

Reflection on epistemology and methodology in management sciences: CEDOC Case Study of “Hassan 1st University”

Réflexion sur l'épistémologie et la méthodologie en sciences de gestion : étude de cas CEDOC de l'Université Hassan 1er

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Abstract

The epistemological position of management science is generally an essential phase in the evolution of scientific research. Its aim is to clarify the concept of knowledge that underpins a scientific approach. It is more than just a slight methodological preoccupation, since it enables us to understand the nature of the knowledge generated, how it is generated and its status. From there, it determines the purpose of the investigation, and the approaches and procedures used to carry out a scientific project. Each study unfolds and articulates a set of steps that can be repetitive and are essentially linked to the object of study. Perplexities arise from mix-ups between some of these steps. In terms of the project's purpose, should it be considered a study designed to understand, elucidate or anticipate? Furthermore, does the approach adopted focus on the discovery or validation of hypotheses or theories? For its part, methodological choice encompasses the different procedures implemented to bring a scientific project to fruition. In this context, the scientist determines the means of data collection and processing he or she will use. This paper aims firstly to outline the major epistemological paradigms within management studies and their methodological repercussions, and secondly to carry out a study aimed at taking stock of the different epistemological paradigms and methodological choices adopted by PhD students at Hassan 1er University.

Keywords: « Epistemological posture »; « Methodological choice »; « Research method »; « Management sciences »; « Hassan 1er University ».

Résumé

La position épistémologique des sciences de gestion constitue généralement une étape essentielle de l'évolution de la recherche scientifique. Son objectif est de clarifier le concept de connaissance qui sous-tend une démarche scientifique. Plus qu'une simple préoccupation méthodologique, elle permet de comprendre la nature des connaissances produites, leurs modalités et leur statut. De là, elle détermine l'objet de la recherche, ainsi que les approches et procédures utilisées pour mener à bien un projet scientifique. Chaque étude se déroule et articule un ensemble d'étapes, parfois répétitives, et essentiellement liées à l'objet d'étude. Des confusions naissent de confusions entre certaines de ces étapes. Au regard de l'objectif du projet, doit-on le considérer comme une étude visant à comprendre, à élucider ou à anticiper ? De plus, la démarche adoptée vise-t-elle à découvrir ou à valider des hypothèses ou des théories ? Le choix méthodologique, quant à lui, englobe les différentes procédures mises en œuvre pour mener à bien un projet scientifique. Dans ce contexte, le scientifique détermine les moyens de collecte et de traitement des données qu'il utilisera. Cet article vise d'une part à exposer les grands paradigmes épistémologiques au sein des études de gestion et leurs répercussions méthodologiques, et d'autre part à réaliser une étude visant à faire le point sur les différents paradigmes épistémologiques et choix méthodologiques adoptés par les doctorants de l'Université Hassan 1er.

Mots-clés : « Posture épistémologique » ; « Choix méthodologique » ; « Méthode de recherche » ; « Sciences de gestion » ; « Université Hassan 1er ».

Introduction

Epistemological reflection is a crucial approach for the relevance of scientific production in several disciplines. This approach therefore leads the researcher to concentrate on an appropriate epistemological choice to carry out his work Perret, M. L. (2012). The purpose of epistemology is to clarify the foundations of knowledge underlying a scientific research project. It is not restricted to a modest methodological approach since it evokes the characteristics of the knowledge generated, the way in which it is formulated and its status. The use of a methodological choice is the repercussion of a specific epistemological posture. To situate in an epistemological choice signifies an epistemological and scientific identification Van Baalen, S. (2019). The epistemological positioning of management sciences continues to provoke much debate today. There is no single method for conducting research. In fact, scientists' multiple perceptions of the world are reflected in their scientific work. Van Baalen, S. (2019). Epistemology is based on a set of paradigms. In this regard, it is useful to refer to the definition proposed by Kuhn (1962) and cited by Perret (2012), which states that a paradigm is a system of beliefs about what science is, what it studies, and how it studies it. These paradigms have given rise to numerous categorizations based on the reasoning and perspectives of different researchers. In epistemology, three epistemological choices can be discerned: positivism, constructivism, and interpretivism. To establish and confirm the scientific quality of the knowledge generated, each research project must be based on an epistemological posture. To clarify its epistemological status, it is essential to learn about the characteristics of the knowledge developed and how it was developed. Epistemological questions, namely “the ontological question, the methodological question, and the axial question,” aim to demonstrate at every moment the research question on an observed phenomenon Thiétart, (2014). A scientist's epistemological posture profoundly influences their methodological and scientific orientations, particularly deductive, inductive, and abductive approaches. Durampart, M. (2018). These factors determine the type of research method to be used, i.e., qualitative and/or quantitative. Decisions made during a research process are generally guided by the goals of the study itself Rouziès*, A. (2018). Scientists are required to clearly distinguish between epistemological and methodological issues. The epistemological posture can be presented at the beginning or emerge from research; however, the methodological choice must be explicitly defined at the start of a project, but it can also be enriched throughout the research process Perret, M. L., (2012). In

order to provide answers to these questions, we will outline the investigative process used in management science studies, then explain what epistemology is and describe the three epistemological positions. Next, we will highlight the methodological implications of these epistemological options, which will be discussed in greater detail when addressing the modes of reasoning and research methods that may be favored. The purpose of our article is to provide clarification to scientists in the field of management in order to facilitate the best selection between epistemological posture and methodological choice. Finally, a survey conducted among doctoral students at Hassan 1st University will be the focus of the experimental part of this paper. This survey aims to identify methodological trends in management sciences and assess the epistemological positions adopted by doctoral students at the CEDOC research center at Hassan First University.

1. The research process in management science:

One of the main tasks of scientific production is to formulate research questions precisely. It does not follow a linear path; it starts with a general question, which is then explored in depth through repeated exchanges between theory and practice Giordano & Jolibert (2012). Research is also an orderly and planned process that stems from scientific questioning about a specific problem. Its main goal is to propose answers, provide solutions, and create new theories through research and the examination of issues Ben Aissa (2001). Problematic, research topics, research questions, are concepts that all mean the same thing when referring to the subject of our investigation Giordano & Jolibert (2012). This is the main foundation on which all research projects are based. McKenzie, T. (2019) describes a research project as a system composed of a set of combinations, made up of different elements aimed at bringing out the subject of the research. It should be emphasized that one of the most complicated tasks in any research project is formulating the research question, as this is what gives the research its legitimacy, foundation, and meaning. Bouchard, Y. (2000). It takes into account several dimensions such as the nature of the study, the scientific approach, the field of investigation, and the ontological position. The second step consists of conducting a literature review, in which the researcher must document themselves on the various publications related to their topic, reflect on them, and develop summaries. McKenzie, T. (2019). The bibliographical analysis may include one or more theories depending on the issue. The research subject will develop a theoretical framework appropriate to the problematic Bouchard, Y. (2000). This involves defining the theoretical constructs and detailing the theories and models on which

the research project will be based. The research subject is then required to develop hypotheses in order to analyze the interactions between the fundamental concepts on which the theoretical basis is founded. Étienne, R. (2013). Subsequently, the research subject must operationalize the concepts studied by clearly determining the empirical indices corresponding to the theoretical notions used. Then, the researcher is led to collect empirical data relating to his problem. It is necessary to differentiate between primary data and secondary data. Then, the researcher must empirically verify these hypotheses which will be validated or not by the field in order to legitimize his work, lastly, the researcher must compare the results obtained with the established theoretical basis Étienne, R. (2013).

2. Epistemology and methodology: points of difference

Epistemology questions philosophical concepts, focusing on what Reality, Knowledge, etc... According to Piaget (1967), epistemology is the study of the construction of valid knowledge. This discipline seeks to answer epistemological questions, namely, the ontological question which questions the characteristics of reality to be discovered, the epistemic question which examines the nature of the knowledge generated, the methodological question relating to the way in which knowledge is produced and justified, and the axiological question which examines the values underlying knowledge. The aim of this epistemological questioning is to determine the notion of knowledge on which the scientific project will be based and the expected scope of the knowledge that will be generated in order to clearly specify the aim and the research approach, the methods and tools used. The research subject must carefully select his epistemological posture and present solid arguments in order to justify the validity of his research work and the methodological consequences which result from it. Methodology is only one element of epistemology which is concerned with the relevance and validity of the path of the constitution of knowledge Piaget (1967). The development of scientific knowledge requires that research be positioned within a precise epistemological choice. This constitutes a set of principles specific to a particular scientific community, often called a paradigm, distinguished into a scientific paradigm and an epistemological paradigm. The first constitutes a set of beliefs defining the nature of science, its object of study, as well as the methods used for its exploration. Currently, two predominant scientific paradigms are recognized: the paradigm of exact sciences and that of artificial sciences. At the same time, the epistemological paradigm, as defined by G. Perret & coll (2008), encompasses a set of

hypotheses linked to the questions addressed by epistemological reflection. We distinguish several modern epistemological paradigms:

- The classical conceptions appreciated by Popper, including positivism, which has been softened, and we rather speak of managed-positivism, which takes into account the fact that it is not always easy to grasp reality completely and ideally in its entirety.
- Bachelard welcomed new perspectives, particularly constructivism. Currently, trends favor a more balanced approach, integrating different paradigms into an adapted posture.

3. Epistemological postures and their implications:

At the heart of a research project focused on knowledge production, it is crucial to initially question the nature of knowledge, the fundamental assumptions underlying it, and its value. Epistemological questions have become a fundamental component of the scientific research process in several disciplines Thiétart (2014). In our paper, we limited ourselves to management sciences through the following paradigms: positivist, constructivist, and interpretivist.

3.1. Positivist paradigm :

- ✓ The positivist paradigm stands out as one of the earliest epistemological orientations. It has gained considerable popularity, particularly in the exact and hard sciences; the term “positive” indicates reality, Auguste Comte (1844), cited by Le Moigne, (1990). The models developed by proponents of this paradigm have no value in themselves; they merely provide an explanation for the facts analyzed. As a result, different models explaining the same research subject may coexist, even if they are contradictory. For positivists, reality exists in itself, independent of the research subject, which merely seeks to understand it. The facts analyzed correspond to constant rules that the research subject attempts to understand. The knowledge produced does not depend on context and corresponds to a deterministic conception of the world. This paradigm is based on several fundamental assumptions Avenie r& Gavard-Perret (2012):
- ✓ Realistic ontology: Any observation that accurately describes reality can be described as true. The goal of science is to understand reality objectively through observation. This applies to all areas in which the human brain can intervene.
- ✓ Natural determination: the researcher can detect, identify, and understand the different forms of determination related to the facts being studied; reality is determined by several

laws, and the subject of research attempts to explain these laws and the existing causal relationships.

- ✓ Objective dualistic epistemology: the research subject's observation of reality does not transform reality; the research subject is autonomous with regard to the issue at hand, which he or she understands objectively since it operates under controlled circumstances.

However, proponents of this paradigm recognize that achieving reality and accurately reflecting it is unattainable and therefore limit themselves to saying that scientific knowledge is not true, but corroborated, provided that it can be verified, confirmed, and cannot be refuted by our experiences. Positivism is characterized by the adoption of rigorously defined scientific criteria for validity and is able to distinguish between scientific knowledge and knowledge that is considered non-scientific Perret, Seville (2003) through the following criteria:

- ✓ Verifiability, as stated by Blaug in (1982), categorically postulates that any proposition can be subjected to empirical verification.
- ✓ Confirmability is based on the idea that scientific propositions and theories must be formulated in such a way as to allow for objective and empirical verification. According to positivism, only statements that can be confirmed by observation, experiment, or empirical data have scientific validity Hempel (1972).
- ✓ Refutability, according to Popper in 1984, stipulates that any theory must be formulated in such a way that it can be refuted. A theory that is not refutable or cannot be proven false is scientifically useless, and its essence lies in its ability to be refuted.

The methodological reasoning advocated by proponents of these principles is the hypothetical-deductive method, which applies to exact sciences such as physics. This approach involves formulating fundamental axioms, followed by the logical deduction of conclusions, so that the validity of these conclusions is solely linked to the validity of the initial axioms. Dépelteau, F. (2010). The scientist develops his or her research question based on a specific theoretical framework and, on this basis, formulates hypotheses relating to a particular situation in order to test them in the field and validate or reject them, in order to compare them with the chosen theoretical framework of reference. Bourion 2, C. (2009).

3.2. Constructivist paradigm:

Two forms of constructivism have been identified: one has been conceptualized by expert researchers in educational sciences, such as Guba and Lincoln (1998), while the other,

described as radical, stems from the work of Piaget (1967) and has been theorized by Le Moigne (1995; 2001; 2007). This article explores the application of radical constructivism in the context of management sciences. Radical constructivism is based on several fundamental assumptions drawn from studies conducted by Glasersfeld (2001) and Le Moigne (1995-2007). The first specifies that the knowledge that a human being possesses perfectly is that which derives from his or her experience. Reality that can be known is “understood or determined by the experience that each researcher develops from his or her awareness or knowledge” Le Moigne (1995).

In his theory of knowledge, Glasersfeld (2001) argues that knowledge does not stem from an ontological reality but rather emerges from the structuring and organization of a world that is shaped by our lived experience. Glasersfeld (2001) notes that radical constructivism is based primarily on the idea that a person cannot ideally comprehend reality without going beyond the limits of their personal experience. The issue is not to dispute the existence of a reality, but rather the complexity of making it manifest independently of the representations it engenders. An individual's experience may prevent them from being completely objective about the phenomenon under examination. Martin, D. J. (2006).

- ✓ The phenomenological hypothesis: individuals have decisive power in the development of knowledge. We only have representations through which we understand facts, so we believe that the world is made up of constructions and that we can only represent reality. Avenier, M. J. (2009). The world is therefore made up of interpretations, and the knowledge generated is therefore subjective and depends on its context.
- ✓ The teleological hypothesis: The generation of scientific knowledge involves a process before reaching a result. According to Piaget (1967), and in this cycle, it is complex for human thought to dissociate the known from the knower; this hypothesis is based on an interdependence between the researcher and the phenomenon being examined.

Reality according to this paradigm is multiple and subjective since it is linked to the way in which the research subject apprehends the research object. In fact, for the same phenomenon studied, there would be as many realities as there are different research subjects, unless they all share the same idea of the meaning and configuration of reality. The challenge for the research subject is to manage to grasp the problematic from the point of view of the participants, thus seeking to detect joint points of view in the perception and construction of "their reality". This implies inductive reasoning as the appropriate reasoning for this paradigm. The inductive approach proceeds from the specific to the general. According to this

approach, the research subject initially tries to completely neglect established theory in order to study the phenomenon in question with the minimum of pre-conceived ideas D'Amboise, (1996). The research subject collects from the people targeted by the problem perceptions or clarifications on the phenomena they encounter. Through these actors, the researcher attempts to understand and develop common concepts that will interpret certain attitudes and behaviors. It is at the end of this process that the foundations of a theory finally emerge from the empirical study.

3.3. Interpretivist paradigm:

Interpretivism posits that knowledge stems from the researcher's experience. The knowledge generated is inseparable from the researcher in relation to the observed facts, which, to the extent that they only manage to form representations, Dumez, H. (2011). The teleological hypothesis suggests that the emergence of knowledge depends on the interaction between the environment, the thoughts, and the actions of researchers, all guided by their intentions and goals. The assumptions of interpretivism are similar to the founding assumptions of radical constructivism. The major difference between this paradigm and radical constructivism is a distinction made at the ontological level. Constructivism does not deny the existence of a reality external to the subject of research, independent of it; it only questions the ability to grasp this reality outside the representations it generates (Glaserfeld, 2001), whereas interpretativists reject the hypothesis of the existence of a single, objective reality unrelated to the scientist, as specified by Gavard-Perret (2012). For them, research consists of interpreting and understanding how people view the world they perceive. This method, which is highly valued by management scientists, offers the opportunity to explore a phenomenon in concrete terms while focusing on a limited sample of situations. The research subject must first have developed a research question and is required to select examples based on very specific criteria. The findings of these studies are compared to determine similarities and differences. Researchers have the opportunity, to a considerable extent, to minimize the challenge of generalization by examining a large number of relevant situations D'Amboise (1996). Interpretivism consists of interpreting and understanding facts rather than verifying them and formulating theories. Managed positivism or interpretivism are seen as intermediate approaches between the two main epistemological positions. Epistemological questioning is important in formulating a problem. It is necessary to determine one's perspective with regard to the epistemological frameworks to which management research topics relate before

specifying the implications of their decisions in terms of methodological choices and research approaches Gavard-Perret, (2012).

4. Methodological implications related to the epistemological perspective:

4.1 The repercussions of positivism :

The methodological approach advocated by positivists is deductive, of the “if...then” type. It starts from a general level and then focuses on specific aspects, using the definition of a problem based on a specific theoretical framework and the definition, on this basis, of hypotheses relating to a specific situation with a view to testing them in the field and comparing them with the theoretical framework used Jolibert, A., (2012). This approach is based on two foundations: analytical decomposition and the causal hypothesis, which draws on hypothetical relationships between the various elements of the phenomenon being analyzed, using a mode of reasoning known as “syllogistic.” This methodological approach is suited to such an epistemological paradigm in the sense that the research subject is convinced of the existence of a single reality that is accessible to knowledge and comprehensible. They are able to define, decipher, and perceive it completely, since it is governed by repetitive natural laws. Based on this observation, the research subject will discover this reality by testing the numerous hypotheses that arise from a relevant theoretical framework D'Amboise (1996). With regard to managed positivism, the methodological approach remains fundamentally the same, being deductive or hypothetical-deductive in nature. A managed positivist accepts that reality is incompletely knowable. They will only grasp reality as closely as possible and will attempt to mitigate the rigidity of positivism in order to analyze complex social behaviors. Quantitative methods, based on statistical precision as a guarantee of the scientific accuracy of the conclusions obtained, are more frequently used from a positivist perspective. On the other hand, for managed positivism, qualitative approaches can be used or merged with quantitative methods Gavard-Perret (2012).

4.2 The repercussions of constructivism and interpretivism:

Proponents of these two epistemological positions favor inductive and/or abductive approaches because of their epistemological basis. Induction moves from the specific to the general; in other words, it starts with specific observations and leads to broader concepts Thiétart (2014). In contrast, the abductive approach leads to the formulation of hypotheses to elucidate a phenomenon. It offers the possibility of suggesting hypotheses or drafting proposals based on an understanding of the observed context. All three approaches contribute

to the construction of knowledge. It may even be the case that all three approaches are used in certain studies; these hypotheses are likely to have repercussions that will be explored in the context of induction Thiétart, (2014). Deduction, for its part, allows us to confirm the theoretical framework used. If we find ourselves in a case of invalidation, it is necessary to restart the process by defining new hypotheses Thiétart, (2014).

5 Research methods:

Scientists must have a precise understanding of the investigative process and recognize the advantages and limitations of the knowledge they generate. Most studies involve a number of phases that may be repetitive Thiétart, (2014) and are essentially linked to the problematic and the choice of methodology. The typology used—quantitative vs. qualitative—can refer to several aspects, in particular the data or the means of collecting and manipulating this data. In the case method, for example, the information collected is mainly qualitative in nature, but it can also be quantitative (frequency of words, etc.). There are various means of collecting this information: structured or semi-structured interviews, study of written or visual materials, etc. For most scientists, the concept of quantitative methodology involves studying large, carefully selected samples, while qualitative research usually focuses on only a small number of cases, or even a single one Yin (2009). It is always associated with an earlier (exploratory) stage of the quantitative approach Anadón, M. (2019).

5.1 Quantitative research:

The quantitative approach has prevailed and continues to predominate in various fields of the humanities and social sciences: cognitive or social psychology, sociological and economic studies Chiulli, R. (2018). Quantitative methodology facilitates more in-depth evaluation of theories. It is appropriate when the literature already recognizes a well-established theoretical framework Boucherf, K. (2016). By adopting the predominant hypothetical-deductive approach, the researcher formulates a model based on relevant studies in the literature. This model is then subjected to empirical validation Laberge, D. (2019). Scientists are required to have in-depth knowledge of the conclusions of previous studies and to examine any “theoretical gaps” or inconsistencies they may detect Beniamine, S. (2018). As Boucherf, K. (2016) points out, the research subject infers the implications of their hypotheses. To do so, they draw on their experience and knowledge. The quantitative approach offers a more accurate measurement of the variables used, ensuring in particular the reliability of the concepts measured and their clear distinction from related concepts Boucherf, K. (2016). In this sense, the use of coefficients such as Cronbach's alpha coefficient, combined with

exploratory or confirmatory factor analysis, greatly simplifies the scientist's task. Methodical planning of the stages of an investigation speeds up the research process Jolibert, A. (2016). This increase in speed is also achieved by focusing on specific quantitative methodologies. Some scientists have specialized intensively, which can lead to time savings, but also promote a certain variety of ignorance Jolibert, A. (2016).

5.2 Qualitative research:

Qualitative research consists of studying social phenomena, exploring their existence and meanings, as well as the factors that may condition the behavior of social actors when faced with a reality, by putting oneself in the actor's place to identify these factors Dumez, H., (2016). It is an interpretative and naturalistic approach in which the researcher studies the phenomenon and its subjects in their natural contexts in order to make sense of the phenomenon Dumez, H. (2011). When it comes to qualitative research, there is a strong emphasis on the subjects' perspectives, experiences, and representations, as well as the factors that will modify their behavior in their contexts Mucchielli, A. (2009). Qualitative research analysis uses an inductive approach that moves from the specific to the general, from facts to theory, as it often studies subjects that are new or rare Luckerhoff, J. (2020). The data obtained in qualitative research is richer and more in-depth on a more specific topic, and the results can be transferred to other contexts. Luckerhoff, J. (2019). Saturation is a very important aspect of qualitative research; at a certain point, participants will no longer provide new information Dumez, H. (2011). By engaging in direct observation in the field, the research subject has the opportunity to fully immerse themselves in the empirical reality they are studying Mucchielli, A. (2009). For certain types of research, access to the field cannot be envisaged outside the proximity of the research subject. A strong mastery of the practices of the actors involved is essential in order to generate enriching information that enables contextualized analyses to be carried out Caron, C. (2017). Natural observation requires the researcher to constantly evaluate the implications of their presence in the field. It is precisely this consideration that leads many researchers to favor immersion in the context. Finally, qualitative research stimulates creativity more than a simple, rigid, standardized research model. In fact, according to Lincoln, Y. S. (Eds) (2018), qualitative research specialists are tinkerers, as they manipulate a variety of tools in the process of developing their projects. This specificity allows for more creativity than quantitative research.

6 Study of doctoral students at Hassan 1st University on their epistemological choices:

Following this conceptual exploration of epistemology, a study was conducted at the CEDOC of Hassan 1st University with the aim of determining the epistemological paradigms of doctoral students and explaining the reasons behind their decisions in order to determine their impact on the methodological choices they made in their doctoral theses. The individuals participating in our survey are students enrolled in doctoral programs in their third year or above at Hassan 1st University. First- and second-year doctoral students were excluded from our study because they are at the very early stages of their research training and are not yet familiar with the field of epistemology. The doctoral students surveyed in our study come from a variety of backgrounds, including marketing and sales, actuarial science and corporate finance, strategic management, etc. The research was conducted between July 5 and 28, 2025, using a questionnaire. The survey source for our research project was compiled from doctoral student databases provided by the CEDOC at Hassan 1st University. The method used to collect responses in the field was a questionnaire distributed to doctoral students via Google Forms.

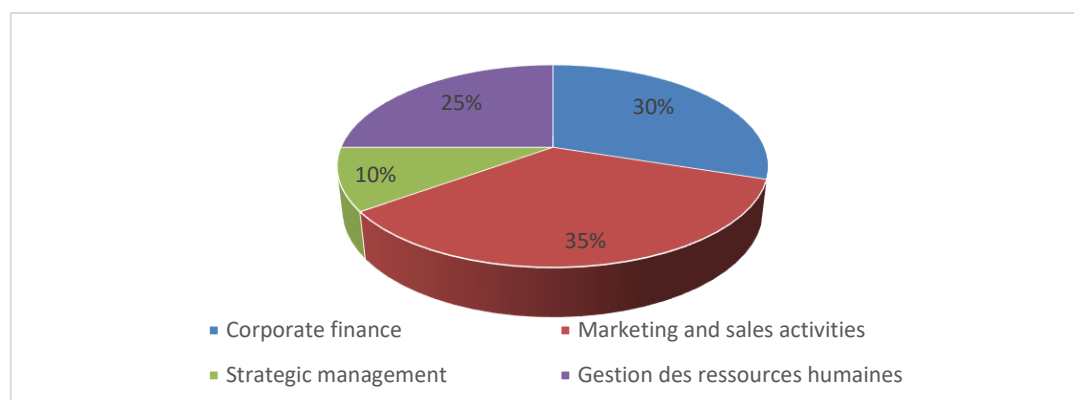
6.1 The organization of the questionnaire chosen for our survey:

The questionnaire encompasses aspects related to the researcher's profile, research approaches, data collection, as well as the integration of data analysis instruments. The first theme addresses multiple facets related to the profiling of participants, including aspects such as age, gender, year of doctoral studies, and field of study. The second theme of our questionnaire consists of assessing the respondents' knowledge of epistemology in management sciences, through the definition, epistemological postures, the epistemological positioning of the doctoral student and the reasons behind these decisions, in addition, examining their understanding of reasoning in management sciences, focusing on typologies, the sequence of modes, and their alignment with research methods. The final theme seeks to elucidate the selection of the methodological approach and research methodology, taking into account the epistemological positioning of the doctoral student, the methods and means of data collection, as well as the analysis tools mobilized in the quest to understand reality. In this way, all qualitative elements are captured through a 5-point Likert scale. The final questionnaire contains 11 questions.

6.2 Presentation of study results:

After sending our questionnaire to doctoral students enrolled in the third year of the CEDOC program at Hassan 1st University, we reviewed and analyzed the data collected. Of the 100 responses received from doctoral students, 51.2% were from men and 48.8% from women. Twenty-five percent of respondents were in their third year, 26% were in their fourth year, 30.6% were in their fifth year, and 18.4% were in their sixth year. Regarding the participation of doctoral students in our study, the breakdown by field is as follows: 30% are doctoral students in corporate finance, 25% are doctoral students in human resources management, 35% are doctoral students in marketing and sales, and 10% are doctoral students in strategic management (see Graph 1).

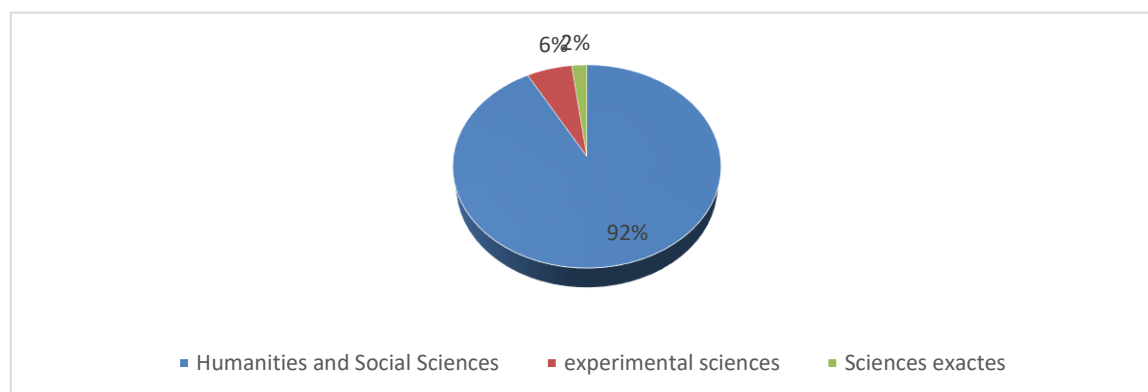
Graph 1. Distribution of doctoral students by field of study



Source: Authors

The predominance of humanities and social sciences is clearly evident in the identification of respondents' profiles, representing 92% of the total. Experimental sciences follow with a proportion of 6%, while exact sciences represent only 2%.

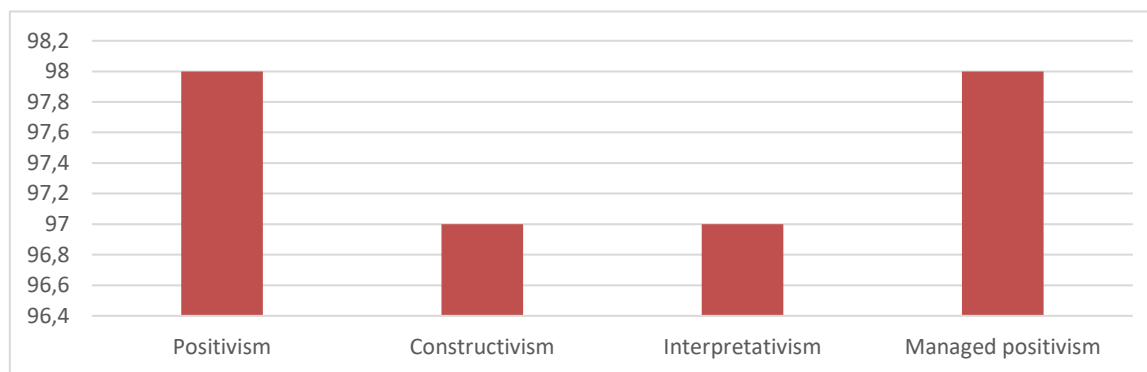
Graph 2. Distribution of doctoral students according to their scientific field of reference



Source: Authors

Most doctoral students demonstrate familiarity with the main epistemological positions, including positivism, interpretivism, constructivism, and modified positivism.

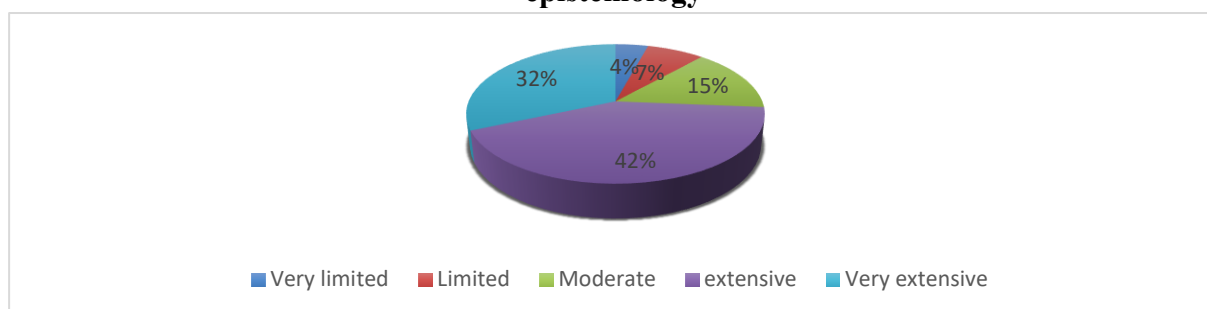
Graph 3. Analysis of doctoral students' familiarity with epistemological concepts



Source: Authors

The majority of participants demonstrate a solid understanding of epistemological foundations, with definitional knowledge reaching 74% (Graph 4).

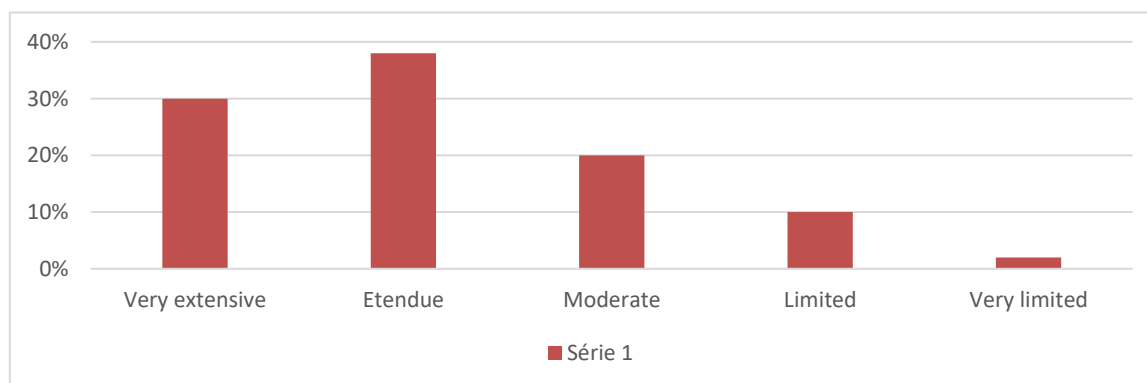
Graph 4. Assessment of doctoral students' understanding of the definition of epistemology



Source: Authors

However, 68% of doctoral students consider themselves to have in-depth knowledge of paradigms.

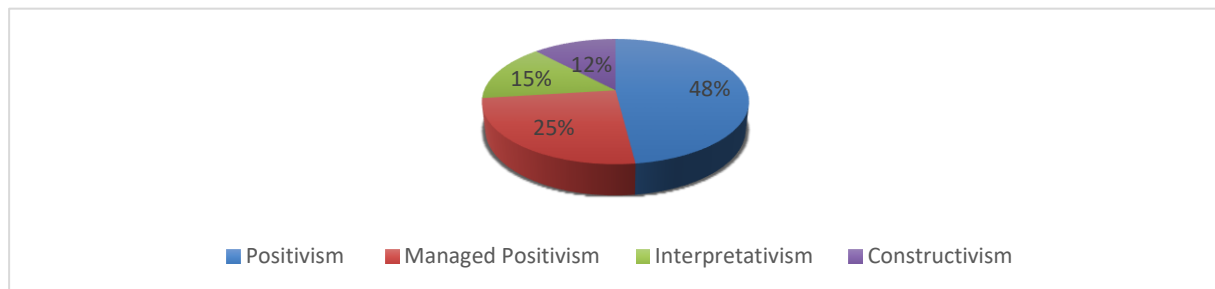
Graph 5. PhD students' perception of their mastery of epistemological paradigms



Source: Authors

With regard to the epistemological orientation of doctoral students, positivism is the most prevalent, reaching 48%. In second place is managed positivism with 25%, followed by interpretivism with 15%, while constructivism ranks last with only 12%.

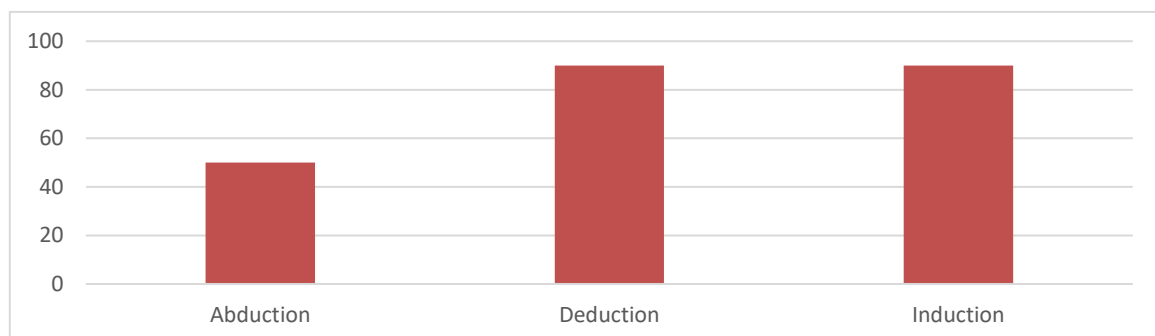
Graph 6. Epistemological orientations adopted by doctoral students.



Source: Authors

The vast majority of participants are proficient in inductive and deductive reasoning processes, however, abductive reasoning is familiar to only half of the respondents.

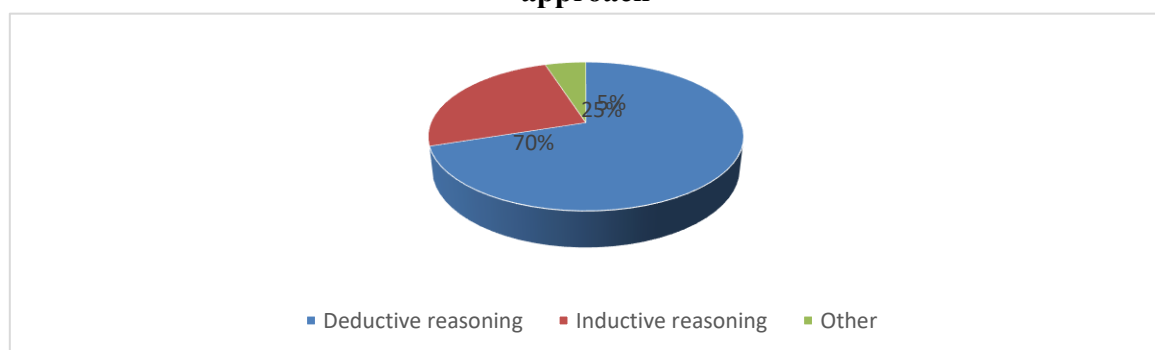
Graph 7. PhD students' assessment of their understanding of the various reasonings



Source: Authors

The overwhelming majority of participants favor the deductive approach, with a preference of 70%, while inductive reasoning is adopted by 25%.

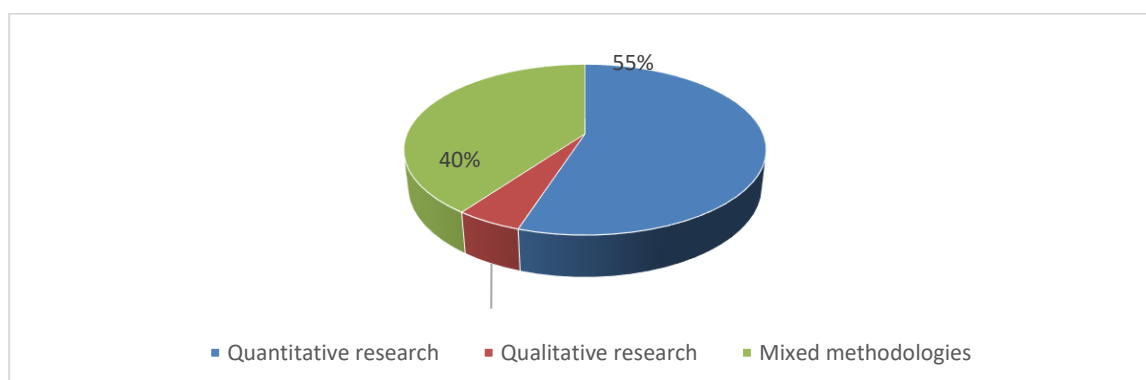
Graph 8. Methodological preferences of doctoral students in the choice of their approach



Source: Authors

Regarding research methodology, respondents made a diverse choice between quantitative methods (55%), a combination of both (40%), and qualitative methodology (5%).

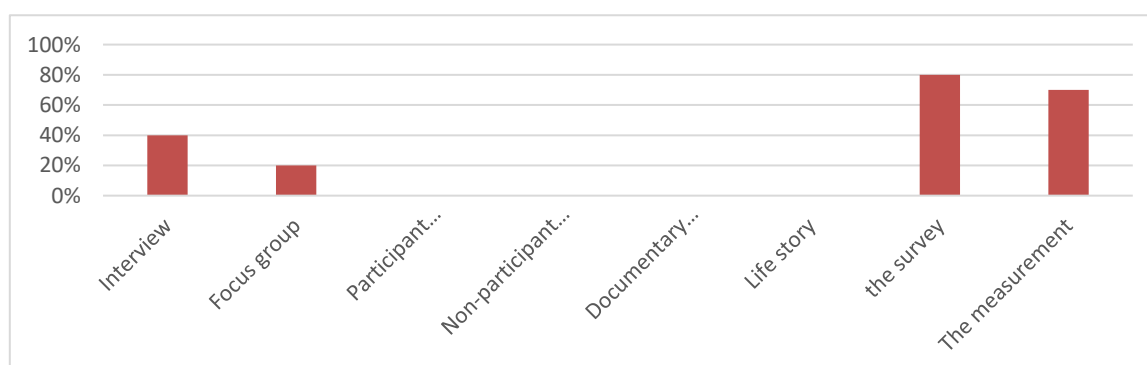
Graph 9. Methodological preferences of doctoral students in their research.



Source: Authors

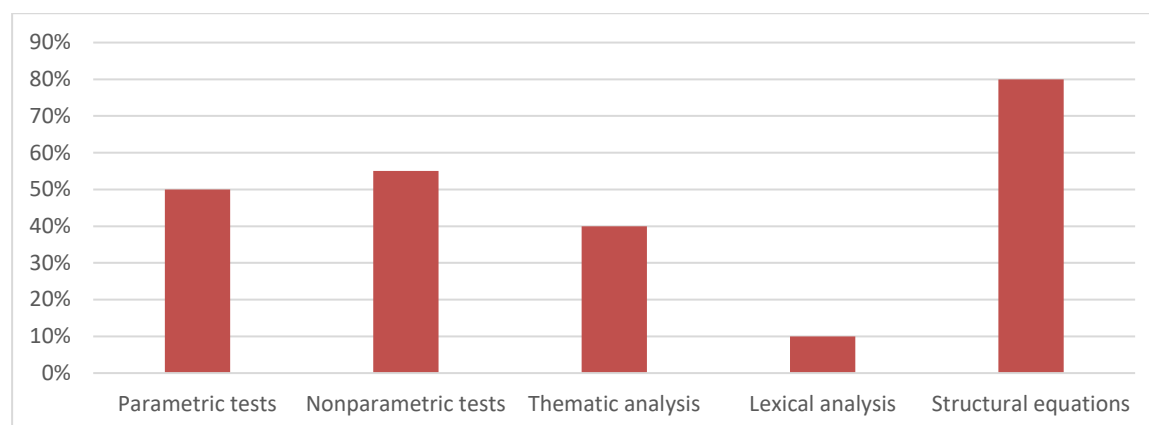
With regard to the data collection tools used by doctoral students in their studies, surveys and measurements remain the preferred choices, closely followed by interviews and focus groups. On the other hand, life stories and participant and non-participant observation are not among the methods used by doctoral students.

Graph 10. Data collection approaches preferred by doctoral students



Source: Authors

With regard to the tools used by doctoral students to examine the results of their work, a variety of tools are mentioned or considered. The majority emphasized the use of structural equations (80%), followed by parametric and non-parametric tests, thematic analysis, and finally lexical analysis. These findings reflect or can be attributed to the epistemological orientation of doctoral students.

Graph 11. Data analysis methods adopted by doctoral students**Source:** Authors**Conclusion:**

In conclusion, our exploration of the research process in management science has clearly demonstrated the essential need to understand the epistemological and methodological foundations that underpin any scientific process. The distinction between epistemology and methodology has been clarified, emphasizing that epistemology encompasses fundamental beliefs about the nature of knowledge, while methodology concerns the specific methods used to produce that knowledge. Analysis of epistemological positions, particularly positivism, constructivism, and interpretivism, has revealed the diversity of theoretical approaches in management science research. Each position has unique implications for how reality is perceived, interpreted, and studied. In addition, the methodological implications of the epistemological perspective were examined in detail, emphasizing the importance of consistent alignment between the chosen epistemological stance and the research methods employed. Finally, our study of doctoral students at Hassan 1st University allowed us to observe the epistemological choices within the academic community, thus providing concrete insight into preferences and trends in the field of management research. In short, this study highlights the complexity and richness of the research process in management science, inviting researchers to reflect deeply on their epistemological and methodological choices in order to ensure the relevance and rigor of their work.

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