



Use of Mixed Methods in Social Sciences Research

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Abstract

The landscape of social sciences is inherently complex and multifaceted, demanding a comprehensive and nuanced approach to research methodologies. This paper highlights the significance of mixed methods research in addressing the intricate and dynamic nature of social phenomena. Mixed methods not only enhance the validity and reliability of research findings but also allow for a holistic understanding of social phenomena and empower researchers to explore the comprehensiveness and diversity of human experiences, behaviors, and interactions that the traditional single-method approach often falls short of. Furthermore, mixed methods facilitates the triangulation of data, enabling researchers to corroborate and validate results through diverse lenses, thereby fortifying the robustness of their conclusions. Mixed methods contribute to the development of more effective and informed social and public policy interventions. Adopting mixed methods in social science research is not merely a choice but a necessity for unlocking the full potential of inquiry and advancing our collective understanding of the complex social world.

Keywords: Credibility, comprehensiveness, mixed methods, data triangulation, trustworthiness



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1. Introduction

Quality research in social sciences is important as it serves as the bedrock for understanding, analyzing, and addressing complex societal issues (Creswell & Creswell, 2017). Rigorous and well-conducted research in the social sciences not only contribute to the knowledge expansion but also plays a crucial role in informing appropriate policy decisions, improving the framing of public discourse, and fostering positive social change. Through robust methodologies, systematic data collection, and critical analysis, researchers in the social sciences can uncover patterns, trends, and causal relationships to deepen the researcher's comprehension of human behavior, societal structures, and cultural dynamics. Such research provides the evidences necessary for planners, policymakers, educators, and practitioners to develop informed strategies and interventions, ultimately contributing to the betterment of society. Additionally, high-quality research in the social sciences fosters intellectual curiosity, encourages interdisciplinary collaboration, and helps build a foundation of reliable information for future generations of scholars and practitioners to build upon.

In academic research, there is a prevailing trend where the methodology section emerges as a weaker component. The methodology serves as the backbone of any research endeavor and researcher outlines the systematic approach employed to gather, analyze, and interpret data, thereby establishing the credibility and trustworthiness of the study (Dawadi, Shrestha & Giri, 2021). However, a notable gap exists in the attention and precision accorded to this critical aspect within the academic works of social sciences in Nepal. The methodology section not only delineates the research design but also provides a roadmap for the entire investigative process.

Mixed methods offer a holistic and comprehensive approach in research to understanding the complex dynamics of social phenomena (Khatri & Pasa, 2022). The quantitative method provides numerical data that help in identifying patterns and trends, while the qualitative method captures the

complex experiences, perceptions, and context-specific details that quantitative data may miss (Baškarada & Koronios, 2018). By integrating both approaches, mixed methods allow researchers to triangulate findings, enhancing the validity and reliability of the study (Newman & Ridenour, 2008).

In social sciences, where diverse and context-dependent challenges prevail, mixed methods enable a deeper exploration of issues such as poverty and prosperity, migration and opportunities, demographic changes and state policy, youths and uncertainties, social movements and justice, economic systems and vulnerability, climate change and livelihood challenges, agricultural practices and productivity, healthcare and universal coverage, infrastructure and disaster, stagnant and social transformation, and social structure and resilience. The approach not only enriches the research findings but also facilitates the formulation of more effective and targeted policies and interventions, ensuring that development initiatives address the unique needs and aspirations of the communities they aim to serve (Creswell & Creswell, 2017). In economics, the combination of quantitative data analysis and qualitative insights enables a more thorough exploration of economic behavior, institutions, and policies. In political science, the integration of qualitative case studies with quantitative surveys enhances the depth of political analysis, providing a holistic understanding of political processes and structures. Sociology benefits from mixed methods by allowing researchers to capture the richness and depth of social interactions and cultural contexts while quantifying patterns and trends.

Mixed methods in rural and urban development research offer a holistic perspective on complex issues. This approach allows researchers to grasp the personal narratives and cultural factors influencing poverty and quantify the broader socio-economic trends, offering a robust foundation for informed policy recommendations. Thus, there is a growing interest in mixed methods research, a paradigm that integrates both qualitative and quantitative methodologies within a single study.

2. Philosophical Debate

Some scholars argue that qualitative and quantitative methodologies inherently represent different ontological and epistemological perspectives on social reality. Proponents of this view argue that qualitative research, with its emphasis on understanding the subjective experiences and meanings attributed by individuals, aligns with a constructivist and interpretivist ontology. On the other hand, quantitative research, emphasizing objective measurements and statistical analysis, is often associated with a positivist approach. The contention arises from the belief that combining these methods may lead to an epistemological clash, hindering the coherence and validity of the overall research endeavor. For instance, Johnson and Onwuegbuzie (2004) discuss the incompatibility of positivism and constructivism, asserting that the assumptions underlying each paradigm are fundamentally irreconcilable. They argue that positivism asserts the existence of an objective reality that can be discovered through empirical observation and measurement.

Researchers following a positivist paradigm believe in the possibility of uncovering universal laws and generalizable findings. On the other hand, constructivism, a key aspect of qualitative research, posits that reality is socially constructed and subjective, varying across individuals and contexts. For example, research on effectiveness of mental health intervention, quantitative survey may involve a large, randomly selected sample to establish statistical generalizability. However, qualitative interviews with purposive sample of participants may provide in-depth insight into the unique experiences of specific subgroups (age, sex, caste and ethnicity, social class).

Despite these debates, many researchers argue for a pragmatic approach, suggesting that methodological pluralism can be effective in addressing research questions that benefit from both qualitative and quantitative insights (Creswell & Plano Clark, 2011). The ongoing discourse highlights the need for careful consideration of philosophical assumptions when integrating mixed methods in social science research (Dawadi, Shrestha & Giri, 2021).

By acknowledging the distinctive strengths and limitations of both paradigms, this paper highlights the possibility of conducting mixed-methods research integrating qualitative and quantitative data. The subsequent sections of this paper highlight the types of mixed methods and the practical considerations in research design, data collection, and analysis, providing insights into how researchers can effectively employ mixed methods to enrich their investigations in the social sciences.

3. Issues and Use of Methods in Social Sciences

Currently, social sciences researchers can be broadly categorized into three distinct groups based on their methodological approaches (Pole, 2007). The first group comprises quantitatively oriented researchers who employ empirical methods, utilizing statistical analyses to deductively draw conclusions from their data. Quantitative research has historically been the cornerstone of social sciences research. Purists call for researchers to eliminate their biases, remain emotionally detached and uninvolved with the objects of study and test or empirically justify their stated hypotheses (Johnson & Onwuegbuzie, 2004).

The second group consists of qualitatively oriented researchers who take a more subjective approach to constructing their understanding of reality. These researchers rely on descriptions of phenomena and are influenced by the theoretical frameworks guiding their work. Qualitative purists support a constructivist or interpretivist paradigm and contend that multiple-constructed realities (Baškarada & Koronios, 2018). The supporters of this group of researchers argue that time context-free generalizations are neither desirable nor possible. They emphasize that research is value-bound, and it is impossible to differentiate fully causes and effects because the subjective knower is the only source of reality. For example, an anthropologist conducting ethnographic research on a particular cultural group might rely on qualitative methods such as in-depth interviews and participant observation to gain a complex understanding of the group's behaviors and beliefs.

A divide existed between qualitative and quantitative researchers and there was a tendency to criticize rather than collaborate until the 1970s (Pole, 2007). Qualitative researchers often dismissed quantitative methods as reductionist and overly simplistic. Similarly, quantitative researchers viewed qualitative approaches as subjective and lacking in empirical grounding. These two paradigms had been assumed to be polar opposites and, among some researchers, even separate and distinct scientific absolutes (Newman & Ridenour, 2008). This division hindered the potential synergies between the two paradigms (Creswell & Creswell, 2017). As the academic landscape evolved, scholars began to recognize the limitations inherent in their respective methodologies. Gradually, a paradigm shift occurred, and the researchers started to appreciate the complementary nature of qualitative and quantitative methods. Acknowledging the strengths and weaknesses of each approach researchers started to critically review their methodologies and started to look a more inclusive instance for integrating both qualitative and quantitative elements.

In the 1980s and 1990s, esteemed authors and researchers advocated for the inherent compatibility of these approaches toward a more inclusive and comprehensive understanding of research design and execution (Lincoln & Guba 1985). The third group, mixed methodologists occupied a middle ground between the quantitative and qualitative approaches. These researchers did not strictly adhere to traditional quantitative or qualitative methods. Instead, they focused on integrating both approaches, often aligning more closely with qualitative worldviews. Mixed-methods studies were developed after the paradigmatic conflicts between qualitative and quantitative research methodologies (Baškarada & Koronios, 2018). For instance, the sociologists interested in exploring the factors influencing educational attainment started to use a mixed-methods approach by collecting both numerical data (quantitative) through surveys and in-depth interviews (qualitative) to provide a comprehensive understanding of the phenomenon (Creswell & Creswell, 2017).

This blending of methods started to occur in parallel, concurrently, or sequentially, allowing researchers to answer research questions from multiple perspectives (Pole, 2007).

Mixed methods research has developed rapidly in the last few years (Molina-Azorin, 2016). Mixed methods research is an innovative and dynamic approach to bridge the gap between qualitative and quantitative methodologies. By concurrently utilizing both methods, researchers could derive a more comprehensive understanding of the research question, acknowledging that certain phenomena are best understood when examined through multiple lenses (Leech, Dellinger, Brannagan, & Tanaka, 2010). In social sciences, where context plays a pivotal role, mixed methods have emerged as a powerful tool for unraveling the complexities inherent in specific research areas (Timans, Wouters & Heilbron, 2019). It aims to provide a more comprehensive and nuanced understanding of a research problem by drawing on the strengths of both qualitative and quantitative methods.

Researchers use mixed methods when they believe that a combination of qualitative and quantitative approaches will yield a more complete and nuanced understanding of their research problem than either approach alone. This approach is particularly useful when researchers wish to triangulate findings, validate or explain quantitative results with qualitative insights, or explore complex phenomena that cannot be fully captured by a single method (Creswell & Creswell, 2017). The key to successful mixed methods research is careful planning, thoughtful integration of methods, and a clear rationale for why both qualitative and quantitative data are necessary to address the research questions.

Qualitative methods contribute depth and context by exploring the intricacies of human experiences, perceptions, and social interactions. On the other hand, quantitative methods provide statistical rigor and generalizability, offering a broader perspective on patterns and trends within a population. The combination of these approaches enables researchers to not only answer “what” and

“how” questions but also delve into the “why” and “underlying mechanisms” behind observed patterns (Creswell & Creswell, 2017). Additionally, mixed methods research facilitates a more inclusive examination of diverse perspectives and ensures that the limitations of one method are balanced by the strengths of the other (Timans, Wouters & Heilbron, 2019). As social phenomena are inherently complex and multidimensional, mixed methods research becomes a powerful tool for social scientists to generate a richer and more holistic understanding of the issues they investigate, ultimately contributing to the advancement of knowledge in the social sciences.

4. Some Misconception on Mixed Method Research

Mixed methods research is an innovative and flexible approach that combines both qualitative and quantitative research methods within a single study. Unfortunately, misconceptions about mixed methods research are not uncommon, often stemming from a lack of understanding or familiarity with the methodology (Caruth, 2013). One common misconception is that mixed methods research simply involves conducting qualitative and quantitative research independently and then combining the results. In reality, mixed methods research requires careful integration of both approaches throughout the research process, from the design and data collection to analysis and interpretation (Timans, Wouters & Heilbron, 2019). This methodology seeks to leverage the strengths of both qualitative and quantitative methods to provide a more comprehensive understanding of a research problem.

Second misconception about mixed methods research is that it is a compromise or a last resort when one cannot decide between qualitative or quantitative approaches. In contrast, mixed methods research is a deliberate choice that recognizes the inherent limitations of relying solely on one type of data (Creswell &

Creswell, 2017). By combining qualitative insights with quantitative data, researchers can gain a more nuanced and holistic perspective, allowing for a deeper exploration of research questions (Anguera et al., 2018). Educating individuals about the nature and benefits of mixed methods research is essential to dispel these misconceptions and highlight its value in enhancing the rigor and richness of research across various disciplines.

The third misconception revolves around the belief that mixed methods research is only suitable for complex or large-scale studies. While mixed methods can indeed be valuable in addressing complex research questions, it is equally applicable to smaller-scale investigations. The key is to align the research design with the specific goals of the study, selecting methods that complement each other and contribute to a more holistic understanding of the research problem (Caruth, 2013). Researchers should carefully consider the nature of their research questions, the context of the study, and the strengths and limitations of each method to design a mixed methods approach that maximizes the benefits of both qualitative and quantitative data (Timans, Wouters & Heilbron, 2019). Ultimately, using mixed methods is to diversify methodology and the synergize integration of different data sources to enhance the overall rigor and validity of research findings. Table 1 shows the common legends of mixed methods (Morse & Cheek, 2014; Creswell & Creswell, 2017).

There are various types of mixed methods research. Each type offers a unique framework and process for addressing research questions, allowing researchers to tailor their approach to the specific need of the study and enhance overall depth of inquiry (Hafsa, 2019). The most common types are concurrent and sequential mixed methods.

Table 1*Mixed Method Legends*

Notation	Defined
QUAN	Quantitatively driven study / Quantitative carries more weight than qualitative
QUAL	<i>Qualitatively driven study / Qualitative carries more weight than quantitative</i>
Quan	Quantitative data is secondary to qualitative data
Qual	Qualitative data is secondary to quantitative data
+	Indicates that quantitative and qualitative data are collected concurrently Collect both quantitative and qualitative data at the same time
→	Indicates that quantitative and qualitative data are collected sequentially Collect quantitative data first, followed by qualitative data Collect qualitative data first, followed by quantitative data

5. Concurrent Mixed Methods

Concurrent mixed methods research is a design in which both qualitative and quantitative data are collected simultaneously. In social science research, this approach is particularly valuable when researchers aim to cross-validate or complement their findings from one method with the other, providing a more comprehensive understanding of the research question. Researchers often start by defining a central research question or hypothesis during the concurrent mixed methods design. They then design qualitative and quantitative components that are implemented concurrently, with data collection and analysis occurring simultaneously or in close succession. For example, a researcher might use surveys to collect quantitative data

on a specific social phenomenon and, at the same time, conduct interviews or focus group discussions to gather qualitative insights on participants' experiences and perspectives. These data types may be integrated during the interpretation phase, where researchers compare and contrast findings, exploring potential convergence or divergence between qualitative and quantitative results.

In social science research, concurrent mixed methods are applied across various disciplines such as economics, sociology, psychology, political science and development studies. This design allows researchers to capitalize on the strengths of both qualitative and quantitative approaches, addressing the limitations of each method while producing a more robust and nuanced understanding of the social phenomena under investigation. The concurrent design is well-suited for exploring complex social issues, offering the flexibility to adapt the research process as insights emerge and fostering a holistic comprehension of the studied phenomena. Researchers employing this method must carefully plan the integration of qualitative and quantitative components, ensuring that the design aligns with the overarching research goals and enhances the overall quality of the study's findings

6. Sequential Mixed Methods

Sequential mixed methods research is a comprehensive approach that integrates both qualitative and quantitative research methods in a sequential and systematic manner to address a research question or problem. There are two types of sequential mixed methods, explanatory and exploratory (Dawadi, Shrestha & Giri, 2021).

In the explanatory sequential design, the initial phase involves the collection of quantitative data, succeeded by the collection of qualitative data. This design is employed when the objective is to expound upon a set

of quantitative data through the acquisition of supplementary qualitative information (Subedi, 2016). An example of this methodology is administering a job satisfaction survey to employees, followed by in-depth interviews to elucidate the underlying reasons for their responses.

The exploratory sequential design commences with the collection of qualitative data, succeeded by the acquisition of quantitative data. This mixed methods research design is pertinent when the aspiration is to explore a subject matter before embarking on the collection of quantitative data. For instance, an investigation into the dynamics of parent-child interactions may initiate with qualitative interviews, followed by a subsequent survey to further scrutinize and quantify these interactions. Sequential mixed method is particularly useful in fields where a multifaceted understanding of a phenomenon is essential, such as in social sciences, education, and population health.

7. Embedded Mixed Methods

The embedded design involves the simultaneous collection of quantitative and qualitative data, with the qualitative data seamlessly incorporated within the quantitative dataset. This design proves optimal when the primary emphasis is on the quantitative data, yet an augmented comprehension of the phenomenon under investigation is sought through supplementary qualitative insights (Hafsa, 2019). For instance, a survey might be administered to students regarding their perspectives on an online learning platform, with individual interviews providing additional depth to the quantitative findings.

8. Transformative Mixed Methods

Transformative mixed methods design uses 'social justice' or 'power' as the umbrella concept incorporating in it both quantitative and qualitative data (Hafsa, 2019). Scholar of this school of thought argue that positivist and

interpretivist approaches to social science do not aim to raise awareness of human liberation and emancipation (Baškarada & Koronios, 2018). The aim of transformative mixed methods in social sciences research is generating a more comprehensive understanding of a phenomenon to promote progressive social change. For example, in a study exploring the impact of an educational intervention on marginalized communities, researchers might employ surveys to gather quantitative data on academic performance of students and use qualitative methods such as interviews or focus group discussions to capture the experiences and perceptions of participants and key informants. By combining these methods, researchers not only gain a more holistic understanding of the educational outcomes but also uncover the social dynamics that contribute to success or challenges. The transformative mixed method is important when the research findings are used to advocate for policy changes, influence educational practices, or empower marginalized groups in their pursuit of education.

9. Multiphase Mixed Methods Design

Multiphase mixed methods design is prevalent in the areas of evaluation and program interventions. In this type of design, concurrent or sequential approaches are applied jointly to get the best sense of a long-term program objective. For example, a study examining effectiveness of community health intervention. In the first phase qualitative method such as interviews or focus group discussions might be employed to explore the community's perceptions, attitudes, and cultural factors related to health. This qualitative phase helps inform the development of a quantitative survey instrument used in the second phase to gather numerical data on specific health outcomes, behavior changes, or intervention impact. By combining these phases, researchers can enrich their understanding by

integrating the depth of qualitative insights with the breadth of quantitative data. This multiphase mixed methods design allows for a more comprehensive and nuanced exploration of the research

Table 2

Mixed Methods Designs

Research Design	Process	Purpose	Level of Interaction	Priority
Convergent parallel (concurrent)	Qual Quant	To obtain different but complementary data to answer a single research question	Data collected & analyzed independently	Equal
Sequential explanatory	QUANT qual	Qualitative data are collected to explain the quantitative findings	Quant data frames qualitative data collection	Quantitative dominant
Sequential exploratory	QUAL quant	Quant data builds on qualitative findings to provide generalizability	Qualitative data frames quant data collection	Qualitative dominant
Embedded / Nested	Qual (quant) Or Quant (qual)	To obtain different data to answer a complementary research question	Embedded dataset provides answers to a Complementary research question.	Can be either Qualitative or Quantitative dominant
Transformative	Qual (quant) Or Quant (qual)	Collect different data to explore power dynamics and develop policy for social transformation	the role of the researchers actively engaging with the research participants and the social context, advocate for positive change	Can be either Qualitative or Quantitative dominant
Multiphase	Qual (quant) Or Quant (qual)	sequentially combine qualitative and quantitative research approaches in distinct phases	Multiphase data set provides ore holistic perspective on the research question	Can be either Qualitative or Quantitative dominant

topic, contributing to a more robust and holistic interpretation of the study's findings. Table 2 provides a summary of various mixed methods designs (Halcomb & Hickman, 2015; Creswell & Creswell, 2017).

10. Conclusion

Mixed methods research is emerging as an indispensable approach for unraveling the complexities of social sciences. Its ability to provide a nuanced understanding, enhance validity through triangulation, and facilitate context-specific insights makes it a valuable approach for researchers and practitioners. Using mixed methods, researchers can capitalize on the strengths and limitations of qualitative and quantitative methods and achieve a more comprehensive understanding of complex social phenomena in a single study. As we continue to explore innovative methodologies, mixed methods research stands as an inspiration, guiding us toward a more profound understanding of social sciences.

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