# Chapter 8
# Application of Qualitative Data Collection Methods in Agricultural Science

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## ABSTRACT

*Agricultural science, merging positivist and interpretivist views, employs diverse methodologies. Though quantitative methods prevail, the integration of qualitative methods is vital for understanding complex agricultural issues. This chapter reviews qualitative data collection methods in agricultural research. A bibliometric analysis of 628 studies from Scopus, focusing on interviews, focus group discussions, obser-*

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*vations, narratives, and surveys, reveals a steady increase in their use since 2005. A total of 413 journals published research using these methods. Key thematic areas are climate change, gender, food security, sustainability, and adaptability. Applying a combination of qualitative methods has enhanced the validity and reliability of research, thereby improving publication quality. The findings highlight the essential role of these methods in addressing complex agricultural issues and promoting a holistic approach for sustainable solutions.*

## INTRODUCTION

Agricultural science is a broad multidisciplinary field of biology encompassing the parts of exact, natural, economic, and social sciences used in the practice and understanding of agriculture (Bosso, 2015; Boucher, 2018). Hence, agricultural science covers various disciplines such as crop science, agronomy, horticulture, animal science, agricultural economics, agricultural extension, soil science, agricultural systems, environmental science, business, resource management, fishing, aquaculture, etc. Due to its mixed nature, the study of phenomena in agriculture can be influenced by positivist, interpretivist/constructivist and pragmatic epistemological positions, leading to the application of quantitative, qualitative and mixed-method research methodologies.

The positivist paradigm believes in a single reality and gives rise to quantitative approaches where deductive approaches are used, and hypotheses are formulated and tested. Qualitative approaches stem from constructivism/interpretivism, which believes in multiple realities and uses inductive and hypothesis-free approaches to understand phenomena. Additionally, the mixed-method design combines quantitative and qualitative research designs, positioning in a pragmatic paradigm that is more practically driven rather than philosophical considerations. Philosophers of this doctrine emphasize the need for a worldview that would provide research methods appropriate for studying the phenomenon at hand (Alise & Teddlie, 2010; Biesta, 2010). Mixed-methods research involves integrating the collection and analysis of quantitative and qualitative data (Creswell, 1999). Depending on the sequence of respective methodological use, mixed methods can be convergent, explanatory sequential, or exploratory sequential.

Agricultural science largely constitutes natural science; hence, applying quantitative methods predominates. Since agricultural science embeds social and human elements, on the other hand, suggests the need and relevance of applying qualitative methods to study some of the phenomena in agriculture despite controversies about the reliability and validity of qualitative research methods. Moreover, the recent development of agriculture with the growing societal interest in agricultural prac-