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Qualitative and Quantitative Methodologies for Understanding Social Realities. Systematic Review

Las metodologías cualitativa y cuantitativa para la comprensión de las realidades sociales. Revisión Sistemática

Víctor Guzmán-Brand¹ , Laura Gelvez-García²

Abstract

Objective: To identify the characteristics of qualitative and quantitative methodologies for understanding social realities.

Methodology: This is a systematic review of qualitative literature consisting of a structured process of searching, selecting, and analyzing information in specialized databases. **Results:** The systematic review included 35 articles from high-impact scientific journals and 23 thematic books, selected from recognized databases, to address recent research and reinforce key concepts. **Discussion:** Quantitative and qualitative methodologies differ in their objectives and approaches: while quantitative methodology seeks to generalize findings through statistical analysis, qualitative methodology delves into contextual meanings and dynamics. However, combining the two allows us to overcome individual limitations and offers a more comprehensive understanding of social phenomena.

Conclusions: Qualitative and quantitative research offer complementary approaches to addressing social phenomena. While qualitative research focuses on understanding subjectivity, meanings, and specific contexts, quantitative research seeks to measure, analyze, and generalize results using standardized methods. Their integration allows for a more comprehensive understanding, combining interpretive depth with statistical rigor.

Keywords: research, qualitative, quantitative, understanding, reality, social.

Objetivo: es conocer las características de las metodologías cualitativa y cuantitativa para comprender las realidades sociales. **Metodología:** es una revisión sistemática de la literatura de tipo cualitativo que consiste en un proceso estructurado de búsqueda, selección y análisis de información en bases de datos especializadas. **Resultados:** la revisión sistemática incluyó 35 artículos de revistas científicas de alto impacto y 23 libros temáticos, seleccionados de bases de datos reconocidas, para abordar investigaciones recientes y reforzar conceptos clave. **Discusiones:** la metodología cuantitativa y cualitativa se distinguen por sus objetivos y enfoques: mientras la cuantitativa busca generalizar resultados a través del análisis estadístico, la cualitativa profundiza en los significados y dinámicas contextuales. Sin embargo, su combinación permite superar limitaciones individuales y ofrece una comprensión más completa de los fenómenos sociales. **Conclusiones:** la investigación cualitativa y cuantitativa ofrecen enfoques complementarios para abordar los fenómenos sociales. Mientras la cualitativa se centra en comprender la subjetividad, los significados y contextos particulares, la cuantitativa busca medir, analizar y generalizar resultados mediante métodos estandarizados. Su integración permite una comprensión más completa, combinando profundidad interpretativa y rigor estadístico.

Palabras Clave: investigación, cualitativa, cuantitativa, comprender, realidad, social.

Introduction

One of the essential characteristics of human beings is their natural inclination to understand and explain the world around them. Driven by their innate capacity to seek meaning and purpose, humans have developed science and technology as key tools for interpreting and transforming the world (Harari, 2018). This quest for truth and understanding of the phenomena around them has been the primary driving force behind the development of scientific research, a systematic process that applies rigorous methods to generate knowledge (Piña-Ferrer, 2023). Over time, science has fueled technological advancement, establishing a feedback loop in which both fields drive each other forward. This connection has enabled humanity to tackle complex problems and broaden its horizons toward new discoveries (Münch and Ángeles, 2012).

In the social sciences, the challenge for researchers lies in constantly reflecting on how to generate data and demonstrate that the invisible also exists, whether through qualitative or quantitative approaches, while adopting a constructivist perspective (Sánchez, 2019). This approach involves recognizing the dynamic interaction between the interpretation of the reality under investigation and the transformation of that interpretation into representative data that account for what is being studied. In this context, the challenge lies in continuing to advance along the path toward the

construction of knowledge (Cohen and Gómez, 2019). This requires continually questioning the methodologies employed and exploring new ways of interpreting and representing reality. Only through this reflective and dynamic process can the boundaries of understanding in the social sciences be expanded.

The term “method” comes from Greek and means “path to achieving a result.” It is defined as the set of procedures used to acquire scientific knowledge. On the other hand, the study of method—or of methods in a broader sense—is called methodology (Jiménez et al., 2023). The concept of research methodology is used to describe the steps and procedures followed in a specific study, to identify the working models applied in a discipline or specialty, and also to refer to the set of practices and recommendations that are passed on to students (Bautista, 2010).

A key aspect of learning about research methods is that it makes us more critical and discerning consumers of information. Training in these methodologies enhances our ability to reason logically when faced with real-world events and problems. We constantly receive information from various sources, such as the media, sales strategies, and other people. However, much of this information may be inaccurate, overly simplified, or even false. Understanding research approaches allows students to develop more analytical thinking and evaluate the quality of the information they receive (Kassin et al., 2015).

In this regard, the main objective of this research is to examine the characteristics of qualitative and quantitative methodologies for understanding social realities, using information gathering based on the guidelines of a systematic review as a tool.

Methodology

A qualitative systematic review consists of a structured process that collects, analyzes, and organizes previous theories and empirical findings related to a specific phenomenon (Hyun et al., 2024). The purpose of this approach is to synthesize the available information, presenting it in an organized manner across categories that allow for an in-depth description and understanding of the phenomenon (Anza et al., 2020). Similar to a literature review, this type of systematic review is characterized by its methodological rigor, as it classifies and articulates data in a coherent manner, thereby facilitating a comprehensive and structured overview of existing knowledge on the topic under study (Ramos-Galarza and García-Cruz, 2024).

Thus, a search is conducted for publications from primary sources of information—such as articles, books, and documents—that address the topic under study. This search is carried out in specialized databases such as SciELO, Dialnet, Redalyc, Scopus, and EBSCO, with the aid of specialized search engines such as Google Scholar and RefSeek. To improve the filtering of documents, the following search equation was formulated: (“qualitative methodology” OR “qualitative approach”) AND (“quantitative methodology” OR “quantitative approach”) AND (“understanding of social realities” OR “social phenomena” OR “social analysis”) AND (“comparison” OR “complementarity” OR “differences”). The material is then selected according to the following inclusion and exclusion criteria:

Table 1.

Outline of Eligibility Criteria

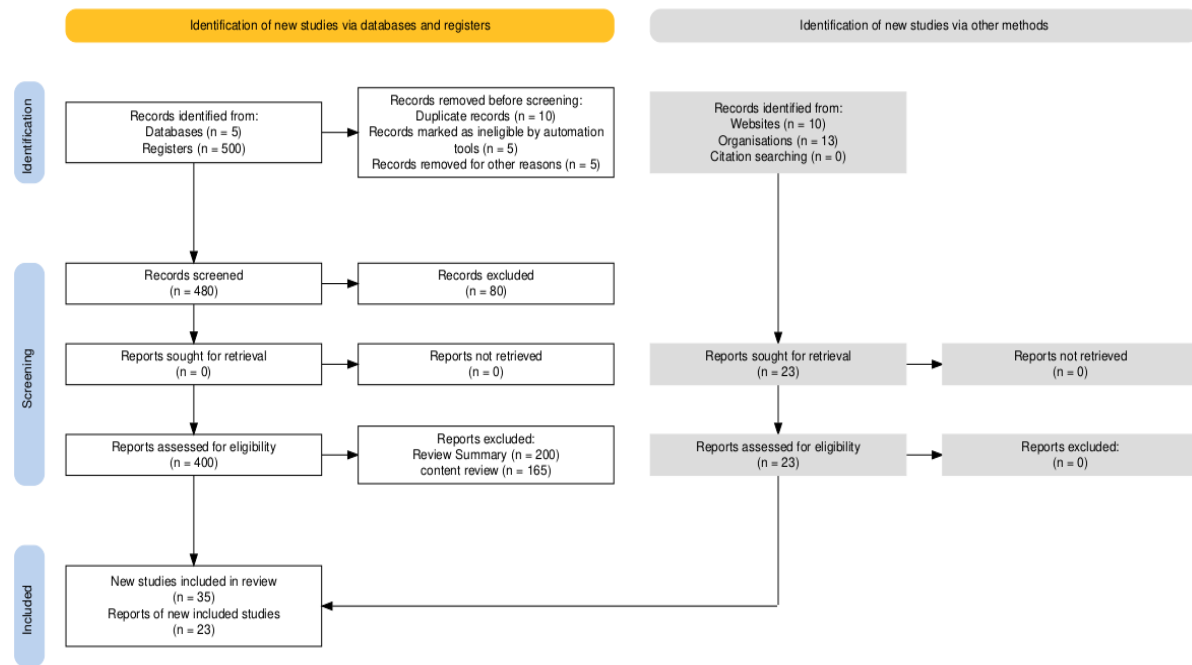
Criterion	Inclusion	Exclusion
Publication type	Scientific articles published in peer-reviewed, indexed journals.	Articles not peer-reviewed. Popular science articles, essays, academic papers, theses, brief reports.
Publication status	Open access.	Restricted access. In preprint status.
Publication language	Spanish, English, or Portuguese.	Another language.
Publication period	Preference was given to articles from the last five years.	For books, information was selected from the most representative authors.
Topic	Documents that directly address the topic.	Documents that did not focus on the topic.

Note: Prepared by the authors.

This systematic review was conducted using the major databases that include high-impact, peer-reviewed scientific journals. Thirty-five (35) articles that met the established criteria were selected, covering recent research related to the topic. In addition, twenty-three (23) books on the subject published by various publishers were included to reinforce the concepts. Disagreements that arose during the selection process were resolved by consensus among the authors. The strategy employed is detailed in full in Figure 1, represented as a flowchart as follows:

Figure 1.

Flowchart Structure



Note: Developed according to the guidelines of Haddaway et al. (2020). Created by the authors.

Results

The researcher—whether an individual or an institution—is dedicated to the exploration and discovery of the unknown, guided by an active, enthusiastic, and persevering attitude. Among their essential characteristics are curiosity—which drives originality and constant attention to detail—a strong work ethic, supported by efficient organization of time and resources; and qualities such as concentration, impartiality, and the ability to formulate sound hypotheses (Baas et al., 2012). Ethics is a fundamental pillar of their work, manifested in honesty in respecting observed data, a love of truth in the tireless pursuit of knowledge, modesty in valuing the contributions of colleagues, and a commitment to putting science at the service of humanity (Guzmán-Brand and Gelvez-García, 2024).

Qualitative research aims to understand phenomena by exploring participants' experiences, taking into account their natural environment and the context in which they occur (Hernández-Sampieri and Mendoza, 2018). Its main objectives are to analyze and understand human behavior within specific contexts, with the aim of identifying patterns, themes, and shared characteristics across different societies (Pimienta and De la Hoz, 2017). In this way, it seeks to understand the cultural, social, and psychological dynamics behind human interactions, identifying the factors that shape behavior (Deslauriers, 2004).

In the qualitative approach, the researcher poses a problem without following a rigid or preestablished process, continuously adapting to what is observed (Alegre, 2022). This approach is based primarily on inductive reasoning, which moves from the particular to the general. Initially, the researcher explores and describes specific aspects in order to generate theory based on them (Salazar-Escorcia, 2020). In a typical qualitative study, the process begins with interviews with one person; the data obtained are analyzed, and preliminary conclusions are drawn. Then, more interviews are conducted, the new information is examined, and the previous conclusions are adjusted. This process is repeated iteratively, with the goal of achieving a deeper and broader understanding of the phenomenon under study (Hernández-Sampieri et al., 2019).

This methodology allows the researcher to empathize with the participants, seeking to understand how they experience and live their realities (Ríos-González, 2024). Each perspective holds a unique richness, and by working with this approach, it is possible to understand individuals' personal experiences and, in a sense, connect with their daily struggles. Furthermore, it allows for an appreciation of intimate concepts, such as beauty and pain, which often go unnoticed in other research methods (Guzmán, 2021). In this way, it focuses on the meanings and actions of individuals, as well as on how these relate to other behaviors within the community. Its objective is to explain social phenomena, seeking a deep understanding of them (Piña-Ferrer, 2023).

Researchers are required to demonstrate deep sensitivity and awareness regarding the effects their work may have on the people being studied. This involves interacting in a natural and non-intrusive manner, respecting both the individuals and their reality (Loayza, 2020). During data collection, an approach based on spontaneous conversations is prioritized over the use of structured questionnaires. Furthermore, researchers must be able to set aside their own beliefs, perspectives, and biases, avoiding taking any aspect of the reality under study for granted (Espinoza, 2020).

This approach values the different perspectives of the subjects as fundamental elements, prioritizing a detailed understanding of their viewpoints rather than seeking absolute truths or traditional moral judgments (Bernal, 2016).

According to Calle (2023), qualitative methods play a crucial role in obtaining descriptive information about a specific population, as they focus on exploring experiences, perceptions, and meanings from the participants' perspective; this approach is essential for understanding how individuals interpret their reality, providing a holistic view of their lived experiences. Mora (2022) emphasizes that this type of data allows us to capture the essence of human experiences, beyond what numbers can reflect. As Molano et al. (2021) argue, this approach is particularly valuable for addressing complex phenomena that cannot be reduced to quantifiable variables.

Qualitative research is chosen when the objective is to analyze how specific individuals perceive and experience the phenomena around them, delving into their perspectives, interpretations, and meanings (Hernández-Sampieri and Mendoza, 2018). According to Ramírez-Elías and Arbesú-García (2019), this approach is ideal for exploring participants' subjective experiences, allowing for a richer and more detailed understanding of their reality. Context and specific cases are essential for interpreting the phenomena under study, with case studies being a commonly used tool in this approach (Hernández-Sampieri and Mendoza, 2018).

Ramírez-Elías and Arbesú-García (2019) emphasize that case studies provide an appropriate framework for contextualizing phenomena within their natural environment. Furthermore, writing and text play a crucial role in all stages of the qualitative research process (, from transcription to the presentation of findings. According to Graham (2012), one of the most significant challenges in this type of research is the transformation of complex social situations into text, a process that requires precision and sensitivity.

Qualitative research seeks to understand experiences, interactions, and documents in their natural context, highlighting the particularities of these elements without relying on predefined concepts or hypotheses (Rodríguez-Gómez, 2023). Concepts, when used, are developed and adjusted during the research process. This approach prioritizes adapting methods and theories to the object of study, modifying them or developing new strategies when necessary (Tracy, 2021). Researchers are an integral part of the process, contributing reflexivity and unique perspectives drawn from their interaction with the field (Abad, 2020).

Qualitative research often involves a process of relating the researcher's perspective on the object of study to the concepts that frame the research (García, 2023). These perspectives or images are constructed through case analysis, identifying similarities among various manifestations of the phenomenon that appear to belong to the same general category (Finol and Arrieta, 2021). In turn, these images are linked to concepts, understood as general ideas that apply to multiple specific expressions. Concepts represent abstract syntheses of properties shared by members of a category of social phenomena (Gómez et al., 2010).

Qualitative data collection techniques aim to deepen our understanding of participants' experiences and perceptions, focusing on subjectivity and the interpretation of context. In-depth interviews are a key tool, as they allow for the collection of detailed information through direct interaction, while focus groups enable a collective exploration of a topic, facilitating an understanding of the group's beliefs and attitudes (Benavides-Lara et al., 2022; Rodas and Pacheco, 2020; Piza et al., 2019).

Participant observation adds an immersive dimension to the research process, allowing the researcher to integrate into the study setting to observe behaviors and situations within their natural context—a hallmark of qualitative methodology (Jociles, 2017). Through content analysis, researchers can examine a variety of materials, such as texts and recordings, to identify patterns and underlying meanings, facilitating a deep interpretation of the phenomena under study (Piza et al., 2019).

Likewise, diaries and personal records offer a valuable window into participants' subjective experiences, providing access to their most intimate reflections and offering a richer, more detailed understanding of their lived experiences (Sánchez and Murillo, 2022). Taken together, these qualitative techniques provide a more nuanced and complex view of social and human phenomena, in contrast to quantitative approaches, as they allow for the capture of subjective and contextual dimensions that often elude numerical methods (Sinche-Crispín, 2023).

According to Guerrero (2022), quantitative methodology is based on the use of specific methods, techniques, strategies, and instruments designed to measure, count, weigh, and, in general, observe aspects of reality objectively. This methodology, as Sánchez (2019) argues, is essential for transforming observations into concrete figures, which facilitates statistical analysis. Through this approach, it is possible to identify patterns and relationships in the data, which, in turn, allows for the establishment of cause-and-effect relationships as well as correlations between

variables. According to Jiménez and Meneses (2021), this type of analysis is essential for discovering and explaining the fundamental connections between different elements.

Furthermore, as Vargas (2011) points out, one of the main strengths of quantitative methodology lies in its ability to generalize results, allowing valid conclusions to be extrapolated to broader populations. Quantitative research is characterized by a rigorous, objective, and systematic approach that facilitates the generation of knowledge. This method applies deductive reasoning to test theories through quantifiable variables and enables the extrapolation of findings from a sample to a broader population (Muñoz et al., 2024).

Quantitative analysis is based on the premise that the best way to understand fundamental relationships and patterns is to study phenomena through a large number of cases. According to Yucra and Bernedo (2020), focusing on a single case or a small number of cases could result in a biased or unrepresentative view. By analyzing numerous cases, the aim is to neutralize the particularities of each one, allowing for the construction of a more general and refined view of social reality, excluding elements specific to a single case or small group (Castañeda-Meneses and Salamé-Coulon, 2021). This process is achieved by analyzing the co r covariation between two or more characteristics or variables present in multiple cases, which generates a systematic representation of the relationships among them (Gómez et al., 2010).

According to Castañeda (2022), this methodology is geared toward identifying causalities and correlations, drawing on a realist approach that is divided into two strands: ontological and epistemological. Within this framework, ontological realism asserts that what is known has an objective existence and is knowable, while epistemological realism maintains that knowledge obtained through scientific and rational methods objectively represents reality.

Quantitative designs are particularly suitable when sufficient direct and objective information is available to test and validate the hypotheses proposed in the study (Cajide, 2024). This approach is especially useful when the nature of the research problem allows for clear and precise scientific answers to be obtained through quantitative analysis (Castañeda, 2022). Furthermore, its application is recommended when sufficient empirical evidence can be found to support the research process and help provide an appropriate solution to the problem (Acosta, 2023). The availability of this empirical data is crucial for ensuring the robustness and validity of the results

obtained. Thus, the quantitative design allows for a precise and systematic interpretation of the phenomena under study (Muñoz, 2015).

The quantitative approach should be used when the research problem is concrete and specific, and the goal is to measure observable real-world phenomena using standardized procedures (Guerrero and Guerrero, 2014). This approach is ideal for formulating hypotheses based on prior theories, collecting data through numerical measurements, and analyzing the results using statistical methods (Pimienta and De la Hoz, 2017). Its primary objective is to establish causal relationships, identify general patterns, and generate knowledge that is replicable and generalizable to a broader population. Furthermore, this approach minimizes uncertainty and error through rigorous process control, ensuring validity, reliability, and objectivity in the results (Hernández-Sampieri et al., 2014). The key considerations when choosing a quantitative methodology are:

- **Statistical analysis and cause-and-effect relationships:** Quantitative methodology is particularly well-suited for measuring the dispersion of values, establishing cause-and-effect relationships, and evaluating factors that impact organizational performance (Asryan, 2024).
- **Observational and experimental studies:** This approach is ideal for both experimental research designs, such as clinical trials, and non-experimental designs, such as observational studies. It allows for the rigorous collection of descriptive and analytical data (Nwabuko, 2024).
- **Assessment of Bias and Accuracy:** Quantitative methodology is used to analyze quantitative biases, allowing for the evaluation of the impact of systematic errors in observational studies. This helps adjust effect estimates and describe how biases may influence observed results (Shi et al., 2024).
- **Quantitative Measurement in Clinical Practice:** In the clinical setting, quantitative methodology is preferred over visual estimates, such as in measuring postpartum blood loss. This practice improves accuracy and reduces the likelihood of adverse outcomes (Wang et al., 2024).
- **Supply Chain and Sustainability Research:** In the context of sustainable decision-making within supply chains, mathematical programming and simulation models are used to evaluate economic, environmental, and social

dimensions, enabling more effective and responsible management (Mena-Reyes et al., 2024).

Quantitative methodology is crucial in fields that demand precision, objectivity, and the ability to generalize the results obtained. According to Vizcaíno et al. (2023), its usefulness is particularly evident in experimental studies, bias assessments, risk analyses, and data-driven decision-making. This methodology is highly adaptable, ranging from the exact sciences to the social sciences, and addresses the specific needs of each field of study. Quantitative methods are particularly effective for analyzing user perceptions, collections, systems, services, functions, and staff attitudes, as they allow for working with large populations and numerical data (Pandey et al., 2023).

Depending on the chosen research path, data collection techniques include various structures for obtaining data through interaction with both direct and indirect contacts (Daruhadi and Sopiati, 2024). The suitability of methods and techniques is not determined in advance but is conditioned by the specific problem the research seeks to address, the level of development of the substantive theory, and the nature of the question the researcher intends to answer (Padua et al., 2018).

Data collection techniques in quantitative research are essential for obtaining objective and measurable data (Weinreich, 2011). These techniques focus on gathering numerical data that, when analyzed statistically, allow for the identification of patterns and relationships (Babativa, 2017). On the other hand, the techniques used in qualitative methods are varied and are employed to obtain detailed and in-depth data, which facilitates an understanding of phenomena from the participants' perspective (Gavidia-Ruíz, 2022).

Quantitative techniques are characterized by their objectivity and standardization, as they are based on precise measurements that allow diverse perspectives and experiences to be categorized into a limited number of predetermined categories, thereby ensuring uniformity in the results (Butt, 2016). This standardization contributes to the generalizability of the data, allowing for valid inferences about broader populations and increasing the applicability of the findings (Clark, et al., 2019). Furthermore, quantitative data stand out for their ease of comparison; since they are numerical, they can be summarized and contrasted more clearly than qualitative data, which simplifies analysis and facilitates the interpretation of results (Indulska, 2012).

Among the techniques, observation is a fundamental method that consists of a meticulous and systematic process, allowing hypotheses to be validated or refuted through the direct perception of phenomena in their natural context, without artificial intervention (González-Vega et al., 2022; Fera et al., 2020; Fresno, 2019). This approach allows for an understanding of the representations of the studied community and its group dynamics (García, 2016; Guerrero and Guerrero, 2014).

Sociometric techniques are based on the premise that each individual plays a role within society and that this behavior is influenced both by the specific roles that characterize each person and by the cultural functions that society imposes—with varying degrees of success—on its members (Bezanilla, 2011). These techniques, widely used in the field of psychology, focus on the study and measurement of internal relationships within social groups. Their primary objective is to assess the affinities and aversions among the group's members, which allows for a simple and graphical representation of the relational structure existing at a given moment within that group (Useche et al., 2019).

Surveys are a widely used technique in scientific research for collecting data from a group of people, and they are characterized by the statistical systematization of responses for the analysis of results (Salvador-Oliván et al., 2021; Blanchar and Martínez, 2024; Arias, 2020). Finally, a literature review is key to analyzing the information contained in documents; it allows data to be processed and presented in a coherent and well-reasoned manner, thereby enriching the understanding of the topic under study (Peña, 2022; Meza-Salcedo et al., 2020; Martínez-Corona et al., 2023). These techniques, although used in different approaches, are essential for data collection and analysis across various research areas.

This section provides guidance on the differences between qualitative and quantitative research, which are so marked that they can be considered to represent two distinct cultures, each with its own inferential logic. These differences go beyond a simple distinction between the use of numbers in quantitative methodology and words in qualitative methodology. Their true differentiation lies in the basic orientations and mathematical traditions that underpin them, each suited to addressing specific tasks and achieving diverse objectives.

Quantitative methodology is based on inferential statistics and the analysis of multiple cases. This approach allows for the generalization of conclusions based on the study of large volumes of data, which is useful for identifying patterns and trends in social phenomena. In contrast, qualitative methodology is based on logic, set theory, and

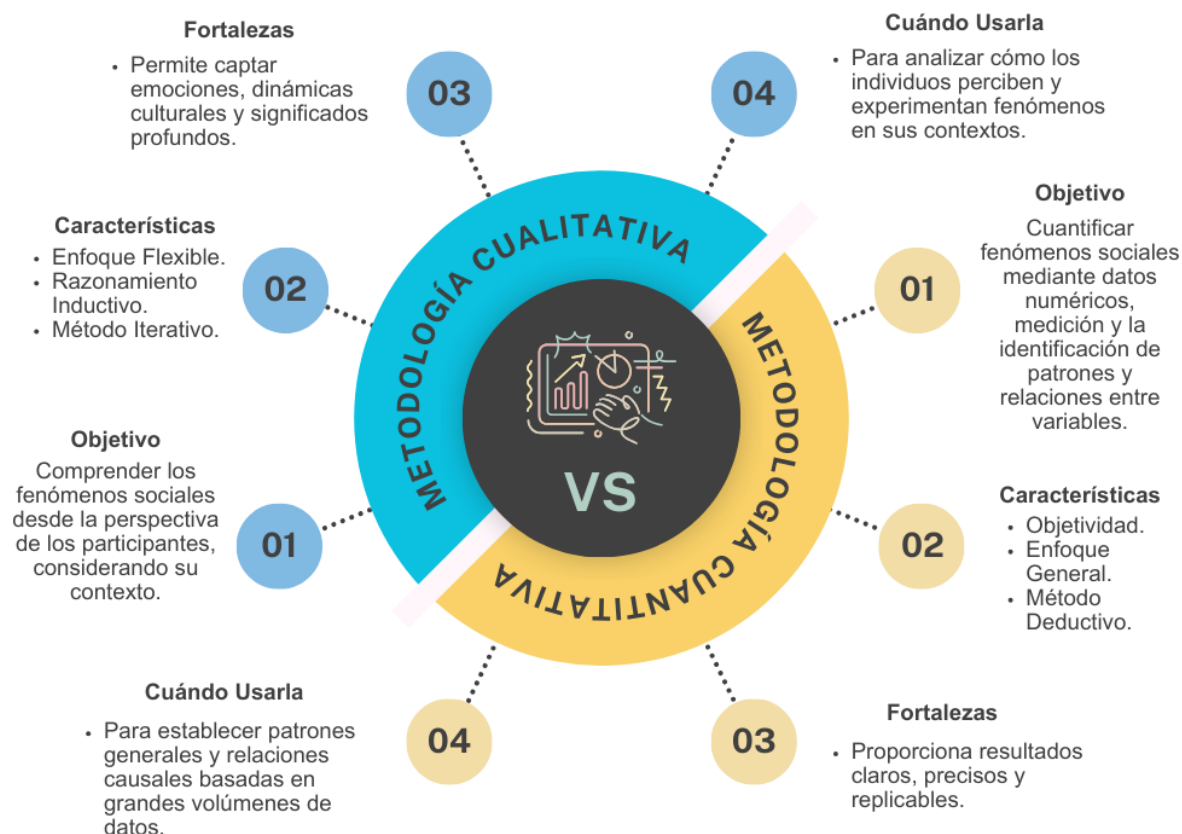
the detailed analysis of individual cases. This approach prioritizes a deep understanding of the contexts and particularities of the phenomena under study, highlighting their uniqueness.

A key aspect that distinguishes the two methodologies is their conception of causality. Quantitative research adopts a "cause-and-effect" approach, seeking to establish causal relationships based on patterns observed in the data. Qualitative research, on the other hand, follows a "effects-of-causes" approach, focusing on how specific contexts or conditions generate certain outcomes. Both approaches are valid and necessary, but they entail different methodological implications (Caminotti and Toppi, 2020).

Unlike the quantitative method, which directs the researcher's efforts toward deciphering and answering the questions "what?", "in what way?", and "when?" the phenomena under study occur, the qualitative method is oriented toward a deep understanding of the underlying reasons and mechanisms, focusing on the "why?" and "how?" these phenomena occur. This qualitative approach seeks to capture the essence of the contexts, motivations, and subjective perspectives of the actors involved. Thus, it allows for the description of events as well as the interpretation of their meaning and the social dynamics that shape them (Pimienta and De la Hoz, 2017).

Figure 1.

Comparison of Methodologies.



Qualitative research faces significant challenges, as it is not possible to achieve a level of precision comparable to that typically characteristic of quantitative research, especially in the physical and natural sciences. However, quantitative approaches fall short when dealing with social phenomena, due to their complexity and subjectivity, requiring interpretive and flexible approaches that go beyond strict measurement. Nevertheless, although the quantitative model is often inapplicable in various types of social research, it offers a valuable basis for making comparisons with qualitative research, which is more prevalent in the social sciences (Baena, 2014).

From a qualitative perspective, reality is conceived as a dynamic phenomenon that changes according to context and interactions among subjects; therefore, the processes that shape it are essential. This approach does not seek to generalize results but rather to interpret phenomena through detailed analysis of these processes, thereby enabling the development of well-founded and flexible theories that adapt to new realities (Calle, 2023). In contrast, the quantitative perspective views

reality as an effect conditioned by causes, with results that can be generalized, setting aside context and the particular characteristics of individuals. This approach focuses on identifying statistical relationships between variables, prioritizing the demonstration of general patterns over contextual analysis (Aguilar, 2023).

The complementarity between methodological approaches is grounded in the principles of consistency and dialectical unity. Quantitative methodology, based on a hypothetical-deductive logic, contributes to the research process by explaining cause-and-effect relationships (Castillo, 2021). On the other hand, the qualitative approach, with its inductive-deductive perspective, delves into the construction and decoding of meanings related to human subjectivity, considering both individual experiences and group dynamics arising from social processes (Herrera, 2018). Thus, combining both methods allows researchers to leverage their respective strengths to overcome the limitations of each, offering a more comprehensive and enriching view of the phenomenon under study.

Thus, the central issue lies in the fact that each method follows a distinct logic. While some methods possess certain virtues, others excel in different aspects. The various types of social phenomena demand differentiated theoretical approaches to understanding and explanation (Salinas-Atausinchi et al., 2023). In this sense, the choice of one paradigm over another determines and conditions the entire research process. Similarly, opting for a specific epistemology over another profoundly affects the purpose of the research and multiple aspects of the research work (Pérez et al., 2020).

Conclusions

Qualitative research is a methodological approach that focuses on exploring and understanding social phenomena through the analysis of experiences, perceptions, and meanings from the participants' perspective. Unlike the quantitative method, it does not seek to measure or generalize results, but rather to interpret the subjective and contextual aspects that shape the reality under study. This type of research values the richness and diversity of individual narratives, using techniques such as open-ended interviews, observations, and content analysis. Its goal is to capture the complexity of human phenomena, prioritizing depth over breadth and providing a comprehensive view that includes unique emotional, cultural, and social factors.

Likewise, this subjective approach prioritizes empathy, respectful interactions, and the contextual interpretation of human phenomena. Through spontaneous conversations, it captures unique and complex perspectives, such as values, emotions, or everyday struggles. Furthermore, it fosters the researcher's sensitivity to avoid bias and respect the realities being studied. It offers a deep and nuanced understanding of social phenomena from the perspective of individuals and communities.

Qualitative research stands out for its flexible nature and its ability to adapt to the context and the data collected. This approach seeks to "reconstruct" reality from the perspective of the people being studied, allowing hypotheses to emerge and be adjusted during the process, rather than starting from predefined assumptions. Its naturalistic nature prioritizes the analysis of cases in their everyday environments, respecting the normal unfolding of phenomena without intervening or manipulating conditions, which significantly distinguishes it from experimental approaches.

Quantitative methodology is a research approach that employs methods and techniques designed to measure and observe aspects of reality objectively, transforming observations into numerical data that facilitate statistical analysis. This method allows for the identification of patterns and relationships between variables, establishing correlations and possible cause-and-effect relationships. Its strength lies in the generalization of results, extrapolating valid conclusions to broad populations. Furthermore, by analyzing numerous cases, individual particularities are neutralized, constructing a systematic and general representation of social reality based on the relationships between variables.

Likewise, it should be used when the research problem is concrete, specific, and allows for the measurement of observable real-world phenomena through standardized procedures. It is ideal for formulating hypotheses based on prior theories, collecting numerical data, and analyzing it using statistical methods. This approach seeks to establish causal relationships, identify general patterns, and generate knowledge that is replicable and generalizable to a broader population. Furthermore, it minimizes uncertainty and error through rigorous control of the process, ensuring validity, reliability, and a precise and systematic interpretation of the phenomena under study.

Quantitative and qualitative methodologies differ in their objectives, approaches, and applications, but both are essential for understanding social phenomena from complementary perspectives. Quantitative research, based on statistics and the analysis of large volumes of data, seeks to generalize results by identifying clear

patterns and causal relationships. In contrast, qualitative research focuses on the in-depth analysis of individual cases and specific contexts, prioritizing an understanding of underlying meanings and dynamics. Thus, the former offers precision and generalizability, while the latter provides flexibility and contextual interpretation.

Both approaches also have limitations that can be overcome by combining them. Quantitative research, while robust in measurement, may be insufficient to address the complexity and subjectivity of social phenomena—areas where qualitative research excels by interpreting reality as a dynamic process influenced by contexts and human interactions. However, the qualitative approach lacks the capacity for generalization and precision found in the quantitative approach. The complementarity between these two approaches allows researchers to capitalize on their respective strengths: the quantitative approach contributes rigor in measurement and statistical analysis, while the qualitative approach offers depth in the interpretation and decoding of meanings, providing a complementary perspective that enriches our understanding of social phenomena

References

- Abad, A. (2020). Qualitative research in higher education. *Revista NOVUM*, 2(10), 30–49. <https://revistas.unal.edu.co/index.php/novum/article/view/82670>
- Acosta, S. (2023). Research Approaches in the Social Sciences. *Revista Latinoamericana Ogmios*, 3(8), 82–95. <https://doi.org/10.53595/rlo.v3.i8.084>
- Aguilar, L. (2023). Qualitative and Quantitative Research: Brilliant Complements. *Socio-Humanistic Paradigms*, 5(1), 7–11. <https://doi.org/10.26752/revistaparadigmash.v5i1.691>
- Alegre, M. (2022). Key Aspects of Data Collection Techniques and Instruments in Qualitative Research: A Conceptual Reflection. *Population and Development*, 28(54), 93–100. <https://doi.org/10.18004/pdfce/2076-054x/2022.028.54.093>
- Anza, I., López, A., González, F., Ruiz, G., García, T., Valverde, J., Cinesi, C., Martínez, J., Muñoz, A., Martínez, M., Soria, V., Navarro, F., Monteagudo, O., Abad, E., Vivo, M., Sánchez, J., Aguinaga, E., Sánchez, M., Castillo, M., Roca, A., Ríos, A., Carrillo, A., López, A. (2020). *Research Methodology and Evidence-Based Clinical Practice*. Editorial Quaderna.

- Arias, J. (2020). *Online Research Methods: Digital Tools for Data Collection*. Editorial Independiente.
- Asryan, A. (2024). Analysis of Quantitative Data Using Statistical Methods. *Accounting and Control*. <https://doi.org/10.36871/u.i.k.2024.08.01.008>.
- Baas, M., Barceló, M., & Herrera, G. (2012). *Research Methodology*. Pearson Education.
- Babativa, C. (2017). *Quantitative Research*. Fundación Universitaria del Área Andina Publishing.
- Baena, G. (2014). *Research Methodology*. Grupo Editorial Patria.
- Bautista, N. (2010). *The Qualitative Research Process: Epistemology, Methodology, and Applications*. Manual Moderno Publishing.
- Benavides-Lara, M., Pompa, M., Agüero, M., Sánchez-Mendiola, M., Rendón, V. (2022). Focus Groups as a Research Strategy in Education: Some Lessons from Their Design, Implementation, Transcription, and Moderation. *CPU-e, Journal of Educational Research*, 3(2), 1–25. <https://doi.org/10.25009/cpue.v0i34.2793>
- Bernal, C. (2016). *Research Methodology*. Pearson.
- Bezanilla, J. (2011). *Sociometry: A Method of Social Research*. PEI Publishing.
- Blanchar, T., & Martínez, N. (2024). Interview or Survey?: A Necessary Distinction. *Revista Latina De Comunicación Social*, 83(83), 1-25. <https://doi.org/10.4185/rlcs-2025-2339>
- Butt, N. (2016). *LibGuides: Quantitative Research Methods: Home*.
- Cajide, J. (2024). Quantitative and Qualitative Research: Some Considerations. *Educational Innovation Journal*, (34)3, 1-20. <https://doi.org/10.15304/ie.34.10166>
- Calle, S. (2023). Qualitative and Quantitative Research Designs. **Ciencia Latina: Multidisciplinary Scientific Journal**, 7(4), 1865–1879. https://doi.org/10.37811/cl_rcm.v7i4.7016

- Caminotti, M., & Toppi, H. (2020). *Social Research Methodology: A Toolkit*. Editorial Universitaria de Buenos Aires.
- Castañeda, M. (2022). The scientificity of quantitative, qualitative, and emerging methodologies. *Revista Digital De Investigación En Docencia Universitaria*, 16(1), 15–35. <https://doi.org/10.19083/ridu.2022.1555>
- Castañeda-Meneses, P., & Salamé-Coulon, A. (2021). Systematization and Social Work in Chile: The Long and Winding Road. *Journal of Social Work and Social Intervention: PROSPECTIVA*, 31(6), 1-20. <https://doi.org/10.25100/prts.v0i29.8196>
- Castillo, N. (2021). Phenomenology as a Qualitative Research Method: Questions from Research Practice. *Latin American Journal of Social Research Methodology*, 20 (10), 7-18. http://www.relmis.com.ar/ojs/index.php/relmis/article/view/fenomenologia_como_metodo/167
- Clark, T., Foster, L., & Bryman, A. (2019). 11. Collecting Quantitative Data. *How to Do Your Social Research Project or Dissertation*. <https://doi.org/10.1093/hepl/9780198811060.003.0011>.
- Cohen, N., & Gómez, G. (2019). *Research Methodology: What Is It For? Data Production and Research Designs*. Editorial Teseo.
- Daruhadi, G., & Sopiati, P. (2024). Research Data Collection. *International Journal of Social Service and Research*. <https://doi.org/10.46799/ijssr.v4i7.863>.
- Deslauriers, J. (2004). *Qualitative Research: A Practical Guide*. Papiro Publishing.
- Espinoza, E. (2020). Qualitative Research: An Ethical Tool in the Field of Education. *Conrado*, 16(75), 103–110. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1990-86442020000400103&lng=es&tlng=es.
- Feria, H., Matilla, M., & Mantecón, S. (2020). The interview and the survey: methods or techniques of empirical inquiry? *Revista Didasc@lia*, 3(2), 1-20. <https://dialnet.unirioja.es/servlet/articulo?codigo=7692391>

- Finol, M., & Arrieta, X. (2021). Qualitative Research Methods: A Documentary Analysis. *Encuentro Educacional*, 28(1), 9-28. <https://doi.org/10.5281/zenodo.8169472>
- Fresno, C. (2019). *Research Methodology: It's That Easy*. El Cid Editor.
- García, G. (2023). Qualitative Research from the Action Research Method. *UNICA Journal of Arts and Humanities*, 24(51), 196–210. <https://doi.org/10.5281/zenodo.10048464>
- García, J. (2016). *Research Methodology for Administrators*. Ediciones de la U.
- Gavidia-Ruíz, A. (2022). Observation in Research: Method or Technique? A Discussion of Tactics and Strategy. *Trujillo Medical Journal*, 17(3), 076–077. doi: <https://doi.org/10.17268/rmt.2022.v17i2.4857>
- Gómez, M., Deslauriers, J., & Álzate, M. (2010). *How to Write a Master's or Doctoral Thesis*. Eco Ediciones.
- González-Vega, A., Molina, R., López, A., & López, G. (2022). The qualitative interview as a research technique in the study of organizations. *New Trends in Qualitative Research*, 14(10), 571–586. <https://doi.org/10.36367/ntqr.14.2022.e571>
- Graham, R. (2012). *Analyzing Qualitative Data*. Editions Morata.
- Guerrero, G., & Guerrero, M. (2014). *Research Methodology*. Grupo Editorial Patria.
- Guerrero, V. (2022). Quantitative Approach: Taxonomy Based on the Depth of Knowledge Inquiry. *Llalliq*, 2(1), 13–27. <https://doi.org/10.32911/llalliq.2022.v2.n1.936>
- Guzmán, V. (2021). The Qualitative Method and Its Contribution to Social Science Research. *Gestionar: Journal of Business and Government*, 1(4), 19–31. <https://doi.org/10.35622/j.rg.2021.04.002>
- Guzmán-Brand, V., & Gelvez-García, L. (2024). Ethics and responsibility in the implementation of artificial intelligence: a systematic review. *Revista Ingeniería, Matemáticas y Ciencias de la Información*, 11(22), 107–118. doi: 10.21017/rimci.1081.

- Haddaway, N., Page, M., Pritchard, C., & McGuinness, L. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimized digital transparency and Open Synthesis Campbell Systematic Reviews, 18, e1230. <https://doi.org/10.1002/cl2.1230>
- Harari, Y. (2018). 21 Lessons for the 21st Century. In Part Three: Despair and Hope. (R. Joandoménec, Trans.) Debate
- Hernández, R., & Mendoza, C. (2018). Research Methodology: Quantitative, Qualitative, and Mixed Methods Approaches (6th ed.). McGraw-Hill.
- Hernández-Sampieri, R., Fernández, C., & Baptista, M. (2014). Research Methodology. McGraw-Hill.
- Hernández-Sampieri, R., Mendoza, P., Méndez, S., & Cuevas, A. (2019). Research Methodology for High School. McGraw-Hill.
- Herrera, J. (2018). Contemporary Research Practices: The Challenges of New Epistemological Approaches. Scientific Journal, 3(7), 6–15. <https://doi.org/10.29394/Scientific.issn.2542-2987.2018.3.7.0.6-15>
- Hyun, J., Farfán, L., & Jiménez, Á. (2024). How to Write a Systematic Review Article. Spine Surgery Journal, 2(2), 131–137. doi:10.35366/115863
- Indulska, M., Hovorka, D., & Recker, J. (2012). Quantitative approaches to content analysis: identifying conceptual drift across publication outlets. *European Journal of Information Systems*, 21, 49–69. <https://doi.org/10.1057/ejis.2011.37>.
- Jiménez, J., Moreno, M., & De la Cruz, J. (2023). Meanings of research methodology in doctoral programs in Education. An exploration from the perspective of the curriculum. *Educación*, 32(62), 161–184. <https://doi.org/10.18800/educacion.202301.007>
- Jiménez, W., & Meneses, O. (2021). The use of quantitative techniques in legal and social science research. *Revista Inciso*, 23(1), 1–20. <https://revistas.ugca.edu.co/index.php/inciso/article/view/1108>

- Jociles, M. (2018). Participant observation in the ethnographic study of social practices. *Revista Colombiana De Antropología*, 54(1), 121–150. <https://doi.org/10.22380/2539472X.386>
- Kassin, S., Fein, S., & Markus, H. (2015). *Social Psychology*. Cengage Learning.
- Loayza, E. (2020). Qualitative Research in the Humanities and Education: Criteria for Writing Scientific Articles. **Educare Et Comunicare: Research Journal of the Faculty of Humanities**, 8(2), 56–66. <https://doi.org/10.35383/educare.v8i2.536>
- Martínez-Corona, J., Palacios-Almón, G., & Oliva-Garza, D. (2023). Guide to Literature Review and Analysis: A Proposal from a Research Perspective. *Ra Ximhai: Scientific Journal of Society, Culture, and Sustainable Development*, 19(1), 67–83. <https://dialnet.unirioja.es/servlet/articulo?codigo=8851658>
- Mena-Reyes, J., Vergara, F., Linfati, R., & Escobar, J. (2024). Quantitative Techniques for Sustainable Decision Making in the Forest-to-Lumber Supply Chain: A Systematic Review. *Forests*. <https://doi.org/10.3390/f15020297>.
- Meza-Salcedo, G., Rubio-Rodríguez, G., Mesa, L., & Blandón, A. (2020). The Formative and Pedagogical Nature of the Literature Review in Research. *Información tecnológica*, 31(5), 153–162. <https://dx.doi.org/10.4067/S0718-07642020000500153>
- Molano, M., Valencia, A., & Apraez, M. (2021). Characteristics and importance of qualitative methodology in scientific research. *Revistas Semillas del Saber*, 1(1), 1-20. <https://revistas.unicatolica.edu.co/revista/index.php/semillas/article/view/314>
- Mora, R. (2022). 19. The Value of Qualitative Research and Understanding: A Critical Examination. *EDUCARE Journal - UPEL-IPB - Second New Phase 2.0*, 26(1), 389–405. <https://doi.org/10.46498/reduipb.v26i1.1625>
- Münch, L., & Ángeles, E. (2012). *Research Methods and Techniques*. Trillas Publishing.
- Muñoz, C. (2015). *Research Methodology*. Oxford University Press.

- Muñoz, Y., Castillo, I., & Zuno, J. (2024). Quantitative Research Method. *Ingenio Y Conciencia: Scientific Bulletin of the Ciudad Sahagún Higher Education Institute*, 11(22), 174–175. <https://doi.org/10.29057/escs.v11i22.12573>
- Nwabuko, O. (2024). An Overview of Research Study Designs in Quantitative Research Methodology. *American Journal of Medical and Clinical Research & Reviews*. <https://doi.org/10.58372/2835-6276.1169>.
- Padua, J., Ahman, I., Apezechea, H., & Borsotti, C. (2018). Research Techniques Applied to the Social Sciences. Fondo de Cultura Económica.
- Pandey, P., Madhusudhan, M., & Singh, B. (2023). Quantitative Research Approach and Its Applications in Library and Information Science Research. *Access: An International Journal of the Nepal Library Association*. <https://doi.org/10.3126/access.v2i01.58895>.
- Peña, T. (2022). Stages of Documentary Information Analysis. *Inter-American Journal of Library Science*, 45(3), 50–65. <https://doi.org/10.17533/udea.rib.v45n3e340545>
- Pérez, L., Pérez, R., & Seca, M. (2020). Methodology of Scientific Research. Maipue Publishing.
- Pimienta, J., & De la Hoz, A. (2017). Research Methodology. Pearson Education.
- Piña-Ferrer, L. (2023). The Qualitative Approach: A Complex Alternative in the World of Research. *Koinonía Interdisciplinary Peer-Reviewed Journal*, 8(15), 1–3. <https://doi.org/10.35381/r.k.v8i15.2440>
- Piza, N., Amaiquema, F., & Beltrán, G. (2019). Methods and Techniques in Qualitative Research: Some Necessary Clarifications. *Conrado*, 15(70), 455–459. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S199086442019000500455&lng=es&tlng=es.
- Ramírez-Elías, A., & Arbesú-García, M. (2019). The Object of Knowledge in Qualitative Research: An Epistemological Issue. *University Nursing*, 16(4), 424–435. <https://doi.org/10.22201/eneo.23958421e.2019.4.735>

- Ramos-Galarza, C., & García-Cruz, P. (2024). Guide to conducting quantitative systematic review studies, *CienciAmérica Journal*, 13(1), 1–6, doi: 10.33210/ca.v13i1.444.
- Ríos-González, C. (2024). Qualitative Research in the Context of Public Health: An Update on Concepts. *Paraguayan Journal of Public Health*, 14(1), 51–58. <https://doi.org/10.18004/rspp.2024.abr.08>
- Rodas, F., & Pacheco, V. (2020). Focus Groups: A Framework for Their Implementation. *INNOVA Research Journal*, 5(3), 182–195. <https://doi.org/10.33890/innova.v5.n3.2020.1401>
- Rodríguez-Gómez, R. (2023). Qualitative Research in Public Health Published in Colombian Biomedical Journals Between 2011 and 2021. *Biomédica*, 43(1), 69–82. <https://doi.org/10.7705/biomedica.6476>
- Rojas-Gutiérrez, W. (2023). The relevance of qualitative research. *Revista Studium Veritatis*, 20(26), 79–97. <https://studium.ucss.edu.pe/index.php/SV/article/view/353>
- Salazar-Escorcia, L. (2020). Qualitative Research: A Response to Social and Educational Research. *Cienciamatria: Interdisciplinary Journal of Humanities, Education, Science, and Technology*, 11(6), 101–110. <https://cienciamatriarevista.org.ve/index.php/cm/article/view/327>
- Salinas-Atausinchi, Y., Sucari, Wilson, Sarmiento-Yujra, L., Huaman-Lucana, R., Paullo-Tisoc, Y., & Chavez-Orellana, G. (2023). How Should the Theoretical Framework Be Implemented in Quantitative Research? *Scientific Journal of Social Sciences*, 5(1), 102–113. <https://doi.org/10.53732/rccsociales/05.01.2023.102>
- Salvador-Oliván, J., Marco-Cuenca, G., & Arquero-Avilés, R. (2021). Evaluation of survey-based research in articles published in journals in the field of Library and Information Science. *Revista Española De Documentación Científica*, 44(2), 30–45. <https://doi.org/10.3989/redc.2021.2.1774>
- Sánchez, A., & Murillo, A. (2021). Methodological approaches in historical research: quantitative, qualitative, and comparative. *Debates por la historia*, 9(2), 147–181. <https://doi.org/10.54167/debates-por-la-historia.v9i2.792>

- Sánchez, F. (2019). Epistemic foundations of qualitative and quantitative research: consensus and disagreement. *Digital Journal of Research in University Teaching*, 13(1), 102-122. <https://doi.org/10.19083/ridu.2019.644>
- Shi, X., Liu, Z., Zhang, M., Hua, W., Li, J., Lee, J., Dharmarajan, S., Nyhan, K., Naimi, A., Lash, T., Jeffery, M., Ross, J., Liew, Z., & Wallach, J. (2024). Quantitative bias analysis methods for summary-level epidemiological data in the peer-reviewed literature: a systematic review. *Journal of Clinical Epidemiology*, 111507. <https://doi.org/10.1101/2024.04.23.24306205>.
- Sinche-Crispín, F., Infante, L., Espinoza-Quispe, C., Matos-Vila, G., & Gilvonio-Yaranga, F. (2023). The Implications of Social Phenomenology and the Socio-Critical Paradigm in University Education Research. *e-Revista Multidisciplinaria del Saber*, 1, e-RMS01112023. <https://doi.org/10.61286/e-rms.v1i.5>
- Tracy, S. (2021). Qualitative Quality: Eight Pillars for High-Quality Qualitative Research. *Márgenes Journal*, 2(2), 173–201. <https://doi.org/10.24310/mgnmar.v2i2.12937>
- Useche, M., Artigas, W., Queipo, B., & Perozo, E. (2019). Techniques and Instruments for Qualitative and Quantitative Data Collection. University of La Guajira Press.
- Vargas, X. (2011). How to Conduct Qualitative Research? A Practical Guide to Understanding What Research Is in General and How to Conduct It, with an Emphasis on the Stages of Qualitative Research. ETXETA Publishing.
- Vizcaíno, P., Cedeño, R., & Maldonado, I. (2023). Scientific Research Methodology: A Practical Guide. *Ciencia Latina: Multidisciplinary Scientific Journal*, 7(4), 9723–9762. https://doi.org/10.37811/cl_rcm.v7i4.7658
- Wang, T., Li, H., Liu, Y., & Min, X. (2024). Quantitative blood loss measurement methods for early detection of primary postpartum hemorrhage following vaginal birth: A scoping review. *Journal of Clinical Nursing*. <https://doi.org/10.1111/jocn.17216>.
- Weinreich, N. (2011). Evaluation methods. In *Hands-on Social Marketing: A Step-by-Step Guide to Designing Change for Good* (2nd ed., pp. 271–276). SAGE Publications, Inc., <https://doi.org/10.4135/9781452224879>

Yucra, T., & Bernedo, L. (2020). Epistemology and Quantitative Research. *IGOVERNANZA*, 3(12), 107–120. <https://doi.org/10.47865/igob.vol3.2020.88>