

Epistemological Paradigms and Methodological Approaches in Management Research

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<i>Received : 30/05/2026</i>	<i>Accepted : 11/06/2026</i>	<i>Published : 22/06/2026</i>
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Abstract:

In management science, choosing a research methodology is an essential and complex step in the scientific process. It requires rigorous reflection aimed at identifying the epistemological stance and methodological approaches best suited to the research objectives.

From this perspective, this article analyzes the epistemological and methodological foundations of research in management science, highlighting the main paradigms and the distinctions between quantitative, qualitative, and mixed-methods approaches. It also offers a reflection on the factors likely to influence a researcher's methodological choices, particularly the specific characteristics of management research and its epistemological positioning.

Keywords : Management science; Methodology; Epistemology; Interpretivism ; Constructivism.

JEL Classification Codes: B41, C18, M10

1- Introduction:

Scientific methodology forms the essential foundation of all management research aimed at producing knowledge and understanding organizational phenomena. Faced with the increasing complexity of political, economic, technological, and social environments, researchers

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are confronted with multidimensional problems requiring methodological approaches capable of describing, analyzing, interpreting, and sometimes predicting organizational realities.

Management sciences are characterized by an epistemological and methodological diversity that reflects the heterogeneity of their fields of application as well as the multiplicity of issues related to the functioning, governance, and dynamics of organizations. This plurality makes it difficult to define a precise and consensual scope of research in management, insofar as the phenomena studied are evolving, complex, and strongly influenced by their environment.

In this vein, Cohen (1996) defines management as "a set of practices, discourses, and theoretical or technical knowledge relating to the behavior of organizations." This definition highlights the multidimensional nature of management science and underscores the impossibility of using a single methodological approach to understand organizational realities. The diversity of research topics thus necessitates the use of varied and complementary methodological approaches, adapted to the nature of the phenomena studied, the objectives pursued, and the context of the study.

Management research can therefore employ quantitative, qualitative, or mixed-methods approaches to analyze organizational phenomena from different perspectives. Choosing an appropriate methodology is a crucial step in the research process, as it determines the relevance, reliability, and scientific validity of the results. This choice goes beyond simply selecting data collection and analysis tools and is part of an epistemological reflection on how to conceive of and interpret organizational reality.

Therefore, management researchers must not only master scientific research methods and techniques, but also adopt a critical and reflective stance toward the theoretical paradigms that guide their approach. Research methodology thus emerges as a comprehensive scientific approach aimed at producing a rigorous, objective, and contextualized understanding of managerial phenomena.

Furthermore, the evolution of managerial practices, the digitalization of organizations, and the rise of Big Data and artificial intelligence have profoundly transformed research methods in management science. These changes are leading researchers to rethink traditional methodological approaches and to integrate more flexible, interdisciplinary, and innovative methods.

In this context, this article aims to revisit the scientific approach in management science through a reflection on the main epistemological foundations that structure research in this discipline. It also seeks to analyze the different modes of reasoning employed in scientific work and to examine the criteria guiding the choice of methodological approaches, particularly the emergence and growing interest in mixed methods for studying complex organizational phenomena.

2- Research in management science:

Management science constitutes an interdisciplinary scientific field dedicated to the study of organizations, managerial practices, and decision-making processes. Its distinctive feature lies in the diversity of the phenomena studied, as well as in the complexity of the economic, social, technological, and human interactions that characterize contemporary organizations. This plurality gives management science a unique status, situated at the intersection of the social sciences and the action sciences (Pesqueux, 2020).

The scientific status of management science remains at the heart of numerous epistemological debates. The question of the scientific nature of management continues to challenge researchers: is management science an autonomous science or an applied field drawing on knowledge from disciplines such as economics, sociology, psychology, or cognitive science? Similarly, should management research be limited to observing and explaining organizational practices, or can it also contribute to their transformation?

Several works have contributed to the emergence of an epistemological foundation specific to management science. These include Herbert A. Simon's reflections on the science of the artificial,

Jean Piaget's work on the place of engineering in the spiral of science, and the systemic approaches developed by Peter Checkland through Soft Systems. Methodology has allowed us to move beyond a strictly positivist view of management science. In the same vein, Chris Argyris, with Action Science, as well as Armand Hatchuel and Molet, through their work on the rational modeling of organized systems, have shown that management research can simultaneously produce knowledge and transform action. The contributions of Jean-Louis Le Moigne on constructivism, Bernard Roy on decision support science, and Gérard Koenig on diagnostic action research also contribute to consolidating an epistemological and methodological identity specific to management science (Le Moigne , 1995; Hatchuel , 2005; Thiétart , 2014).

Research in management science pursues several complementary goals. First, it aims to generate new knowledge about how organizations function, how individuals behave, and how decision-making processes work. This knowledge contributes to a deeper understanding of complex organizational phenomena and to the development of theoretical frameworks and explanatory models for analyzing managerial dynamics and the behavior of individuals within organizations.

Furthermore, management research has a significant practical dimension, as it also seeks to provide solutions to the problems encountered by organizations. Research findings can thus be used to improve organizational performance, optimize managers' decision-making, and support companies in their strategic choices. For example, research in strategy allows for the analysis of the sources of competitive advantage and guides companies in their strategic decisions, while work in innovation management contributes to improving the processes of creating and developing new projects, and research in finance allows for the analysis of value creation mechanisms and guides companies' investment and financing decisions.

Finally, management science research plays a vital role in the overall understanding of the organizational world by analyzing its modes of operation, its transformations, and its interactions with its economic, social, and technological environment. It thus contributes to the development of scientific knowledge capable of analyzing, explaining, and understanding organizational and managerial practices.

3- The epistemological foundations of research in management science:

Epistemology refers to reflection on the nature, foundations, conditions of production, and limits of scientific knowledge. In management science, it plays a crucial role in that it clarifies how researchers understand the reality under study, construct knowledge, and justify their methodological choices (Thiétart, 2014). It thus constitutes a framework that guides the scientific approach adopted throughout the research process.

From a conceptual standpoint, epistemology can be defined as a philosophical discipline devoted to the study of the modes of construction, justification, and legitimation of scientific knowledge. In its classical conception, it was primarily based on a normative approach aimed at evaluating the logical and cognitive value of scientific knowledge in order to assess its degree of certainty and justification (Soler, 2019). However, this approach has gradually evolved toward a more reflexive and dynamic conception of scientific knowledge. In this respect, epistemology corresponds more closely to "the study of the constitution of valid knowledge" (Piaget, 1967, p. 6), focusing on the processes by which knowledge is produced, legitimized, and recognized within the scientific community.

Epistemological reflection revolves around several complementary dimensions. The ontological dimension questions the nature of the reality being studied, while the epistemic dimension examines the nature of the knowledge produced. Added to this are a methodological dimension, centered on the processes used to produce and validate knowledge, and an axiological dimension concerning the values and aims of scientific activity (Guba & Lincoln, 1994). Thus, every scientific approach rests on a particular representation of reality and employs a variety of methods—experimental, historical, discursive, or statistical—based on specific criteria of validity (Thiétart, 2014). The knowledge produced can then aim to explain, understand, predict, or even transform the phenomena under study.

From this perspective, explicitly stating one's epistemological position is of fundamental importance, as it allows researchers to clarify

the foundations of their research, justify their theoretical and methodological choices, and ensure the overall coherence of their scientific approach. It also contributes to strengthening the validity and credibility of the knowledge produced, while facilitating an understanding of the divergences between different theoretical currents. As Thiétart (2014) emphasizes, epistemological reflection also constitutes a driver of scientific innovation by going beyond the mere pursuit of coherence between the methods employed and the objects of study.

This reflection is embodied in various epistemological paradigms that structure research in management science. A paradigm can be defined as a frame of reference encompassing a set of beliefs, values, principles, and techniques shared by a scientific community at a given time (Kuhn, 1962). It constitutes an intellectual model that guides how researchers perceive reality, formulate research questions, and select appropriate methods for studying them. This framework thus provides a common language that facilitates the accumulation and transmission of scientific knowledge.

In management science, three main epistemological paradigms are generally distinguished: positivism, interpretivism, and constructivism (Saunders et al., 2019). These paradigms differ in their conception of reality, the status accorded to the researcher, and their approach to the production of scientific knowledge. According to Neuman (2007), all scientific research rests on a set of hypotheses, beliefs, and procedures for collecting, analyzing, and interpreting data that guide how we understand reality and construct scientific knowledge.

3-1. The positivist paradigm:

The positivist paradigm rests on the idea that reality exists independently of the researcher and is governed by objective and causal laws (Popper, 1999). Inheriting the work of Auguste Comte, this school of thought considers that social phenomena can be observed, measured, and explained rationally through empirical facts. In this framework, the researcher adopts a position of neutrality and detachment from the object of study in order to guarantee the objectivity of the knowledge produced.

Positivist research generally follows a hypothetico-deductive logic. Researchers formulate hypotheses based on existing theories and then proceed to verify them empirically using quantitative methods and statistical tools. The knowledge thus produced is considered objective, measurable, generalizable, and reproducible. Positivism rests primarily on two fundamental postulates: an ontological postulate, according to which reality possesses an independent existence separate from the observer, and a deterministic postulate, which assumes that all phenomena result from identifiable causal relationships (Neuman , 2007; Thiétart et al., 2014).

In this context, the research objective is to discover the regularities and general laws that can explain and predict the phenomena under study. Quantitative methods, statistical surveys, and causality tests are therefore particularly favored in this approach.

3-2. The interpretivist and constructivist paradigms

Unlike positivism, interpretivist and constructivist paradigms consider that social reality cannot be entirely independent of the individual observing it. Reality is perceived as a social construct developed through the interactions, experiences, and representations of actors in specific contexts (Thiétart et al., 2003). The knowledge produced is therefore subjective, contextualized, and closely linked to the meanings attributed by individuals to their actions and their environment.

Interpretivism primarily aims to understand the meaning that actors ascribe to their behaviors, practices, and the situations they experience. From this perspective, the researcher is less concerned with establishing universal laws than with accessing individuals' representations, motivations, and lived experiences. Social reality is thus understood as multifaceted, relative, and context-dependent. The researcher adopts a comprehensive approach based on immersion in the field, listening to the actors, and interpreting their discourse and practices (Denzin & Lincoln, 2005).

This approach generally favors qualitative methods such as interviews, participant observation, or content analysis, allowing access

to the complexity of human and organizational phenomena. The objective is not to explain phenomena through universal causal relationships, but to understand the meanings constructed by the actors themselves.

Constructivism shares this view that reality is socially constructed. However, it places greater emphasis on the active role of the researcher in the knowledge production process. Inspired in particular by the work of Jean Piaget and Le Moigne (1994), constructivism considers that knowledge results from a cognitive construction process developed through interactions between the researcher and their field of study.

From this perspective, the researcher does not discover a pre-existing objective reality; rather, they construct a representation of reality based on their experience, interpretations, and interactions with the actors being studied. The knowledge produced is therefore relative to the context and the research project being pursued. It is evaluated not according to its conformity to an objective reality, but according to its relevance, coherence, and ability to meet the research objectives (Le Moigne, 1995).

Thus, while positivism prioritizes objectivity, measurement, and causal explanation, interpretivist and constructivist paradigms place greater emphasis on understanding meanings, social interactions, and subjective constructions of reality. These different stances directly influence methodological choices, the role assigned to the researcher, and the nature of the knowledge produced in management science.

Table N°1: Epistemological positions of research

Dimensions	Positivist paradigm	Interpretivist paradigm	Constructivist paradigm
Nature of reality (Ontology)	Reality consists of objective data, independent of the individuals who observe it.	Reality is perceived and interpreted through the knowledge and representations of the subjects.	The reality is: • a cognitive construct developed by individuals who experience the world; • a co-construction resulting from interactions between the actors.
Researcher/object of research relationship	Independence : the researcher does not influence the observed reality.	Empathy : the researcher interprets the discourses and actions of the actors, who themselves interpret the object being studied.	Interaction : the researcher participates in the construction of interpretations and/or projects with the actors concerned.
Knowledge Project	Describe, explain and confirm.	To understand.	Build.
Knowledge construction process	Knowledge is produced from the discovery of regularities and causal relationships.	Knowledge is based on an empathetic understanding of the actors' representations.	Knowledge is constructed through the design and development of a phenomenon or project.

Source: Giordano, 20003

Each paradigm thus claims a specific position regarding the nature of the reality studied, the status of the researcher, and the knowledge production process. However, regardless of the position adopted, Thiétart et al. (2003) emphasize the need for researchers to conduct rigorous epistemological reflection in order to clearly articulate the presuppositions that underpin their scientific approach. This reflection must also take into account the empirical and methodological constraints inherent in any research.

In this regard, Perret and Séville (2007) remind us that the researcher must question the nature of the knowledge he produces: is it objective knowledge reflecting a reality independent of the researcher, an interpretation constructed from the perceptions of the actors, or a construction elaborated by the researcher himself? The answer to this question conditions the entire scientific approach, from the choice of methods to the interpretation of the results obtained.

4- Reasoning Methods in Scientific Research:

In any research endeavor, the mode of reasoning employed to produce knowledge plays a central role (Hlady Rispal, 2002). Methodological reflection thus constitutes a fundamental step in the research process, from methodological choices to the definition of the research object, including the methods of data collection and processing. In management science, exploratory and testing approaches coexist and raise major epistemological debates, insofar as the choice of one or the other orientation is never neutral with regard to the scientific positioning of the research. More precisely, exploration generally follows an inductive and/or abductive logic, while testing relies more on deductive reasoning. This distinction leads the researcher to consider the most appropriate mode of reasoning for their study: deduction, induction, or abduction. It is therefore necessary to present these three modes of reasoning before justifying the choice adopted within the framework of the research.

4-1. Deductive reasoning

Deduction can be defined as reasoning that leads from the general to the specific, or from the whole to the part. It relies on previously

established postulates, principles, or theories from which the researcher deduces propositions applicable to the phenomenon under study. Thus, what is considered true at the general level is assumed to be true at the specific level as well. According to Charreire and Durieux (2007), deductive reasoning is characterized by the fact that, if the initial premises are true, the conclusions that follow from them must necessarily be valid.

In a deductive approach, the researcher formulates hypotheses based on a theoretical framework, then collects empirical data and compares these hypotheses with observed reality to assess their validity (Thiétart et al., 2007). Deduction thus forms the basis of the hypothetico-deductive approach, widely used in quantitative research. The researcher develops general hypotheses derived from theory, then deduces observable consequences that will be subjected to empirical verification.

Deductive reasoning thus allows us to move from the general to the specific and to apply general laws or principles to specific situations (Bergadàa & Nyeck, 1992). This approach is particularly well-suited when the research objective is to test hypotheses from the literature in a given empirical setting.

However, deductive reasoning is subject to some criticism. Indeed, the conclusions reached remain dependent on the initial premises: if the initial hypotheses are incorrect, the results obtained will also be incorrect. Furthermore, this approach leaves little room for the emergence of new elements from the field. Consequently, when research aims to enrich or reformulate theoretical hypotheses based on empirical observations, deductive reasoning may appear insufficient (Glaser & Strauss, 1967; Thiétart et al., 2014).

4-2. Inductive Reasoning

Induction is a reasoning process that leads from the specific to the general. It involves observing phenomena, collecting data, and identifying patterns in order to arrive at more general principles or laws. The researcher thus starts with empirical facts, specific situations, or field observations to progressively construct theoretical generalizations.

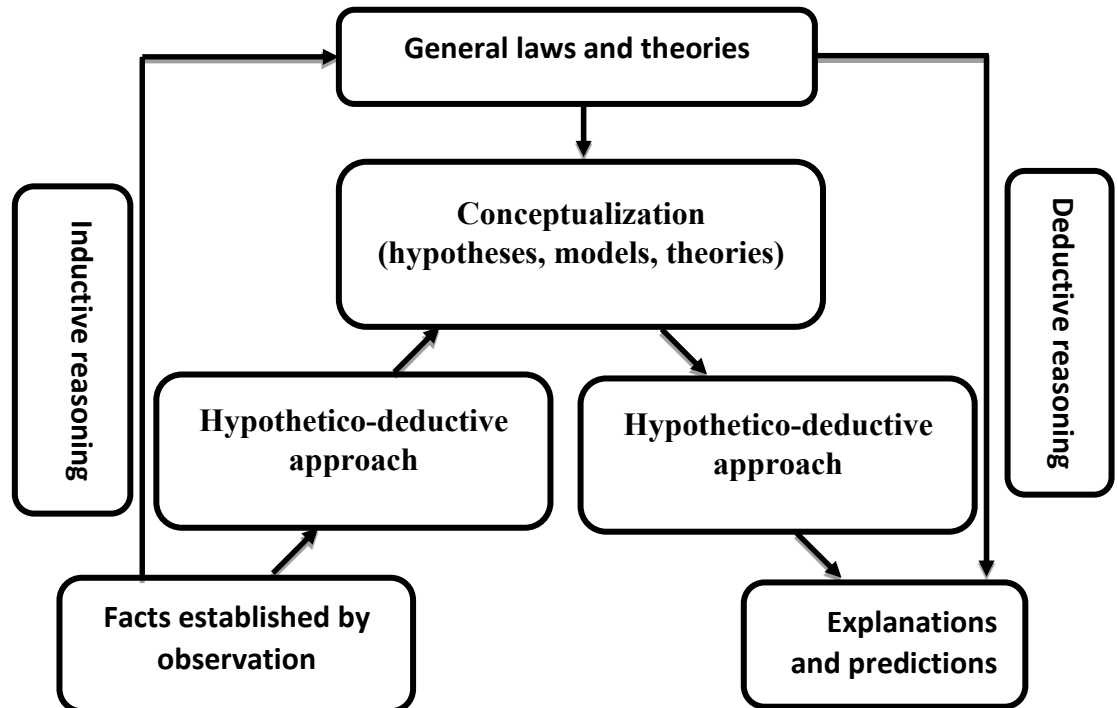
According to Charreire and Durieux (2007), induction is based on a logic that allows us to move from facts to laws, from observations to general principles, or from effects to causes. This approach gives priority to observation, inquiry, and experience in the knowledge production process.

Inductive reasoning therefore aims to construct theory from data collected in the field. It is particularly used in exploratory and qualitative research, where the researcher seeks to bring forth new concepts, categories, or relationships from the analysis of empirical data.

Nevertheless, several authors highlight the limitations of this approach in management science. Wacheux (1996) argues, in particular, that pure induction remains difficult to implement, while Evrard et al. (1993) believe it often constitutes a preparatory phase for a subsequent deductive approach. Thus, induction alone does not always guarantee the scientific robustness of the knowledge produced.

The process of constructing scientific knowledge in management science is based on an articulation between inductive and deductive reasoning, integrated into a hypothetico-deductive approach that allows empirical observation to be linked to theoretical conceptualization.

Figure N°1 : Scientific research methods



We consider that deductive reasoning proceeds from the general to the specific, while inductive reasoning evolves from the specific to the general. These two approaches are not opposed; rather, they appear complementary, insofar as every scientific model necessarily integrates elements of both inductive construction and deductive reasoning.

4-3. Abductive Reasoning

Faced with the respective limitations of deduction and induction, a third mode of reasoning has gradually become established in management research: abduction. This reasoning consists of formulating plausible explanatory hypotheses based on observed facts. In other words, the researcher's task is to identify the most probable explanation for an observed phenomenon.

Unlike deduction, which seeks to verify hypotheses formulated from a pre-existing theoretical framework, and induction, which aims to

identify general patterns through repeated observation of facts, abduction relies on a logic of discovery and understanding of observed phenomena. Abduction can thus be defined as reasoning that infers the probable causes of an observed situation by formulating conjectures capable of explaining the phenomenon under study. From this perspective, the researcher organizes and structures their empirical observations in order to produce new knowledge and construct coherent and scientifically grounded theoretical propositions (Charreire Petit & Durieux, 2007). For Peirce (1958), considered the principal theorist of abduction, this mode of reasoning allows one to move from the observation of particular facts to the development of plausible explanations based on previously mobilized knowledge. Abduction thus leads the researcher to infer mechanisms or relationships that are not directly observable in order to explain the phenomena being studied.

Following this same line of reasoning, Koenig (1993) considers abduction as an intellectual process that allows us to escape a fragmented or disordered perception of reality through the formulation of conjectures about the relationships that may exist between observed phenomena. Abduction, therefore, does not aim to immediately establish general or definitive laws, but rather to propose interpretive hypotheses that must then be discussed, tested in the field, and empirically validated. Thus, unlike induction, which seeks to identify relatively stable regularities, abduction grants discovery a provisional explanatory status, requiring a continuous process of verification and adjustment.

This approach appears particularly relevant in management research, where the phenomena studied are often complex, evolving, and highly dependent on their organizational context. According to Thiétart (2014), the abductive approach simultaneously enriches the understanding of the phenomena studied and strengthens the validity of the results produced. It fosters a better connection between existing theoretical knowledge and empirical realities observed in the field.

Methodologically, abduction is closely linked to inductive and deductive reasoning. These three forms of reasoning appear complementary in the process of producing scientific knowledge. Catellin (2004) emphasizes that abduction allows for the generation of hypotheses or premises that are then used by deduction to draw logical

conclusions, while induction contributes to the empirical validation of identified regularities. Abduction thus occupies an intermediate position between empirical exploration and theoretical formalization.

The abductive approach is particularly recommended when research aims to identify new variables, relationships, or mechanisms not explicitly anticipated by the initial theoretical framework (Thiétart et al., 2014). It fosters a reciprocal enrichment between existing theoretical models and lessons learned from fieldwork. In this approach, the theoretical framework is not considered fixed; it evolves progressively through interaction with empirical observations, the researcher's interpretations, and emerging insights during the research process. As Hallée and Garneau (2019) emphasize, abduction thus paves the way for the exploration of unexpected phenomena and the generation of new analytical perspectives.

Moreover, abduction appears particularly well-suited to contemporary contexts marked by uncertainty, complexity, and the rapid evolution of organizational environments. In management science, this approach offers a flexible methodological framework that allows actors to progressively construct meaning from their interactions, practices, and the situations they encounter (Hallée & Garneau, 2019).

In practice, the abductive approach relies on a continuous back-and-forth between empirical data and the theoretical knowledge used during the research. The researcher initially draws on concepts from the scientific literature to interpret observations gathered in the field. However, this theoretical knowledge is continually re-examined, adjusted, and enriched through interaction with empirical data. This iterative dynamic fosters a close connection between theory and fieldwork while ensuring progressive coherence between theoretical frameworks and observed phenomena.

Finally, the abductive approach helps to strengthen the relevance and validity of the results produced by enabling a thorough, contextualized, and evolving understanding of the realities studied. It thus appears as a particularly suitable approach for management science research seeking to understand complex phenomena while fostering the emergence of new theoretical and empirical knowledge.

5- The choice of methodological approach: towards a mixed method

The choice between a quantitative and a qualitative approach is a fundamental methodological decision that guides the entire scientific research process. According to Thiétart (2014), this choice depends primarily on the researcher's objective, whether it be to test an existing theoretical framework or to progressively construct a new theoretical object. However, the use of a quantitative or qualitative methodology cannot be reduced to a simple opposition between induction and deduction, nor to a strictly determined epistemological stance. Even though qualitative approaches are often associated with interpretive and constructivist paradigms, while quantitative approaches are generally linked to positivism and hypothetico-deductive reasoning, the methodological choice rests above all on the suitability of the method used, the problem being studied, and the nature of the observed phenomenon (Charreire Petit & Durieux, 2007).

In management research, quantitative and qualitative methods occupy a central place due to their complementarity in the production of scientific knowledge (Thiétart et al., 2014). These two approaches are distinguished primarily by the nature of the data collected, the analytical techniques used, and the knowledge objectives pursued. Quantitative methods rely essentially on numerical data expressed as measurements, percentages, ratios, or statistical indicators, while qualitative methods produce verbal and textual data such as narratives, observations, interviews, or case studies (Kumar, 2011).

The quantitative approach prioritizes a logic of measurement, standardization, and generalization of results based on often large and representative samples. It employs statistical tools to identify relationships between variables, test hypotheses, and establish causal links (Neuman, 2007). This approach is generally rooted in a positivist stance aimed at producing results considered objective, reproducible, and comparable (Bryman & Bell, 2015). Quantitative analysis procedures thus rely on codified techniques such as correlations, factor analyses, means, and statistical regressions, facilitating scientific validation and the replication of results.

Furthermore, quantitative methods offer the advantage of enabling the rapid and standardized processing of large volumes of data. Since digital information is easily recorded, stored, and processed by computer, this approach facilitates the aggregation, synthesis, and generalization of results to larger populations (Miles & Huberman, 2003; Creswell, 2014). Many institutional decision-makers thus place considerable trust in quantitative analyses, which they consider more objective and less dependent on the researcher's subjectivity (Patton, 1990).

Nevertheless, quantitative approaches have certain limitations when it comes to understanding the complexity of human, social, and organizational phenomena. While they can identify statistical relationships or measurable variations, they often struggle to explain the processes, motivations, and meanings underlying observed behaviors (Denzin & Lincoln, 2005). Their reliance on predefined indicators also reduces their ability to detect emergent, unexpected, or difficult-to-quantify phenomena, such as perceptions, beliefs, representations, or lived experiences of actors (Wacheux, 1996).

Conversely, qualitative research primarily aims to understand the meanings, perceptions, rationales for action, and experiences of actors within their natural context (Mucchielli, 1996). This approach seeks to highlight the social, organizational, and economic mechanisms that structure the situations studied, while taking into account the diversity of contexts and observed realities. Unlike quantitative approaches oriented towards the search for general regularities, the qualitative approach prioritizes a thorough and contextualized understanding of social and organizational phenomena (Dumez, 2010).

The goal of qualitative research is therefore not to establish universal laws, but rather to identify mechanisms, dynamics, and processes that may manifest themselves differently depending on the contexts studied. This logic corresponds to an analytical generalization approach based on the interpretation of phenomena within their real environment (Yin, 2014). The qualitative approach thus allows the researcher to interpret the behaviors, practices, and representations of actors based on the meaning they attribute to their lived experiences (Denzin & Lincoln, 2005).

From this perspective, the research problem remains fluid throughout the investigation process. Yin (2014) emphasizes that the initial research definition must remain provisional to allow for the gradual integration of collected empirical data and emerging interpretations. The research question then plays a central role in defining the unit of analysis, whether it be a sector of activity, an organization, a group of actors, or individuals interviewed. However, this definition may evolve as fieldwork progresses and results are obtained (Thiétart et al., 2014).

Qualitative methodology employs various interpretive techniques to describe, analyze, and understand the phenomena under study. According to Coutelle (2005), qualitative analysis involves reformulating, explaining, and theorizing experiences, testimonies, and observed situations. Following this line of reasoning, Denzin and Lincoln (2005) consider qualitative research particularly well-suited to studying phenomena in their natural context through methods such as interviews, field observations, focus groups, and case studies.

The scientific quality of qualitative research depends heavily on the researcher's methodological rigor and analytical skills in processing and interpreting the collected data (Miles & Huberman, 2003). Qualitative analysis involves in-depth interpretive work aimed at making sense of the discourses, behaviors, and interactions observed in the field. This close connection to the field also allows the researcher to access data at its primary source and to consider the subtle details that structure the social phenomena under study.

Qualitative methods also offer considerable methodological flexibility and allow for in-depth study of specific or atypical situations that might be overlooked in a general statistical approach (Eisenhardt, 1989). They facilitate the consideration of divergent viewpoints and the analysis of the complexity of social realities. They thus appear particularly well-suited to research addressing the "how" and "why" of organizational and social phenomena (Dumez, 2010). Unlike quantitative approaches, they do not always require exhaustive prior knowledge of the field, which fosters the gradual emergence of new avenues of analysis during the research process (Thiétart et al., 2014).

Among the various strategies employed in qualitative research, the case study plays a significant role in management science and the social sciences. Yin (2014) distinguishes several research strategies, including surveys, historical analysis, document analysis, experimentation, and case studies. The latter aims to gain an in-depth understanding of the dynamics specific to a particular context through a detailed and contextualized analysis of the phenomena under study (Eisenhardt, 1989).

According to Yin (2014), a case study is an empirical investigation of a contemporary phenomenon studied within its real-world context, particularly when the boundaries between the observed phenomenon and its environment are difficult to distinguish. This research strategy relies on drawing on multiple sources of information to understand the complexity of organizational and social phenomena.

Thanks to its interactive and contextualized nature, the case study allows for the analysis of complex situations involving multiple actors and different levels of interaction. It offers researchers considerable methodological flexibility by enabling them to simultaneously study several dimensions of the observed phenomenon. This approach thus fosters an understanding of the relationships between actors, their motivations, their perceptions, and their action strategies (Eisenhardt, 1989).

Yin (2014) also emphasizes that the case study proves particularly relevant when research seeks to answer the questions "how" and "why," when the researcher has limited control over the events studied, and when the analysis focuses on a contemporary phenomenon embedded in a real-world context. This method then allows for the grasp of the concrete and complex characteristics of social and organizational phenomena.

Table N°2: Comparison between quantitative and qualitative approaches

Elements	Quantitative approach	Qualitative approach
Data	Numbers	Words
Typical data collection methods	Predefined options and closed-ended questions in surveys, direct measurements, digital data collection	Open-ended questions in surveys and interviews, focus groups, observation, case studies
Analysis	Statistical methods (means, correlations, regression analysis)	Data summary, reduction, and coding; in-depth analysis of individual cases
Sampling	Large and random samples	Purposive (deliberate) sampling of the most relevant cases
Indicators	Specific, measurable and numerical indicators	Qualitative indicators or broadly defined questions
Typical research questions	How many? How often?	How or why did this phenomenon occur? For whom?
Data storage and processing	Data stored in digital form; largely automated processing	Data stored as text or attached reports; less automated processing

Given the respective strengths and limitations of quantitative and qualitative approaches, a consensus has gradually developed around their complementarity (Creswell & Plano Clark, 2011). Many researchers now believe that combining the two approaches enriches the understanding of the phenomena studied while compensating for the weaknesses inherent in each. This evolution has fostered the development of mixed methods based on the integration of quantitative and qualitative approaches within the same research or evaluation (White, 2009; Christofi et al., 2024).

Several combination methods can be employed within mixed methods frameworks. Triangulation involves comparing different data sources, methods, or perspectives to improve the validity and reliability of the results (Dźwigoł, 2022 ;Denzin & Lincoln, 2005). Methodological sequencing, on the other hand, relies on the successive use of qualitative and quantitative approaches, for example, when an exploratory qualitative study allows for the development of hypotheses that are subsequently tested quantitatively, or conversely, when statistical results are explored in greater depth through qualitative analysis (Creswell, 2014). Finally, cross-analysis allows for the integration of the two types of data, sometimes transforming qualitative data into quantitative data through coding, categorization, or rating scales (Miles & Huberman, 2003).

Mixed methods now occupy an important place in social science and management research, as they allow for a richer, more nuanced, and more comprehensive understanding of the phenomena studied (Saunders et al., 2019). They offer the possibility of combining the generalizability of quantitative approaches with the analytical and contextual depth of qualitative methods (Ratten, 2023). However, implementing these approaches requires significant methodological resources, more time, and a rigorous mastery of both methodological traditions to ensure a true integration of data and analyses (Tashakkori & Teddlie, 2010).

6- Conclusion:

Research methodology plays a crucial role in management science, as it provides the essential scientific framework for analyzing, understanding, and interpreting organizational phenomena. The relevance of a methodological approach thus rests on its ability to ensure the scientific rigor, validity, reliability, and contextualization of the knowledge produced.

This article highlights the specific characteristics of management science as an interdisciplinary field defined by a plurality of epistemological paradigms. The positivist, interpretivist, and constructivist paradigms are based on distinct conceptions of reality, knowledge, and the researcher's role in the research process. Positivism

prioritizes causal explanation and the search for general laws, while interpretivism focuses on understanding the subjective meanings that actors attribute to their experiences. Constructivism, for its part, emphasizes the social co-construction of organizational realities and the dynamic nature of the knowledge produced.

This paradigmatic diversity translates into the use of varied methodological approaches. Quantitative methods are distinguished by their ability to measure phenomena, test hypotheses, and produce generalizable results from representative samples. Qualitative methods, on the other hand, foster a deeper understanding of behaviors, practices, and organizational dynamics within their context. Mixed methods appear as a particularly promising avenue, allowing for the articulation of the advantages of quantitative and qualitative approaches to better grasp the complexity of contemporary managerial issues.

This reflection also underscores that coherence between epistemological stance, mode of reasoning, and methodological strategy is an essential condition for the quality of scientific work. Deductive reasoning primarily aims to test hypotheses derived from pre-existing theoretical frameworks, while inductive reasoning allows for the emergence of new conceptualizations from empirical observation. Abductive reasoning, for its part, fosters the development of plausible and innovative explanations for unexpected, complex, or paradoxical phenomena, thus contributing to a richer scientific understanding of organizational realities. The explicit articulation of these choices within any research project guarantees the internal coherence of the approach and promotes the comparability and cumulativeness of knowledge in management science.

Furthermore, the rapid evolution of organizational environments, marked by digital transformation, the development of artificial intelligence, the massive exploitation of data, and increasing interdisciplinarity, leads to a questioning of traditional methodological approaches and calls for the emergence of more flexible and integrative methods. In this context, several practical orientations deserve to be formulated. Research aimed at measuring, comparing, or predicting managerial variables will benefit from prioritizing quantitative approaches, particularly in fields such as human resource management,

marketing, and management control. Researchers seeking to understand emerging phenomena, organizational cultures, or complex change processes will find qualitative methods more effective. When the complexity of the field demands it, mixed-methods approaches emerge as the most relevant solution, combining explanation and understanding through methodological triangulation. Faced with digital transformation, researchers are also encouraged to integrate advanced analytical tools (big data analysis, machine learning, and computational simulations) while maintaining rigorous epistemological awareness of their inherent biases and limitations. Beyond technical skills, the training of management science researchers should thus incorporate a solid epistemological foundation, fostering the ability to justify methodological choices, identify their limitations, and adapt them to the specificities of the field.

In light of these observations, several recommendations can be made for researchers and practitioners. First, it is essential to adopt an epistemologically reflexive stance from the outset of the research project: explicitly stating one's paradigmatic presuppositions is not a mere formality, but a condition of scientific rigor that determines the coherence of the entire methodological framework. Second, the choice between quantitative, qualitative, or mixed methods should not be guided by disciplinary habits, but by the nature of the research question: when the objective is to measure, compare, or predict, the quantitative approach is appropriate; when it is a matter of understanding, interpreting, or co-constructing meaning with stakeholders, the qualitative approach should be favored; when the complexity of the field demands it, mixed methods offer robust methodological triangulation. Third, in rapidly changing organizational contexts—digital transformation, AI adoption, restructuring— It is recommended to use longitudinal or iterative designs, capable of capturing the dynamics of phenomena rather than freezing them in a static snapshot. Finally, the methodological training of management science researchers should integrate, beyond techniques, a solid epistemological foundation, fostering the ability to justify one's choices, recognize their limitations, and adapt them to the specificities of the field.

In conclusion, this analysis shows that epistemological and methodological choices form the foundation of knowledge production in management science. Mastering these choices determines not only the scientific quality of research but also its relevance to understanding and resolving contemporary organizational challenges. Ongoing technological and societal transformations thus pave the way for new methodological perspectives that warrant further exploration and formalization in future work.

Bibliography:

1. Bergadàa, Michelle, and Simon Nyeck. "Recherche en marketing : un état des controverses." *Recherche et Applications en Marketing*, vol. 7, no. 3, 1992, pp. 23-44.
2. Bryman, Alan, and Emma Bell. *Business Research Methods*. 4th ed., Oxford University Press, 2015.
3. Catellin, Sylvie. "L'abduction : une pratique de la découverte scientifique et littéraire." *Hermès*, no. 39, 2004, pp. 179-185.
4. Charreire Petit, Sandra, and Frédéric Durieux. "Explorer et tester : les deux voies de la recherche." *Méthodes de recherche en management*, edited by Raymond-Alain Thiétart, 3e éd., Dunod, 2007, pp. 57-82.
5. Christofi, Michael, et al. "Advancing Research Methodologies in Management: Revisiting Debates, Setting New Grounds for Pluralism." *British Journal of Management*, vol. 35, no. 1, 2024, pp. 24-35.
6. Cohen, Élie. *Dictionnaire de gestion*. La Découverte, 1996.
7. Coutelle, Patricia. "La recherche qualitative : définitions, méthodes et applications." *Recherches Qualitatives*, vol. 25, no. 2, 2005, pp. 1-15.
8. Creswell, John W. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed., Sage, 2014.
9. Creswell, John W., and Vicki L. Plano Clark. *Designing and Conducting Mixed Methods Research*. 2nd ed., Sage, 2011.
10. Denzin, Norman K., and Yvonna S. Lincoln, editors. *The Sage Handbook of Qualitative Research*. 3rd ed., Sage, 2005.
11. Dumez, Hervé. *Méthodologie de la recherche qualitative*. Vuibert, 2010.
12. Dzwigol, Henryk. "Research Methodology in Management Science: Triangulation." *Virtual Economics*, vol. 5, no. 1, 2022, pp. 78-93.

13. Eisenhardt, Kathleen M. "Building Theories from Case Study Research." *Academy of Management Review*, vol. 14, no. 4, 1989, pp. 532-550.
14. Evrard, Yves, Bernard Pras, and Elyette Roux. *Market : études et recherches en marketing*. Nathan, 1993.
15. Giordano, Yvonne. *Conduire un projet de recherche : une perspective qualitative*. Éditions Management et Société, 2003.
16. Glaser, Barney, and Anselm Strauss. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Aldine, 1967.
17. Guba, Egon G., and Yvonna S. Lincoln. "Competing Paradigms in Qualitative Research." *Handbook of Qualitative Research*, edited by Norman K. Denzin and Yvonna S. Lincoln, Sage, 1994, pp. 105-117.
18. Hallée, Yohan, and Annie Garneau. "L'abduction comme mode de raisonnement en recherche qualitative." *Recherches Qualitatives*, vol. 38, no. 1, 2019, pp. 124-140.
19. Hatchuel, Armand. "Towards an Epistemology of Collective Action: Management Research as a Responsive and Actionable Discipline." *European Management Review*, vol. 2, no. 1, 2005, pp. 36-47.
20. Hlady Rispal, Martine. *La méthode des cas : application à la recherche en gestion*. De Boeck, 2002.
21. Koenig, Gérard. "Production de la connaissance et constitution des pratiques organisationnelles." *Revue française de gestion*, no. 95, 1993, pp. 4-17.
22. Kuhn, Thomas S. *The Structure of Scientific Revolutions*. University of Chicago Press, 1962.
23. Kumar, Ranjit. *Research Methodology: A Step-by-Step Guide for Beginners*. 3rd ed., Sage, 2011.
24. Le Moigne, Jean-Louis. *Les épistémologies constructivistes*. Presses Universitaires de France, 1995.
25. Miles, Matthew B., and A. Michael Huberman. *Analyse des données qualitatives*. 2e éd., De Boeck, 2003.
26. Mucchielli, Alex. *Dictionnaire des méthodes qualitatives en sciences humaines et sociales*. Armand Colin, 1996.
27. Neuman, W. Lawrence. *Basics of Social Research: Qualitative and Quantitative Approaches*. 2nd ed., Pearson, 2007.
28. Patton, Michael Quinn. *Qualitative Evaluation and Research Methods*. 2nd ed., Sage, 1990.
29. Peirce, Charles Sanders. *Collected Papers of Charles Sanders Peirce*. Harvard University Press, 1958.
30. Perret, Véronique, and Martine Séville. "Fondements épistémologiques de la recherche." *Méthodes de recherche en*

- management*, edited by Raymond-Alain Thiétart, 3e éd., Dunod, 2007, pp. 13-56.
31. Pesqueux, Yvon. *De l'épistémologie des organisations aux théories des organisations*. Retrieved from HAL Archives Ouvertes, HALSHS-02492467, 2020. website: <https://hal.science/halshs-02492467>. Consulté le 11/05/2026.
 32. Piaget, Jean. *Logique et connaissance scientifique*. Gallimard, 1967.
 33. Popper, Karl. *La logique de la découverte scientifique*. Payot, 1999.
 34. Ratten, Vanessa. *Research Methodologies for Business Management*. 1st ed., Routledge, 2023.
 35. Saunders, Mark, Philip Lewis, and Adrian Thornhill. *Research Methods for Business Students*. 8th ed., Pearson, 2019.
 36. Soler, Léna. *Introduction à l'épistémologie*. Ellipses, 2019.
 37. Tashakkori, Abbas, and Charles Teddlie. Overview of Contemporary Issues in Mixed Methods Research. *Sage Handbook of Mixed Methods in Social & Behavioral Research*. 2nd ed., Sage, 2010.
 38. Wacheux, Frédéric. *Méthodes qualitatives et recherche en gestion*. Economica, 1996.
 39. White, Howard. "Theory-Based Impact Evaluation: Principles and Practice." *Journal of Development Effectiveness*, vol. 1, no. 3, 2009, pp. 271-284.
 40. Yin, Robert K. *Case Study Research: Design and Methods*. 5th ed., Sage, 2014.