



University of Oran 2

Faculty of Economics, Business and Management Sciences

Handout:

**Methodology for preparing
a master's thesis**

**Master 1, Human Resources Management
Second semester**

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Introduction

The second semester of the Master's research program in management sciences is specifically dedicated to the completion of work focused on managerial and organizational phenomena, as well as the preparation and presentation of a thesis. The latter requires a demonstration of reflective, methodological, and professional skills, thereby consolidating the student's overall abilities in a written format. The thesis constitutes a fusion between the teachings of the various disciplines followed and relevant theoretical references, resulting in analyses and conclusions that allow the jury to evaluate the student's analytical ability on a specific topic.

In this thesis, it is a matter of systematically linking theory with practice, starting from a precise question regarding a management situation, following a demonstrative approach. It is imperative that this work addresses a management question by adopting an appropriate methodology to answer it. A simple description is not sufficient; it is crucial to embrace analytical and demonstrative dimensions, and to propose recommendations supported by a solid argument throughout the research.

This educational document supports students throughout their period of reflection, research, and development leading to the writing of the master's thesis. It aims to provide the student with structuring tools and essential benchmarks to frame and support the final phase of their master's studies.

The substantial variance in individual experiences within each group of students reveals a diversity of profiles, thus influencing the approach to the required exercise. Despite this disparity, linked to the origin and background of each student, most of the guidelines and standards necessary for the completion of final works in specific professional fields can be adapted to the writing of the master's thesis. It should be emphasized that writing, presenting reports, or any other expert account will be all the more effective and valued if they demonstrate rigor both in the organization of the final document in terms of form and content.

1. The realization of a master's thesis project: the necessity of management

1.1. About the thesis

Regardless of the chosen specialization, the conclusion of university studies is marked by the completion of a specific written work: whether it is a thesis, an internship report, or a professional project, the names vary according to the programs. This document, governed by specific rules varying according to academic levels, usually requires an oral presentation before a jury composed of teachers, sometimes enhanced by the presence of professionals working in the business field.

Each type of thesis has determining intrinsic characteristics. The criteria for evaluating the thesis must be rigorously defined by the academic curriculum and perfectly integrated by the student. Achieving inappropriate objectives inevitably leads to failure: a student asked to write a research thesis who produces a professional document will have invested their efforts in vain.

1.1.1. The characteristics

The predominant nature of the thesis can be of three types: descriptive, explanatory, or normative:

The descriptive nature implies that the student reports and describes a situation or work. The explanatory aspect leads the student to seek to detail a situation, to identify causalities.

The normative aspect goes beyond diagnosis by recommending solutions, recommendations, and methods.

The descriptive scope generally covers:

- A detailed presentation of the organization and the division within which the work is undertaken. This description must include crucial elements to later support the chosen working method and ensure the relevance of the proposed suggestions. It is generally concise, not including superfluous information such as exhaustive chronological details of the company's history from its beginnings or extensive content taken from institutional websites. In most cases, this data is not relevant.

- A thorough analysis of the problem the student is focusing on. This description does not simply consist of listing elements randomly. It must contain all the necessary elements of the context to justify the adopted methodology and ensure the relevance of the proposals. It must be limited to these essential aspects. The key components for describing the situation often stem from the teachings provided. However, it is often wise to include elements considered important by the managers of the department in which the student is working, and potentially other stakeholders such as managers from other departments, non-managerial employees at various levels, clients, or even experts. For elements outside the service managers where the work is carried out, it is prudent to seek advice from the teacher responsible for research supervision to decide on their inclusion in the work.

When a thesis adopts an approach primarily oriented towards recommendations and concrete solutions, their justification is essential for the student. In the context of a master's thesis, a large part of this justification must stem from the methods taught during the course. Sometimes, the student finds themselves facing issues for which the teachings are not sufficient to provide all the necessary data. This limitation is inevitable, as academic curricula cannot anticipate and cover all the cases encountered in the field. In these situations, it is recommended that the student undertake additional research, particularly by exploring the bibliographic references provided by the teachers and using dedicated platforms.

It is also imperative to present these elements to the teacher responsible for the thesis, so that they can evaluate their validity, relevance, comprehensiveness, and applicability. To justify the proposed recommendations, the student must then present concrete data supporting their arguments. Thus, a master's thesis focused on prescription often requires a significant amount of descriptive elements. To determine which descriptive elements to include, the student should refer to the teachings provided, the instructor in charge of supervising the thesis, and, if applicable, the company tutor if the work is carried out as part of an internship. In practice, it is common for theses to include these three elements, or even require them. It is strongly recommended to carefully check with the teacher the specific

expectations.

1.1.2. The stages of the thesis

The design of a master's thesis involves four major steps:

- Definition of the subject.
- Data collection.
- Data analysis.
- Writing.

These phases do not necessarily follow a strict order and can overlap, taking into account epistemological stances (positivism versus constructivism/pragmatism). For example, writing can begin in parallel with the collection of information. It is thus recommended that students begin writing from the start, fully utilizing word processing tools to gradually shape the document.

It is possible to detail the thesis process through a diagram. However, this linear representation should not give the impression that the completion of the thesis proceeds smoothly. Iterations and setbacks are frequent and contribute to the concatenation of the work. This process is marked by phases of enthusiasm, but also sometimes by discouragement, which it is important to overcome.

The choice of topic for a master's thesis defines a field of interest. This choice is influenced by:

- The objectives: three fundamental objectives can be specified.
 - o The skills of the students that translate into:
 - o The ability to apply theoretical knowledge acquired in class to concrete applications and implications in management.
 - o The ability to integrate different perspectives from various teachings and educational modules.
 - o The ability to actively contribute to the functioning of the host company during the internship or project.
 - o Search, organize, and utilize targeted documentary sources. This aspect of the work represents a significant added value, both for the author and for the reader—whether from the academic or professional world, two audiences known for their high standards in this regard. The process of

collecting and analyzing documentation is of paramount importance in the reflective approach of the thesis. It poorly tolerates inconsistencies and simplifications. Depending on the nature of the selected topic, the documentary references may include various sources such as general literature, academic and research literature, technical documents, specialized and/or professional publications, each with varying importance.

- The ability to lead and oversee a project as a whole.
- The ability to undertake independent work.
- The mastery of defining the subject of study. This preliminary step is of paramount importance. It is indeed imperative to first confirm the relevance of the topic (its ability to support an in-depth analysis or to be debated in a contradictory manner, its resonance in the managerial field and/or the research sphere, etc.) as well as the underlying question. At this stage, it is necessary to precisely delineate the field of study or reflection, in order to avoid any risk of confusion or misinterpretation.
- The ability to set clear objectives.
- The ability to gather the necessary documentation and information.
- The ability to consolidate existing knowledge.
- The ability to organize work efficiently.
- The ability to manage relationships with memory stakeholders and effectively mobilize social networks and advanced research tools.
- The ability to develop a coherent structure and plan.
- The ability to communicate clearly in writing. This stage of drafting and structuring the final document will reconcile the precision of the approach with the required formal rigor. At this stage, it will become feasible to present a finalized work likely to best meet the established requirements, to lead to a satisfactory defense, and to be valued both internally and externally.
- The ability to present articulately in oral form. The thesis defense represents the oral presentation of the written work or a substantial part of it. It provides the opportunity to assess the student's presentation and synthesis skills. Thus, the quality of the presentation must demonstrate to the members present that the student has acquired the necessary skills to present their work with clarity,

precision, conviction, and enthusiasm, thereby indicating their transition to the status of an executive.

- The available opportunities: knowledge of the field, contacts and agreements with socioeconomic partners, offered internships, missions carried out in a structured framework, etc.

Opportunities to define the topic can come from various sources. Teachers can suggest research or study topics due to their knowledge of relevant fields and their contacts with the professional world.

1.2. The choice of topic

The criteria can vary greatly depending on the programs and the students. Nevertheless, here are some recommendations for choosing a topic that stands out:

1.2.1. Opt for an original topic

You must ensure that the chosen topic has not already been addressed by another student or is not already widely explored. Even if the topic is not revolutionary, you should make sure to add a personal touch to it. The completion of the thesis will remain, in any case, a formative experience.

In some cases, the topic may not be entirely innovative. In this case, the student is expected to handle the subject professionally by thoroughly applying the methods studied in the course, with sufficient skills, and adapting to the field. If the task is more akin to an execution mission, it is important for the student to confirm with their thesis supervisor (and possibly their internship supervisor) that the scope and complexity of the task allow for work at the master's thesis level.

1.2.2. The enthusiasm for the proposed topic

The commitment to the proposed topic must be evaluated first. It is crucial to determine if the student can bring innovative and interesting perspectives to the topic. It is essential to assess their potential involvement in the in-depth study of a question over a period of one year, while balancing their professional obligations. Often, the abandonment of the project stems less from the demanding pace it entails than from a lack of affinity or enthusiasm for a subject chosen by default.

1.2.3. The organization for which you are conducting this research

Regarding the organization for which the research is conducted, it is preferable that the question posed aligns with the concerns of said organization or the environment in which the student operates. In this way, the research will find its relevance in concrete issues. A subject that is too isolated, singular, or marginal risks lacking effective follow-up and not integrating harmoniously into an existing context.

1.2.4. The state of research and existing work on the subject

Regarding the state of research and existing work on the subject, it is crucial to situate the object of study within the landscape of current knowledge. Some topics have already been extensively explored, while others are still in the exploratory phase. In the first case, the student can rely on a large body of knowledge, while in the second, there is still much to be done. Before diving in, it is wise to verify this information, as it can be difficult to determine the state of knowledge when approaching a new field of study. If the topic is already well covered, the student should consider the possibility of providing original insights that enrich the debate. Perhaps he can identify a less explored sub-theme or an area of application where he feels competent to delve into the subject. If the topic is widely covered in several publications, or if there is a lack of available information, it is advisable to consider the value of investing time and effort in this direction.

1.2.5. The subject at the source of important and current debates

Evaluating the economic impact of the subject, its stakes, is also crucial. Some topics are relatively neutral and less exposed, which makes it easier to control the information. Other topics, due to their timeliness, are more sensitive, more controversial, more "hot." Although appealing for these reasons, they can compromise the feasibility of the work. Consulting professionals in the field before starting the research can greatly help in assessing the level of risk associated with the choice of topic.

1.2.6. A topic of proximity

It is preferable to choose a field of study that is familiar, both relationally and geographically. If the student already has contacts in a particular field, it can be counterproductive to choose a topic related to another where they have no established connections.

Geographical origin can also influence the choice of subject where it might be difficult to establish connections.

There are useful subjects that may not captivate the student or are not necessarily related to their geographical proximity. For example, choosing a field that does not particularly interest him, but where he feels it is necessary to acquire skills to progress, or being interested in subjects that he is passionate about, but which may not interest the professionals at the company where he is doing his internship or with whom he collaborates for his thesis.

1.2.7. The feasibility of the topic

It is evaluated in light of technical constraints (time, financial, access to sources, etc.). The student must absolutely ask themselves the question: can these constraints be overcome to produce a quality thesis?

The evaluation of the feasibility of a subject is based on several axes.

- Temporal plan: the student must ensure that the topic can be addressed within the allotted time. It is crucial not to get involved in an impossible situation. It is essential that the period allocated for the thesis is sufficient to successfully complete the projected work. This criterion is of paramount importance. In case of doubt, the student should quickly consult their teacher, who may need to restrict or modify the topic. It is essential to remember that the viability of a thesis depends on its sustainability.
- Data collection: the student must ensure that no obstacle will hinder the collection of the required data: confidentiality, availability of interlocutors, risk of disputes between the company and the institution. The student must consider the means by which they will obtain this data, to whom they will need to address themselves, and in what manner: phone, email, in-person interviews, etc.
- Data dissemination: the student must ensure that the company or organization providing the data will not oppose the inclusion of crucial information for their work, even if considered confidential.
- Material plan: the student must be aware of the potential costs associated with certain thesis projects. It is recommended to allocate a sufficient budget. The student should not find themselves in the position of having to spend recklessly to address the topic.

- Conceptual plan: the conceptual feasibility must be validated with the supervising teacher. The student must assess whether they have sufficient mastery of the knowledge and concepts to adequately address the topic within the given timeframe. The help of a teacher may be necessary to appropriately address the topic.

1.3. The thesis schedule

Effective time management is crucial for successfully completing a thesis project. Here are the steps to follow:

- Create a detailed list of the different phases to complete the project.
- Estimate the time required for each step.
- Allow for safety margins to ensure compliance with the given deadlines.
- Establish a reverse schedule to ensure that all planned steps fit within the allocated time.
- Regularly update this schedule to track the progress of the project.

This schedule can be represented in various ways, including in the form of a table (Table 1). It is important to note that, in reality, the workflow is not linear and frequent adjustments are necessary.

Table 1. Thesis follow-up schedule

Step	Planned		Executed	
	Start date	End date	Start date	End date
Definition of the topic				
Documentary research, information gathering				
Reading time for the collected documents				
Definition of the objectives of the work, the problem statement, or the research questions				
Definition of the thesis outline				
Validation by the supervisor(s)				
Data collection, field surveys				
Processing of collected data				
Interpretation of the results				
Writing - chapter 1 - chapter 2 - chapter 3 etc. - conclusion - introduction - managerial summary - bibliography - appendices - table of contents, etc.				
Verification and updating of the collected documentation				
Proofreading by yourself				
Proofreading and checking the format (possibly by a third party)				
Validation by the tutor(s) Printing the document				
Verification of each copy				
Sending or submitting copies of the thesis				
Preparation of the oral defense				

It is important to take into account the time required for certain phases that may seem trivial, such as:

- The time required to obtain appointments for the surveys.
- The time for writing reports.
- The time for writing the chapters.
- The time for final proofreading.

- The time for validation by the professors or the professionals of the company.

The time required for updating the final document.

Effective planning management is one of the essential conditions for the success of the thesis.

There are other forms of schedule representation, such as the Gantt chart illustrated in Table 2.

Table 2. Gantt Chart

Task	Calendrier															
	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd ^e
	½ Oct	½ Oct	½ Nov	½ Nov	½ Dec	½ Dec	½ Jan	½ Jan	½ Feb	½ ^e Feb	½ Mar	½ Mar	½ Apr	½ ^e Apr	½ May	½ May
N1																
N2																
N3																
N4, etc.																

1.4. Management of the relationship with the stakeholders of the thesis project

A thesis project requires interpersonal skills. It is the student's responsibility to interact with a set of relationships with different stakeholders.

1.4.1. The different actors

- The teachers

During the initial contact with teachers for the supervision of your master's thesis, you generally have two options: either choose a willing teacher or be assigned one by your institution's administration. In the most common case, where you need to convince a teacher of the relevance of your topic and your skills, it is recommended to meticulously prepare your emails or letters.

Avoid:

- Generic emails sent to multiple teachers at once.

- Approaches that do not take into account the specialties of each teacher or their research areas. Ensuring beforehand the areas of expertise of the recipients can improve the chances of the project's success.

- Personalized letters sent to the wrong recipient.

In this context, it is advisable to:

- Attach a clear and concise presentation of your project along with a timeline for its execution.

- Include your resume.

The choice of the teacher should be made thoughtfully and based on:

- Expertise in the field of your thesis topic: a teacher whose research interests and expertise closely match your topic. This ensures that he will be able to provide you with relevant and in-depth advice.

- Supervision experience: a director who has proven experience in supervising dissertations or theses. This may include their ability to effectively guide students, provide constructive feedback, and meet deadlines.

- Accessibility and availability: the teacher is accessible and available for regular meetings or as needed. Good communication is essential for the success of your project.

- Compatibility and intellectual closeness.

2. The construction of the research topic

Between problem-solving in everyday life and research, there is no absolute contrast: what truly differs is the level of awareness, the effort of structuring, and the rigor of generalizations. Each research represents a renewed challenge for the researcher in their quest for the advancement of knowledge. A problem arises when there is a need to bridge the gap between an unsatisfactory initial situation and a desired situation. In research, a problem is defined as a conscious gap between what is already known (deemed unsatisfactory) and what should be known (deemed desirable). However, the possibility of exploring a research topic goes far beyond the mere choice of the latter. It is essential to clarify the concerns and the questions posed, to specify the key concepts and the studied population. This refinement process takes place in three distinct phases:

2.1. Inquiry into the research subject

It is an approach aimed at delineating the problem by defining it and choosing a specific approach (such as the economic, social, psychosociological angle, etc.) from which it will be explored. To do this, the researcher interviews the subject of study in order to clarify the analytical framework.

2.2. Definition of the target population

The target population usually refers to a group of people or elements sharing common characteristics, meeting the established selection criteria, and likely allowing for the generalization of results. The data will be collected from this population, defined during the processing stage.

2.3. The precision of key concepts

- During the process of refining the research topic, it is essential to define the key concepts, as they constitute the subject of study. These concepts can be concrete or abstract. Research questions require a scientific approach and can generate new knowledge that can be generalized, whether the research method is quantitative or

qualitative. Each study begins with a research question, but its structure varies depending on the chosen orientation.

- Quantitative research question: it is a structured inquiry that identifies the concepts and the population of an empirical study, aiming to obtain answers through observation. It also aims to explore and verify the relationships between concepts, as well as to predict the impact of one variable on another.

- Qualitative research question: it is an inquiry that explores a phenomenon with the aim of discovering, understanding, or evaluating it. It suggests an empirical approach focused on a deep understanding of the subject studied.

2.4. The characteristics of definitive questioning: the rupture

The preliminary question is formulated based on the researcher's observations or experiences when they have not yet read what has been written on the research topic; thus, it serves to guide the researcher towards the documentation. In contrast, the final question is formulated after reviewing the literature and gaining an understanding of the current state of knowledge on the research topic.

- The preliminary question helps determine whether the research topic is relevant or worth exploring because, to undertake research, it is important to be convinced that it will bring innovation or new knowledge to serve progress.

- A significant question: Which means that the research question must be relevant and serve the advancement of knowledge, solve a research problem, clarify relationships between variables, or understand and describe phenomena.

- A question linking research to theory: Research aims to verify and develop theory, which makes them inseparable, and all research is linked to key concepts derived from theory.

3. The issue

A problem statement is a logical framework built around a main question that is directly related to the chosen topic. This logical set necessarily includes the working hypotheses and the questions logically articulated among themselves. A problem statement must be explicit, well-written, and unambiguous. It must be deployed and unfolded in an obvious manner. The plan tangibly translates a well-developed issue. Figuratively speaking, the research question is the control panel of your thesis work.

Once these criteria are validated, the topic identified within your theme must be formulated judiciously to secure your path. Here are some simple guidelines:

- The formulation must be simple and unambiguous;
- It must cover the content of the work and not be more extensive, otherwise you will be criticized for being incomplete in your development.

Avoid:

- The titles are too long;
- Nested headings: not to be confused with subtitles that serve to focus or apply to a specific case;
- Titles addressing multiple levels of an issue simultaneously: you will probably be criticized for having better addressed one aspect or level than another.

Any work of reflection will therefore be defined by structuring factors:

- A reflection has a serious chance of succeeding only if it focuses on a limited object, defined by a state of knowledge, and if it corresponds to a clearly identified social and/or professional demand. Then the approach gains a certain legitimacy and the central question can be clearly formulated. A work of reflection does not simply consist of recalling or reproducing obvious facts (observations), observing the world, or proposing a universal explanation or theory. It contributes to the increase of knowledge of its object in a particular field, and this through enrichment, confirmation, or refutation. It must contribute, through its results, to a set of theoretical relationships with explanatory aims.
- A reflection is based on the prior definition of a precise question that demonstrates a willingness to prove. A well-posed question contributes, through the answers it leads

to or the questions it raises in turn, to enriching the range of viable issues in a particular field of research. The initial question can take on several meanings: identifying a paradox, exploring an unknown field, proposing a shift in approach, challenging a postulate, testing a recognized theory in a different context from the original context, etc. The final results, as propositions of explanation, give meaning to the approach and then become knowledge, as soon as they are articulated with the recognized issues in a particular field.

The issue is constructed according to different modes of reasoning. Two main logics are presented.

3.1. Formulation of the problem in the deductive reasoning mode

Starting from a deductive approach, the problem is formulated based on concepts drawn from the scientific literature. This then leads to a precise research question, aimed at testing this theory against a specific reality.

3.1.1. The steps of the problem

In the context of a deductive approach, the main steps to specify a research problem are as follows:

- Choose a research topic;
- Formulate a general question;
- Collect, structure, and critically analyze relevant information;
- Determine a specific problem and research question.

In summary, you must first choose a general theme. Next, a careful reading of general works on this theme allows for the formulation of a general research question, which is still too broad to be directly utilized. Finally, through a critical reading of more specific writings related to this general question, one identifies a particular problem and deduces a specific research question from it.

3.1.2. The formulation

- Choice of Research Topic

The first step is to select a general research theme. This theme serves as the starting point for all subsequent steps.

- Formulation of a General Question

Once the theme is chosen, it is crucial to formulate a general question that will guide the rest of the research process. For a beginner researcher, this involves collecting and examining the existing general knowledge on the chosen topic. At this stage, it is necessary to identify the general concepts, important principles, theoretical models, as well as the main theoretical and methodological approaches.

- Collection and analysis of information

The approach is centered on the general question and the specific questions that arise from it. It is an investigation guided by specific questions. By adopting a deductive approach, the researcher refines the problem through an in-depth analysis of specific research writings and other practical writings related to the general question.

- Critical and active attitude

To discover a research problem, it is essential to adopt a critical and active attitude towards the ideas encountered during readings. This involves constantly asking fundamental questions such as:

- What exactly is being claimed here?
- Are these statements true?
- What concrete evidence supports these claims?
- Are these pieces of evidence valid?
- Are these statements compatible with each other?

This critical attitude requires skills such as classifying and judging research according to certain criteria, analyzing an argument, and structuring information. Tables and synoptic figures are effective tools for organizing this information and highlighting their relationships.

Delimitation of the specific question

When developing a relevant framework for the general question, specific problems may emerge. For example, gaps or inconsistencies in our scientific knowledge may be revealed.

Types of specific problems:

- Lack of knowledge: there are missing elements in the response to the general question.
- Non-generalizability: the conclusions of previous research cannot be generalized to a particular situation.
- Forgotten variables: some important variables were not taken into account.
- Inadequate methodology: uncertainties exist due to methodological issues.
- Contradictions: conclusions from research on the same subject are contradictory.
- Lack of verification: a model or theory has not been sufficiently tested.

Other types of difficulties may arise, requiring the researcher's ingenuity to progress in the research process, for example by developing new tools or methods.

Formulation of the specific question

Once the particular problem is identified, it is crucial to formulate a specific question that will serve as a guide throughout the research. This question must be precise, with clearly defined terms, especially in an operational manner. Each element of the question must be observable or measurable.

Feasibility Criteria

The choice of a specific research problem must take feasibility into account:

- The magnitude of the issue;
- The available time;
- Financial resources;
- The collaboration of assistants;
- Accessibility to instruments.

Despite the importance of feasibility, the relevance of the specific question in relation to the overall issue remains a central criterion for judging the interest of the chosen problem.

3.1.3. The presentation of the problem

In a deductive approach, the problem statement must demonstrate, through rigorous organization, the usefulness and necessity of empirically exploring a specific question or verifying an idea derived from reasoning based on information from scientific writings. The specification of this issue follows a process going from a general problem to a specific question, constructing a coherent, complete, and parsimonious argumentation. Here are the essential elements to include in the problem statement:

- Precision of the research topic: the research topic must be clearly defined.
- Relevance of the research: it is important to highlight the significance of the theme and the general question for researchers, practitioners, and decision-makers, showing that they address a current concern.
- Presentation of relevant information: within the framework of the general question, it is crucial to present relevant information, including the results of empirical and theoretical research, facts, concepts, relationships, and models. This information must demonstrate the existence of the specific research problem or provide elements of a solution to address it, thus constituting a conceptual or theoretical framework for the research.
- Highlighting a specific problem: a specific problem must be clearly identified. Formulation of a Specific Research Question: the specific question must be formulated in such a way as to guide data collection, with the aim that the answer to this question will help solve the identified specific problem.

Steps of the deductive approach

Define the research theme: choose and specify a relevant and current general theme.
Formulate a general question: this question guides the research and requires the collection and analysis of existing knowledge.

- Collect and analyze information: identify and structure important concepts, principles, theoretical models, and methodological approaches.
- Adopt a critical attitude: question the claims, verify the evidence, and evaluate the validity and coherence of the information.
- Identify a specific problem: through the analysis of the writings, identify gaps, inconsistencies, or specific methodological issues.

- Formulate a specific question: this question must be precise, operational, observable, and measurable, and it must guide the entire research.

Feasibility and relevance criteria

When formulating the specific question, it is essential to take into account:

- Feasibility: the scope of the issue, the available time, financial resources, necessary collaboration, and accessibility to instruments.
- Relevance: the specific question must be directly related to the entire issue, and it must address current concerns of researchers, practitioners, and policymakers.

By adhering to these steps and criteria, the deductive approach allows for the construction of a rigorous and justified research problem, serving as a solid foundation for empirical exploration or theoretical verification.

3.2. Formulation of the problem in the mode of inductive reasoning

In an inductive approach, the development of the problem statement is clearly distinguished from the deductive approach. It does not rely on the structuring of already established concepts and general propositions, but on an iterative formulation of questions based on the meaning given to a concrete situation. Here is how this approach is structured.

3.2.1. The steps

In the context of an inductive approach, the main steps in specifying the problem are:

- The formulation of a provisional research problem based on a situation involving an interesting particular phenomenon.
- The formulation of a research question allowing for the choice of an appropriate methodology.
- The development of interpretations based on data collection and the inductive analysis of these data.
- The iterative reformulation of the problem and/or the research question based on the insights gained during the data collection and preliminary analysis.

3.2.2. Inductive analysis and data interpretation

In an inductive research approach, specific problems emerge from the researcher's personal experience, particularly from lived situations that present particular, curious, or surprising phenomena, related to their research interests. The researcher selects a concrete situation because it contains a phenomenon that can be described and understood through the meanings that the participants attribute to the events. This situation must be sufficiently rich to define a specific context, involve an interesting phenomenon (whether already studied or not), and offer the possibility to advance knowledge.

From this particular situation, the researcher provisionally formulates a research problem, articulates one or more general research questions, and chooses an appropriate methodology. An interesting phenomenon may arise from changes in the usual functioning of a group, leading to significantly different reactions among individuals. Established original practices can also create unique situations worthy of study. Similarly, recurring problematic events or astonishing or difficult-to-establish practices can attract the researcher's attention.

The analysis of these situations allows for a better understanding of the experiences of the actors and contributes to the improvement of situations or interventions.

Another type of situation likely to reveal an interesting phenomenon occurs when events present unexpected aspects or when interventions lead to unforeseen consequences. These events, although generally ordinary, can include surprising elements that challenge our usual understanding of the world. It is not necessary for the situation to be exceptionally unique to arouse interest. Common events or daily practices, often undocumented, can also attract particular attention.

Many practices, often taken for granted, still lack systematic documentation from the perspective of the people who experience them. The identification of the problem begins as soon as the researcher discovers a situation containing an intriguing or surprising phenomenon. This problem must be formulated clearly, albeit provisionally, due to the researcher's initially limited knowledge of the situation. The researcher then begins to develop a partial descriptive and interpretative framework, based on local concepts that reflect the obvious elements of the structure and processes of the situation.

To formulate the problem, the researcher can combine their personal knowledge with information from the relevant scientific literature on the phenomenon being studied.

3.2.3. Reformulation of the question

In the continuation of the research problem, the initial question plays a crucial role for the researcher. Although provisional, this question must be sufficiently general to generate more specific questions and facilitate the discovery of important aspects of the phenomenon, while being precise enough to focus the research. The focus of the research has two essential functions:

- Delimit the boundaries of the research: establish the limits and the field of study.
- Determine the relevance of the information: provide criteria for including or excluding data from collection and analysis.

The general question is usually accompanied by specific questions aimed at exploring the structural elements, interactions, and processes (sociocultural and organizational) to determine and describe the important dimensions of the phenomenon. The challenge for the researcher is to formulate the most relevant and insightful questions to understand the phenomenon.

Once these questions are established, the researcher chooses the methods they will use and determines, through theoretical sampling, the people to contact. Unlike a confirmatory approach, where the specific question remains fixed during data collection, in a generative approach, the focus can evolve along the way. After collecting the initial data, the researcher conducts an in-depth analysis to accurately describe the events as they were experienced by the people involved in the situation. From this description, the researcher develops broad hypotheses, not in the sense of operational variables, but rather as hypothetical propositions aimed at better understanding the phenomenon in its complexity. The objective is to make sense of events rather than to establish unidirectional linear causal relationships.

To develop a grounded theory of the studied phenomenon, the researcher primarily relies on the concepts and hypotheses that emerge from the collected data, while also integrating knowledge from relevant scientific literature.

This process of constructing meaning from the data allows the researcher to identify gaps or inconsistencies in the overall understanding of the phenomenon. These specific

problems lead to the formulation of precise questions that guide the collection of relevant information about the phenomenon and contribute to the development of a theory as grounded as possible in the available empirical data.

The formulation of the general problem can evolve throughout the research, as the initial understanding may be incomplete or insufficient in light of the first inductive analyses of the data. The final reformulation of the problem is generally completed towards the conclusion of the study. Therefore, it is common for the final formulation of the problem, as presented in academic publications, to differ substantially from its initial version.

The specific questions are subject to adjustments as the inductive analysis progresses and the overall picture of the phenomenon becomes clearer. This also applies to the general research question, which may evolve to better reflect the insights drawn from the accumulated empirical data.

3.2.4. The presentation of the problem

In an inductive approach, the problem statement must justify the need to empirically explore a specific situation in order to enrich our understanding of a given phenomenon. The argumentation must be rigorous, comprehensive, and concise. The construction of the inductive problem statement generally includes the following elements:

- Identification of a concrete situation containing a particular phenomenon of interest;
- Formulation of a research problem that emerges from this intriguing situation;
- Development of a precise research question;
- Demonstration of the relevance of the research by showing that this problem attracts the interest of decision-makers or researchers;
- Anchoring the research problem in an existing theoretical context, by presenting the current knowledge on the subject;
- Mention, if applicable, theories, models, or emerging concepts used;
- Illustration of how research contributes to advancing knowledge regarding the problem studied.

4. The bibliography and the analysis of the theoretical corpus

At this stage of the project, the following elements are considered established: the definition of the subject of study, which delineates the field of research; the formulation, even provisional, of the topic or the "main question"; and the construction of the problem statement, that is, the logical organization of interconnected questions and the plan envisaged for the demonstration. As a general rule, you have tested the reaction of your potential thesis advisor. A preliminary exploration directed you towards reading materials that confirmed your interest in the subject. The recommendations presented in this chapter aim to answer the essential questions of "why?" and "how?" regarding documentary research in the context of writing a thesis. Two major points emerge: on the one hand, that a systematically conducted literature review helps avoid dead ends and repetitions on topics already covered, sometimes superficially; on the other hand, that a well-designed research strategy saves time and leaves a favorable impression on the recipients of the thesis.

4.1. The Importance of Reference Works

Most works, including theses, draw inspiration from or reference pre-existing works, which is a general rule in intellectual creation. All research is part of a continuum, as previously mentioned: it is rare for a researcher to be the first to explore a particular theme. This situation can be explained for two main reasons:

- A topic or a sub-theme that is still underexplored is necessarily linked to a broader theme, which serves as its frame of reference. This general theme has probably already been the subject of numerous publications, among which the researcher can identify relevant works that will serve as a guide. The references to prioritize at the beginning of the research are those of synthesis works, which present the fundamental questions surrounding the chosen issue for the study in a structured manner.

Next, the in-depth analysis of specialized works on the chosen sub-theme (articles, reports, conference proceedings, specialized press, etc.) will naturally follow the initial stage of research.

- The central question of the study, even though it does not have a very extensive

bibliography, can be related to closely related sub-themes that have already been addressed in existing works. In this case, it will probably be possible to adopt the method that has proven effective in these works to apply it to the ongoing project.

In concrete terms, it will often be useful to create thematic folders on the different aspects related to the question being studied, that is, the "related fields." This will greatly facilitate the development of the research approach.

4.1.1. Research for Familiarization with the Subject

In a given theme, there is generally a community of researchers who share methods, analytical procedures, and common approaches to structure the central questions. Similarly, certain fundamental concepts are often highlighted. Rather than following fleeting trends or adopting unconsidered approaches, it may be pertinent to rely on the experiences and teachings of previous researchers, in order to avoid mistakes and save time.

Researchers, often faced with the same technical and theoretical challenges within a given topic, share their solutions and warnings through their publications. That's why it is crucial to review what has been done on the matter.

4.1.2. Benefit from experiences conducted on similar subjects

Once the field is explored, it becomes crucial to confirm our ability to address a topic that stands out for its unique nature. A well-structured literature review, focused on similar themes, can help the researcher validate their questions and ensure that other researchers have already developed relevant approaches and solutions, which would be wise to draw inspiration from.

4.1.3. To effectively explore related themes

During the initial exploration of a thesis topic, the essential reference themes quickly emerge, thus forming the foundation of the approach. However, as one deepens their understanding of the subject, it is common to discover questions, references, and related concepts that interact with the main issue. It is therefore advisable to compile a concise file on these aspects. Although it does not require an excessive investment of time, neglecting these elements could hinder a complete understanding of the subject and lead to remarks from academic or professional interlocutors.

4.1.4. To develop an effective plan

It is always prudent to draw inspiration from proven plan models, derived from validated works, studies, or theses, which have already demonstrated their relevance. Rather than simply imitating, using these existing models can help secure the project while avoiding conformity.

4.2. Establishment of a bibliographic reference database

The challenge is to gather relevant books and articles on your topic within a limited timeframe and identify ways to access their content.

4.2.1. The bibliographic research is conducted based on a well-specified object

When starting a bibliographic research, the final formulation of the subject and its exact delimitation are generally not yet fully finalized. That is why the first impression is one of an abundance of references, at least when the field has been practiced; if that is not the case, then so be it:

- The subject is improperly formulated;
- The chosen theme, for various reasons, generates little output. In this case, it is better to change your ambition.

Once this initial stage is passed, the precision in defining the object and the subject will provide criteria for sorting the documentation. The number and volume of references directly related to the subject and essential for the project's completion will be reduced to what can be reasonably handled over a period of a few months.

Note: While it is important to be rigorous and systematic in your selection, it is also wise to trust your intuition: do not dismiss a document that piques your curiosity even if it does not strictly align with the topic. It is likely to effectively complement your issue and bring the necessary creativity and innovation.

4.2.2. Plan the establishment of the database based on time constraints and available resources

- Time management is a crucial aspect when it comes to researching and gathering the essential documentary material for the creation and writing of the thesis. It is essential never to underestimate this factor, as the time required can vary significantly depending on prior familiarity with the subject: the newer the field, the more time learning will require. Thus, anticipating this constraint from the very beginning when choosing the topic is preferable to avoid producing a hasty, incomplete, and fragile document in terms of information.
- Random documentary research refers to the online exploration of documentary sources that are often unpredictable due to their abundance, requiring laborious sorting and processing. Even when conducted methodically, these searches do not always guarantee direct shortcuts to the desired information.

4.2.3. Tree-based search

It involves methodically structuring the initial exploration of a new topic by reviewing a few key reference sources. This process is crucial for clarifying the subject and effectively formulating queries to specialists or documentation databases. Here are some guidelines:

- After clearly defining the topic, create a list of essential themes to explore, serving as a guide for your research.
- Validate this first document with specialists, who will act as resources to guide you in managing your issue and provide you with relevant documentary sources, thus optimizing your time and efficiency.
- During your initial readings, make use of the bibliographic appendices and footnotes that refer to specific information sources. These references often lead to well-established authors or institutions.
- As you progress, you will probably notice that certain references appear recurrently from one work to another. The authors cite each other, reinforcing or critiquing their arguments according to a bibliographic logic that unfolds on multiple levels.

4.3. Documentary Research on Computerized Databases

To optimize research time and make the best use of essential sources, it is crucial to formulate precise queries to documentation specialists, who will be able to navigate effectively through the databases most suited to the chosen topic. Although this requires an initial investment, this method generally proves to be cost-effective.

When collecting documents, it is common to encounter difficulties in accessing information, often due to the fact that documentation centers and libraries only have a portion of the publications available on a given subject. Textbooks, specialized journals, articles, conference proceedings, studies, and reports are sometimes scattered. However, the increasing access to online publications constitutes a real opportunity.

Databases can solve this problem of information overload, provided that the search criteria are correctly defined. However, an exhaustive search is not always necessary for writing a thesis, due to the specific objectives and the diversity of the topics addressed. Some theses are primarily based on academic sources, while others incorporate various resources, whether internal to an organization or derived from empirical approaches.

4.4. Document exploitation

At this stage of the work, it can be reassuring to rely on a tangible and evolving support that will complement the writing of the thesis. These are the reading notes and the "model" binder that will serve as a working template.

4.4.1. Reading logs

During the discovery or detailed reading, the spontaneous gesture consists of making annotations and inserting bookmarks to highlight passages deemed important. The necessary effort of synthesis that makes the key elements of the documentation easily available relies on the systematic drafting of reading notes presented in the most standardized manner possible.

Namely:

- Title, author, publisher;
- Reference theme: keywords, etc.;

- Place this reference in the developed issue;
- Elements particularly prominent and significant that you wish to highlight in a specific place in your plan.

These reading notes will be organized by themes or according to the structure planned for your thesis, as soon as it is sufficiently defined. The main objective is to make these reading notes easily accessible so that they can quickly enrich any new idea related to your work.

4.4.2. The summary table

Creating a summary table throughout your readings may seem laborious, but it turns out to be a beneficial approach. By choosing appropriate comparison criteria, it allows you to analyze your documentary material in a synthetic and structured manner. Here is an example of a table that will be adjusted according to your specific issue and your lines of thought.

Table 3. Example of a bibliography summary table

Title of the text	Authors	Date	Research Question and Hypotheses	Research Question and Hypotheses	Main results	

5. Literature review

The literature review, also called the state of the art, involves synthesizing existing knowledge on the defined research topic. Its purpose is to pose a precise question right from the introduction, and then to analyze how other researchers have answered it in the past. This process highlights how previous studies have approached and addressed this specific question.

On this subject, the key points to remember:

- The literature review aims to take stock of the existing knowledge related to the research question. This requires clearly formulating the question from the outset and examining the answers provided by previous researchers.
- It is crucial to exclude any information that is not relevant to the research question.
- Each developed element must be justified based on its utility and relevance in relation to the framework and objectives of the study.
- The literature review must include a critical analysis of the limitations of previous works, highlighting the gaps and shortcomings in our current knowledge on the subject.
- By briefly dismissing the theoretical explanations deemed irrelevant, the author demonstrates their mastery of the studied field.
- The literature review allows for the formulation of hypotheses or demonstrates how the chosen theoretical framework is applicable to the research topic. It highlights the concepts, theories, key data and figures, as well as the central authors who support the chosen theoretical framework.

1.1. The theory and the construction of the theoretical framework

Theory plays a crucial role in providing a conceptual framework for our knowledge. It consists of a set of interconnected propositions that allow for the explanation of a wide range of observed facts.

In social sciences, a theory emerges from the interest in specific social phenomena and the need to provide an explanation for them. It goes beyond intuitive conceptions by offering a capacity for in-depth analysis and interpretation of these phenomena. Theory is not limited to clarifying our existing knowledge; it also encourages us to ask new questions to enrich our understanding and to explore new ways to influence our social environment.

Based on a literature review and his own knowledge, the researcher develops a theoretical framework that specifies the concepts, theories, and models on which his research is based. Often, the researcher accompanies this presentation with a graphical model that represents the concepts and their relationships. When a theory has already been widely presented, the theoretical framework allows it to be summarized concisely. On the other hand, when the researcher does not limit themselves to a single theory but draws from multiple ones, which is often the case in management sciences, they must create a precise theoretical framework that will serve as the main foundation for their research.

5.2. The structure of a literature review

An introduction:

Explain the focus and establish the importance of the topic, as well as the objectives of the literature review. It can also provide a very brief history to provide the context of the subject.

Body:

- Summarize, evaluate, and synthesize the current state of knowledge in the field.
- Trace the intellectual progression of the field, including the major debates.
- Provides arguments that will justify the proposed research objectives.
- Can provide a new interpretation of materials and approaches.
- Describe the relationship of each study with the others.

- If possible, resolve the conflicts between the apparently contradictory previous studies.

Conclusion:

- Summarize all the evidence presented and show its importance.
- Highlight the gaps and indicate how previous research leads to your own research project and the chosen methodology.
- It serves as an introduction to your own research and situates your own research within the context of existing literature and existing gaps.
- Ask: Why? How does it work? What is it about? What is it for? What does that mean?

But X says...! How do you know? So what? Says who? What happens if...?

- Provenance: Are the author's arguments supported by evidence [e.g., historical material, case studies, statistics, recent scientific discoveries]? Is the research objective achieved?

- Methodology: The techniques used to identify, gather, and analyze the data; were these data appropriate for solving the research problem? Was the sample size appropriate? Were the results interpreted and reported effectively? Was it a strong or weak research model? Objectivity: Is the author's perspective impartial? Are opposing data considered, or are some relevant pieces of information ignored to prove the author's point?

- Value: Are the author's arguments and conclusions convincing? Does the work contribute significantly to the understanding of the subject?

- Your take, positioning: What can you take away from it? How will this research help your own research? What should be avoided? What do you do differently?

Development of the literature review:

Problem formulation:

- Define your subject and the scope of the review. Research:

- Find relevant documents for the subject under study. Data evaluation:

- Determine which literature makes a significant contribution to the understanding of the subject. Organize:

- Analyze, interpret, and organize the structure of the literature review. Organize the literature review

Focus on your subject:

- What interests you?
- What interests others?
- What research period are you considering?

Read and evaluate:

- What assumptions do most/some researchers seem to make?
- What methodologies do they use? What are the testing procedures, subjects, and materials tested?
- Evaluate and synthesize the research results and the conclusions drawn.
- Note the experts in the field: names / frequently referenced laboratories.
- Note the contradictory theories, results, and methodologies.
- Monitor the popularity of the theories and their evolution over time.

Note and summary:

- Commonly accepted / disputed findings.
 - Two or three important trends in research.
 - The most influential theories.
 - Develop a summary.
 - Organize the review.
 - Develop titles/subtitles, especially in long reviews.
 - Place your ideas and results in the section.
 - If your evaluation is lengthy, provide an overview at the beginning of the review.
 - At the beginning of the review, explicitly indicate what will or will not be covered.
- Use transitions to help you trace your argument. Summarize and synthesize:
- Summarize and compare the literature in a table or a "concept map."

- Recall the different categories of studies examined.
- Plan to present applications and implications
- Provide specific directions for future research towards the end of the review.

Common mistakes and plagiarism:

- The review is not coherent.
- The review does not focus on the most important aspects of the study.
- The review does not establish a link between the literature and the study.
- Too few references or outdated references are cited, and recent references are less present.
- The review is not written in the author's voice.
- Using the words or ideas of another author without proper citation.
- Cite a source, but reproduce the exact phrase without quotation marks.

Borrowing the sentence structure of another author without giving credit.

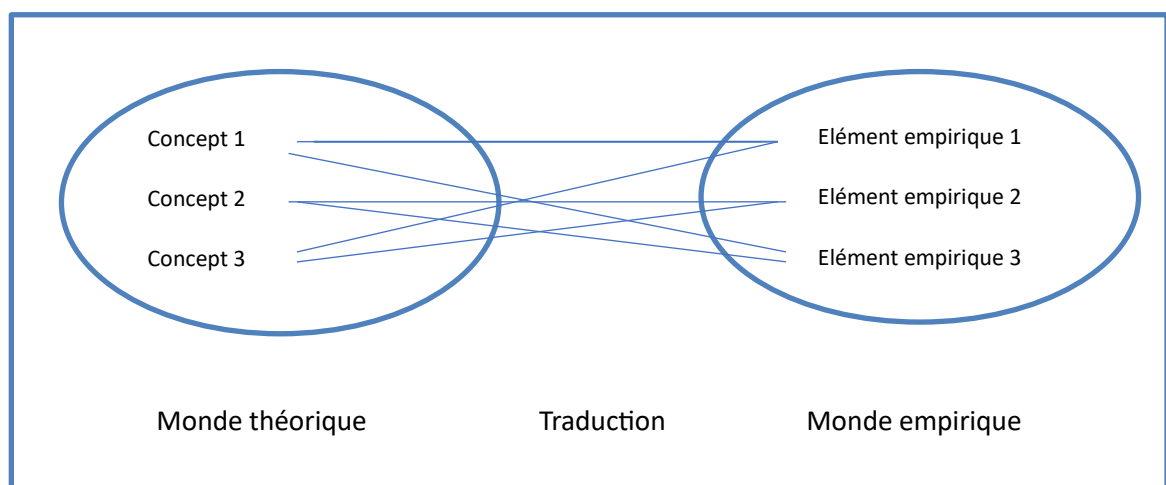
- Borrowing all or part of another student's review.

5.3. The link between concepts and data

In the field of research, two main approaches can be identified. The researcher can either confront theory with reality using deduction, or extract theoretical elements from reality using induction. Once the researcher has defined their research topic and chosen the approach they wish to adopt, they are faced with two possible situations. Either he examines the existing literature and extracts the relevant concepts, or he explores reality through one or more observation sites (Thietart et al, 2014). In both cases, he then has a set of concepts or data that will serve as the foundation for his work. When the researcher moves from the theoretical domain to the empirical domain, they make a transition by translating the conceptual definition they have adopted (theoretical domain) in order to identify the elements of the empirical world that best correspond to this definition (Thietart et al, 2014). This approach aims to find concrete examples in the empirical world that most accurately illustrate this definition. According to Thietard et al. (2014), there is no direct and exclusive (bijective) correspondence

between a conceptual definition and the empirical world. In other words, a conceptual definition does not necessarily find an exact equivalence in empirical data. For a given conceptual definition, there are no empirical data that correspond exclusively to this concept. Similarly, when a researcher seeks to move from the empirical world to the theoretical world, they have elements that can be considered as manifestations of several potential concepts. In other words, empirical data can represent or encompass several possible theoretical concepts.

Figure 2. Links between concepts and data



Source : (Thietart et al, 2014).

The researcher has resources of different natures coming from both the theoretical world and the empirical world. On one hand, he has access to conceptual definitions, and on the other, he has concrete empirical elements.

We call:

The measurement: moving from the theoretical world to the empirical world
Measurement represents the transition from abstract concepts to concrete observables in the empirical world. In other words, it is the process by which the researcher evaluates or quantifies theoretical concepts using empirical data.

Abstraction: moving from the empirical world to the theoretical world
Abstraction, on the other hand, is the reverse process of measurement. It involves extracting general ideas or theoretical concepts from the elements observed in the

empirical world. The researcher thus uses empirical data to formulate abstract concepts and develop explanatory theories.

The Translation

Translation involves converting the available elements into the language of the targeted domain. For measurement, this means creating specific indicators corresponding to a given concept. In other words, measuring a concept involves developing specific indicators to represent that concept. These indicators are concrete elements used to quantify or evaluate the desired concept.

The measurement process

Measurement consists of procedures that allow organizing empirical observations in a way that represents theoretical conceptualization. In the social sciences, measurement must be interpreted more broadly than in disciplines like physics or biology. Researchers can take measurements even if they are not expressed numerically (Thietart et al., 2014).

The steps of the measurement

First of all, a researcher studies a theoretical problem and creates an abstract structure (a visual representation) that gradually takes the form of a concept.

2. Secondly, the measurement of a concept involves discovering its components. These constructs are called facets or dimensions.

3. Thirdly, this approach defines, for each dimension identified in the previous step, the type of data to be collected. To do this, researchers can rely on indicators. Indicators are elements that can be collected in the empirical world and whose relevance to the concept is defined probabilistically.

6. The hypotheses

The objective of a hypothesis is to propose a concise (synthetic) answer to the initial question, so that it can be validated through an empirical study or survey. The hypothesis can be considered both as a way to answer the initial question and as a preliminary connection between two phenomena. It is entirely based on the development of the problem and does not constitute a conclusion, but rather an essential summary, a fundamental structure. Strictly speaking, the hypothesis is the answer to the research question (Lièvre et al., 2016).

6.1. The types of hypotheses

In their book "Introduction to Research in Social Work," Lièvre et al. (2016) list the following types of hypotheses: To illustrate these different types of hypotheses starting from a research question, let us take the example of the following question: "What are the difficulties faced by young people in the local mission?"

- A descriptive hypothesis would consist of listing the difficulties these young people face (for example, psychological, economic, social difficulties), which have a direct impact on the integration of young people in local missions.

- An explanatory hypothesis in terms of factors would be able to identify the essential notions that seem to govern the integration difficulties of these young people (for example, the level of school education, the parents' profession, and the young person's perception of the world of work, and their impact on the integration of young people from local missions).

- An explanatory hypothesis in terms of typology would be able to construct two or three profiles of young people by combining the explanatory factors that account for the difficulties encountered by young people.

- A final type of hypothesis (the most difficult), the process hypothesis, means that we introduce the time variable into the proposed typologies and that ultimately it is the trajectory of the young people associated with explanatory factors that accounts for the difficulties in integration.

Marie-Fabienne Fortin (2016, p.103-105) distinguishes 8 types of non-exclusive hypotheses. There are:

- Simple hypotheses that state an association or causal link between two variables.
- Complex (or multivariate) hypotheses, which predict causal or associative links between three or more variables.
- Directional hypotheses that specify (positive or negative, more or less) "the expected direction of the relationship between the variables."
- Non-directional hypotheses that specify a relationship exists between two variables without predicting the positive or negative nature of the relationship.
- Hypotheses of association involving variables that exist or coexist over time.
- Hypotheses of causality involving causal relationships.
- Statistical hypotheses that we use during statistical tests. These are null hypotheses in the sense that they state there is no relationship between variables.
- Research hypotheses that are the opposite of the previous ones. They announce a relationship between the variables.

6.2. The conditions for the validity of a hypothesis

There are various categorizations of hypotheses, each meeting specific criteria:

- An hypothesis generally proposes a relationship between variables.
- It constitutes a temporary answer to the initial question, subject to being validated or invalidated by empirical tests.
- In the social sciences, the most common research hypotheses are simple or complex, often involving causality between multiple variables.
- In simple hypotheses, an independent variable is identified as the cause, thereby affecting the dependent variable, which is the effect.
- An hypothesis is formulated by the researcher before any rigorous research, derived from an existing theory or constructed by the researcher, and subjected to empirical validation.
- Finally, research hypotheses are concrete propositions derived from theoretical foundations and must be empirically tested to be confirmed or refuted. The variables and concepts included in a hypothesis must be observable and measurable.

These criteria define the rigorous process of formulating, testing, and validating hypotheses within the framework of scientific research.

6.3. The formulation of the hypothesis

It is essential to formulate your hypothesis in accordance with a previously chosen, adapted, or developed theory. A hypothesis can be considered valid if it conforms to the principles stated previously:

- It derives from a chosen, modified, or constructed theory;
- She is a provisional answer to an initial question.

6.4. The theoretical framework: the issue of operationalization

At the stage of operationalizing the theoretical framework, the researcher prepares their hypotheses for the next phase of the scientific process. The adapted, modified, or developed theory, along with the research hypothesis derived from it, will be empirically tested to verify their validity. To do this, it is essential to translate the hypothesis into terms of observable data in order to determine if real phenomena behave in accordance with theoretical predictions. In other words, operationalizing a theoretical framework involves transforming an abstract theory and a general hypothesis into concrete and specific phenomena that can be directly measured and observed.

Maurice Angers (2014, p.102) rightly emphasizes that the operationalization of theoretical hypotheses involves making concrete what we wish to study scientifically. This process allows for the transition from general and abstract research questions to the actual behaviors one wishes to observe in reality, thus concretizing the shift from the abstract domain to the concrete domain.

Operationalizing research involves establishing an operational framework that constitutes the crucial and intermediate step between the formulation of hypotheses and the empirical work of analysis. This operational framework represents a central element of the research project, as it precisely specifies what will be analyzed to test our hypotheses. Consequently, this transition from the abstract to the real must meet two essential conditions: ensuring that the research hypotheses are falsifiable and clearly defining the research concepts by making them operational, that is, by determining their

dimensions, components, indicators, and possibly their measurement criteria. A falsifiable research hypothesis implies that it must be capable of being empirically tested to determine its truthfulness. This means that the hypothesis can be subjected to tests that could potentially confirm or refute it, although never definitively validate it. Indeed, no hypothesis can be verified absolutely, as any hypothesis is likely, at some point, to be refuted by empirical observations.

To be considered falsifiable, hypotheses must meet two essential criteria:

- According to Karl Popper, a hypothesis is falsifiable if the class of its virtual falsifications is not empty. This means something very simple: all theories and the hypotheses that derive from them produce two classes of basic statements: basic statements that they allow (which do not contradict them) and basic statements that they reject or that contradict them (which are called virtual falsifiers).
- A falsifiable hypothesis must have a generalizing character. Indeed, a refutable hypothesis must also be falsifiable by other researchers who will want and be able to replicate the research. Also, for a hypothesis to be falsifiable, the research must be reproducible, and for that, it is preferable that the hypothesis has a sufficient degree of generality so that it can be tested with recent and current data. Moreover, from a knowledge perspective, general hypotheses are more fruitful. In summary, operationalizing a theoretical framework is partly about formulating a general research hypothesis that can be subjected to empirical tests that could falsify it.

7. The development of the analysis model

To understand and effectively study the concrete phenomena that interest the researcher, it is essential to make the best use of new perspectives and ideas. This requires formulating them in a way that systematically guides the subsequent work of collecting and analyzing observational or experimental data. The construction of the analysis model plays a crucial role here by serving as a link between the problem chosen by the researcher and their work of elucidation on a specific and precise area of analysis.

The selected concepts go beyond mere definitions; they translate theoretical ideas into precise and operational language, thus facilitating the collection and comparison of data, whether statistical or qualitative. The essential quality of these concepts is their ability to be complementary and operational, which justifies considering them as full-fledged concepts and not merely as definitions.

Conceptualization, as we have already mentioned, constitutes a crucial dimension in the construction of the analytical model. It prevents the work from getting lost in vagueness, uncertainty, and arbitrariness by clarifying concepts and articulating hypotheses. These hypotheses establish relationships between concepts that represent concrete phenomena, thereby determining the data necessary for their testing and analysis.

The analytical model, composed of closely articulated concepts and hypotheses, forms a coherent and unified framework for research. Without this coherence, the research risks becoming scattered, making it difficult for the researcher to structure their work effectively. It is therefore crucial to structure and prioritize the concepts and hypotheses throughout the research process to avoid any confusion and maintain the unity of the entire work.

Finally, it is important to distinguish the concepts that constitute the analytical model from those commonly used in social sciences. Even if their use may differ from their general meaning, it is necessary to clearly define them as soon as they are introduced in the research work.

7.1. The necessity of hypotheses for the analysis model

Organizing research around working hypotheses is essential to ensure its structure and rigor. A hypothesis is not merely a conjecture about the behavior of the objects studied; it guides the research by indicating the direction to explore and the most promising avenues. It effectively replaces the initial question by providing a clear guiding thread, although the question remains relevant. The next step is to test these hypotheses by confronting observational data, specifically chosen for their relevance in this context. This data selection process is crucial because it allows for a direct confrontation of the hypotheses with the actual behavior of the studied objects. Thus, the proposed analysis model can be evaluated and adjusted based on the empirical results obtained. This empirical work does not merely analyze reality through a theoretical model, but it also offers the opportunity to improve this model based on concrete observations. This reciprocal approach between theoretical reflection and empirical work is at the heart of all research, regardless of its form or method.

7.2. The question of elaboration

There are various avenues to explore, each research being a unique experience that charts its own path, influenced by several criteria such as the initial question, the researcher's training, the available resources, and the institutional context. Before developing the analysis model, it is essential to emphasize that the research question plays a central role in the coherent structuring of hypotheses. Moreover, the quality of exploratory work is crucial, as the analysis model is gradually prepared throughout this initial phase.

To build the model, the researcher can choose between two approaches, although these are not necessarily distinct: they can either give primary importance to the hypotheses and treat the concepts as secondary, or adopt the opposite approach.

Conceptualization is an abstract process aimed at grasping the essence of reality from the researcher's perspective, selecting what is crucial. Constructing a concept begins by identifying its essential dimensions that represent it, and then by defining measurable indicators that will guide the exploration and confrontation with reality. These indicators, whether traces, signs, expressions, or other phenomena, objectively reveal

the dimensions of the concept, although their precision may sometimes be vague. The conceptual construction varies depending on the number of dimensions and specific indicators required, each approach (inductive or deductive) having its own level of sophistication.

Isolated operational concepts, constructed empirically from direct observations or collected information, are distinguished from systemic concepts, created through abstract reasoning often aligned with general theoretical frameworks such as theories or paradigms. This latter type of conceptualization begins with the identification of empirically proven paradigms, followed by a chain deduction to illuminate the dimensions, components, and indicators. Each concept, whether an isolated operational one or a systemic one, involves a rigorous selection of relevant elements from reality.

The value of a concept lies in its heuristic capacity to facilitate the discovery and understanding of phenomena, thereby contributing to the advancement of knowledge. Regarding the construction of hypotheses, every observation or experimentation relies on these propositions anticipating relationships between concepts or phenomena. Whether they are explicit, implicit, or unconscious, hypotheses take the form of an anticipation of relationships between elements of the studied domain, offering a provisional answer to the posed research questions.

8. The data collection techniques most commonly implemented in management

In management, various data collection techniques are commonly employed. In addition to the traditional methods that we will discuss here, management sciences employ approaches such as participant and non-participant observation, action research, and intervention research. However, qualitative and quantitative approaches remain the most commonly used. These two approaches can be combined sequentially or within the framework of "triangulation" to leverage their strengths and minimize their respective weaknesses.

To examine, confirm, adjust, specify, or possibly reject the formulated hypotheses, the auditor can choose from various methods such as the development of surveys, comparison with similar sectors, simulations, the construction of questionnaires, or conducting interviews. The choice of method depends on the objective to be achieved, which stems from two preliminary questions:

- What is the subject of the thesis?
- What is the knowledge project (describe, understand, explain, etc.)?

Answering these questions also requires understanding the uses and limitations of each method in order to combine them effectively to best address the research question. In management sciences, several methods are listed, the most common being surveys. These can take the form of interviews, where individuals are questioned (qualitative approach), or questionnaires designed to collect standardized data allowing for statistical analyses (quantitative approach).

8.1. Documentary Studies

Documentary studies or information research, to be effective, must be systematic and methodical. The first step is to define your information needs precisely. Indeed, this is the condition for the information found to not be too abundant and too broad but to allow for answering the question posed. This need for information varies among individuals, depending on their prior knowledge of the subject. It is therefore necessary to organize a structured inquiry to define it as best as possible:

- What? What is the theme of your work? Can it be broken down into sub-themes? What are its characteristics? What are the risks?
- Who? Which authors have worked on your topic, your theme? Which stakeholders are involved in the outcome, in the implementation?
- Where? Where does the problem arise? In what type of organization? Which department of the company? In which geographical location?
- When? What period is covered by your topic? What is the deadline for completing this work? What is the available time for this?
- How? Are specific modes of operation identified? How does the studied process unfold?
- How much? What human and financial resources are available? What impact on the organization of the company (layoffs, relocation, investments, ...)
- Why? What is the objective of your work? What is the objective of each methodological step (information research, qualitative studies, etc.)?

This QQQQCCP2 method (What? Who? Where? When? How? How much? Why?) called "Quintilian's Mnemonic Hexameter" is frequently used to conduct documentary research.

It has become the central pillar of the quality approach and is now used to systematically describe an activity, a malfunction, or an action by answering seemingly simple questions. This description must lead to an analysis, which will form the basis of the forthcoming explanatory process.

It is only after precisely assessing your needs that you will be able to define a documentary research strategy. At this stage, it is crucial to check if you will have easy, free, and unrestricted access to the necessary documents.

The second step of your documentation work concerns the data related to your field of study, that is, the internal or external documents to the company that you can collect, whether they are quantitative or qualitative in nature. Among these documentary sources, there are commercial documents (sales reports, panel results, etc.), financial documents (balance sheet, income statement, etc.), and the activity report. These documents help understand the internal workings of a company. Although they do not

lay the theoretical foundations of your work, they can serve as examples, illustrations, or be useful in the first part of your thesis.

You can also enrich your documentation by conducting interviews with various managers or colleagues, or by developing a survey or questionnaire.

8.2. Qualitative Survey

Qualitative studies aim to understand a phenomenon in depth. For this, it is necessary not only to make the interviewees comfortable and get them to talk, but also to analyze non-verbal behaviors.

Three families of qualitative studies are identified: focus groups, face-to-face interviews, and observation.

8.2.1. The focus groups

It is a research method that involves gathering people for a guided discussion on one or more topics. It is based on the dynamics of small groups (6 to 8 people directly concerned with the subject of study) as described by Kurt Lewin: "the group is a system of interactions with a play of forces that allows overcoming resistances." Group meetings allow ideas to flow and bounce off each other among the different participants. The auditor, who takes on the role of study manager, then has the role of debate facilitator and observer.

The uses are varied:

- 1- Explore a topic: understand the vocabulary of a population, refine the definition of the problem, formulate hypotheses, draft a closed questionnaire, etc.
 - 2- Understanding a complex process: exploring opinions, attitudes, motivations, post-purchase satisfaction, studying images, etc.
 - 3- Find solutions, ideas, product concepts, advertising evocation concepts.
 - 4- Test concepts, names, advertising messages, products, a marketing mix, etc.
- During the same meeting, several of these uses can be combined. That's why, depending on the objectives, we distinguish: - Discussion group meetings; - Projective groups (motivations and barriers) - Creativity sessions (new ideas and solutions) The meetings are often filmed so that they can be studied later and both the verbal and non-verbal communication can be transcribed.

8.2.2. Semi-structured individual interviews

First, let us note that free interviews are very rarely used in management sciences. We will briefly describe the semi-structured individual interview here. The objective of this method is to obtain reactions on a number of themes - for which it is difficult to debate in a group - without depriving oneself of the advantages of non-directivity. The solution: propose an initial guideline and only introduce other themes if the interviewee does not spontaneously address them. The investigator adopts the same attitude (non-directiveness, empathy) and the same intervention techniques (reformulation, synthesis) as in a free interview. He has an interview guide composed of an initial prompt and several themes, stimuli that can take the form of photographs, products, projective tests, open-ended questions, etc. In the case of face-to-face interviews, even though the interview is much less directed and structured than in the case of quantitative studies, the study manager (in our case: the auditor) will have to intervene much more than in group meetings and will follow an interview guide.

The interviewee, however, remains free: spontaneous responses are encouraged, and the investigator's neutrality is maintained. He tries to limit interactions as much as possible.

3.2.3. Tips for a Successful Interview

Conducting effective interviews requires the researcher to proceed in an organized and convincing manner. The main recommendations to follow to make this exercise effective and focused on the studied theme.

1. Adapt your language: your respondents may belong to or come from various social classes, it is essential to adapt your linguistic register for two main reasons:

- a) Give yourself every chance to be understood;
- b) Limit the symbolic distance between the interviewee and yourself, which has the effect of putting your interlocutor at ease.

2. Follow up: When the interviewee answers a question, they do not always do so as thoroughly as you would like. Rather than abandoning the question and settling for their partial answer, prompting your interlocutor will allow you to delve deeper into the subject and obtain useful clarifications.

3. Reformulate: Reformulation involves paraphrasing what your interviewee has said. To do this, you formulate a sentence that summarizes what the interviewee said, starting with "if I understood correctly...". It is then common for the interviewee not to stop at the answer "yes" or "no," but to add clarifications.

4. Making transitions: To make exchanges smoother and facilitate the flow of questions (to avoid giving the impression that it is an interrogation), when you wish to redirect the investigator, introducing a form of transition is beneficial. These transitions depend on the importance of the desired redirection.

5. Refocus the subject. Manage hesitations: When the respondent has difficulty answering you despite their good intentions, you can either put them in a situation and ask them to show you (if it is a practice), or ask them to recount an example as many times as necessary.

6. Interrupt: never interrupt the interviewee to ask a question, but wait until they have finished expressing their idea.

8.2.4. The observation

As with quantitative studies, the observation method can be used for qualitative studies. It involves systematically observing and studying behaviors in a natural setting and helps avoid the bias that an individual might introduce when describing their own behavior. This method is akin to an anthropological approach: immersion in a given social environment or community.

8.3. Quantitative Survey

The novice researcher collects and assembles data, which he then analyzes using methodical tools to obtain results and enrich existing theories. Quantitative methods constitute one of the five axes of data collection in the general methodology of data percolation. In this section, we will explore in more detail the quantitative research method in management.

A quantitative study aims to prove or demonstrate facts by quantifying a phenomenon. The results of this method are generally expressed in the form of numerical data (statistics). For example, this method can be carried out using:

- Surveys (responses to a question);

- Questionnaires (answers to multiple questions).

The results of a quantitative study are translated into numerical data that allow for calculating averages, measuring the frequency of certain responses, dividing the data into percentages, etc. Usually, these results are presented in the form of statistical tables or graphs.

In management sciences, the use of quantitative and qualitative methods is commonly accepted and appropriately applied. However, this use can sometimes provoke controversies. Proponents of quantitative methods argue that they are essential for granting social sciences a scientific status. On the other hand, proponents of qualitative methods argue that quantitative methods tend to obscure the reality of the social phenomena being studied. Moreover, quantitative methods do not simply constitute an empirical observation of reality; the formulated hypotheses largely influence the obtained results. Indeed, "the theory, whether explicit or implicit, always preexists."

Furthermore, quantitative phenomenology is a reliable and systematic method for identifying themes in qualitative linguistic data. Based on the lexical hypothesis, the calculations allow determining to what extent certain words and themes are associated with a question, a stimulus, or a subject in the sampled population.

The current trend, as well as the most widespread in the history of social sciences, favors an eclectic approach. Quantitative and qualitative methods are often used complementarily. We will explore this perspective within the framework of the mixed method. The use of qualitative methods allows for the interpretation of numerical data obtained from quantitative methods, while quantitative methods make qualitative ideas precise and verifiable.

Quantitative methods represent one of the five axes of data collection in the general methodology of data percolation. This methodology also includes qualitative methods, literature review (including scientific writings), expert interviews, and computer simulations. Data percolation provides a more comprehensive approach and methodology than simple data triangulation for analyzing observed phenomena.

8.3.1. The main rules for drafting the questionnaire

Here are the main writing recommendations for the questionnaire:

- Start the questionnaire with an introductory phrase, out of courtesy and to establish trust;
- Place filter questions at the beginning (verification of target membership);
- Go from general questions to specific questions (funnel logic);
- Go from trivial questions to questions that involve/embarrass;
- Use clear, unambiguous vocabulary (avoid double negatives that are often difficult to interpret, and overly technical terms if they are not explained);
- Formulate the questions neutrally to avoid influencing the respondent;
- Put the demographic questions at the end (and not at the beginning, to avoid making the respondent uncomfortable);
- The questionnaire must be immediately understandable and not open to interpretation by the investigator and the respondent (avoid rephrasing that can generate biases);
- The questionnaire must be prepared for statistical analysis (code the questions and response options from the construction of the questionnaire);
- Avoid overly long questions (which can lose the respondent).

8.3.2. The scales and response modalities

Each question requires the development of a set of response options. These response modalities take various forms, depending on the objectives of the study and the characteristics of the surveyed population. For example, in a study conducted with young children, the iconic scale will be preferred.

- Dichotomous or binary;
- MCQs, also called multidichotomous;
- Scales (most often in 4 or 5 points), of the type:
 - o differential semantics: to be situated between two extremes;
 - o of rank or classification: relative, between two or three objects.
- Likert, also called a scale of agreement/disagreement;

- Semantic supports: declined adjective "pivot".

The questionnaire constructed and the response modalities established, it is advisable to conduct a test of the questionnaire. This involves validating the tool with a few individuals chosen for their abilities (expertise, available time, ...) to improve the questionnaire. Following the test of the questionnaire, the form (syntax, ease of understanding) and the logical sequence of the questions are validated. Similarly, the response options will have been completed and/or refined. As with qualitative studies, the nature and formulation of the objective condition the methodological choices. Thus, the auditor defines the type of quantitative studies suitable for the issue, the characteristics of the population to be surveyed, and the degree of precision of the expected results.

8.3.3. The characteristics of the sample

The constraints for forming a sample are the same regardless of the discipline in which the issue is situated. Mathematics and statistics teach us the rules to follow. Survey techniques adhere to these rules. The main constraint is representativeness. It defines the sample's ability to behave like the population it represents. In the case of qualitative interviews, the study manager (here, the auditor) will need to select a few individuals (rarely more than fifty) who can enrich the understanding of the issue. They may be of varying ages or not, belong to the same department or not, etc. In this context, we are not talking about "representativeness" but about the relevance of the selection. In the case of quantitative questionnaires, the survey is based on a large sample. The choice is made based on the characteristics of the total population. For example, a survey conducted among the employees of a company may require specific sample selection rules. If the company is relatively small (fewer than 1000 employees), the questionnaire can be sent to everyone (here, sample = total population). On the contrary, if the company has a large number of employees, the quota method can be used, reproducing the proportions of some characteristics of the parent population in the sample. The choice of these characteristics is essential because it determines the relevance of the responses to the issue that concerns us. Note that to be representative, the sample size should not be proportional to the size of the parent population but should take into account the complexity of the issue concerning the population we are interested in.

The objective of this chapter is hardly to offer a statistics course. Nevertheless, let us note that mathematical formulas based on Bernoulli's law exist and allow for the calculation of the optimal sample size, by setting the margin of error, the degree of homogeneity of the studied population, and the confidence level. The following diagram allows us to visualize the constraints of sample composition and to memorize the vocabulary used.

8.3.4. The administration techniques and data collection methods

The techniques for administering studies are varied. Their variety is further accentuated by the contexts in which they are administered. Indeed, for example, depending on whether the questionnaire is sent by mail (self-administered at home) or administered on the street, the responses will not be identical. Each method of collection has advantages and disadvantages that must be evaluated before choosing one or the other. This is the subject of the following table.

Overall, quantitative studies require the consideration of numerous parameters and are quite costly, but they perfectly complement qualitative techniques. Indeed, the former allow for understanding situations, while the latter assess their intensity.

9. Data processing

No matter the nature of the analysis, it is crucial to go beyond a simple description and not to stick to what seems obvious at first glance. There are no standardized methods for analyzing situations or phenomena. Often, several iterations and adjustments are necessary to obtain a satisfactory representation of the studied reality, which is essential for formulating a valid scientific explanation.

The data collected through interviews or questionnaires must be carefully analyzed in order to answer your research question. Indeed, raw data do not immediately reveal their usefulness or how they support or refute your hypotheses. It is therefore necessary to transform this data into an understandable format, often by summarizing or reducing it, to extract meaningful information: this is the role of data analysis.

Here are some guiding principles for your analyses. This is not about providing a complete course on statistics or qualitative data analysis. If you use these techniques, it is important that you deepen your knowledge and fully understand the conditions for applying the chosen methods (Tenenhaus, 2007; Huberman & Miles, 2003). Although statistical analyses are generally performed by software, you must ensure to select the most relevant information, to exploit your data intelligently, and to analyze the obtained results thoughtfully.

Field observations must be presented clearly and accessibly to your readers. It is therefore common to display them in the form of tables or diagrams for a graphical representation of the information. However, for a thesis, it is essential to provide raw elements (such as interview transcripts, data matrices, etc.) in the appendices, so that your work can be evaluated transparently.

It seems like there was an error in your input. Could you please provide the text you would like to have translated?

9.1. Analyze qualitative data

The data collected through qualitative surveys are less standardized than those collected with questionnaires: they are often more abundant and more heterogeneous. As a result, they are both richer and more complex, which allows for a deeper understanding of the phenomena but often makes their analysis more difficult. These

particularities require sustained attention to the technical aspects and the organization of the analysis by clearly identifying the different main stages: data condensation (reduction and coding) – data presentation – development and verification of conclusions. The most well-known analysis technique is content analysis, but it is not the only one.

9.1.1. Content analysis

Content analysis is defined as "a set of techniques for examining communications, aiming through systematic and objective procedures of describing the content of messages, to obtain indicators (quantitative or not) that allow deducing knowledge about the conditions of production and reception (inferred variables) of these messages." In the field of management sciences, content analyses generally focus on the meaning of messages. They seek to unveil the systems of representations conveyed by the discourses. For example, they allow for the identification of the attitudes, beliefs, and intentions of certain actors, or for comparing responses in terms of the interests, opinions, and expectations of different groups of actors (such as men/women, administrative/operational, etc.).

Content analysis involves the implementation of different stages:

1. Preparation of the corpus: transcription of the data, sometimes reordering them, numbering the interviews, pages, paragraphs, and documents.
2. Exploitation of the material: coding, enumeration, classification, and sometimes counting, of data from the corpus. The raw data (text units) are assigned to categories and thus coded, which allows for the identification of the content of the relevant excerpt.
3. Processing of results: treatments, sometimes statistical, will allow for inferences and interpretations to be made. Multiple modes of data representation (causal diagrams, relationship graphs, matrices, etc.) can then be used to facilitate the analysis work and the emergence of conclusions. A qualitative analysis is generally illustrated by quotes (verbatim) extracted from transcribed interviews, which will reflect the ideas of the categories derived from the analysis, make the analysis report more concrete and "alive," but also provide the reader with the means to verify the relevance of the coding and the assignment to the categories. It is then necessary to provide an accurate

transcription of the respondents' statements and, in particular, not to correct their oral expression: this is indeed a guarantee that the researcher has not interpreted the statements of their interlocutors while transcribing them.

Although there are other forms of qualitative data analysis, the auditor, in their future professional experience, is not destined to become an expert in the implementation and analysis of qualitative data. The qualitative studies most commonly used in management sciences are those based on content analysis.

9.1.2. Precautions to take

The difficulty of qualitative research lies in the need to ensure that their analysis is not too subjective. To reduce interpretation biases and ensure the reproducibility of results, it is crucial to accurately document the adopted approach. This includes the description of the procedures implemented, the use of a coding grid, the definition of categories, as well as the justification of the different stages of reasoning.

Analyze the quantitative data

The analysis of quantitative data can use basic treatments to describe the collected elements. Descriptive analyses allow for characterizing the state of a variable through counts, percentages, means, or ranks. Various descriptive techniques can be employed, such as flat sorting, filtered sorting, stratified sorting, as well as cross sorting and evaluations.

9.1.3. Flat sorting

Flat sorting is a method used to describe the responses obtained by examining the distribution of response modalities for a given variable. For closed-ended questions, this involves quantifying the responses in terms of counts (e.g., 36 respondents said "yes," 24 said "no") and/or percentages (e.g., 60% responded "yes," 40% responded "no"). For numerical response questions, the variables are evaluated in terms of central values such as the mode, median, and mean, as well as measures of dispersion like frequency, quartiles, and standard deviation. Flat analysis allows for a clear understanding of the examined sample. To generalize these observations to the entire population, it is essential to consider the necessary conditions to move from certain knowledge obtained from the sample to a more uncertain estimate of the same phenomenon for the total population. Statistical tests are

used to evaluate the robustness of the data, although they are generally applicable only if the data come from a random sampling.

To ensure the accuracy of the results (frequencies, means, etc.), it is recommended to present them with their confidence interval, typically calculated at 95% (which means there is a 5% chance of being wrong in stating that the percentage or mean falls within this interval). Moreover, it is important to verify that the differences observed between two distributions are not simply due to the randomness of sampling, but indeed represent a significant divergence within the studied population.

9.1.4. Filtered sorting and stratified treatment

The filtering process involves extracting only a specific part of the sample that meets defined conditions. This subset constitutes what is called a stratum. Flat analyses are then conducted within this selected stratum, and the percentages are calculated based on the population of this stratum (which is mentioned in the question title).

The reliability of the obtained results directly depends on the number of observations in the selected stratum: if this number is less than 30, the results have no statistical validity. This means that it is not appropriate to extrapolate these results to the entire population or to draw general conclusions from this data.

9.1.5. Triads and Cross Treatments

It involves simultaneously addressing the responses to two (or more) questions to highlight how the answers given to one coincide with the answers given to the other. We then obtain:

- contingency tables that account for the simultaneous counting of responses to two questions;
- value tables that provide the average value of one (or more) quantitative question(s) calculated for each stratum corresponding to the modalities of a qualitative question.

When calculating percentages to facilitate the reading of cross tables, several choices must be made based on the objectives of the analysis. Here are some considerations to justify these choices:

Percentage calculation: Percentages can be calculated in different ways:

- Compared to the total of the table: this allows you to see the relative distribution of each cell in relation to the entire dataset. Useful for getting an overview.

- In relation to the sample size: gives an idea of the relative frequency in the overall sample.
- Regarding the number of citations: relevant if the data is based on specific citations or occurrences.
- In columns or in rows: allows comparing proportions within the categories of one variable (in columns) or between the levels of another variable (in rows).

Choices justified by the objectives:

- If the objective is to compare the distribution of responses or occurrences between different categories, calculating the percentages by column or by row can be relevant.
- Calculating percentages relative to the total of the table may be preferable for an overview of the overall data distribution.
- In relation to the sample size, this helps to express the relative frequency of occurrences within the entire set of responses.

Ensure statistical validity:

- To determine if the observed relationships are statistically significant, it is essential to use appropriate inferential tests such as the chi-square test for crossed categorical variables or Pearson's correlation coefficient for linear relationships between continuous variables.
- These tests allow measuring the association between variables and verifying if the observed results are likely to be reproduced in the larger population.

When analyzing relationships between quantitative variables, several more advanced approaches can be used to explore and explain the observed phenomena:

- Correlation and regression tests: These tests allow us to determine if there is a mathematical relationship between the variables. The correlation coefficient measures the strength and direction of the linear relationship between two variables, while regression analysis allows modeling the relationship between a dependent variable and one or more independent variables.
- Analysis of variance (ANOVA): Used to assess whether the variation in a dependent variable is associated with one or more categorical independent variables (factors). This allows determining if different groups (strata) have a significant influence on the

criterion

studied.

- Multivariate analysis: When there are a large number of variables to consider simultaneously, multivariate methods allow for the exploration of complex relationships between the variables.

This includes exploratory methods such as principal component analysis to reduce data dimensionality and identify underlying structures, as well as explanatory methods to model causal relationships between variables.

- Exploratory and explanatory methods: Exploratory methods such as correspondence analysis or typological analysis are used to understand the relationships between variables without necessarily establishing causal relationships. They allow for the identification of clusters or associations between similar variables.

- Explanatory methods: These methods aim to determine the cause-and-effect relationships between variables, where an explanatory variable influences a variable to be explained. This may involve the use of theoretical models to test specific hypotheses about the relationships between variables.

10. The results

The process of reflection is not limited to analysis. It also requires an interpretation of the obtained results, placing them in perspective with previous research conducted by others. The results must be examined with humility and critical spirit, defended by their authors to enrich the existing body of knowledge.

Before being shared, the results must be confronted with the actors involved in the phenomenon or the studied field, thus marking a crucial phase of validation. It is essential to remember that the process of reflection is often non-linear, made up of trials and errors, rarely conforming to the initial plan. Nevertheless, all this journey, past and future, will contribute to the construction of your memory. When you approach writing the chapter on your results and recommendations, ask yourself various questions and answer them with clarity and precision.

Has your reflection allowed:

- To add theoretical and/or practical knowledge? To what extent?
- A better understanding of a phenomenon?
- To highlight and resolve a contradiction between theory and practice?
- To adapt a classic solution to a particular case?

10.1. The discussion: the critical approach to work and results

Do your results have:

- A genuine professional interest?
- A satisfactory intellectual validity?
- A good external validity (are your reflections and results transferable to a broader universe?) What are the possibilities and conditions for generalizing the results?
- Good reliability (if you repeated your work under the same conditions, would you get the same results?)?
- A good feasibility (considering the strategic and material constraints)?

Are your results:

- Precise and well-argued?
- Discussed (critical capacity)?

10.2. The recommendations

Are the recommendations:

- Well expressed?
- Achievable / feasible? and under what conditions (financial, human, organizational, etc.)?
- Risky (for you? for the organization? from a societal perspective?)
- Prioritized in strategic terms?

10. The constituent elements of the thesis

The written document contains a series of fundamental elements, some of which are particularly important. Each described element is generally presented on a separate page.

The cover

Printed on a rigid cardboard support, the cover generally includes the following information from top to bottom:

- logo of the academic institution and its name;
- Title of the document and designation of the training program;
- thesis title;
- name, logo of the company for internship reports;
- last name (uppercase), first name (lowercase) of the student.
- class or year of study;
- date of defense or submission;
- name of the professor and/or professional tutors; "under the direction of Professor..."

The cover page

Attention, the choice of the thesis title is very important. Indeed, the title must possess the following qualities:

- Clarity: reading the title should clearly inform about the content of the document;
- Precision: the title should avoid overly general formulations;
- Conciseness: the title should not be too long;
- Accuracy: the title must correspond to the content of the thesis.

It is quite common for the initial title not to be included in the final formulation. Often, it is at the end of the writing process that the final title is redefined. The title of theses, research papers, or professional papers can be recorded in documentary databases. It is therefore important that each word in the title is meaningful, as it is likely to be indexed and thus allow your document to be found.

The special mention

In academic institutions, it is customary to include the following statement at the beginning of theses:

"The university does not intend to give any approval or disapproval to the opinions expressed in this thesis: these opinions should be considered as those of the author."

The dedication (optional)

The student can, on one page, mention the people to whom he dedicates his work. It is generally a personal mention.

Acknowledgments (optional)

This potential mention is left to the student's discretion for the help received from their professors, tutors, professionals from companies met, colleagues, etc. We advise against overusing acknowledgments that do not correspond to genuine assistance. On the other hand, it is always regrettable not to mention the people who helped the candidate in their information search, data collection, data processing, or writing. To avoid these irreparable omissions once the thesis is published, open a file at the beginning of the thesis where you will note down the people who have helped you as you go along.

The summary

The summary is the list of parts, chapters, or major subdivisions of the thesis. It appears on a single page and gives an overall idea of the work plan. It is important that it is paginated and that the different subdivisions are numbered. The summary is distinct from the table of contents, placed at the end of the thesis, which is much more detailed as it includes all the subdivisions of the work. The titles must be presented in the same font. If you use the "table of contents" function in Word, it will be automatically updated in case of changes.

The summary indicates the page at the beginning of each part or sub-part.

The synthesis of the thesis (optional)

The summary of the thesis is a summary of the work, a maximum of two pages. It must be easily understandable by the reader.

In some theses, it is customary to include a summary, also called a "managerial summary," which summarizes in a few pages, sometimes printed on colored cardstock, the essential points of the work, both in terms of analysis and recommendations.

The management summary contains:

- a reminder of the subject of the study;
- a summary of the methodology in a few words;
- the main results;
- the recommendations made by the author.

The executive summary is neither the introduction nor the conclusion. It is a finalized and action-oriented synthesis. It is written after all the other parts of the thesis and after a complete review. It succinctly answers the questions of a reader who might ask: "What should I take away from your work?" and possibly "What should I do?" What do you advise me?

The introduction

The introduction sets the context of the work and presents the adopted plan. Its style must be simple and clear. Ideally, it should pique the reader's interest and make them want to read the entire document. To do this, the introduction is sometimes started with

a "hook," that is, a striking sentence that immediately captures the reader's attention and interest.

Example: in a thesis on the impact of email on communication, the introduction could start with: "Email kills communication!"

The introduction generally includes the following elements:

- The importance of the subject: highlight the relevance of the topic you are addressing.
- The relevance of the topic: recall the connection between the thesis topic and current events to justify the interest you have in it.
- The different aspects of the topic: specify the various dimensions (economic, financial, sociological, cultural, etc.) of the topic, showing that you have understood it in its entirety, while indicating the aspects you will address and those you have decided not to cover.
- The definition of essential terms or concepts: clarify the essential terms or concepts for understanding the title and the subject.
- The objective of the thesis: indicate the purpose of your work. The objective will vary between research theses and those with a professional purpose, specifying the expected results.
- The methodology: explain how the data was collected and processed.
- The author's status: please specify if you are a student, intern, or consultant. In what capacity are you expressing yourself and have you completed the thesis? Do you have any particular connections with the company or the project? This point allows the reader to understand the context in which the thesis was written.
- The justification of the plan: provide the reasons that led you to choose a certain organization of the parts of your work rather than another.
- The announcement of the plan: mention the titles of the different sections.

The body of the thesis

The body of the thesis is subdivided according to a structured and logical plan.

According to the needs and the logic retained in the plan, one can successively find parts, chapters, sections, and paragraphs.

Conclusion

The conclusion summarizes the work and, of course, indicates the main conclusion. It can also mention other possible methods to study the subject and open up new avenues for research. Here is what a conclusion should generally include:

- the reminder of the objectives and the methodology of the work;
- the main results;
- the forces of labor performed, its originality;
- the conceptual or managerial implications;
- the possible limits;
- the possible extensions of the thesis.

The bibliography

The bibliography is an important part of the thesis and must be prepared with care. It is located immediately after the conclusion and just before the appendices. It is advisable to use a bibliographic reference management software (Zotero, EndNote, Mendeley, etc.) from the beginning of the literature search.

The bibliography includes all the documents (books, journals, reports, websites, etc.) consulted for the completion and writing of the work. There are different classification systems:

- By type of document: separate books, articles, and websites, then sort each category in alphabetical order by authors.
- By theme: start with a section titled "general works," then group the other sections by major themes of the work. Within each section, arrange the documents in alphabetical order by the authors' names.
- By alphabetical order of authors: for a thesis, it is nevertheless advisable to present the bibliography sorted by alphabetical order of the authors, all documents combined. Don't forget to note the websites consulted and used. By following these recommendations, your bibliography will be well-organized and easily accessible.

The index (optional)

Indexes are alphabetical lists of words, subjects, and names, with the page number where they are cited. Depending on the needs, one can include an index of authors (in research papers), concepts, etc.

The index is created at the end of the work because it is paginated. It serves as a tool to facilitate the reading and use of the thesis. The search functions of word processing software allow for quick indexing.

Creating an index shows the jury that the thesis was not completed in a rush and makes it easier to consult the thesis.

The glossary

The glossary is a list, arranged alphabetically, of the technical terms used in the thesis text. The definition of each term is provided, and it is also present in the text at its first use. Let us clarify that the technical expressions listed in the glossary are italicized in the thesis text.

The lexicon

The glossary is a list, arranged alphabetically, of terms in a foreign language present in the thesis text. Just like the technical terms, the foreign expressions listed in the lexicon are in italics in the thesis text.

These sections, the glossary and the lexicon, located at the end of the thesis, facilitate the understanding and consultation of the text by providing clear and organized references for the specialized terms and foreign expressions used.

The annexes

The appendices include the documents that were useful or necessary for the study but could burden the main text rather than facilitate its understanding. They are located at the end of the thesis, in a section titled "Appendices." The appendices must complement the body of the thesis and have a direct connection to it.

Here are some examples of what you can find in the appendices:

- Organizational chart of the organization or company: if understanding the organizational structure is relevant to the study.

- Detailed tables of complex figures: whose inclusion in the main text would be too cumbersome, but which are necessary for verification.
- Detailed simulations: only the summary is analyzed in the body of the thesis.
- Detailed result graphs: a summary of which is included in the body of the thesis.
- Official documents: laws, regulations, etc., relevant to the developments of the thesis.
- Photos, illustrations, or maps: for a better visual understanding of the discussed elements.
- Additional technical documents: necessary to explain specific technical aspects.
- Details of the research or study methodology: for an in-depth understanding of the methods used.
- List of people met: emphasizing their roles and socio-demographic characteristics.
- Questionnaire and interview guides: used for data collection.
- Raw data: unprocessed information from collections.
- Meeting minutes: detailed transcriptions of the discussions held.
- Tables and summaries on data collection: including the duration of interviews, etc.

It is crucial to paginate the appendices, to number them (for example, in Roman numerals), and to insert page references from the main text to the appendices when necessary. Students are advised to systematically include in the appendix, possibly on a digital medium, raw data, interview transcripts, etc. This ensures the transparency and rigor of the study while facilitating the verification and consultation of additional information.

The lists of figures and tables (optional)

The numbered lists of figures (diagrams, graphs, or illustrations) and tables, accompanied by their pagination, can be included at the end of the thesis. These lists allow the reader to easily find a document they have already consulted.

They are prepared at the end of the writing process and in the final phase of the work's development. The lists of figures and tables are generally highly appreciated by the juries because they testify to the degree of completion and the rigor of the written work.

By including them, you facilitate the reader's navigation through your thesis, allowing them to quickly locate the figures and tables mentioned in the text. Make sure to paginate each figure and table correctly for precise reference in the lists.

The list of abbreviations, acronyms, or logos (optional)
This list must be presented in alphabetical order. It includes the meanings of the abbreviations, acronyms, and logos used in the thesis, as indicated upon their first use in the text.

Including this list at the end of the thesis allows readers to easily refer to the specific acronyms and symbols used throughout the document. Make sure to paginate and number it correctly for easy reference.

The table of contents

The table of contents is generally placed at the end of the thesis, unlike the summary which is inserted at the beginning of the thesis on a separate page.

She provides a detailed outline of your thesis with all its subdivisions: parts, chapters, sections, paragraphs, etc. The titles are presented with the same characters as in the text, accompanied by their respective page numbers. If you use the "Table of Contents" function in Word, it is automatically updated when changes are made to the document.

To structure your sections, you can use the "Numbering" function in Word, which offers different options:

- Part
- Chapter Context:
- Paragraph
- Sub-paragraphs ... and so on, as detailed as necessary.

For the numbering, you can choose between a numerical structure (for example, 1, 1.1, 1.1.1, etc.) or a mixed numbering, depending on the needs and complexity of your thesis.

The table of contents is essential to allow readers to navigate your thesis effectively and quickly locate the sections that interest them. Make sure that the table of contents is well-organized and updated to accurately reflect the structure and content of your academic work.

References

- Aktouf, O. (1982). Une approche observation participante des problèmes représentationnels liés aux aspects relationnels et organisationnels dans les rapports de travail [Thèse de Doctorat]. Ecole des Hautes Etudes Commerciales. Montréal.
- Aktouf, O. (1990). Le symbolisme et la culture d'entreprise—Des abus conceptuels aux leçons du terrain. In *L'individu dans l'organisation : Les dimensions oubliées* (Jean-François Chanlat (eds), p. 553-588). Presses de l'Université Laval, Québec et ESKA.
- Aktouf, O. (1992). *Méthodologie des sciences sociales et approche qualitative des organisations*. Presse de l'Université du Québec.
- Alexandre, M (2013). La rigueur scientifique du dispositif méthodologique d'une étude de cas multiple. *Recherches qualitatives*, 32(1), 26–56. <https://doi.org/10.7202/1084611ar>.
- Angers, M (2014). *Initiation pratique à la méthodologie des sciences humaines et sociales*. CEC.
- Bogna, F., Raineri, A., & Dell, G. (2020). Critical realism and constructivism : Merging research paradigms for a deeper qualitative study. *Qualitative Research in Organizations and Management: An International Journal*, 15(4), 461-484. <https://doi.org/10.1108/QROM-06-2019-1778>
- Coron, C (2020). *La Boîte à outils de l'analyse de données en entreprise*. Dunod.
- Coutel, C (2014). KARL POPPER ET LA QUESTION DU MONDE 3. Éditions Association des professeurs de philosophie de l'enseignement public. *L'Enseignement philosophique* 2014/3. 70 à 74. DOI10.3917/eph.643.0070.
- Corbière, M. Larivière, N (2020). *Méthodes qualitatives, quantitatives et mixtes*. Dans la recherche en sciences humaines, sociales et de la santé. Presses de l'Université du Québec.
- Creswell, J. W. (2014). *Research design : Qualitative, quantitative, and mixed methods approaches* (4th ed). SAGE Publications.
- Crotty, M. J. (1998). *The Foundations of Social Research : Meaning and Perspective in the Research Process* (First Edition). SAGE Publications Ltd.

- Fortin M-F., et Gagnon J. (2016) Fondements et étapes du processus de recherche, méthodes quantitatives et qualitatives, Edition CHENELIERE éducation.
- Guikas, I. Morin, D et Bigras, M. (2016). Développement d'une grille d'observation : considérations théoriques et méthodologiques. *Revue francophone de la déficience intellectuelle* 2016 (27), 163–178. DOI : <https://doi.org/10.7202/1043131ar>.
- Hessler, R. M. (1992). *Social Research Methods*. West Publishing Company.
- Huberman, A.M. et Miles M.B., (2003). *Analyse des données qualitatives*, De Boeck Université, 2ème édition.
- Kalika, M (2016). *Le mémoire de master*. Dunod.
- Lièvre, P (2016). *Manuel d'initiation à la recherche en travail social*. Presses de l'EHESP.
- N'Da, P (2015). *Recherche et méthodologie en sciences sociales et humaines Réussir sa thèse, son mémoire de master ou professionnel, et son article*. L'Harmattan.
- Proulx, J. (2019). *Recherches qualitatives et validités scientifiques*. *Recherches qualitatives*, 38(1), 53. <https://doi.org/10.7202/1059647ar>
- Roussel, P., & Wacheux, F. (2005). *Management des ressources humaines : Méthodes de recherche en sciences humaines et sociales / sous la direction de Patrice Roussel et Frédéric Wacheux*. De Boeck. <https://learninghub.em-lyon.com/EXPLOITATION/Default/doc/SYRACUSE/20073/management-des-ressources-humaines-methodes-de-recherche-en-sciences-humaines-et-sociales>
- Sarantakos, S. (2004). *Social Research* (3rd edition). Palgrave Macmillan.
- Tenenhaus, M. (2007), *Statistique*, Dunod.
- Thietart, R.A (2014). *Méthodes de recherches en management*. Dunod.
- Yin, R. K. (2013). *Case Study Research : Design and Methods* (5th Revised edition). SAGE Publications Inc.

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