

## Quantitative-Qualitative Discussion: The Emerging Paradigm as Combination Approaches

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### **Abstract**

*Using a comprehensive orientation of the research idea from the ontology to the epistemology basis, this article examines the distinctions between qualitative and quantitative social research approaches. The main foundation of this work is a comprehensive review of the body of research on both qualitative and quantitative methods. This analysis makes it abundantly evident that the qualitative and quantitative approaches are different from one another. These distinctions are found in the various research layers. The mix-method approach is the best alternative strategy for social research, according to the discussion of qualitative and quantitative approaches and their advantages and disadvantages. Therefore, the mix-method not only offers the advantages of both the quantitative and qualitative approaches, but it also resolves the current controversy and reduces their drawbacks.*

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**Key Words:** *Qualitative Approach, Quantitative Approach, Ontology, Epistemology, Positivism, Interpretivism, Mix Method*

### **Introduction**

In everyday speech, research refers to the pursuit of knowledge. Research is the methodical study of an issue in order to identify solutions. The research can generally be divided into two categories: social science research and natural science research. While social scientists do research according to a systematic strategy, natural scientists apply the methods of natural scientists. According to Neuman (2006) social research refers to the systematic and scientific procedure that researcher applied different methods and methodologies to acquire the knowledge about the social world.

In social science research, the way of acquiring the knowledge of social reality depends on the different epistemology, theoretical perspectives, methodologies and methods (Neuman, 2006). The method of social inquiry or approach varies from one orientation to another based on these factors. In the social and behavioral sciences, there are now three main study paradigms. They include mixed, qualitative, and quantitative methods.

Demography as a social science as well as inter-disciplinary social science and the aims of formal demography derive from its historical rooted as quantitative approach.

But quantitative demography is more than just plainly reporting numbers, without considering competing explanations or individual differences (Preston, 1993). One of the main points of contention in the social sciences has been the contrast between quantitative and qualitative research approaches. The positivist foundation of quantitative research places a strong emphasis on numerical measurement, objectivity, and testing hypotheses to produce conclusions that can be applied broadly. On the other hand, qualitative research—which is sometimes linked to interpretivism—focuses on using non-numerical data to comprehend human experiences, meanings, and the complexity of social processes. Arguments about the relative merits and suitability of each strategy have resulted from this division. Nonetheless, a paradigm that aims to combine the advantages of both approaches is provided by the rise of mixed-methods research.

Conversely, a large portion of demography's quantitative techniques have evolved to study variability. It is necessary to triangulate between the qualitative and quantitative approaches because of the recent emergence of the demography as an inter- and multi-disciplinary field. In addition to evaluating the paradigm shift in demographic research from quantitative to the mix method, this paper aims to analyze and distinguish between qualitative and quantitative research approaches based on epistemology, theoretical perspectives, methodologies, and methods, as well as triangulation between them as the mix method.

### **Dimension of Qualitative and Quantitative Approach**

In the 20th century, when academics struggled with methodological decisions while examining social phenomena, the quantitative-qualitative debate gained importance. The rigor, reproducibility, and generalizability of quantitative approaches were praised. Conversely, qualitative approaches were prized for their breadth, contextual awareness, and capacity to convey the complexity of the human condition. While opponents of qualitative methods said that they lack impartiality and are vulnerable to researcher bias, critics of quantitative approaches stated that they frequently ignore the subjective aspects of social life. Because of this polarization, researchers frequently only aligned themselves with one paradigm, creating a methodological gulf.

Quantitative researcher attempts to understand the reality by isolating and measuring components of that reality without regard to their contextual setting. Similarly, qualitative approach attempts to understand the reality by examining it in a holistic way or by examining components of that reality within their contextual setting (Bryman, 2008).

Ontology, epistemology, theoretical viewpoints, methodology, and methodologies are the main components of research. Each dimension suggests the formulation of a research topic, the conceptualization of a research project, and the execution of a study. Additionally, methodological and techniques decisions are always influenced

by ontological and epistemological stances. The development of theoretical perspectives, methodological considerations, and methodology and method choices are thus distinct from the emergence of research ideas in qualitative and quantitative research. Nonetheless, there are clear distinctions between the qualitative and quantitative approaches, with the quantitative approach being influenced by the heritage of demography research. However, the complexity and deviation of the new demography scope in recent years are not anchored in formal demography; rather, their scope relates to social demography, thus it is preferable to incorporate both methodological and epistemological triangulation.

### **Ontology, Epistemology and Theoretical Views**

Various ontological and epistemological presuppositions provide the intellectual underpinnings of both qualitative and quantitative research. The foundations of quantitative research are an objectivist epistemology, which holds that knowledge may be obtained by objective measurement and observation, and a realist ontology, which holds that reality exists apart from human perception. Contrarily, qualitative research is grounded in a subjectivist epistemology, which emphasizes the co-creation of knowledge between the researcher and participants, and a constructivist ontology, which maintains that reality is socially produced. The perceived incompatibility of the two systems has historically been influenced by these fundamental contrasts. Ontology is a philosophical belief system about the nature of social reality what can be known and how. It stands for the patterned set of assumption concerning reality. Similarly, an epistemology is a philosophical belief system about who can be a knower and it provides knowledge of reality (Guba & Lincoln, 1998). This is supported by the ontological and epistemological foundations of social reality, which are grounded in idealism and realism. From subjectivist to objectivist, there are a number of epistemological strands that include positivist, post-positivist, pragmatist, interpretive, participatory, and postmodern. For instance, is the social world constantly being created by human interactions and rituals, or is it patterned and predictable? Two radically distinct ontological and epistemological stances are represented by these presumptions. Every step of the research process, including topic selection, question formulation, method selection, sampling, research design, and research methods, is influenced by the researcher's ontological and epistemological stances, sometimes referred to as the philosophical foundation. As a result, the ontological and epistemological aspects of qualitative and quantitative research have different orientations. There are various theoretical stances to understand social reality based on ontology and epistemology. Philosophical position is provided by the theoretical viewpoints of research, which also inform the methodology and give the researcher context for its logic and standards. As a result, the theoretical stances of qualitative and quantitative approaches are different.

Neuman (2006) formulate ten distinct questions regarding the approach of research as positivist social science (PSS), interpretative social science (ISS) in which there are several distinct issues between them. The qualitative and quantitative approach are

differed from the orientation of research, purpose of research, nature of social reality, nature of human beings, views on human agency, relationship between science and common sense, explanation of truth, etc. On the basis of the theoretical perspectives, the answers of these questions are distinct to each other and these divergent answers differentiate the qualitative and quantitative approach.

### **Positivism as a Quantitative Paradigm**

The quantitative paradigm is based on positivism (Altheide and Johnson, 1994; Secker et al., 1995, Neuman, 2006, Bryman, 2008)). On the basis of positivist approach researcher analyze the social phenomenon as the empirical indicators which represent the truth. The ontological position of the quantitative paradigm is that there is only one truth and which consist as universal. The explanations are nomothetic and advanced with deductive reasoning. The reality seems to an objective that exists independent of human perception (Neuman, 2006; Guba and Lincoln, 1994). Epistemologically, the investigator and investigated are independent so the investigator is capable of studying a phenomenon without influencing it or being influenced by it (Guba and Lincoln, 1994). Similarly, a deterministic stance is taken regarding human agency and instrumental orientation is taken toward the knowledge.

The goal of quantitative research is to discover the universal laws within a value-free framework (Neuman, 2006, Bryman, 2008; Denzin and Lincoln, 1994). Positivist links to the structural functionalist, rational choice and exchange theory framework where researcher precise quantitative data and used statistical tools, sampling, randomization, blinding, highly structured protocols, and written or orally administered questionnaires with a limited range of predetermined responses (Neuman, 2008; Carey, 1993).

### **Interpretivism as Qualitative Paradigm**

The qualitative paradigm is based on interpretivism (Altheide and Johnson, 1994; Kuzel and Like, 1991; Secker et al., 1995, Bryman, 2008, Neuman, 2006) and constructivism (Guba and Lincoln, 1994). Ontologically there are multiple realities or multiple truths which are socially constructed (Neuman, 2006) and so it is constantly changing. On an epistemological level, explanation is ideographic and advanced by inductive reasoning, so access of reality is independent of our minds and unable to predict or generalize the universal law (Neuman, 2006). Social scientific evidence is contingent and context specific so the investigator and the object of study are mutually created within the context of the situation which shapes the inquiry (Neuman, 2006; Guba and Lincoln, 1994; Denzin and Lincoln, 1994). The emphasis of qualitative research is on process and meanings rather than the seeking the universal law.

Interpretivist concerned with how people interact and get along with each other. It is a systematic analysis of socially meaningful action through the direct observation and participation to understand the social reality (Neuman, 2006). To understand the

social reality observation, participatory, in-depth techniques and more qualitative information are used for the research.

### **The Quantitative and Qualitative Debates**

The underlying assumptions of the quantitative and qualitative paradigms result in differences which extend beyond philosophical and methodological debates. The quantitative and qualitative approaches of social research contrasted on technique and procedure (literal) as well as the epistemological assumption (derivative) (Howe, 1992).

The derivative comparison deals with more general epistemological presumptions, while the literal contrast deals with the nature of data, data collecting, research design, and analysis.

Quantitative research is typically considered to be the more scientific approach to doing social science. The emphasis is on applying precise definitions and meticulously operationalizing the meaning of certain concepts and variables. Qualitative research approaches place greater focus on interpretation, context analysis, and conceptual depth. Therefore, both strategies offer compelling arguments in favor of and against the strength of their respective strategies. Although both schools offer sound reasoning and have produced suitable instruments and methods for doing social research, they are vehemently opposed to one another and assert that their own methods are superior.

Qualitative researchers mostly attribute the failure of quantitative approaches on their inability to precisely describe and measure enough variables to comprehend intricate social interactions. Comparably, the quantitative approach blames the qualitative approach for its inability to forecast the scientific case for the validity and dependability of research and to thoroughly analyze the intricate structures underlying complicated natural interactions.

In demography, formal demography is primarily oriented toward the quantitative approach and favors the more quantitative variables and their measuring methods. Thus, the research process was associated with the quantitative method. Many academics and social demographers have been debating the qualitative and quantitative approaches and their suitability for demography research in recent years. Therefore, the present discussion about the logical selection and motivation of an acceptable research approach has equally evolved in the field of social demography as it does in qualitative and quantitative research.

### **Mix Method: The Evolution of Alternative Method**

Mixed-methods research has become a promising alternative to just quantitative or qualitative methodologies due to their inherent limitations. In order to provide a more thorough knowledge of research challenges, this paradigm promotes the deliberate integration of quantitative and qualitative methodologies within a single study.

Mixed-methods research aims to provide deeper insights, validate findings, and address research topics from several angles by fusing numerical data with detailed narrative descriptions. This strategy recognizes that in order to fully represent the complexity of complex social processes, many approaches are frequently needed.

On the most basic level, quantitative research involves the use of methodological techniques that represent the human experience in numerical categories, sometimes referred to as statistics. Conversely, qualitative research provides detailed description and analysis of the quality, or the substance, of the human experience. However, there is much overlap between the two, both in practice and theory. Thus, these methodological approaches should not be viewed as diametrical opposites. As is the case with the positivistic/ interpretative debate, quantitative and qualitative approach does not represent disciplinary absolutes, much less moral ones. So, the best alternative of these debates is referred to the combining of these approaches as mix method (Creswell, 2012).

The validity and reliability of research's dependability, credibility, and transferability gave rise to the classic point of contention between qualitative and quantitative methods. The quantitative method makes a compelling case that the strength of research reflects its validity and dependability as well as its scientific basis for evaluation. On the other hand, qualitative research is more concerned with contextual reality than quantitative data. Therefore, the mix-method is the better notion and appropriate solution of the qualitative and quantitative argument that the social scientists are generating.

Having discussed some of the basic philosophical assumptions of the two paradigms, we are better able to address the arguments given for combining quantitative and qualitative methods in a single study. The two approaches can be combined because they share the goal of understanding, fallibility of knowledge, indetermination of theory by fact, and a value-laden inquiry process, commitment to understanding and improving the human condition (Neuman, 2006). It is preferable to combine the two methods for evaluating social reality and quantitative explanations in demography, especially social demography. Although mixed-methods research has many benefits, there are drawbacks as well. Careful preparation, a precise statement of the study goal, and a cogent design that complements the research questions are necessary when integrating two different approaches. In addition to being aware of potential epistemological conflicts, researchers need to be skilled in both quantitative and qualitative methodologies. Furthermore, the intricacy of mixed-methods designs may result in higher demands on finance, time, and analytical skills. Notwithstanding these difficulties, mixed-methods research is an appealing option for examining intricate social phenomena since it offers the possibility of deeper and more thorough insights.

## Conclusion

This analysis clearly shows that qualitative and quantitative approach distinct to each other. These differentiations exist in the different layer of the research. The key issues in the quantitative-qualitative debate are ontological and epistemological. Quantitative researchers perceive truth as something which describes an objective reality, separate from the observer and waiting to be discovered. Qualitative researchers are concerned with the changing nature of reality created through people's experiences an evolving reality in which the researcher and researched are mutually interactive and inseparable. Regarding to the debate on qualitative and quantitative approach and their strength and weakness, the best alternative approach stands as the mix-method approach for the social as well as the social demographic research. So, mix-method not only provides the strength of quantitative and qualitative approach but also solve the existing debate and minimizing the weakness of theses approach. Eventually, the new paradigm will take a mixed approach.

The field of social science research has been profoundly impacted by the dispute between quantitative and qualitative methods. A paradigm shift that goes beyond the conventional dichotomy and provides a more comprehensive approach to comprehending complex phenomena is represented by the rise of mixed-methods research. Mixed-methodologies research offers a way to produce more thorough and nuanced insights by embracing methodological pluralism and acknowledging the complimentary merits of quantitative and qualitative methods. Promoting methodological openness and flexibility will be essential as the area develops to meet the complex problems that come with social science research.

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