological rigor to minimize bias and standard tools to collect objective data. However, the interpretivist and constructivist approaches acknowledge the value of the researcher in the case study (Boblin et al., 2013). It believes that the background, experience, and perspective of the researcher can shape their understanding of the case in the research.

The integration of ethics in case study research refers to maintaining confidentiality and respecting participants' rights (Crowe et al., 2011). It is about being careful while reporting sensitive information. Researchers must consider their responsibility to participants and communities while maintaining their scholarly integrity. In simple words, axiology of case study research guides researchers to make value-laden decisions. They should make decisions about what is important to investigate and how to conduct it ethically. They must also focus on how to present the research findings responsibly.

In short, the philosophical underpinnings of ontology, epistemology, and axiology are not only a theoretical consideration. But they are deeply integrated into the design and execution of case study research. It helps in making every decision from question formulation to data interpretation and reporting.

Major Features of the Case Study Method

The case study method possesses several distinctive features. All of which set it apart from other research approaches. The combination of these characteristics enables the unique contribution of a case study to understand complex phenomena.

Intensive focus on Bounded System

A core feature of a case study is that it investigates a bounded entity or bounded system, which is also called a case or the main unit of analysis (Njie & Asimiran, 2014). As we have

introduced in the beginning, boundaries of a case can be based on time, place, activity, or definition. Time-bound can refer to two scenarios, one is the time when we study it, like when we will start or stop it, and another can be the time when the thing we are studying happened. Further, a place, activity, or definition helps to clarify the context of study for its well-defined scope. Binding the case is necessary in any case study research to put parameters on our study and avoid being too broad. Cases for our study can be individuals, groups, organizations, events, programs, or communities, but we must define clear boundaries by mentioning what will be included and excluded from our investigation.

Holistic Exploration of Real-Life Context

A case study allows for in-depth, multi-faceted exploration of complex issues (Crowe et al., 2011). It investigates contemporary phenomena within their real-life context or naturalistic setting. The case study method aims for a holistic understanding from a system and context perspective. It considers the interplay between phenomena and the environment (Njie & Asimiran, 2014). From a system perspective, case studies examine the case as a whole, looking at the interaction and interconnectedness within the system. The context in which our case exists is vital to understanding it. So, it also focuses on contextual understanding.

Rich Description

The hallmark of the case study research is its richly descriptive nature (Patnaik & Pandey, 2019). Case studies are not superficial research studies, but they delve deeper into the subject matter to provide a detailed understanding and a vivid picture. A vivid picture refers to the presentation of data in a way that the reader can visualize people, setting, events, and interactions being studied. It's like painting a clear picture with words so the readers feel they were there or can understand it like a tangible story. Rich description in a case study helps readers understand the complexity of many variables that are inherent in the phenomenon being studied (Hancock & Algozzine, 2006).

Multiple Sources of Evidence (Triangulation)

A case study method utilizes multiple data sources and data collection methods. This multi-faceted approach is known as triangulation of data, which helps to confirm the findings (Baxter & Jack, 2008; Njie & Asimiran, 2014). It is about validating findings by checking them from different angles. During a case study, researchers must employ various techniques, including interviews, observations, document analysis, archival records, and physical artifacts, to develop a complete understanding of the case (Alpi & Evans, 2019; Salmons, 2021). It enhances the credibility of research findings.

Flexibility in Design Types

The case study research method offers various design types to suit different research purposes. Yin (2003) and Stake (1995) divide case studies into different forms based on research purpose, design structure, and research interest (Baxter & Jack, 2008).

Table3

Types of Case Study

Types	Subtypes	Description
By Research	Exploratory	Used to explore new or less understood situations to find out what is happening or generate new ideas.

Purpose (Yin, 2003)	Descriptive	Aims to describe a specific situation, event, or phenomenon in detail as it exists in its real context.
	Explanatory	Used to explain the reasons behind why something is happening by looking at the connection between different factors.
By Design Structure (Yin, 2003)	Single Case	Focuses on one specific, unique, extreme, or critical case.
	Multiple Case	Involves studying several cases and allows for comparison between cases or replication of findings across different settings.
	Embedded	A single or multiple case study, which allows the analysis of subunits of larger cases.
By Research Interest (Stake, 1995)	Intrinsic	Allows researchers to choose a topic that is interesting and unique to them. It is not to generate theory or generalization.
	Instrumental	Allows researchers to gain an understanding of a larger issue or question, where the case explains something broader. It also helps to refine theory.
	Collective	It is like a multiple case study defined by Yin (2003). It looks at multiple cases together to investigate a general phenomenon or condition across those cases.

All of these features collectively enable a case study to provide a comprehensive understanding of complex phenomena in their natural settings.

Particularistic and Heuristics

Case studies are particularistic as they focus on specific instances rather than seeking broad statistical generalizations (Harrison et al., 2017). An example can be a case study that explores how one school integrated STEAM into its curriculum. Because of the particularistic approach, the case study research is useful to explore unique or rare phenomena. Then, the term “heuristic nature” describes an open-ended, exploratory approach. Instead of theory building, it emphasizes learning, understanding, and gaining insight. It is beyond proving a specific hypothesis like in quantitative. Therefore, case study research is useful to explore unknown or poorly understood situations.

Data Collection Tools and Strategies

A case study follows multiple data collection tools and strategies to capture a holistic understanding of the phenomenon. Use of multiple sources of evidence to collect data enhances the trustworthiness of findings through triangulation. However, the research question, case features, and philosophical assumptions guide the selection of a particular approach. In a case study, interviews and observations are the most common data collection tools. But it can make use of other sources as well, like documents, archival records, physical artifacts, etc.

Interviews

Interviews are the most common source of data in a case study, which allows researchers to gather personalized and in-depth information about participants' experiences of an event (Crowe et al., 2011; Hancock & Algozzine, 2006; Patnaik & Pandey, 2019). It can range from informal to semi-structured interviews guided by a predefined purpose and research

question. First, researchers must prepare an interview guideline based on the purpose of the study. Then, they must obtain informed consent and ensure the confidentiality of participants. Researchers must focus on collecting knowledge, reasons, or opinions related to the case during the interview. They should encourage their participants to share their understanding of the case in depth and detail. With consent, they should also record an interview for data analysis later. And, they cannot violate ethical protection while conducting interviews.

Observations

Observation refers to the method where we can directly visualize real-life context and record it. Observations provide researchers with firsthand data about interactions, behaviors, and environmental factors within a case setting (Alpi & Evans, 2019). It collects more objective information about the research setting, unlike an interview, which collects perceptions of participants. Data can be collected through formal protocols or informal field notes during observation. Participant observation requires researchers to immerse themselves in the environment where their case exists (Hancock & Algozzine, 2006). It helps them gather insider perspectives on the phenomenon under study. It helps researchers to understand the case from the viewpoint of participants, as it allows them to observe actual behavior and interaction in natural settings. However, researchers require skills and persistence for meaningful observation. They must clarify their goals, explain the study purpose to participants, gain their trust, and be able to immerse themselves in the field.

Document Analysis

Analysis of the document involves a systematic review of those written materials that are relevant to the case. Documents can take many forms, including reports, correspondence, meeting minutes, policy documents, and media coverage (Alpi & Evans, 2019; Patnaik & Pandey, 2019). These documents are analyzed using a qualitative thematic analysis approach. The researchers must identify patterns and themes that are useful for the study from the documents (Miller et al., 2023). Researchers can understand the historical context and other information that exists related to the case. Findings from document analysis can complement the data collected through interviews and observations.

Archival Records

Archival records are an important source of data for case study research (Yazan, 2015). Archival records provide historical data related to our study. It can provide longitudinal understanding of the case. Or, it can complement other data sources through a different viewpoint on the same phenomenon. However, researchers must assess the authenticity of any documents and archival records before extracting something from them. They must consider who created that, why, when, and whether they can have any potential biases for the current study or not (Nair et al., 2023).

Physical Artifacts

Physical artifacts represent tangible evidence within the case. It includes tools, equipment, notebooks, computer output, artworks, and other physical evidence (Tellis, 1997). It provides insight into the case environment and culture. Although it is used very rarely, it can offer unique perspectives on the phenomenon under investigation.

Things to Consider During Data Collection

Along with using multiple data sources, researchers must consider different strategies during data collection. They must follow purposeful sampling, data saturation, access, ethics, and reflexive data collection. Purposive sampling helps in the selection of useful data sources

and participants. It helps to provide relevant information about the case and to address the research questions of the study. Data saturation defines the sufficiency of data. In case of qualitative research, the number of interviews and observations, or document analysis, can't be fixed in advance. The researcher must continue collecting data until the themes and ideas start repeating. It ensures the sufficiency of data to address the issue selected.

While working in sensitive settings, researchers must consider access and ethics. These components have a direct influence on how researchers collect data. Researchers must follow ethical guidelines and protect the confidentiality of their participants. Further, while collecting data ongoing reflection of the researcher can have a significant influence on the generation of data. The reflexivity of researchers helps them to understand their role and how it might affect the response from participants. It helps maintain bias in data collection.

There are three key principles of data collection in a case study, as suggested by Yin (1994):

1. Using multiple data sources
2. Creating a database for a case study
3. Maintaining the flow of evidence

Use of multiple sources helps in the triangulation of data. It increases the trustworthiness of research findings. The data collected from sources during case study research should be organized and documented in an allocated database. All types of sources utilized for data collection, data collected through interviews and observations, must be stored in a specific folder. It should be recorded in a way that the evidence can be tracked step by step in a sequential order. In one way, it will be useful during the data analysis phase, and in another way, it helps all co-researchers to access evidence without ambiguity.

Data Analysis Strategies

Data analysis in a case study is an iterative and complex process that occurs concurrently with the data collection process (Baškarada, 2014). In quantitative methods, we can make use of statistical tools, automated algorithms, and routine procedures for data analysis. However, it is a different scenario for case study analysis. It demands researchers to go through the data multiple times, identify patterns, define codes, and logically piece together coded evidence into broader themes for meaning-making. Data analysis in a case study involves reviewing, organizing, summarizing, and restructuring the evidence to address the research questions (Yin, 1994). In the case study, there is no fixed, rigorous process of data analysis, as different scholars have identified data analysis procedures in different ways. This paper will provide in-depth insight into the idea presented by Morse (1994) as illustrated by Houghton et al. (2015).

Four-Stage Analysis Framework

Morse (1994) provides a four-stage comprehensive structure for case study data analysis – comprehending, synthesizing, theorizing, and recontextualizing (Houghton et al., 2015). *Comprehending* begins during data collection to gather enough data for a full, detailed, and vivid description. It is about organizing and becoming familiar with data. As researchers collect data through interviews and observations, they should start making sense of it. Then they can start looking for broad ideas and give labels to the chunks of information, which are called codes. This phase is also identified as “Broad Coding” by Miles and Huberman (1994). Then researchers can start making an interpretation of what is going on, who said that, and what it means. While doing coding, they must link that to the research goal, so that it can help to identify patterns and write thick descriptions later.

Once the data is broadly coded, the next step is *synthesizing*. It is about going deeper to find connections and patterns across different parts of the data. The researchers can think of it like a puzzle. As they have already identified the code from the initial phase, now they must see which pieces of code fit together to make a bigger, clearer picture. It can be achieved by a process called pattern coding (Miles & Huberman, 1994). It is the process of creating new codes for ideas that appear again and again in the data. Writing a memo is another way of synthesizing (Houghton et al., 2015). Memos are like mini summaries or reflections that researchers write to capture their thoughts and interpretation when they analyze the data. Later, it helps connect the codes and ideas to draw a bigger conclusion. This phase takes more time than others and requires careful thinking. But it is the phase where the real insight of the case starts to take shape. Overall, this phase is about the identification of patterns and themes.

After identifying common patterns in data, the third step is *theorizing*. It is about the development of explanations and theoretical insights. It is not about developing a theory but trying to understand how things are related. In this step researcher looks at how different themes relate to one another. And, how these connections help explain the bigger issue or question. Researcher reviews memos, sorts them, and tests them against actual data to make sure that they truly reflect what people said. It means theorizing is about trying to bring everything together, like events, actions, and interactions, so that we can understand the whole picture of the case clearly (Miles & Huberman, 1994). It is a very thoughtful process in data analysis.

Finally, the last phase is *recontextualizing*. It is about relating findings to broader contexts and implications. The researcher thinks about how the findings can be related to other settings, people, and situations (Houghton et al., 2015). Researchers compare their findings to past research as well. The major aim of this stage is to make findings useful and transferable (Morse, 1994). It adds depth, relevance, and impact to the research.

Although these steps of data analysis have been explained in different ways but it is related to contemporary analytical approaches. The approach of Morse (1994) indirectly reflects how the popular qualitative data analysis method, like thematic analysis, follows. Thematic analysis involves identifying, analyzing, and reporting patterns or themes within case study data. Nowadays, computer-assisted analysis can also be done through software packages like NVivo, ATLAS.ti, etc. (Houghton et al., 2015). These tools facilitate the data organization, coding, retrieval, and analysis, and help maintain transparency in the analysis process. Researchers can also employ charts, matrices, and graphical displays for visual data analysis (Atkinson, 2002). It helps researchers to organize information systematically. And they can identify connections that might be complex to understand through text analysis alone. During data analysis also researchers must consider several strategies to enhance the trustworthiness of findings and to minimize potential biases. Some of the strategies can be triangulation, member checking, and peer debriefing.

Challenges and Limitations

From all the features and capabilities, we have realized the significant strengths and versatility of case study research. Despite that, researchers following a case study might face several challenges and limitations. They might face concerns regarding limited generalizability, lack of methodological rigor, and bias-related concerns. But they must try to address those issues to ensure the trustworthiness of their findings.

Limited Statistical Generalizability

A most popular and significant criticism of case study is that it is impossible to generalize findings from an individual case to a larger population (Patnaik & Pandey, 2019; Chowdhury & Shil, 2021). Findings from single or a small number of cases may not apply to

broader populations or different contexts. Statistical generalization is not possible, as in quantitative studies. However, analytical generalization is possible in a case study (Starman, 2013). Analytical generalization uses findings from a case study to help build or test theories about how things work in similar theoretical situations, but not to make claims about everyone.

Lack of Methodological Rigor

Case study research is also criticized for a perceived lack of rigor due to a lack of systematic procedure and standardized approaches (Miller et al., 2023). This criticism stems from an inappropriate comparison with quantitative, statistical methods (Patnaik & Pandey, 2019). Quantitative studies can be considered methodologically rigorous due to their careful consideration of sample selection to see if the findings apply to the group. However, a qualitative study maintains rigor differently by exploring a situation in depth and detail. Researchers follow a clear and organized plan for collecting and analyzing data. It helps them maintain the sequence of evidence, so that they can clarify how they reached their findings.

Subjectivity and Researcher Bias Concern

Researchers get deeply immersed in the case environments while doing a case study. There is regular deep interaction between researchers and cases. It might create an opportunity for researchers to present their personal opinions and preferences during data collection, analysis, and interpretation. So, there is a concern that researchers' own beliefs and assumptions might shape the results of the study (Priya, 2020). They can look for evidence that supports what they already believe or expect. But doing this can weaken the trustworthiness of research findings. Triangulation and researchers' reflexivity are mandatory to address this issue. Triangulation uses multiple data sources and data collection methods to enhance credibility. And reflexivity alerts researchers to stay away from their biases. Researchers must acknowledge their biases and ensure transparency of case study research.

Conclusion

A case study is a powerful and flexible research approach. It provides valuable insight into complex phenomena within their natural context. From its origin with Frédéric Le Play to its evolution into a sophisticated form, it has become more adaptable for multiparadigmatic inquiry. Key methodologists including Yin, Stake, and Merriam provide diverse viewpoints and flexibility in case study research methodology to explore social phenomenon. The major intent of a case study is to explore "how" and "why" questions within real-life bounded systems. The philosophical underpinnings, like ontology, epistemology, and axiology, shape how researchers plan and carry out case studies. It incorporates several key features like multiple data sources, a holistic approach, in-depth investigation of context, rich description, particularistic and heuristic, and flexibility in its design types etc. It has several challenges, like limited generalizability, complexity of data management, need for addressing methodological rigor, and researcher bias. But these limitations can be reduced through an established systematic procedure. As research is becoming more interdisciplinary and context-focused nowadays, the case study can be very useful in this evolution. It helps bring together different types of data, explore complex connections, and create theories that others can learn from.

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