



Navigating the Complexities of Qualitative Research in Built Environmental Studies: Methodologies, Philosophies, and Credibility

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ABSTRACT

Qualitative research is renowned for its ability to investigate intricate scenarios and produce in-depth insights, and it is especially well-suited when human subjects are involved. Consequently, it has experienced a surge in popularity within the field of built environmental research. Researchers may encounter inherent complexities when employing qualitative research techniques. In response to these challenges, this working paper seeks to comprehensively examine the matter by delving into relevant issues, including the distinctive characteristics of research, research methodologies encompassing research philosophies, the rationale behind research decisions, and data treatment at the fundamental level. The final segment of this discourse revisits the critical issue of ensuring the credibility of research findings. The objective of this working paper's discussion is to serve as a source of inspiration for students and researchers considering the adoption of qualitative methods in their research endeavors or who are currently utilizing them. It is intended to equip them with a robust understanding of these pertinent aspects, enabling them to leverage the insights presented here for the successful execution of their research projects.

INTRODUCTION

In recent years, qualitative research has experienced a remarkable upsurge in popularity within the built environment, extending its influence even to the study. In the social sciences, qualitative research naturally becomes the preferred approach when delving into topics involving human subjects. Qualitative methods are highly regarded for their capacity to navigate complex scenarios and extract profound insights while acknowledging the researcher's role in shaping them (Moser, 2017). Encouraged by the success stories of diverse qualitative research applications, numerous students and researchers in the built environment have embraced qualitative methods, swiftly embracing the identity of qualitative researchers. Nevertheless, conducting qualitative research often proves more challenging than initially envisioned. Denzin and Lincoln (2008) aptly warned that "qualitative research" resides within a complex web of interconnected terms, concepts, and assumptions. Miles (1979) aptly likened qualitative data and research to an "attractive nuisance." In legal terms, an attractive nuisance is something that, if left accessible, may lure individuals, especially children, into potentially risky situations. This analogy is not intended to diminish the efforts of novice researchers or students. However, it serves as a friendly reminder of the potential difficulties that less-experienced researchers may encounter in their research pursuits. With this ongoing discourse in mind, this working paper aspires to explore these issues from the outset of research. It addresses fundamental questions, such as the essence of qualitative research, its historical underpinnings, the prerequisites for effectively conducting it, and the implications of choosing qualitative research as a methodology. The paper commences by delving into the nature of research. Then, it scrutinizes the research methodology, encompassing research philosophies, the rationale behind research decisions, and considerations at the data level. The concluding section of this discussion revisits the vital aspect of ensuring the credibility of research findings.

RESEARCH METHODOLOGY

Establishing clear definitions for the terminologies used in this paper is essential. Research methodology encompasses the fundamental principles and logical procedures in pursuing scientific investigations (Fellows & Liu, 2021). Thus, research methodology is the overarching strategic framework to achieve the research's objectives and goals. In contrast, research methods encompass the practical tools and techniques employed within a research methodology to realize these objectives. Three primary dimensions warrant careful consideration when delving into research methodology: research philosophy, the research's rationale, and data. The researcher's philosophical standpoint significantly shapes the justification for the study, and both aspects, in turn, influence the data required for the research and its subsequent analysis.

Research Philosophy

Within the domain of research methodology, two dominant branches of philosophy merit discussion: ontology and epistemology. Ontology logically precedes epistemology, and epistemology, in turn, precedes methodology

(Vitale, 2023). While many researchers primarily address ontology and epistemology within the specific context of their research, these philosophical aspects extend to a broader perspective. They are concerned with how the researcher perceives reality in their life, a view that inevitably influences their research methodology, as opposed to how reality is perceived within a single research project. Consequently, adopting a more limited approach risks inconsistency and even hypocrisy, as researchers might alter their beliefs about reality from one research project to another. This does not suggest that researchers are prohibited from evolving their philosophical stances as they further study and gain deeper insights into research philosophy. However, it is essential to recognize that changing ontological and epistemological positions should not be undertaken lightly, as they signify shifts in how researchers comprehend the nature of reality and the methods they employ to make sense of their assumed reality (Effron et al., 2018). Therefore, the primary objective of this working paper is to encourage researchers to remain true to their personal beliefs. Researchers are encouraged to conduct their research in alignment with their convictions regarding the nature of reality and how researchers should interpret their assumed reality.

Ontology delves into fundamental assertions and presuppositions regarding the nature of reality. It engages with inquiries concerning the existence, appearance, constituent elements, and interplay. A researcher's ontological stance mirrors their response to the query about the essence of the reality under investigation. One of the prevailing instances of ontological positions lies in the division between objectivism and constructivism (Nefdt, 2019). On the other hand, objectivism represents an ontological standpoint positing that phenomena and their meanings are autonomous irrespective of the individuals involved.

Conversely, constructivism offers an alternative ontological viewpoint, contending that phenomena and their implications undergo continuous transformation shaped by the individuals engaged, thus experiencing perpetual revision (Buriro et al., 2021). In this light, an objectivist upholds the belief in a singular objective reality uniformly experienced by all. In contrast, a constructivist asserts that truth is personally 'constructed' and perceived diversely by everyone.

Epistemology, conversely, addresses contentions regarding what can be apprehended by the knower or the seeker of knowledge (Guba & Lincoln, 1994). It delves into the domain of knowledge theory, particularly its techniques, validation, and the various avenues for acquiring knowledge within the presumed reality. The most prevalent instance of epistemological positions revolves around the contrast between positivism and interpretivism.

Positivism embodies an epistemological position advocating for using methods akin to those in the natural sciences to scrutinize reality. It presupposes that an absolute "truth" exists and can be ascertained by the researcher. Conversely, interpretivism represents an epistemological stance distinguishing natural science subjects from human agents. From this perspective, researchers and observers shape their own subjective "truth" while

perceiving the world (Lawson, 2019; Siregar, 2021; Moon, 2023). A positivist maintains that reality can be observed, scrutinized, and even modeled, whereas an interpretivist asserts that reality is amenable only to interpretation. The intrinsic link between ontology and epistemology is apparent. Positivism primarily aligns with objectivism, assuming a single, universally experienced objective reality, with the researcher's duty being its discovery and representation. Conversely, interpretivism inclines toward constructivism, postulating that truth is subject to individual construction and open to interpretations.

The Reasoning for the Research

Expanding on the philosophical underpinnings, the discussion advances to the next level of research methodology: the rationale behind the research, a component influenced by the researcher's philosophical standpoint. It is essential to note that this discussion is intentionally streamlined for this paper. Out of various modes of reasoning, we focus on two, deductive and inductive, to extend the conversation from the previous section. The rationale behind research pertains to the logical framework of the study, the role of the existing body of knowledge acquired through literature review, and the methodology employed for data collection and subsequent analysis.

Deductive research entails the development of a conceptual and theoretical framework before subjecting it to empirical investigation (Casula, 2023). This process conventionally commences with a literature review, which involves examining existing works in the field to establish the research context. It proceeds with identifying and framing a specific problem, formulating significant research questions, and addressing situations where existing knowledge might be insufficient. This can involve identifying gaps in existing theories or evidence, exploring contradictions, or discovering new applications for prior findings. The subsequent step typically includes formulating a hypothesis, which sub-hypotheses may accompany. The idea may be a conceptual model to address the identified issues, often with next steps designed to test the theory. Following data collection, guided by the proposed data collection methodology, is followed by data analysis, leading to findings closely linked to the existing knowledge discovered earlier (Pinkert et al., 2021; Larsen, 2021; Gläser-Zikuda et al., 2020).

Inductive research, in contrast, aims to explore the target phenomena using a "less-structured" methodology to obtain more comprehensive and profound information (Mweshi, 2020). Instead of formulating a hypothesis, inductive research seeks to maintain an open-minded approach, free from preconceived notions, while outlining further steps for data collection to comprehend the phenomena under investigation. In some methodologies, such as grounded theory, the literature review is discouraged in the initial phases to minimize the researcher's influence on preconceived notions. Explanations and ideas are then developed based on the observations made during data collection. The primary distinction between deductive and inductive research lies in utilizing the existing body of knowledge and the role of data collection.

Researchers conducting deductive research formulate hypotheses based on existing knowledge and then collect and analyze data to test these hypotheses (Williams, 2019; Shim et al., 2021; Wainstein et al., 2023). Conversely, researchers engaged in inductive research gather and analyze data to derive findings, occasionally using the existing knowledge to guide their data analysis when it proves beneficial.

Deductive research aligns with objectivism and positivism because it relies on the existing body of knowledge in hypothesis formulation. This approach presumes the existence of a single objective truth, enabling researchers to base their investigation on scientifically validated learning, representing the one objective truth. To illustrate, one can liken the process to completing a jigsaw puzzle: a deductive researcher employs existing puzzle pieces to deduce the missing components required to complete the picture. In contrast, an inductive researcher recognizes the subjectivity of other puzzle pieces, acknowledging that they result from diverse constructions and interpretations of reality, which may not necessarily align (Gläser-Zikuda et al., 2020; Moon, 2023; Mweshi, 2020).

RESEARCH RESULT AND DISCUSSION

The Data

At the data level, the information we gather can be broadly categorized into two main types: quantitative and qualitative data, and this categorization is based on their inherent characteristics. As a general guideline, using quantitative methods for data collection and subsequent analysis is essential when analyzing quantitative data. Conversely, the interpretation of qualitative data requires the application of qualitative methods (Schoonenboom, 2023).

Quantitative approaches primarily collect factual data and explore relationships between these solid elements. The analysis of quantitative data yields quantified outcomes and conclusions drawn by evaluating these results within the context of relevant theories and existing literature. These quantitative methods are often called scientific methods, positioning researchers as objective and impartial observers of the phenomena they are investigating. This objectivity is crucial to maintaining a degree of separation from and impartiality toward the research subject (Pandey, 2021). These methods are deeply rooted in the positivist ideals developed by 17th-century philosophers, who argued that mathematics is the ultimate tool for comprehending the world's creation. Numerical methods and mathematics are considered universal languages for describing the world, making them the most suitable means for scientifically establishing facts. Quantitative approaches presuppose their findings are replicable and can be isolated from specific contexts without undermining the studied cause-and-effect relationships (Pradoko, 2020).

In contrast, qualitative methods offer a means of gathering distinct data and evaluating theoretical concepts and approaches (Alejandro, 2023). These qualitative methods prioritize the inherent qualities of the phenomena under investigation over their numerical measurement. Qualitative researchers argue

that real-world phenomena should be assessed within the context of that reality, considering the subjective dimension of that reality. These qualitative methods predominantly originate from the constructivist and interpretivist perspectives on the continuum, and they are rooted in the belief that there is no single objective reality (Mulisa, 2022).

Consequently, the observed fact is intrinsically linked to the researchers' interactions with the phenomenon. The primary strength of qualitative methods lies in their capacity to produce intricate and rich data, which are not solely the result of isolating a single, universally applicable reality or establishing quantifiable relationships among variables. Qualitative methods are inherently inductive and may lead to unexpected discoveries based on collected evidence and the dynamics' explanations (Mulisa, 2022; Schoonenboom, 2023).

Credibility of Finding

Lastly, but by no means less important, researchers must establish the credibility of their findings, whether they are conducting quantitative or qualitative studies. A widely accepted practice in research projects is to provide a comprehensive account of the methods employed and the rationale behind their use, validating the credibility of the findings (Robson, 2004). Each research approach has strengths and weaknesses, which must be thoughtfully considered within the context of the research objectives. In evaluating the credibility of the research methodology in producing findings, two commonly used criteria are validity and reliability (Gill & Johnson, 1997; Saunders et al., 2000).

From the definitions commonly applied in quantitative research, validity relates to whether the identified variables and their characteristics genuinely lead to the expected outcomes. It also addresses the extent to which research findings can be extrapolated or applied beyond the specific sample or setting in which the study was conducted (Robson, 2004). On the other hand, reliability focuses on the consistency of results obtained in the research, particularly concerning the uniformity of the method used for gathering evidence (McNeill, 1995). Due to its foundation in the domain of science, the concept of validity and reliability in quantitative methods is well-established. It encompasses elements such as construct, content-related, and criterion-related validity. Additionally, it includes metrics like agreement scores, test-retest reliability, equivalent forms, and internal consistency when discussing reliability.

In qualitative research, the utilization and perception of validity and reliability differ. Many qualitative researchers are reluctant to employ these terms because there is no widely accepted and explicit set of conventions for qualitative analysis like those observed in quantitative methods (Robson, 2004). When establishing credibility in qualitative research, the emphasis typically lies in addressing the data's quality and the suitability of the methods employed in the research project. Given the array of philosophical and methodological approaches used to study human activities, these considerations are particularly crucial within the social sciences. In qualitative research, the credibility of findings is often demonstrated through rigor, meticulousness, the

appropriateness of the selected methods to address the research questions, representativeness, and showing that research subjects can corroborate or contest the researcher's interpretations regarding the discussed matters. The quality of qualitative data is expected to employ "triangulation," which combines data from diverse sources to provide insights from multiple perspectives (Miles & Huberman, 1994, p. 10).

Lastly, ethical considerations play a pivotal role in establishing the credibility of research findings. Research ethics revolve around the propriety of the researcher's behavior concerning the rights of research subjects or those affected by the research (Saunders et al., 2000). Demonstrating that ethical matters have been diligently addressed and evaluated in the early stages of the study, often through a comprehensive discussion within the research proposal, is considered a critical criterion for advancing a research project (Cooper & Schindler, 1998; Marshall & Rossman, 1999).

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, qualitative methods have garnered recognition for their capacity to explore intricate situations, particularly those involving human subjects, and for yielding in-depth findings. This trend has extended to the built environment field, prompting numerous students and researchers to embrace qualitative approaches and define themselves as qualitative researchers. However, the application of qualitative methods has its set of challenges and intricacies. Researchers employing qualitative methods may need help managing voluminous data, which could impede the achievement of their research objectives.

To address these challenges, this working paper delves into the realm of research, mainly qualitative research. The discourse commences with revisiting the essence of the study, underscoring the critical importance of a solid comprehension of research methodology. Within the domain of research methodology, the discussion encompasses three fundamental elements: research philosophies, the rationale guiding the research, and the level of data analysis. The paper introduces a simplified "research methodology continuum" as a central framework for the discussion. Finally, the report explores the concept of research credibility, placing a particular focus on ethical considerations. The primary aim of this working paper is to motivate and guide students and researchers in the built environment domain, especially those who are adopting or contemplating using qualitative methods in their research endeavors. It encourages them to reflect thoughtfully on the issues elucidated here and to harness the full potential of qualitative methods in their research pursuits.

ADVANCED RESEARCH

This working paper serves as a source of inspiration for students and researchers interested in adopting qualitative methods in their research projects. It offers a comprehensive overview of the distinctive characteristics of qualitative research, research methodologies, data treatment, and the

importance of ensuring research credibility. By leveraging the insights presented in this paper, researchers can enhance the effectiveness and impact of their qualitative research endeavors in the field of built environmental research

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