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**The Mixed Methodology: Towards an Integrative Approach between
Quantitative and Qualitative Methods in Social Research**

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Abstract:

This research addresses the topic of the mixed-methods approach as a modern research methodology that seeks to transcend the traditional dichotomy between quantitative and qualitative methods through an integrative approach that allows for a deeper and more comprehensive understanding of scientific phenomena, particularly social ones, which have become highly complex and which cannot be comprehensively understood by relying on a single methodological approach. Therefore, through this research, we seek to highlight the justifications for adopting an integrative approach between methodologies, as defined by the most prominent contemporary methodological theorists. It has become clear that the adoption of a mixed-methods approach in scientific research is no longer merely a methodological addition, but rather a necessary methodological orientation for achieving a deeper understanding and accuracy in results.

Keywords: quantitative approach; qualitative approach; mixed-methods approach; methodological integration; social research.

Introduction

Contemporary scientific research is undergoing profound methodological shifts as a result of the complexity of phenomena and the interplay of their dimensions. This shift has given rise to new trends towards methodological integration, particularly with the emergence of the mixed-methods approach as a scientific option that transcends the boundaries of both quantitative and qualitative methodologies. This follows a long-standing conflict between two main schools of thought in the social sciences; the first advocates the quantitative approach as one based on measurement, experimentation and objectivity, whilst the second emphasises the importance of the qualitative approach, which is based on understanding, interpretation and the analysis of social meanings.

However, recent developments in scientific research have brought this intense conflict between the approaches to an end, leading to the emergence of a new trend based on the idea of methodological integration, clearly embodied in the mixed-methods approach, which has today become one of the most prominent methodological trends in the social sciences, given the scientific flexibility it offers and its ability to provide a comprehensive and in-depth understanding of complex phenomena, combining statistical rigor with interpretative analysis simultaneously.

In this context, this research contribution aims to explore the latest developments in scientific research methodologies in the social sciences while highlighting the importance of integration between quantitative and qualitative methodologies within the framework of what is known as the mixed-methods approach.

This study adopted a descriptive-analytical approach, presenting and analysing various conceptions associated with quantitative, qualitative, and mixed methods, while employing a comparative approach to highlight the differences and complementarities between them within the framework of contemporary social research.

Accordingly, in this research paper we have sought to address the following research question:

How has the mixed-methods approach contributed to methodological integration within the social sciences? What is its significance and what are the justifications for its use in contemporary scientific research?

THE FIRST TOPIC: THE CONCEPTUAL FRAMEWORK

First requirement: The Concept of Methodology

Maurice Engels defines methodology as "a systematic and logical process followed by the researcher to understand human phenomena by posing a problem, formulating hypotheses, collecting data, and then analysing and interpreting it to arrive at results open to scientific debate."¹

Consequently, methodology is generally regarded as "the correct sequence of mental processes we undertake in order to uncover and demonstrate the truth."

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Second requirement: the concept of the quantitative approach

One of the most well-known definitions of quantitative research is that put forward by Creswell, who defines it as "an approach aimed at selecting objective theories by examining the relationships between variables using numerical measurement tools."³

A characteristic of research using a quantitative approach is its use of numbers and statistics in the analysis and processing of data, which enables it to generalize its findings to the wider population. This type of research aims to verify the validity of a phenomenon by studying the relationships between variables and testing hypotheses in a systematic and controlled manner in order to arrive at accurate scientific explanations of phenomena. In this context, Kerlinger defines scientific research as 'systematic, controlled, experimental, and critical investigation of hypothetical issues concerning the relationships between phenomena'⁴.

The quantitative approach to data collection relies on what are known as standardised instruments, the most prominent of which is **the questionnaire**, or survey as some call it. It is a tool consisting of a set of predetermined written questions, often closed-ended, directed at members of the sample to obtain information that can be classified and statistically analysed⁵. Its importance lies in the fact that it allows for rapid and systematic use on a large sample of individuals while being simple, accurate, clear, and objective—essential conditions for ensuring the reliability of the results and, consequently, their generalizability. This is in addition to other tools, including tests and certain types of scales used to measure opinions and attitudes, as well as structured interviews.

All these tools support the questionnaire, as the researcher uses them to obtain numerical data suitable for statistical analysis.

Third requirement: The concept of the qualitative approach

The qualitative approach is an approach “aimed at exploring and understanding the meanings that individuals or groups attribute to a social or human problem.”⁶

Its importance lies in understanding complex phenomena that are difficult to measure numerically, and in understanding their meanings and implications after describing them accurately. Consequently, the qualitative approach is characterised by its capacity for induction, that is, the extraction of hidden meanings based on the significance individuals attach to their daily lives and their social reality, relying on a comprehensive description of behaviour, relationships, processes and systems on the one hand, and an in-depth interpretation of the problem under study on the other.

As for the tools relied upon by the qualitative approach in data collection, these include the well-known traditional tools: in-depth interviews, participant observation, case studies, and content analysis—which remain among the most prominent tools of qualitative analysis—and tools suitable for analyzing digital content, such as the use of images and videos, with the development of the digital world and the emergence of virtual communities.

Fourth requirement: The concept of the mixed-methods approach:

The mixed-methods approach is a methodological approach in its own right, with its own theories, terminology, and techniques. It is used in research by combining qualitative and quantitative approaches within a single study and by collecting and integrating data using research designs that involve differing philosophical assumptions and theoretical frameworks in order to form a more complete understanding of the research problem⁷.

Consequently, the mixed-methods approach is one that combines two or more methodologies within a single study, most often quantitative and qualitative methods, with the aim of achieving a deeper and more accurate understanding of the phenomenon under study. This approach has been developed by contemporary researchers, most notably the American **John W. Creswell** and the Iranian-American **Abbas Tashakkori**. Consequently, the importance of the mixed-methods approach lies in its ability to employ more than one methodology in

research, or what is known as triangulation, which allows the researcher to identify aspects of the phenomenon more accurately by approaching it from different perspectives, using different techniques and methods⁸.

The mixed-methods approach is also known as a research method that relies on **several designs, including the following:**

- **Concurrent design**, which allows the researcher to collect quantitative and qualitative data simultaneously and then integrate the results at a later stage. The aim is to compare the results to avoid bias⁹.
- **Sequential interpretive design**: This type of design allows the initial quantitative results to be explained using qualitative data, whereby the researcher begins by collecting quantitative data and analysing the results, then works to explain those results qualitatively. The researcher resorts to this type of analysis when the numerical results of the phenomenon under study require a more in-depth and clear interpretation.
- **Exploratory sequential design**: This is a design that begins with qualitative discovery first, then moves on to quantitative measurement. That is, converting the qualitative results obtained into quantitative tools used in a second phase to test and generalize them to a wider community. The aim of this design is to explore how qualitative data can improve and define a specific place for quantitative measures and tools¹⁰.

THE SECOND TOPIC: AN OVERVIEW OF THE ORIGINS OF QUANTITATIVE AND QUALITATIVE RESEARCH METHODS AND RECENT DEVELOPMENTS

Historically, scientific research has undergone significant development, particularly in the social sciences and humanities. It is no longer limited to a single approach; rather, methodologies have diversified to include quantitative, qualitative, and mixed methods. This development reflects researchers' need to understand phenomena from multiple angles that combine statistical rigor with interpretative depth.

First requirement: The Origins and Development of Quantitative and Qualitative Approaches

First section: The Quantitative Approach and the Positivist Paradigm

Its emergence was linked to the natural sciences between the 17th and 18th centuries with the development of the positivist movement, which relies on measurement, experimentation, and objectivity. It was subsequently adopted in the social sciences, with the aim of elevating these disciplines to the level of the natural sciences and thereby explaining social phenomena in an objective manner. The roots of this movement lie with the French social philosopher Auguste Comte, who maintained that the laws governing all phenomena could only be established through observation and scientific experimentation as practiced in the natural sciences, thereby moving beyond religious and metaphysical thinking. This is because, from a positivist perspective, social phenomena do not occur according to whims and chance but are subject to objective laws just like natural phenomena. This idea was developed by the French sociologist Émile Durkheim, who asserted in his book **The Rules of Method in Sociology** that the social phenomenon is an independent phenomenon, external to the individual and his feelings¹¹. It is this independence that has caused it to move gradually away from subjectivity and towards objectivity in a clear and distinct manner. They should therefore be studied objectively, using the experimental methods employed in the natural sciences. Durkheim reached this conclusion following a lengthy debate on the possibility of studying social phenomena objectively, given that they are human-related phenomena characterized by change and the interplay of various factors in their production¹².

For his part, the English sociologist and economist Herbert Spencer emphasized the importance of the positivist approach, considering it the only method for achieving objectivity in the study of social phenomena, thereby adopting the interpretative approach to understanding the laws of social development, based on Darwin's evolutionary and organic methodology. Hence the origins of quantitative research based on the positivist approach.

Second section: The Qualitative Approach and the Interpretative Paradigm:

The emergence of the qualitative approach was linked to the development of the social sciences at the end of the nineteenth century and the beginning of the twentieth, following the realization that the latter required a deeper understanding of the meanings derived from everyday life and real-world experiences—something that cannot be obtained or expressed by relying solely on quantitative analysis. This was aided by the development of phenomenological approaches, (Phenomenology) and symbolic interactionism, (**Symbolic Interactionism**), for which the American Chicago School deserves the greatest credit in the early 20th

century, and which focused on the study of social behaviour in urban life, using the most prominent empirical research techniques such as case studies, direct observation, discourse and message content analysis, and autobiographical studies. Subsequently, with the technological transformations characterizing the contemporary world, qualitative research techniques have evolved to include tools for analyzing social media platforms and virtual communities in general.

Second requirement: Methodological Developments in Quantitative and Qualitative Research

Quantitative and qualitative methodologies have undergone rapid developments as a result of technological progress and the complexity of social phenomena. The quantitative approach has undergone significant transformations, characterized by the use of big data and advanced statistical models, while the qualitative approach has moved towards the use of digital software and the enhancement of analytical rigor. In this context, the mixed-methods approach has emerged as a recent trend seeking to integrate quantitative measurement with qualitative understanding, reflecting the shift in scientific research from a logic of opposition to one of methodological pluralism.

Consequently, quantitative data analysis techniques have evolved through the use of big data, artificial intelligence, and advanced statistical models, which have become among the most significant developments in scientific research. Among the advantages of these tools is that they assist researchers in gaining a deep and comprehensive understanding of the phenomena under study, revealing hidden relationships that are difficult to discern using traditional techniques, while also granting them the ability to interpret and predict simultaneously. These advanced research tools allow for the identification of complex causal relationships from one perspective while simultaneously building accurate predictions of future phenomena from another, thereby enhancing the value of research from both scientific and applied standpoints.

However, from a third perspective, and despite the advantages that big data and artificial intelligence technologies offer in the development of scientific research, their use requires researchers to exercise caution, given that these advanced research tools—in the absence of critical analysis by the researcher and in the face of over-reliance on them—may yield misleading and unethical results. Therefore, to overcome this problem, curriculum experts recommend adopting an integrative methodological approach, combining quantitative analysis based on large-scale statistical data with qualitative analysis, which relies on a

comprehensive and in-depth interpretation of that data, while integrating ethical and social considerations into the design of models in order to arrive at scientific results characterized by accuracy, objectivity, and responsibility.

For its part, the qualitative approach has also undergone a notable evolution, as it is no longer merely a descriptive method but has gone beyond that to become a digital approach, integrated with other methodologies. It utilizes types of digital analytical software such as NVivo and Atlas.ti, known for their speed in analysing and coding data.

The introduction of digital analysis and the emergence of big qualitative data in qualitative studies have helped researchers to enter the virtual world through digital spaces, such as social media platforms, online forums, and others, thereby revealing the meanings and various patterns of daily interaction within virtual communities. Consequently, all these new tools have contributed to the development of what is known as **digital ethnography** as a modern extension of the **qualitative** approach, to which we owe the scientific discovery of the virtual world. This has enabled the analysis of human behavior and social life ‘in real time and on a broader scale¹³.

It is clear from the above that each approach has its own distinct advantages. While the quantitative approach provides us with important numerical data that supports scientific research with evidence, the qualitative approach delves into the depths of the phenomenon, lending greater depth to the quantitative results, which leads us to conclude that integration between the two is essential. In this regard, many researchers justify the hypothesis of convergence between the two approaches—despite the differing philosophical foundations on which each is built—because the weaknesses of one can constitute strengths for the other, which explains the possibility of combining them¹⁴.

THE THIRD TOPIC: THE TREND TOWARDS MIXED METHODS IN THE SOCIAL SCIENCES

First requirement: The Emergence and Development of Mixed Methods

Research in the social sciences has undergone a long evolutionary trajectory at the methodological level, initially passing through a phase of conflict between the quantitative and qualitative approaches, before serious scientific attempts later emerged to transcend this conflict through integrative approaches that combine quantitative measurement tools with the depth of qualitative interpretation. In this

context, the mixed-methods approach emerged as a research trend seeking to achieve methodological integration that keeps pace with the complexity of social phenomena. Its origins date back to the period between the 1970s and 1980s, when researchers began to realize that the most complex social phenomena are difficult to explain using a single method. Hence, calls began to move beyond the traditional dichotomy between quantitative and qualitative approaches and to adopt the concept of methodological triangulation as a fundamental means of verifying findings and enhancing their credibility.

First section: The Period of Methodological Conflict

The positivist approach dominated social research during the nineteenth century, influenced by the natural sciences. Sociologists of the time, such as Durkheim and Auguste Comte, recognized the possibility of subjecting social phenomena to measurement and experimentation. In the context of the intellectual and scientific transformations that Europe underwent following the Industrial Revolution and the French Revolution, Comte sought to establish a new science for the study of society based on scientific laws, believing that social phenomena are subject to fixed laws that can be discovered through the scientific method. For his part, Émile Durkheim championed the same idea when he called for the need to study 'social phenomena as things,' implying that these phenomena do not proceed by chance or whim but are subject to laws, just like natural phenomena. Here, the extent to which Durkheim was influenced by the positivist school founded by Auguste Comte, based on observation, experimentation, and the scientific analysis of facts, becomes apparent.

Following the criticism levelled at the positivist school, and accusations of its excessive reliance on the quantitative aspect, new intellectual and methodological trends emerged that adopted a more interpretative or qualitative understanding of social phenomena. According to this approach, it is necessary to understand subjective meanings through an understanding of human motivations and interactions, rather than reducing them to mere numbers and statistics. Max Weber is considered one of the most prominent representatives of this trend, who, alongside the pioneers of symbolic interactionism, reinforced the qualitative approach in the social sciences. This is what he clarified when defining sociology as the science "which seeks an interpretative understanding of social action"¹⁵. In doing so, he emphasised the specificity of social action, considering it a conscious and intentional human act.

This divergence in perspectives led to a methodological conflict between proponents of quantitative and qualitative approaches, which ultimately resulted in the adoption of an integrative methodological approach that combines both approaches in analysis, based on integrating quantitative and qualitative methods within a single study, with the aim of achieving integration between numerical data and qualitative interpretations.

Second section: The Stage of Methodological Integration

The transformations experienced by contemporary societies, whether at the technological or epistemological level, have raised the possibility of integrating quantitative and qualitative methodologies in scientific research in general and in social research in particular, especially given the increasing complexity of social phenomena. Neither approach is now capable of providing a comprehensive understanding of phenomena or encompassing them from all angles. Whilst the quantitative approach has the capacity for measurement and generalization, it does not grasp meanings and contexts with the same ability. The same applies to the qualitative approach, which shows its limitations in generalization and measurement despite its strength in providing an in-depth understanding of phenomena and so on. Consequently, contemporary scientific research is moving towards the dual use of both approaches as a necessity for achieving comprehensiveness and a more realistic understanding.

THE FOURTH TOPIC: THE IMPORTANCE OF THE MIXED METHODOLOGY AND JUSTIFICATIONS FOR ITS USE IN SOCIAL RESEARCH

First requirement: The importance of employing the mixed-methods approach

The mixed-methods approach has gained significant importance in contemporary scientific research for the following reasons:

- Overcoming the shortcomings of both quantitative and qualitative approaches: The use of both approaches in a single study, within the framework of what is known as the mixed-methods approach, does not seek to replace one with the

other, as noted by **Tashakkori** and **Teddl**, but rather seeks to capitalize on the strengths of both¹⁶ and combine their advantages in a single study.

- Gaining a deeper understanding of the problem and scrutinizing the results: This has been emphasized by many researchers, who have noted that employing the mixed-methods approach in research “provides a better understanding of research problems compared to using either approach in isolation”¹⁷. Consequently, the importance of the mixed-methods approach lies in its contribution to deepening understanding and enhancing the credibility of results, as it combines the ability to measure and interpret simultaneously.
- **Flexibility**: This characteristic makes the mixed-methods approach suitable for many disciplines, leading to enhanced collaboration between different fields of research and increasing the scientific value of the results¹⁸.

Second requirement: Justifications for the use of the mixed-methods approach in social research

What justifies the need to combine methodologies in the study of social phenomena? Here, it is important to note the nature of social phenomena. As phenomena linked to human beings and society, and given their multifaceted nature, they are difficult to subject to measurement and experimentation compared to natural phenomena. This means that, in this context, the quantitative approach has limited capacity to understand and interpret social phenomena in depth. Consequently, enhancing quantitative analysis with in-depth qualitative interpretation—or, rather, moving beyond reducing phenomena to a single dimension—helps to:

- A comprehensive and in-depth understanding of complex phenomena by employing a variety of tools that allow us to move beyond superficial analysis.
- Enhancing the accuracy of results and, consequently, ensuring the quality of social research design.

Hence, the scientific value of the mixed-methods approach becomes apparent, given the scientific flexibility it offers and its ability to study multidimensional phenomena.

Third requirement: Conditions for the Application of the Mixed Methodology in Scientific Research

The use of the mixed-methods approach in scientific research is subject to a set of rules, which the researcher must understand and adhere to, including:

- It must be constrained by the nature of the phenomenon to be studied and by the research problem¹⁹. This means that this type of methodology is not necessary for all types of research problems.
- The phenomenon to be studied must be a complex one, where neither approach alone – whether quantitative or qualitative – can achieve the research objectives. Here, the researcher must ensure that their research is suitable for this type of methodology and take care not to use it indiscriminately.
- The researcher must possess a high level of scientific competence and advanced skills combining quantitative and qualitative analysis.

Consequently, they must be capable of making dual use of the diverse research tools of both methodologies, such as questionnaires, statistics, interviews, and content analysis. They must be capable of synthesising the results and selecting the appropriate method and approach for doing so. This clearly indicates that using more than one methodology in a single study and employing more than one method of analysis and the ability to synthesize data and achieve results that combine quantitative precision with qualitative depth is no easy task for the researcher; rather, it poses a real challenge, necessitating the strengthening of their methodological training and the development of their research skills, particularly for beginners or those with limited experience in the field of research.

The need for researchers to be aware of the epistemological differences between these approaches. Each approach has its own philosophical background and theoretical frameworks from which it proceeds in addressing phenomena of various kinds. Consequently, the move towards methodological pluralism in scientific research, while necessary as previously noted, remains contingent upon this awareness, for the debate between quantitative and qualitative research “is not limited solely to research methods and strategies but also extends to epistemological and ontological issues”²⁰. This therefore necessitates justifying the integration of the two when studying any phenomenon, to avoid arriving at contradictory results that might undermine the credibility of the research.

Conclusion

Thus, based on what has been presented, it is clear how important quantitative, qualitative, and mixed methods are as fundamental pillars of contemporary scientific research. Although each differs in terms of philosophical foundations and analytical tools, contemporary views tend to emphasize the need for their integration, particularly when it comes to studying complex phenomena that require a combination of statistical rigor and in-depth interpretation.

In this context, the mixed-methods approach stands out as a methodological approach that transcends the traditional dichotomy between quantitative and qualitative research, by utilising the potential of each approach in an integrated manner that allows for the production of more comprehensive and realistic knowledge. This approach also reflects the shifts in contemporary social research, which has increasingly moved towards methodological openness and away from exclusionary judgements between methodologies.

However, the adoption of the mixed-methods approach is not without its challenges, whether in terms of study design, data analysis, or the integration of results, which requires the researcher to possess multidimensional methodological competence and the ability to balance the requirements of both approaches. Nevertheless, this approach remains one of the most capable of capturing social phenomena in all their complexity and multidimensionality, making it a promising avenue for the development of scientific research and the enhancement of the credibility of its results in the future.

Footnotes

¹ Maurice Angers, *A Practical Introduction to the Methodology of the Humanities*, 7th ed., Les Éditions CEC, Anjou (Québec), 2018, pp. 17–18.

² Muhammad Muhammad Qasim, *An Introduction to Scientific Research Methods*, 1st ed., Dar Al-Nahda Al-Arabiya, 1999, p. 52.

³ Creswell, J.W. & Creswell, J.D., *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 6th ed., 2023, p. 5.

⁴ Kerlinger, F.N., *Foundations of Behavioural Research*, 3rd ed., Holt, Rinehart and Winston, New York, 1986, p. 54

⁵ Abdul Hamid Saleh, *Principles of Philosophy*, Damascus University Press, Syria, 2005, p. 130.

⁶ Creswell, J.W., *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th ed., SAGE Publications, 2014, p. 4.

⁷ Daraji Zakari, “The Mixed Methodology and a Critique of its Research Designs in Interdisciplinary Studies,” *Al-Muqaddimah Journal of Humanities and Social Studies*, Vol. 9, No. 1, 2024, p. 745.

⁸ Rida Masad Al-Said, “Mixed Methods: An Integrative Approach to Combining Quantitative and Qualitative Data in Educational Research,” *Journal of Mathematics Education*, Vol. 24, No. 5, 2021, pp. 12–13.

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- ¹¹ Émile Durkheim, *The Rules of Sociological Method*, F. Alcan, Paris, 1919, p. 5.
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- ¹⁹ Bryman, A., *Social Research Methods*, 4th ed., Oxford University Press, Oxford, 2012, pp. 35–36.
- ²⁰ *Ibid.*

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