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Lectures in Scientific Research Methodology

A University Handout Presented
to
First-Year Master's Students
in
Criminal Law and Criminological Sciences
First Semester
Academic Year 2023-2024

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Master's Program Title: Criminal Law and Criminal Science
First Semester
Semester: 1
Unit: Methodological Education Unit
Course 1: Scientific Research Methodology
Credits: 6
Coefficient: 1
Course Learning Objectives:

Scientific research methodology holds a distinguished position within postgraduate studies. Consequently, at this formative stage, it is imperative to deepen students' methodological knowledge to enable its application during the preparation of their master's theses and doctoral dissertations. The primary aim of this course is to equip students with the methodological principles necessary to culminate their academic and professional development through rigorous and sound scientific research.

Prerequisites:

Students are expected to have completed prior coursework in scientific research methodologies, schools of thought in research, and the stages of scientific research preparation.

Course Content:

- Definition of scientific research
- Characteristics of scientific research
- Typologies of scientific research
- Research instrumentation and methods

References:

1. Al-Berri, Z. (n.d.). Sharīʿah evidence and foundational linguistic rules. Dar al-Nahḍha al-Arabiya.

2. Al-Chikhli, A. (1995). The art of legal drafting: Legislative, jurisprudential, and judicial dimensions (1st ed.). Dar al-Thakafa Library for Publishing and Distribution.

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Introduction:

The human being faces many and varied problems throughout life and professional activity, imposed by the rapid changes in information and communication technologies, which affect numerous aspects of daily activities.

This drives the individual to seek to develop capabilities and skills in order to increase effectiveness in discovering the laws and systems governing the universe and its events, through a set of refined mental processes granted by the Almighty.

At this point, the individual feels an urgent need to search for creative solutions to confront such problems, which requires addressing them and the questions they raise by adopting the scientific method, as it provides a precise way and approach for studying these phenomena so that, ultimately, knowledge can be produced and used to confront and overcome them.

On this basis, **knowledge** means a set of meanings, beliefs, concepts and mental representations that answer the questions raised by the human being in order to satisfy needs and achieve creativity. It is the result of repeated attempts to understand surrounding phenomena and objects, as well as the discovery of prevailing systems and rules and the means of attaining them.

By virtue of the information acquired, the individual learns how to overcome obstacles that stand in the way of attaining desired goals, and learns how to design strategies that allow for correcting errors and adopting new measures that enable the realization of aspirations in life.

Scientific research, in turn, is a set of activities that seek to add new fundamental knowledge to one or more fields of knowledge by discovering new facts of importance using objective, methodological procedures.

In this sense, it is the means by which truth, or a set of truths in a given situation, may be reached, then tested in order to verify their validity in other situations, and generalized until they reach the level of theory, which is the aim of all scientific research. It is a mode of thinking and effort aimed at identifying a problem, analyzing it and finding solutions, by proposing hypotheses and testing them to confirm their effectiveness or reject them partially or totally.

The salient feature of scientific research is the **scientific method**, a designation first adopted by the philosopher and researcher Francis Bacon in the thirteenth century. The scientific method is not, in reality, a single method, but rather a set of principles and research techniques that help the researcher obtain accurate results from empirical studies.

Because the scientific method is concerned with the general approach to research, and not with the specific substantive content of any single study, it is employed by researchers in various disciplines and scientific fields, and one of its most important benefits is that it provides clear orientations and principles for collecting and evaluating information and for reporting findings in the context of a research study.

The scientific method is thus a way of **thinking** and working that the researcher adopts to organize, analyze and present ideas, with a view to reaching reasonable results and truths regarding the phenomenon under study. This method is characterized by sequential stages that are linked in such a way

that each stage leads to the next. The method usually begins after identifying the research problematic, then proceeds to the formulation and testing of hypotheses, analysis, presentation of results and formulation of recommendations.

The choice of the scientific method or approach to be applied to study a given phenomenon or problem is determined by the nature and content of that phenomenon. Research methods and techniques therefore differ according to the characteristics and subject matter of the phenomena and problems studied, though this does not absolutely preclude the possibility of studying a single phenomenon using more than one scientific method, noting that some phenomena can only be studied by employing certain specific methods and techniques.

Interest in scientific research has increased as a result of the growing ambitions of societies to develop and progress. Societies have thus sought scientific approaches to solve their problems, which has led to the proliferation of research centers, increased attention to scientific institutions and research laboratories, all with the aim of developing scientific research in various fields.

Scientific research has become an urgent necessity for every person, regardless of occupation or status, and is no longer the preserve of academic researchers. Everyday life problems require scientific thinking and methodical approaches(McIver, 2015) and it is no longer possible to rely on unscientific methods and trial-and-error when confronting such problemsatics.

Developed States attach great importance to scientific research because they are aware that the development of nations and societies lies in the

scientific, intellectual and other capabilities of their people. Scientific research, with its methods and procedures, is essential to any field of knowledge; familiarity with the different methods and the rules to be followed – starting from the operational definition and description of the problematic, through the choice of method and data-collection technique, and ending with data analysis and extraction of conclusions – has become a basic requirement in the natural, social and human sciences.

The importance of scientific research increases with the degree to which States, especially developed ones, rely on it, as they recognize its role in ensuring continued progress and development, achieving the welfare of their peoples and preserving their international standing.

For scientific research to attain such importance, a number of qualities must be present in the researcher. These include being well-informed and educated, having clarity of mind, patience, perseverance and scientific integrity

It also requires possessing the ability to imagine and conjecture – which helps generate ideas that serve the research being undertaken – being keen to search for the true causes of phenomena and events rather than stopping at superficial justifications, exercising accuracy in collecting evidence by relying on trustworthy sources, maintaining scientific objectivity and avoiding bias, being prepared to change one's opinion if it proves wrong, being receptive to criticism and, finally, being familiar with the steps of the scientific method.

This pedagogical handout has been divided into four main parts. The first part, entitled "*The Concept of Research*", presents the various definitions given to scientific research and clarifies its aims and importance. The second part,

"*Characteristics of Scientific Research*", sets out its features according to its nature and purpose. The third part, "*Types of Scientific Research*", explains the different kinds of research, while the fourth part, "*Research Tools*", discusses the tools and means used by the researcher when conducting research, such as observation, interview, questionnaire and others.

Chapter One: Definition of Scientific Research

Scientific thinking and research have been the means that helped bring humanity from darkness to light and distance it from the specter of superstition that dominated it, leaving the human being powerless to explain the natural phenomena surrounding them and leading them to attribute such phenomena to hidden and supernatural forces.

When the human being began to employ reason to explain various surrounding phenomena and benefit from them, and with the advent of the modern era in which the human being adopted the scientific approach as a mode of thinking, it became possible to grasp the true nature of the phenomena and events occurring in the world.

Since scientific research occupies an important place in various sciences and disciplines, **legal** scientific research holds equal importance, given that the realization of justice is the desired goal underpinning every legal system. Attaining the truth cannot be achieved except through scientific research, which makes it possible to uncover the true causes underlying legal problems and thereby to identify the most appropriate legal solutions.

Moreover, the scientific method can only be developed by a person who possesses the qualities of a researcher, since the researcher's view of phenomena and facts differs from that of the ordinary person. The researcher follows a scientific method that has its own foundations, rules and philosophy.

Interest in scientific research constitutes a general trend widely adopted by developed States, and developing States strive to rely on it to find solutions to their various problems and improve their social and economic conditions.

The growing concern for scientific research forms part of this general trend and expresses it, on the basis that the human being is the source of power and progress in every society, and because the scientific method is considered a means of dealing with the general approach to research rather than a specific type of study, it is used by researchers across different scientific specializations(Bakr & Feriel, 2010, p.181).

This chapter will therefore address the definition of **scientific research** by first clarifying the meaning of "*research*" and of "*science*", and then arriving at a precise definition of the term "scientific research", as set out below.

First: Definition of "*Research*"

Scientific research is a human activity characterized by the observance of clear and organized rules, and it aims to solve a problematic, investigate a particular situation(Hafedh, 2012, p.3), correct a hypothesis or verify the validity of results reached by previous studies.

Scientific research also seeks to draw on earlier studies, given that scientific knowledge is cumulative, and legal scientific research is no exception, since it is based on the application of sound reasoning and logic in order to build valid scientific knowledge in the researcher.

Scientific research involves a wide range of activities, each with its own unique approach. The nature of the work can differ greatly, depending on the specific problematic at hand and the field of study(Pupin, 1925).

While some people believe that research isn't truly scientific because of the areas it covers and the subjects it deals with, others—especially those in the social

sciences—contend that, regardless of what the so-called "*pure*" sciences claim, research still draws from the essence of science. It involves thorough scientific experiments and investigations, sticking to the established principles and rules of the research process(Newman, 2016).

1. Linguistic definition:

The Arabic term for research consists of two words – "*bahth*" (research) and "*'ilm*" (science) – which requires defining each of them in order to formulate an accurate definition of "*scientific research*".

Linguistically, "*bahth*" means searching or looking for something, while the English word "*searching*" denotes examination and close observation of a matter(Chroukh, 2019, p.18), or a strong light that allows one to probe the darkness; it also means inspection(kamel & al., 1963, p.135).

The term "*research*" further signifies investigation(Maila, 2013), tracking, probing, questioning and discovery, and denotes exerting effort on a subject or on all matters connected with it.

In French, the word "*recherche*" (research) is derived from the verb "*rechercher*", meaning to dig, search, investigate and verify, that is, to examine a particular phenomenon in terms of its causes, effects and conditions, among other aspects.

2. Terminological definition:

In terminology, research is the exertion of effort to know a question or specific subject, collecting the related issues and particulars and analyzing them to reach scientific truth or to correct or develop existing information.

Research is also a way of thinking and working through which complex scientific problematics can be solved in order to deepen human knowledge by following scientific steps and methods(Khalaf, 2022, p.8).

On this basis, research in the technical sense is an activity reserved for the rational human being and encompasses three stages.

First is the **searching and probing** stage, which corresponds to the linguistic meaning of research mentioned above.

Second is the **classification and organization** stage, which presupposes obtaining something as a result of the search process and requires that such material be structured and logically connected.

Third is the **analysis and application** stage, in which conclusions are drawn from the data first obtained and then classified(Assem, 2012, p.19).

Following the correct method in the search and probing phase, as well as in the organization, classification, analysis and application phases, is what makes research **scientific**; the correct method intended here is methodology.

If the researcher uses a sound method that does not, however, suit the subject of the research, the research, though scientific, will not lead to the desired results. Even if the researcher, by means of an unsuitable method, reaches correct and valuable findings that enrich knowledge in general, such findings will not necessarily answer the research questions posed(Assem, p.20).

In summary, research is the organized investigation of the material of any subject in order to add the resulting information to human or personal

knowledge. It is an attempt to discover, explore and verify knowledge through precise investigation, then to present it in a comprehensive and complete manner so that it may contribute to the advancement of human civilization.

Second: Definition of "*Science*"

1. Linguistic definition:

Linguistically, "*science*" (*ʿilm*) is the verbal noun of "*ʿalima*" (to know); to know a thing is to perceive it. A "*ʿallāma*" is a person who is very knowledgeable. The concept of science has been defined in various ways, reflecting differing viewpoints on its subject matter and nature(Douidri, 2000, p.20).

Some thinkers hold that the word "*science*" (Science) refers to the field of the natural sciences, while others broaden its scope to include the natural sciences as well as serious and objective research in history, literature, the arts and other fields.

Others define science by its method, which rests on essential pillars such as the formulation of hypotheses, observation, the conducting of experiments where possible, and then the acceptance or rejection of the hypothesis and its formulation as a theory, with the reasoning in all this being inductive or deductive.

The difficulty of the matter increases in view of the imprecise understanding of the term "*scientist*". Some believe that a scientist is a special type of person who deals with truth in laboratories; another conception views the scientist as someone who is good at thinking and formulating complex

theories; yet another considers that the aims of science are limited to inventions and discoveries. Such conceptions impede understanding of science, the activities and thinking of the scientist and, more broadly, scientific research itself, and they make undertaking research a very difficult task.

2. Terminological definition:

In terminology, science is defined as a method used to study phenomena and events and explain the reasons for their occurrence, contributing to the construction of knowledge consisting of facts, concepts, laws and theories and relying on observation and experimentation. Laws describe phenomena and the interactions that occur, while theories explain the reasons for those interactions(bhattecherjee, 2012, p.6).

Science is also described as an organized effort based on a specific method for uncovering truth in an objective manner, with the aim of explaining phenomena, discovering new facts and enriching knowledge, and linking and organizing such facts in order to predict and control phenomena(Chayeb, 2009, p.17).

Science is furthermore defined as that branch of study that relates to an interconnected body of established and classified facts governed by general laws and that contains reliable methods for discovering new facts within that field of study. **Julian Huxley**, in his book "*Man in the Modern World*", defined science as "the activity whereby man obtains a large measure of knowledge of the facts of nature and the way of controlling them"(Gedder, 2000, p.5).

Abd al-Bāsit Mohsen Hassan defined science as "*knowledge that relates to understanding the connections and relationships existing between phenomena*

rather than the phenomena themselves; science thus seeks to encompass general truths, unlike knowledge, which seeks to grasp particular truths".[1]

To clarify the meaning further, it is necessary to distinguish the term "*science*" from related terms such as knowledge, art and culture.[1]

(a) Knowledge:

Knowledge is a set of meanings, perceptions, opinions, facts and beliefs formed in the human being as a result of repeated attempts to understand surrounding phenomena and objects. It is therefore not limited to a particular type of phenomenon but encompasses everything that surrounds and relates to the human being(Bessiouni, 2013, p.27).

Some knowledge is related to the biological and psychological make-up of the human being, while other knowledge concerns elements of the natural, social and cultural environment. Not all of these forms of knowledge have been the subject of study by thinkers and researchers across the ages; rather, they have focused on some aspects to the exclusion of others.

The *Qur'an* calls for knowledge in the verse: "*Have they not travelled through the land so that they may have hearts with which to reason or ears with which to hear? Indeed, it is not the eyes that are blinded, but blinded are the hearts within the breasts*"(Surat ALhaj, versus 46).

1- *It's important to recognize that knowledge can often be fragmented and disconnected, scattered all over the place without any real scientific value. In such cases, it's essential to critique, diagnose, revise, and refine that knowledge into a well-organized and logically coherent framework.*

Throughout history, the human being has succeeded in accumulating a considerable stock of scientific knowledge(Ashton, 2011) through various kinds of learning, which assist in the search for truth and in answering the questions faced. Knowledge is therefore a necessary matter in human life(Bouhoch & Dhnibet, 2014, p.7).

Knowledge of facts helps the individual to understand the issues encountered daily. By virtue of the information acquired, the individual learns how to overcome obstacles that hinder the attainment of desired objectives and how to develop strategies that allow for correcting errors and adopting new measures that enable the realization of aspirations in life, thereby reaching objectives by harnessing intelligence and knowledge to achieve the desired aims(Azhar & al., 1980, p.10).

Knowledge is divided into three types:[1]

- **Sensory knowledge**:

This is the knowledge that the human being acquires through spontaneous observation by means of the senses, such as observing the alternation of night and day and the rising and setting of the sun. Learning such types of knowledge is natural for a thinking being who seeks to understand the environment in which they live and to interpret the interactions that occur in order to improve living conditions(Abdelli, 2022, p.11).

- **Philosophical knowledge**:

This is the knowledge attained by the human being through reason, by means of philosophical reflection and contemplation. After acquiring certain

skills necessary for life, the human being begins to contemplate and think philosophically, seeking the causes underlying phenomena(Yefout, 1999, p.23).

- **Scientific knowledge**:

This is the knowledge attained by the human being through observation based on organized and deliberate experimentation, the testing of hypotheses and the discovery of laws through the methodical study of natural and human phenomena. The scientific method emerged at the hands of the English jurist **Francis Bacon** in the second half of the sixteenth century as a response to Aristotelian thought based on syllogism.

Bacon held that such thinking was disconnected from the real world, harshly criticized this method, accused Aristotelian thought of sterility and blamed it for the backwardness of the natural sciences, rejecting syllogism based on mental images that lack a true picture of natural reality.

On this basis, Bacon presented a new approach based on induction, observing nature and the laws governing its movement and development in a scientific manner. He argued that there are causes and reasons behind the appearance of phenomena that can only be discovered through observation and experimentation(Abdelli, p.12).

Accordingly, scientific knowledge is the highest form of knowledge because it is based on organized and deliberate observation of phenomena, on the formulation of appropriate hypotheses and their verification through experimentation, and on the collection and analysis of data. It seeks to reach laws and rules that go beyond the mere facts uncovered; the inductive method

is therefore the most appropriate approach adopted by knowledge to arrive at generalizations and results.[2]

(b) Culture:

Culture is the complex whole that includes knowledge, beliefs, arts, morals, laws, traditions, philosophies, religions and the other talents, abilities and habits acquired by the human being in the society in which they live.

Culture has also been defined as "*patterns and habitual behaviors, knowledge, values, social attitudes, beliefs, ways of thinking, social interactions and standards shared by the members of a particular generation and transmitted from one generation to another*"(Hachem, 1978, p.189).

Science shares with other cultural manifestations the fact that it is one such manifestation, but it is distinguished from them by a number of aspects relating to subject matter, purpose, method, results and function(Chroukh, p.10).

Science differs from technology in that it is disinterested and seeks only truth, irrespective of material application, and it adheres to the characteristics and requirements of the scientific spirit.

2- *All these points suggest that the level of scientific accuracy we have today isn't just a happy accident; it's the result of a structured way of thinking that follows specific rules and principles. This approach, known as the scientific method, has been fundamental to all advancements in civilization. When humanity has managed to achieve a higher level of organization and mental development, we've been able to better understand and control our environment.*

(c) Art:

In terminology, **art** is "*the human skill and ability to innovate, create and take the initiative; this ability depends on a number of different and changing factors and qualities, such as the degree of intelligence, strength of patience, soundness of judgment and an individual's leadership capacities*"(Gedder, p.9).

Many jurists and thinkers consider that there are fundamental differences between art and science, in that science is based on a set of objective and abstract scientific laws that define the relationship between two or more phenomena under study, with such relationship being measured in terms of necessity and probability.

Art, by contrast, is based on human skill and depends on subjective abilities and individual talents, relying more on practical considerations than on theoretical ones.

This makes it possible to identify the essential differences between the term "*science*" and other related terms such as knowledge, art and culture.

Science has three main objectives: understanding and facilitation, prediction, and control and regulation.

- **Understanding and facilitation**:

Science seeks to understand phenomena, explain the relationships between them and identify the factors that led to their emergence(Abdelli, p.14) and the phenomena resulting from these relationships.

- **Prediction**:

After understanding the relationship between a phenomenon and the circumstances that led to its emergence, the next stage is to predict what may occur as a result of that relationship.

- **Control and regulation**:

Control and regulation are linked to understanding a phenomenon and predicting likely outcomes, which makes it possible to regulate influencing factors and control the effects that may result from them.

Third: Definition of Scientific Research

The human being uses science to understand and explain the various surrounding phenomena through the relationships and laws governing them. In pursuit of this goal, a method or approach is used that assists in achieving it, namely scientific research(Bakr, p.120), which seeks to identify and develop the rules governing a given subject in order to reach precise results.

True knowledge and valid scientific results are those that rely on the method and approach of scientific research to reach conclusions that may then be generalized.

Scientific research has evolved over successive eras, moving from primitive concepts to more complex and advanced notions in terms of form, content, techniques, aims and other aspects.

The concept of scientific research progressed from reliance on trial and error to the phase of authority and tradition, then to speculation and debate,

and finally to an organized scientific method for investigating, studying, analyzing and understanding phenomena.

Initially, the human being experimented with things and relied on personal and practical experience to understand phenomena, explain them and appreciate their effects, then turned to reliance on those in positions of religious, tribal or other forms of authority that influenced people's conceptions about the universe, life and its various phenomena.

Owing to the natural human inclination toward progress and development, the human being ultimately reached a new stage of research and investigation based on logical argumentation and analytical thinking regarding social, natural and other phenomena. Eventually, the human being arrived at an organized and ever-evolving scientific method for studying phenomena, in line with continuous advances in human life.

Scientific research has therefore become a central pillar for reaching scientific truths and formulating them within rules, laws or scientific theories that form the core of the sciences. Science consists of certain and proven cognitions that are conclusively established, and truth is reached through research conducted according to precise and organized scientific methods and by using research tools and instruments.

Scientific research has been defined in several ways, including the following:

It has been described as a detailed exposition or in-depth study representing the discovery of a new truth, confirmation of a previously researched truth, the addition of something new to it, or the solution to a

problematic, as a criteria for judging the scientific value of a research(Lötter, 2000, p.2), that an individual has undertaken to investigate and resolve.

Such an exposition or study is assumed to include all the basic stages of scientific research, from defining the problematic or proposing an idea to supporting all data and information presented with sufficient and adequate evidence, proofs and sources(Bouhoch & Dhnibet, p.13).

In this sense, scientific research is a scientific activity undertaken by the researcher with a view to solving or attempting to solve an existing problem that is of moral, material or intuitive significance, or to examining a given subject and investigating it in order to add new elements to human knowledge(Naimi, 2010, p.3).

Scientific research has also been defined as "*the organized investigation of scientific facts and in-depth study, exploration and immersion in ideas, and the treatment of near and distant meanings relating to all branches of human knowledge and the sciences – both theoretical and applied – with regard to the problem to be solved, the phenomenon to be explained or the truth sought*"(Bassiouni, p.48).

Another definition states that scientific research is "*the systematic use of a number of techniques and procedures to obtain a more adequate solution to a problem than that which could be obtained by other means; it presupposes reaching new results, information or relationships that increase people's knowledge or verify it*".

Accordingly, scientific research is a systematic intellectual process carried out by a person called the **researcher** to investigate facts concerning an

issue or problem known as the **subject of the research**, using an organized scientific approach called the **research method**, with the aim of reaching suitable solutions or results that may be generalized to similar situations or problems, which are referred to as the **research findings**(Abdelli, p.18).

A given study can be considered a complete piece of research only if the following conditions are met:

1. The existence of a problem that calls for a solution.
2. The existence of evidence, which usually comprises facts established regarding that problem and may include expert opinions.
3. Precise analysis and classification of that evidence, whereby it is arranged in a logical framework in order to test it and apply it to the problem.
4. The use of reason and logic to arrange the evidence into arguments and actual proofs that can lead to solving the problem.
5. A specific solution, which constitutes the answer to the research question or issue facing the researcher, on the understanding that a complete piece of research must base its conclusions on scientific truth.
6. After verifying the facts, the researcher selects and re-examines the results reached using all available means in order to be certain of their correctness.
7. Once the research results have been obtained, they must be placed within a logical framework to arrive at a generalization; in this sense, complete scientific research requires professional work and great effort to reach real evidence and tangible results(Hemmam, 1984, p.37).

From the definitions presented, it can be inferred that the aim of scientific research is to investigate the truth about things, their components and dimensions, and to help individuals and institutions understand the content or substance of phenomena that are of particular importance to them, thereby assisting in solving the most pressing social, economic and political problems.

This is achieved by using scientific and logical methods in a comprehensive manner that makes it possible to generalize the truths or knowledge derived from situations or observations arising from social life(Dechli, 2016, p.31).

In the field of **legal** sciences, scientific research generally entails following scientific principles and foundations when investigating the ruling on a particular issue or a general rule or when constructing a theory or principle in the science of law, with the aim of addressing an existing situation, clarifying an area of ambiguity or stating the general legal rule applicable to that issue.

Scientific research is one of the fundamental aspects of human knowledge and consists of a systematic methodological and research effort aimed at investigating and inquiring into justice in order to preserve security and order in society(Abdettaouab, 2009, p.36).

The law is not a set of ready-made molds that encompass all cases and resolve all potential legal disputes. Rather, it is based on knowledge and daily practice by those who formulate legal rules, those who study, interpret and apply them and those who seek the solutions they contain.

Legal research, like other forms of research, benefits from various research methods and from logic, and from techniques of classification, analysis, reasoning and writing, but it is also subject to constraints imposed by the law itself, such as the determination of legal sources and their hierarchy, the degree of freedom given to interpret, analyze and exercise *ijtihād* (independent reasoning) or the restrictions imposed thereon, and whether analogy is allowed or prohibited. Legal research answers a legal problem that constitutes the research question or problematic(Assem, p.24).

The research problematic is not a negative matter to be avoided but a question requiring the intervention of a legal expert. The latter examines legal rules in their primary sources first but may resort to secondary sources for assistance, and not the reverse.

Legal research produces results and presents them in a specific external form, and a researcher's failure to adhere to this form may entail a very high price, given the importance of procedural requirements in the legal field.

Legal research is thus characterized by the following(Sirajul & Sofiah, 2020):

- It is conducted within the constraints of the law itself and, more broadly, within the legal system of the State concerned.
- It involves a legal research problem requiring a legal expert to resolve it because it falls squarely within that expert's field of specialization.
- It is based primarily on legal sources in order to answer the research questions, by applying legal rules to the research problem.

- It is drafted externally in a form suited to the need that has prompted the intervention of a legal expert and the conduct of legal research. In the sense used here, legal research is not confined to studies published in peer-reviewed legal journals or to theses submitted for advanced degrees; confusing these matters is like confusing type with class, substance with form and nature with label.

1. Elements of Legal Research:

Whatever its external form, legal research is distinguished by the requirement that there be a problem of a purely legal nature requiring the intervention of a legal researcher to determine the applicable law in force and thereby to reach a solution to the legal problem.

This means that three elements must be present in legal research: the legal researcher, the legal research problem and the research into legal sources(Assem, p.25).

(a) The legal researcher:

The legal researcher must have received specialized training in law faculties, such as a university professor, lawyer, judge or doctoral student. All of them need to conduct scientific research in their respective fields and use it in their work, and the researcher in the legal sciences must possess and develop the aptitude for scientific research.

The researcher must have the skill to search, investigate, probe and inquire into the information necessary to solve the legal problem at hand.

For example, research into an offence committed through electronic means, such as electronic fraud or misleading electronic advertising, requires the researcher to examine that offence and highlight its specific features, given that it was committed via electronic media. The researcher must then review the evidentiary requirements under the law – in this case, the evidence is electronic – and might, for example, set out the legal value of electronic evidence and the position of the legislature and the courts regarding it, as well as the constituent elements of cybercrimes generally.

Legal research poses many challenges for the legal researcher, foremost among them presenting the legal problem effectively and clearly. Clarity and straightforwardness in expressing a legal problem provide the shortest path to solving it, and the more precise and clear the researcher is, the closer they come to a sound or optimal solution.

(b) The existence of a legal problematic:

Legal research is characterized by the fact that the research problem is a legal one, and the legal problematic may be factual – that is, linked to an existing dispute or to a situation that may change the legal positions of individuals – or hypothetical, with the aim of planning activities and avoiding violation of the law in force in a given country.

In both cases, the research may be considered applied research, as it seeks to identify the legal ruling on the issue under examination. In theoretical academic research, the legal problem may be purely theoretical and not linked to a specific dispute.

(c) Research into legal sources:

The legal researcher must return to the sources of law, starting with those at the top of the normative hierarchy; however, the doctrine of the hierarchy of legal rules differs according to the legal system in place. In the French system, for example, written law is regarded as the primary source of legislation, while judicial precedents occupy the top of the legal hierarchy in the Anglo-Saxon system. The researcher must take all such matters into account when conducting legal research.

2. Purpose of Legal Research:

The purpose of scientific research in the field of legal sciences manifests itself through the knowledge that may be represented in the description of a legal situation previously applied, a form that may be termed **historical research** in legal science, where the aim is to reach the truth about the legal organization of society. It may also be represented in arriving at a specific legal truth, termed **analytical legal research**, where the purpose is to understand the legal organization of the matter and the law's ruling on it.

Furthermore, it may consist in linking the particulars and applications of the matter under investigation with the aim of formulating a method, principle or theory – what is referred to as **foundational** or **inductive research** in legal science – an attempt to establish a new theory or legal construct that enriches the science to which the researched matter belongs.

The results of legal scientific research also directly influence legislative development by providing precise data and analyses, enabling academic researchers to offer recommendations that contribute to modernizing the

existing legal system in keeping with economic, social and cultural developments. All this contributes to creating and developing a legal system that meets the various challenges facing the State and society.

This contribution is manifest clearly and vividly in the purpose that the legal researcher seeks to achieve; as law relates to all social and human sciences, the development of law reflects parallel developments in other sciences.

Legal research, therefore, in harmony with its intended aim, constitutes a new contribution to the development of a particular concept regarding one of the problems at issue, in light of modern scholarship and jurisprudence, and contributes to setting out the broad outlines of its development, dimensions and applicable solutions, or those that may be prescribed for it. This concerns the purpose and objective that must govern the work of every legal researcher – whether professor, jurist, lawyer or judge.

Third: Importance of Scientific Research:

Scientific research is of the utmost importance, a fact confirmed by the substantial sums that developed States allocate to scientific research. In some States, the matter extends to establishing ministries devoted to scientific research and creating specialized research centers in various fields, which serve as the primary reference for making any strategic decisions, given the basic information such centers provide for decision-making(Teib, 2018, p.39).

More precisely, the importance of scientific research may be identified in the following points:

- It is the most appropriate method for identifying, examining and analyzing all problems and phenomena so as to lead to finding appropriate solutions and providing necessary data and information regarding them.

- It is the shortest path that allows humanity to make steady progress forward; there can be no genuine progress or development without scientific research, as evidenced by the level of development achieved by societies and States that accord scientific research its rightful place, dedicate appropriate budgets to it and accord researchers the status they deserve(Teib, p.40).

- Scientific research, its position and level in any society, reflects the degree of awareness, civilization and refinement and the intellectual and cognitive maturity that the society has attained. Societies more aware and cognizant of scientific research are those that afford this activity priority in their life and assign it a high place in their concerns.

- It enables the identification and correction of errors, the discovery of solutions and recognition of indicators which, if not heeded, may lead to problems, as is the case with research using diverse and varied samples, whose results always provide indicators of a phenomenon that may occur if the causes discovered through research conducted on a sample of individuals or groups are not addressed(Akil, p.14).

- Scientific research promotes logical and rational thinking and the use of scientific methods in reaching solutions to the problematics to be researched and studied, thereby avoiding primitive approaches to thinking and problem-solving…

- Scientific method should be distinguished from the aims and products of science, such as knowledge, predictions, or control (Hepburn & Andersen , 2021).

The prevalence of scientific thinking in society and the avoidance of superstition has the potential to establish a culture that is not limited to the scientific elite of researchers and university professors but extends to the broad base of society and touches various State institutions.

With the spread of a culture of research and scientific thinking, institutions will avoid randomness in their decisions and dealings with the public, and will adopt the approach of research and investigation according to scientific methods that lead to the best solutions.

Among the benefits of scientific research is also that it enriches libraries, thus facilitating the availability of knowledge and learning to students and researchers in schools, institutes, universities and research academies(Akil, p.15).

State investment in scientific research strengthens its foundation and increases its influence at the international level; the power of a State is measured by its scientific capabilities and its skills in facing contemporary challenges. Science and scientific research have facilitated for small States, in terms of territory and population, the means of strength, progress, development and international influence(Selama, 1999, p.15).

Developing countries vary in their awareness of the importance of scientific research according to their social development, the extent of their resources, the awareness of their leaders and the availability of the minimum

requirements for research and other such matters; however, they remain far less favored than developed countries in this field.

The gap remains very wide between developed and developing countries in various respects, one of which is scientific research. It is not sufficient for developing countries merely to invest in and apply the results of research conducted by developed countries, for in that case they will always remain dependent on those countries, seeking knowledge and learning from them.

Rather, they must contribute substantially to conducting their own research, provided that this is preceded by the availability of research requirements – researchers and laboratories – and the creation of a scientific environment that allows the researcher to devote themselves fully to their research and carry it out effectively(Aziz, 1981, pp.5-6).

Fourth: Objectives of Scientific Research

The truths reached by the researcher in scientific research are considered relative rather than absolute, which is an essential and important element for research progress, innovation and scientific development; if we assume the absolute fixity of scientific truths, there would be no development or innovation(Bakr, p.31).

Scientific research enables the researcher to reach answers to their questions and to the problematic being studied. The researcher relies on available information and facts to study, discover and explain various phenomena.

Scientific research also contributes to the development of human thought with the aim of improving the quality of human life, increasing well-being and solving the problems confronting humanity, and driving the process of innovation and development in accordance with continuous and accelerating changes in life. The objectives of scientific research are as follows:

1. Description:

Description is the lowest objective of scientific research and refers to defining the characteristics of various phenomena clearly and specifically. Describing phenomena and events does not contribute much, especially if such phenomena or events are not entirely new. The process of description is useful if there are new elements in the phenomenon that were previously unknown(Bassiouni, p.50).

2. Explanation:

This is an attempt to identify the causes of why phenomena and events behave in a particular manner; as such, explanation requires the application of reason to a greater degree than is required in the case of merely describing those phenomena. What facilitates the process of explanation is when a group of phenomena or events share the same behavior in a particular manner.

Explanation also involves discovering phenomena and the causes that led to their occurrence and relies on analysis, comparison and linking between different elements so as to ascertain the causes and arrive at answers to questions such as why and how.

3. Prediction of phenomena:

This concerns what may occur in the future and the testing of the relationships existing between variables, phenomena or events that are subject to observation and monitoring.

Predictions must therefore be formulated as laws or stated scientific theories; this cannot be achieved without understanding reality and providing a scientific explanation in the form of a probability that determines a degree of certainty in light of the validity of the law or theory. The objective of prediction is achieved by providing opportunities to control phenomena(Dechli, p.21).

4. Control, regulation and management:

Control in the field of scientific research means the researcher's ability to control the factors causing a particular event or phenomenon, to prevent it from occurring or to regulate its occurrence as desired.

5. Formation of an organized system of knowledge:

This refers to the systematic organization of facts into a coherent structure; if prediction is supported by repeatedly testing hypotheses, the relationships observed between events or variables become a "*scientific fact*".

The systematic organization of scientific facts and the techniques by which such facts are obtained lead to the construction of a structure of coherent scientific knowledge, whether within a single field or across different fields.

The objectives of scientific research derive from the question raised by the unclear situation in the research problematic(Mechadani, 2019, p.29); objectives are new formulations of the question that necessitated analyzing, breaking down, deepening and verifying the problem. The motivation for conducting research and studies may be one or more of the following objectives:

- Serving society.
- Discovering new developments and uncovering the unknown.
- Meeting the challenge of solving unsolved matters.
- The desire to obtain an academic or scientific degree.
- Institutional directives and work conditions for conducting research and studies.
- Doubt regarding the results of previous research.
- Reviewing, analyzing and reorganizing current knowledge.
- Describing a particular situation or specific problem.
- Enriching the student's knowledge.
- Following established methods in conducting research.
- Using correct rules of logic in order to compare and contrast the views addressing the research subject or any part of it.

Chapter Two: Characteristics of Scientific Research

Scientific research represents a central pillar for reaching scientific truths and formulating them within the framework of rules, laws or scientific theories as the essence of sciences, particularly since science consists of certain and verified cognitions confirmed as absolute truths, truths reached through research conducted according to purposeful, precise and organized scientific methods and using research tools and instruments.

Scientific research is thus an attempt to discover knowledge, explore it and develop it, examine it and verify it through precise investigation and deep criticism, and then present it in a complete manner with understanding and intelligence in the stream of world civilization, contributing meaningfully, vitally and comprehensively to it.

On the basis of this approach, scientific research has a set of characteristics that distinguish it; this is what we will address in this chapter. It should be added that the scientific researcher must be distinguished by a set of qualities so as to impart a scientific character to their research.

First: Characteristics of Scientific Research

These are primarily as follows:

1. Scientific research is organized and controlled:

This means that scientific research is an organized, controlled, precise and planned intellectual activity, in that problems, hypotheses, observations, experiments, theories and laws have been verified and discovered through organized intellectual efforts carefully prepared for that purpose and not by

chance. This characteristic of scientific research ensures complete confidence in the research results(Gedder, p.18).

Scientific research aims at controlling the environment, as such control is considered a primary objective of science achievable through scientific knowledge. The element of organization in scientific research is manifested in the following ways:

- Research begins with a question in the researcher's mind.
- Research requires defining the problem by formulating it precisely and in clear terms.
- Research requires drawing up a plan for the researcher to follow in reaching a solution.

Scientific research on this basis is an integrated and purposeful system that relies on linking available means and possibilities in order to reach drawn and legitimate objectives. It is, moreover, human effort and activity centered on the human being themselves; it is both a means and an end, and upon it depends the level of scientific progress(Radjab, 2008, p.11).

2. Scientific research is theoretical:

This is because it uses theory to establish and formulate hypotheses, which are explicit statements subject to experiments and testing, and research is connected with theory in that theory provides us with a conceptual model for research; theory is science rather than mere imagination.

Theory may be defined as "*organized concepts and definitions that serve to predict phenomena and determine causal relationships between variables*"(Dhamen, 2007, p.37).

Kerlinger also defines it as a set of concepts linked together and presented in an organized manner for studying a phenomenon by determining the relationship between variables with the aim of clarifying and predicting the phenomenon being studied.

Theory is a set of generalizations through which the scientific researcher attempts to explain a phenomenon in an organized manner; the scope of theory's use is broader in basic research than in applied research and in quantitative research than in qualitative research.

Theory serves scientific research in several areas, foremost among which are:

a. Defining the study:

Theory narrows the scope of facts being studied; it helps in selecting aspects of the phenomenon being studied, and these aspects are studied from different angles.

For example, cooperative society could be studied from social, economic and other perspectives, with each science studying a particular aspect of these perspectives in order to be able to deal with it, and each scientific specialization studies the aspects relevant to it.

b. Providing the research with a conceptual framework:

Theory provides us with a conceptual framework regarding the phenomenon being studied; each science embodies a body of organized facts, so the researcher selects a set of facts from the theory and develops the concepts related to each other.

c. Summary:

One of the functions of theory is also to summarize what has been learned about the aims of the study.

On this basis, it can be said that science cannot progress if facts are unconnected; theory organizes these facts and shows us what variables are and how they relate to one another.

For example, learning theory can clarify the relationship between speed and competency as well as other variables such as motivation, reinforcement and experience. Researchers in various fields have developed useful theories to clarify motivation, cognitive and social growth and others(Dhamen, p.41).

From these theories, scientists predict what may occur in reality; if these predictions are supported by science and investigation, science moves toward a process of control.

3. Scientific research is general and universal:

When studying a particular phenomenon or specific matter, the results of that study are generalized to other related phenomena or related matters, for science studies particulars in order to reach general conclusions and universal

laws governing all cases and phenomena. It is the general laws reached by scientific research that assist humanity in achieving the aims of science and scientific research.

Generalizability on this basis is the ability to benefit from research results reached by the researcher in other organizations – it is the formulation of general rules that can be used in explaining similar phenomena(Bakr, p.13).

The more capable research results are of being generalized, the greater their value and utility. In order to improve generalizability, sample design should be conducted in a random probabilistic manner relying on scientific logic(Nedjar, 2009, p.10).

It should be noted that most research currently conducted relies on selecting a sample representative of the population; if the sample is selected well such that it truly represents the population, then the results reached by the researcher through experiments on that sample can undoubtedly be generalized to the population.

This advantage of scientific research makes acquired and obtained knowledge and information worthy of being described as scientific only if it is research that is general and comprehensive regarding all phenomena, relationships and facts and is accessible to anyone who wishes to examine and study it, whether specialized or not(Djouda, 2011, p.23).

Finally, it can be said that adherence to methodology, objectivity and rules of investigation greatly assists in making the results reached through scientific research generalizable in the field in which it was conducted and in the society in which it took place, while exercising caution when the population

is large and lacks homogeneity; in all cases, however, broad research relying on large samples horizontally and vertically produces results more capable of being generalized than research with small and limited samples(Teib, p.38).

4. Objectivity:

Scientific research faces many challenges related to individuals engaged in its various fields; frequently such individuals fail in their research duties because they succumb to their pre-existing biases or personal opinions, having failed to respect the technical and methodological frameworks that show them how to conduct the research process and how to reach scientific truths.

These frameworks are based on the philosophy of **objectivity**, which provides that researchers must strive to eliminate personal biases, pre-existing commitments and emotional reactions to the matters under study while attempting to reach scientific conclusions based on evidence and facts that are independent of the researcher's desires and personal interests.

True objectivity consists of the researcher refraining from imposing their personal preferences or predetermined opinions on the facts and data, and instead permitting the facts and data to speak for themselves, with the researcher using reason and sound judgment in analyzing them and arriving at conclusions.

Complete objectivity is an ideal that is difficult to achieve entirely, since the researcher is a human being with personal inclinations, experiences and interests that may influence their perception and analysis of phenomena. However, the researcher must strive to approach this ideal by adopting strict

scientific methods, using standardized and reliable instruments, and consulting with colleagues and experts.

Objectivity within the research context is often associated with the property of measurement and testing. "Daston" points out that objectivity is closely related to the consistency of the results obtained and their susceptibility to re-testing and scrutiny by neutral researchers(Bendjekhdel, 2019, p.25).

Objectivity is defined as the researcher's commitment to relying on precise scientific measures and including facts that support their findings, as well as facts that conflict with their premises and conceptualizations. The result must be logical and consistent with reality, and the researcher must accept this and acknowledge the extracted results, even if they do not conform to their personal conceptions or expectations(Bouhouch & Dhnibet, 2014).

For instance, the steps of scientific research must commence with a clear definition of the research problem, followed by the formulation of hypotheses, then the determination of the method and manner of data collection, management, review, and analysis.

The information collected is then analyzed and placed in a final report that clarifies what has been executed and what has been concluded. This implies refraining from resorting to the distortion or misrepresentation of the results reached to serve personal purposes of the administration or the researcher in any form whatsoever.

In addition to this, researchers must consistently exhibit scientific conduct to ascertain the truth, avoiding rigidity regarding their personal opinions and feelings, regardless of the results reached in describing the phenomenon or issue under investigation.

This property is considered one of the most important characteristics distinguishing any scientific research. Many field or theoretical studies conducted or implemented in developing countries lack a clear and defined objective derived from a problem that is subsequently defined and delimited in a scientific manner(Abidat, M., & Akla, M., 1999, p.8).

The existence of a clearly defined objective assists researchers in adopting the sound scientific methodology appropriate for the subject at hand, thereby arriving at reasonable causes, results, and implications for the problem of interest.

5. The Scientific Method in Research:

Scientific research is founded upon scientific methodology or the scientific style. To arrive at the hoped-for results and uncover the required truths, the researcher adopts an organized technical method termed the "*Scientific Method*" or the "*Scientific Approach*."

This method renders the researcher reliable in their steps and results, as they rely through it on a set of interconnected and integrated steps that make scientific research a precise, complex, and arduous process, rather than merely a simple and easy mental operation. It necessitates the expenditure of significant organized effort, examination, auditing, critical testing, investigation, and impartial analysis.

It should be noted that the emergence of the scientific method was the result of various efforts exerted by interested parties over long eras. However, the first features of this method appeared at the hands of **Francis Bacon** in the late sixteenth and early seventeenth centuries, where he proposed building results based on a large group of facts and observations that could be collected(Dhoukan, 2015, p.33).

Subsequently, the scientific method or approach appeared, combining the inductive style and the deductive (syllogistic) style; that is, combining the thought represented by the deductive style and the style of observation represented by the inductive style.

From the foregoing, it becomes clear that the most important step of the scientific method is the definition of the problematic. If the research problematic is defined, it will accurately guide the researcher toward the solution.

However, if it is ambiguous, the researcher will spend a long-time collecting information and facts, only to feel after collecting them that they are not necessary. Therefore, the researcher observes the following when examining the problematic:

1. The problem should stem from the researcher's feeling of the existence of a difficulty or a situation that drives them to confusion, anxiety, and discomfort.
2. This feeling should generate in the researcher a sense of the existence of an error or ambiguity, and that this ambiguity requires further explanation.

3. The vague feeling of the problem defines the scope of the problem without defining the problem itself. Therefore, the researcher searches for explanations and information connected to the problem and studies it from multiple aspects to be able to define it. Thus, the researcher can define their problem and confine it to a specific scope.

4. The researcher presents their problem accurately and formulates it in a specific form, often taking the form of one or more questions(Dhoukan, p.35).

In summary, scientific research is subject to methodological rules and procedures characterized by precision and strictness. Methodology means the commitment to following specific agreed-upon rules and procedures in the field of scientific research.

The problematic must be defined clearly, objectives and questions must be formulated in language that does not accept interpretation, the study population must be defined, and the sampling method must be determined in a scientific manner.

Methodologies and tools must be chosen according to the nature and requirements of the study. None of these steps are subject to the researcher's mood, nor are they carried out randomly; rather, they are determined according to scientific procedures and controls(Teib, p.37).

6. Scientific Research is Explanatory:

This is because it uses scientific knowledge to discover unknown scientific truths or to explain existing phenomena through data collected by the researcher regarding the phenomena under study via research and

reliance on groups of connected concepts relevant to the research subject, which are termed theories(Chroukh, p.22).

Alternatively, we may say it is an explanatory work aimed at explaining and justifying intellectual and material phenomena, whatever their nature, interpreting the laws that govern them, and deducing laws and theories.

It is worth noting that if we project the property of discovery and explanation onto scientific research in the field of legal sciences generally, it will appear evident to us that legal research also aims to explain social phenomena, but from the point of view of the law.

It attempts to uncover their causes and devise solutions for the problems of reality in which society, with its various segments and spectrums, is floundering, as viewed by legal legislation, with the possibility of reviewing the opinions of jurists and also citing judicial jurisprudence, judgments, and decisions.

7. Scientific Research is Dynamic and Renewable:

It adds something new to the human and scientific heritage and contributes to arriving at new scientific truths. It also contributes to the formulation of theoretical judgments, in addition to its contribution to deepening the understanding of the aspect of the subjects covered by the study. It contributes to the applied field by utilizing its results in solving existing problematics(Ait Mansour & Tahir, 2003, p.12).

Scientific research is dynamic and renewable because it constantly attempts to approximate the truth as much as possible. It also always seeks to renew knowledge by way of addition or restoration(Hamed, 2003, p.48).

This property makes scientific research aim at renewing, modifying, and updating knowledge, which is characterized by accumulativeness, by way of continuous replacement and continuous extension of knowledge with other, more modern and newer knowledge, or attempting to arrive at new knowledge added to the present or old knowledge regarding the research subject. Thus, research is not merely transferred, imitated, translated, or repeated.

However, this does not negate the permissibility of the research being on a subject previously broached that still raises problems or aspects that have not yet been the subject of research.

Scientific research is the guarantor of achieving this cumulative property that characterizes science. Even assuming it does not add anything new to scientific knowledge, it suffices that it collects existing knowledge and explains it in a form where it becomes clearer. This is an aspect of the novelty conditioned in precise and generalized scientific research(Toumi, p.53).

Based on what experts and specialists in the subject know, simple research carried out by a novice student at the undergraduate stage, such as directed work research or practical work, is not called research in the precise meaning of the term.

8. Repetition (Replicability) and Generalization:

Repetition means the possibility of obtaining almost the same results if the researcher follows the same scientific method and research steps once again, under similar objective and formal conditions(Zibari, 2011, p.25).

Despite the importance of replicating results as a characteristic of the scientific method, many researchers refrain from repeating experiments because it is difficult to publish such repeated research. Furthermore, most researchers believe that well-designed research does not actually need to be repeated because repeated research will not possess the originality of the first research.

Nevertheless, this belief does not in any way diminish the importance of repetition as a fundamental characteristic of the scientific method; without it, one cannot trust the consistency and validity of the research results.

... As for the susceptibility to **Generalization**, it is the ability to utilize the research results reached by the researcher in other organizations. Deriving general rules is useful in explaining similar phenomena. The more generalizable the research results are, the greater the value and utility of the research(Faiz & Nabil, p.9). To improve the ability to generalize, sample generalization should be done in a random probabilistic manner relying on scientific logic.

9. Attribute of Comprehensiveness and Certainty:

Scientific knowledge is comprehensive knowledge, as the issues of science apply to all phenomena being researched. The scientific researcher does not study a specific problem as an objective in itself but starts from studying the specific problematic to arrive at results and generalizations that include phenomena or situations shared with the subject of their study.

The goal of science is to arrive at generalizations and results characterized by comprehensiveness that apply to more than one individual, phenomenon, or situation(Zibari, p.25).

As for the attribute of **Certainty**, it is another attribute of scientific truth and is related to comprehensiveness and generalization. It means basing scientific truth on a sufficient set of convincing objective evidenceso that no doubt remains regarding its veracity.

Scientific certainty relies on logical proofs and evidence(Zakaria, 1978, p.50); it is not fixed or final, as scientific truth is a relative, not absolute, truth. It shifts and changes during its development, for the only fixed truth is that truths change.

10. Accumulation of Knowledge:

Science is cumulative knowledge. Knowledge is a structure to which all researchers and scientists contribute. Each researcher benefits from those who preceded them, completing the correct steps and expanding the scope(Zibari, p.27) with the conclusion of what others have reached.

Every new piece of scientific knowledge is the knowledge relied upon as being correct, such that old scientific knowledge and theories become part of the history of science.

Therefore, scientific truth is a relative truth linked to a specific time period; it evolves and does not stop at a certain limit. It is also not linked to a specific researcher; it is not a subjective matter but an objective one that imposes itself on all minds(Douidri, pp.71-72).

11. Predictability of Results:

This is intended to mean that the results obtained can be relied upon to predict similar cases that may occur in the future, or that those results are expected to allow prediction of what may happen subsequently(Helil, 2021, p.33).

Research results must contain elements through which one can predict what will happen in the future regarding the phenomenon under research. It is noted that the possibility of prediction generally in natural sciences is more precise than in social sciences, as social phenomena can be subject to change over time and with differing circumstances(Djouda, 2012, p.24).

12. Search for Causes:

Many experts and researchers consider the search for causes to be one of the most important characteristics of scientific research. Human mental activity is not science in the precise meaning of the term unless it aims to understand phenomena and know their causes.

The search for causes has theoretical and practical goals, which are the same as the goals of science. Scientific thinking aims to discover the truths of the universe (the theoretical goal) and then to find solutions to the problems of humans and nature (the practical goal).

The search for causes fulfills two fundamental hypotheses: satisfying the human love for exploration, knowledge, and understanding; and increasing the human ability to control phenomena by knowing their causes and controlling them(Zibari, p.27).

Second: Conditions Required for Good Scientific Research

After addressing the characteristics of scientific research, it is incumbent upon us to define the requirements of good research. Good research is that which is required and achieves the purpose envisioned by the researcher, whether it is a thesis or a university dissertation at various scientific and academic levels, or research for a conference or for publication in a refereed scientific journal or scientific periodical(Kandildji, 2014, p.34). A set of basic research conditions and requirements must be available in it, represented mainly in the following:

1. Clear and Comprehensive Title for the Research:

The successful choice of a research title is essential in presenting a good image of the research from the beginning of its viewing, review, reading, or evaluation by others. Three basic features must be available in the title:

a- Comprehensiveness:

Meaning that the research title, with all its general or specialized phrases and terms, should include the specific scope and precise subject into which the researcher is delving.

b- Clarity:

The research title should be clear in its terms and phrases, and even in the use of some signs and symbols if the matter requires it.

c- Significance:

This is intended to mean that the title gives an objective and specific indication of the subject requested to be researched, treated, and written about, avoiding generalities.

2. Sufficient Knowledge of the Research Subject:

The research subject must be commensurate with the researcher's capabilities. It is essential that they be knowledgeable about their field and subject. This familiarity usually comes from the researcher's area of expertise and the work the researcher has experienced or specialized in(Bakr & Feriel, p.189).

The researcher must choose subjects that fit their scientific qualifications, as delving into a subject beyond their capabilities may lead to unsuccessful results and incomplete research.

3. Availability of Sufficient Time for the Researcher:

There must be a specific time to complete the research. It is essential that the available time be commensurate with the size, nature, and objective and spatial comprehensiveness of the research.

Some research requires full-time dedication from the researcher(Mechadani, p.34), as is the case in most Master's and Ph.D. research. In general, a good researcher works on the following:
A. Determining sufficient hours of their time to follow up and execute the research.
B. Programming these hours and distributing them over the stages and steps

of the research in a way that guarantees the completion of the research in the correct form.

4. Attribution (Citation):

The researcher should rely in their writings on original and attributed studies and opinions and be precise in collecting their information, as well as reviewing the various different ideas and opinions presented in their field of research.

Honesty in quotation and benefiting from information is a matter of utmost importance. Scientific honesty focuses on the following: Indicating the source from which the researcher derived their information or ideas, mentioning the basic data of the sources and their authors, and the place and pages if necessary, and ensuring that the ideas or opinions from which the researcher transferred ideas and information are not distorted(Kendildji, p.36).

5. Strength of the Research from Theoretical and Practical Perspectives:

This means that the research relies on theoretical and scientific foundations and hypotheses capable of testing and verification. Research may not be built on superficial theoretical foundations or hypotheses(Hemdani & al., 2006, p.39).

6. Coherence Between Parts of the Research:

There must be coherence between all parts of the research. There must also be a logical, historical, and objective sequence linking the chapters

together, and there must be coherence and sequence in information between the chapters.

7. Extent of Contribution and Addition to Knowledge in the Researcher's Field of Specialization:

Scientific research, including university theses, usually adds new and useful things to what is known in the fields and specializations to which they belong and are related.

Therefore, emphasis on innovation and addition is a matter of utmost importance in preparing and writing research and theses.
A good researcher is one who knows how to start from where their colleagues, other researchers, ended(Kendildji, p.38).

8. Availability of Sources and Information on the Research Subject:

It is essential to ensure the existence of sufficient information and sources regarding the objective field chosen by the researcher to delve into and write about.

This means the availability of written, printed, or electronic sources of information available in the library or libraries and information centers that the researcher can access to invest their various sources and information.

This condition applies to research and theses of a field nature, such as surveys and case studies, which need sources to identify the objective background for such research and theses and to expand the circle of objective knowledge of the researcher in the field in which they are writing,

in addition to the need in writing what is termed the "*Theoretical Chapter*", which relies mainly on presenting the literature related to the subject.

Chapter Three: Types of Scientific Research

The goal of scientific research is to deepen knowledge, search for the truth, and extract a truthful idea about the essence of any subject the researcher is dedicated to studying.

On this basis, scientific research is divided and diversified into several types based on how it treats facts and things, based on the scientific results reached by scientific research and studies, and also based on the extent of the amount of information obtained and available regarding the subject under research and scientific study.

In addition, scientific research in its methodological framework constitutes a group of diverse and complex studies that integrate with each other to bring about change, add something new, or correct old ideas that were not addressed in a precise and correct form.

As for the types of scientific research, they are represented in the following:

First: Theoretical or Basic Scientific Research

These researches aim to study social phenomena in order to arrive at the truth, develop theoretical concepts, and generalize them, such that the goal is knowledge only.

This, in turn, requires the researcher to review and be familiar with the concepts, assumptions, research, and previous theories that addressed and dealt with the phenomenon intended to be researched(Selama, 2013, p.27).

This type of research aims to deepen the understanding of phenomena, enrich scientific knowledge, and discover new research fields. Its scope is often theoretical natural sciences.

The most distinguishing feature is that most of its results are not tangible to the public, and their importance appears after a period of time because they deal with scientific theories and the relationship between different phenomena. They seek to develop scientific research knowledge, whether by developing existing knowledge or adding new knowledge, and usually, it is theoretical knowledge(Abdelli, p.24).

Second: Applied Research

Applied research is defined as that type of studies undertaken by the researcher with the aim of applying its results to solve current problems. It covers many human disciplines such as education, administration, economics, pedagogy, sociology, and law. Applied research aims to address existing problems in social and economic institutions(Zibari, p.24).

On this basis, it can be said that theoretical or basic research does not yield fruit except after a delay, whereas applied research bears immediate and urgent fruit. Hence, many experts and researchers believe in the possibility of combining the two types (theoretical and applied), considering that each of the mentioned types of research leads to activity of the other type.

Theoretical or basic research always leads to applied research, and applied research often reveals problems that require theoretical or basic research.

Finally, it can be said that the direct goal of applied research is a new discovery for the experiment undertaken by the researcher, to arrive in the end at a general theory of the relationships of things with one another(Shon, p.25).

Third: Fact-Finding (Excavation) Scientific Research

This is research in which effort and mental activity are concentrated on discovering a specific, defined partial truth by means of conducting scientific tests and experiments and excavation research for that purpose. It is not intended to generalize results or use them to solve a specific problem, but rather to collect facts only without passing value judgments on them(Gedder, p.26).

Fact-finding research aims to study a specific phenomenon or a defined idea by conducting mental or laboratory tests to investigate its reality, discover it, and reveal it after it was unknown, ambiguous, or intractable to understanding(Toumi, p.54).

We find that there are many researches in medicine, engineering, and chemistry, or innovative mental research such as studying and defining the concept of the objectives (*Maqasid*) of Islamic Sharia in the principles of jurisprudence, or research in the field of organized crime and the spread of drugs and bribery in modern societies. The research may be historical regarding a specific incident through studying historical documents to confirm or deny it(Baouni, 2011, p.19).

Fourth: Critical Explanatory Research

This type of scientific research is concerned with revealing the causes that led to the formation of a specific idea or subject, and viewing this idea or subject with a critical eye to arrive at the scientific truth about the thing itself. Examples of this type of research include discussing the opinion of a specific thinker regarding a specific issue.

In this case, the researcher uses arguments and proofs regarding the validity or error of the opinion of others. This type of research relies to a large extent on logical reasoning to arrive at solutions to problems. This method is usually applied when the problem relates to ideas more than it relates to facts(Badr, 2019).

In some fields (such as philosophy and literature), the researcher deals with ideas more than facts; consequently, the research can contain to a large degree a critical explanation of these ideas.

For example, let us assume that a researcher wants to conduct a study on the functions and tasks that the university should perform at the level of scientific research. After the researcher reviews scientific articles and research issued by various higher education institutions and after interviewing actors in this field, including professors, deans, heads of laboratories, etc., the researcher here finds themselves, after all this effort, before a large number of opinions regarding their research subject.

Perhaps the only way the researcher can address this problem is by analyzing and classifying the opinions, then critically explaining them, indicating in a logical manner the aspects of strength and weakness and the

aspects of isolation or deviation existing in those opinions, and other ideas connected to the subject that may form in the researcher's mind based on their reading and various contacts.

In any case, as long as the research results reached by the researcher rely on logic and the preponderant opinion, we are in this case conducting research that includes critical explanation. This research is an advanced step beyond merely obtaining facts(Badr, p.26).

There is no doubt that the research process at the level of critical explanation has a value that cannot be ignored or denied. It may perhaps be impossible without it to arrive at appropriate results regarding problems that contain only a meager amount of defined facts.

Finally, we indicate a very important issue: explanatory research has a set of conditions that must be met, which are as follows:

1. The explanatory discussion must revolve around and concentrate on known and accepted facts, ideas, and principles in the field in which the scientific research and study are taking place, or at least the study and research must fit, agree, and connect with the sum of ideas, theories, and principles related to the subject of research and study.

2. Explanatory and critical research must lead to some results, generalizations, and solutions; that is, this type of research leads to arriving at the preponderant opinion in solving the problem proposed for study and research in order to solve it.

3. The arguments, supports, and justifications and their discussion during the explanatory and critical study must be clear, reasonable, logical, and disciplined.

4. The ideas that were the subject of discussion must be within the framework of the specific field of scientific research and study(Djibiri, 2017, pp.25-27).

The primary danger to be avoided in this field is for the results to rely on the general impressions of the researcher and not on specific reasonable arguments and discussions.

Fifth: Descriptive Research

The goal of descriptive research is to discover facts and describe specific phenomena or events with a precise description, determining the characteristics of the phenomenon qualitatively or quantitatively. It also collects facts about them, explains the circumstances associated with them, and reports their status as it exists in reality(Mendalaoui, 2024, p.32).

Descriptive research does not stop at the limit of descriptive diagnosis but goes beyond that; it contains its explanation and defines the relationships that unite the phenomena under study and other phenomena similar to them.

As for the means of data collection in descriptive research, they are numerous, including observation, interviews, tests, and questionnaires. These researches are mostly used to identify opinions and trends among individuals and groups, studying and analyzing them with the aim of arriving

at results that represent an understanding of the present with the goal of guiding the future.

Descriptive research generally specializes in studying the reality of events, phenomena, situations, and opinions and analyzing them. Its importance is highlighted by being the optimal method for studying human phenomena(Abdelli, p.26).

The reason for this is the difficulty of using experimental methods, in addition to the possibility of using it in studying natural phenomena through collecting data and information, classifying them, organizing them, and expressing them in a qualitative and quantitative manner.

In addition to monitoring, analysis, and classification, descriptive studies also undertake the task of discussing the results reached, which assists in the correct and objective understanding of the phenomenon the researcher intends to study, thereby unraveling the ambiguity surrounding it...[3]

Description is linked to quantitative studies that employ various statistical methods, as it is also linked to qualitative studies that go beyond generalization to explanation, understanding, clarification, and inference. Descriptive research seeks to understand reality and diagnose it with the aim of presenting visions, visualizations, and proposals to develop it into a better form than it is(Teib, p.68).

3- *It's important to point out that descriptive studies are often utilized in media research specifically, and in the social sciences more broadly. Within media studies, there's a growing interest in analyzing media content through methods like content analysis, audience surveys, and communicator surveys. The goal here is to uncover the essence of scientific messages, their aims and directions, how the audience perceives them, and the characteristics, experiences, and intentions of the sender.*

It should be noted that descriptive research and studies use a set of methods, the most prominent of which are:

1. Survey Research:

This is one of the methods of descriptive research. It aims to collect data and information about a phenomenon with the intention of identifying it closely, diagnosing its current status, determining the aspects of strength and weakness in it(Abdelli, p.26), ensuring the validity of this status, and proposing reformative solutions. Examples include social surveys, school surveys, public opinion, and content analysis. Usually, the survey research sample is a random or stratified sample, or a comprehensive survey when the research population is small and easy to access(Khatib, 2003, p.50).

2. Causal-Comparative Research:

Causal-comparative research seeks to reveal the potential causes behind a specific behavior by studying the causal relationship.

3. Longitudinal (Tracking) Research:

This type of research aims to know the change that occurs in the sample due to the time factor, measuring the amount of this development and growth or change that occurs as a result of the sample's response to specific situations, and knowing the extent of stability and change in prevailing trends toward proposed situations after a period of time.

4. Field Research:

This type of research relies on collecting data in the field indirectly from the sites of institutions, administrative units, and population clusters,

via questionnaire, interview, or observation. Examples include the case study(Kendildji, p.45).

Field research seeks to describe the phenomenon as it is in reality with the aim of obtaining factual information, all through direct observation of the reality of the phenomenon, describing it with a precise and objective description, arriving at precise and truthful scientific results. This is what distinguishes field research from others.

5. Correlational Research:

Correlational research aims to reveal the strength of the direction of relationships between variables and to predict a variable through another variable. In such research, the correlational relationship should not be interpreted as a causal relationship except in the case of control. It reveals the magnitude of that relationship, whether it is a direct or inverse relationship, negative or positive(Cheib, 2009, p.27).

Finally, we can say that descriptive studies are frequently used in the field of media research in particular and in social sciences generally. At the level of media studies, interest increases in the content of mass media through the use of content analysis, surveying the audience of those media, and surveying the communicator, all with the aim of identifying the nature of media messages, their goals, orientations, the recipient's position on them, and the characteristics, experiences, and intentions of the sender.

As for the goals that descriptive research seeks to achieve, they are represented in the following(Sayed, 1994, p.11):

1. Describing phenomena and identifying their elements and components by collecting information and data, analyzing them, and interpreting them to allow the presentation of a precise and objective image of the phenomenon under research.
2. Diagnosing the phenomenon by knowing the relationships existing between it and the variables or factors associated with it.
3. Studying the models and stages of change that prevailed in the phenomenon over a specific period of time according to the field of research and the purposes it achieves.

Sixth: Complete Research

This is research that aims to solve a problem and generalize from it. This type of research uses the two previous types (Fact-Finding and Explanatory); that is, collecting facts and providing evidence for them.

However, it goes further than both, as it posits appropriate assumptions, then the researcher collects facts and analyzes them to accept or reject the assumptions, thereby arriving at logical results. It relies for solving the problematic on factual reasoning, which enables it to establish generalizations used in similar cases(Gedder, p.26).

For us to say that a specific study is considered complete research, the following determinants must be available in it(Badr, p.27):

1. It must be a problem that calls for a solution.
2. The existence of evidence usually containing the facts that have been proven; the evidence may sometimes contain the opinions of experts.

3. Precise analysis of the evidence and its classification so it can be arranged in a logical framework for testing and application to the problem.

4. Using reason and logic to arrange the evidence into real arguments or proofs that can lead to solving the problem.

5. Using scientific tools and methodologies to collect information; that is, choosing the method and tools appropriate for the research so that precise and objective information can be reached.

6. The existence of multiple or conflicting opinions regarding the subject under research, such as the "impossible crime," for example, and the legal problems it raises.

7. Proposing acceptable solutions such that they can bring benefit to society and the individual when applied.

Seventh: Experimental Research

These are researches aimed at testing relationships between two or more variables. They are applied in an environment that is controlled by regulating internal variables and attributing any variable that occurs in the research sample to the experimental treatment.

Experimental research seeks to reveal relationships between variables. It is considered among the best and most precise methods for studying some educational problems because it relies on experiment, observation, and hypothesis testing, either to prove their validity or to prove their error, whereupon the researcher takes a decision to accept or reject the hypothesis.

Experimental research undertakes the treatment of the independent variable, which is known as the *"cause"*, and observing the effect of this treatment in the experimental group. The group that is not subject to treatment is called the control group.

Experimental research is distinguished from other research by the element of *"Control"*, through the equivalence of the experimental and control groups in all aspects except the treatment, which reinforces the difference between them.

Experimental research is characterized by fundamental characteristics, the most important of which are testing a random sample representative of the research population, representing it truly; and controlling internal variables that may affect the research results through random distribution and statistical tests. All of this takes place before conducting the experiment(Jhon, 2012, p.297).

Eighth: Exploratory (Pilot/Survey) Research

These are studies undertaken by the researcher with the aim of identifying the problem. This type of study is generally performed by the researcher when the field of research is new and has not been previously explored by other researchers, or when the level of information about the research is low.

Given that the researcher resorts to this method in the absence of data and information about the phenomenon in the scientific heritage in their field of specialization, to ensure the non-existence of these data, they conduct an exploratory, investigative study to collect data on the aspects and

dimensions of the problematic, the places of its spread and rates, and the extent of the difference of its ratio from one society to another.

The researcher's use of the exploratory method imposes on them to define their research problematic in the form of a general question for which they have no answer, and they attempt to collect sufficient information to answer it(Nassef, 2009, p.25).

Exploratory research is used in the following cases:

1. The case of the researcher directing themselves toward identifying a new phenomenon that has not been previously identified or studied.
2. This type of research is used as an introduction or prelude to other studies following it that are more in-depth.
3. This type of research and studies is sometimes used as part of another study considered the main study, with the aim of providing information that helps in determining research methods, whether in terms of obtaining scientific material about the subject or data leading the researcher to complete encompassing of the phenomenon under research(Teib, p.64).
4. Exploratory research and studies are used in various modern cognitive fields that have not yet witnessed cognitive accumulation; they may be new scientific fields branched off from other fields due to the scientific development witnessed.

It is worth noting that exploratory research achieves a set of objectives, the most prominent of which are:

1. Defining the research problem in preparation for researching it precisely and in-depth.
2. Defining the fields of study that the researcher can address.
3. Revealing sources of data and the volume of information required.
4. Realizing the most important difficulties and obstacles facing the researcher's procedure and striving to know methods to overcome them(Kadri, 2009, pp.18-19).

Chapter Four: Scientific Research Tools

If researchers in the humanities generally today advocate that the scientific method is the optimal approach for solving problems, humanity did not reach the stage of thinking using this method until after countless generations, during which humans obtained their judgment on matters through non-scientific means.

Thinking methodologies have evolved throughout different human historical periods to align with human capabilities and levels of thinking, until reaching the experimental scientific phase, which consists of linking phenomena and causes to each other in an objective manner and analyzing available information about them for the purpose of reaching laws and theories that serve in the course of life through organized knowledge arising from observation, study, and experimentation.

This is intended to establish the foundations and rules of the inductive thinking method, which is based on facts, beginning with the observation of phenomena and leading to the formulation of hypotheses.

As for the data collection phase in scientific research, it is the fundamental phase and starting point, and is the producer of research material and content. The researcher relies on various tools that he considers appropriate and capable of meeting his research requirements, then proceeds to analyze this data.

There are numerous tools and means for collecting data and information required for scientific research. Scientific research tools are defined as means through which required data is obtained. Research tools and methods vary and

multiply according to the type of research, its objectives, scope, the methodology employed, and various criteria that distinguish one research from another.

The most important of these tools are observation, questionnaires, interviews, and content analysis. It should be noted that there exist diverse and multiple sources of information and data required by any researcher engaged in the profession of scientific research. Without the researcher possessing the skill to access these sources, he cannot obtain the necessary information to study his research problem.

A good researcher is one who knows how to select reliable sources based on sound scientific methodology, because of their great importance in interpreting problems, analyzing them, and making sound decisions regarding them(Bassiouni, p.157).

Among the most important scientific research tools, we mention the following:

First: Observation

1- Its Definition:

We can define the observation method in scientific research as careful viewing and monitoring of specific behavior or phenomenon and recording observations sequentially(Teib, p.352), as well as utilizing appropriate study methods suited to the nature of that behavior or phenomenon in order to achieve better results and obtain the most accurate information(Kendildji, p.186).

Observation is considered one of the scientific research tools that requires additional effort from the researcher and depends primarily on the skill, competence, and scientific ability possessed by the researcher, enabling him to accurately monitor situations related to the research phenomenon he is studying. Consequently, observation differs from both questionnaires and interviews.

The information obtained by the researcher through observation represents what the researcher was able to monitor regarding the behavior, positions, and practices of research subjects without necessarily requiring their awareness that their positions are being monitored and recorded.

Observation is also defined as careful viewing of a phenomenon, with the use of research and study methods to measure and record all aspects of changes—whether spatial or temporal—in the phenomenon, according to a specific plan that aligns with the nature of the phenomenon(Abouradi, 1998, p.74).

Observation requires good training for the researcher or researchers undertaking the observation process, enabling them to understand how to monitor, record, and document all practices, behaviors, and positions required to be studied in accordance with study requirements.

Observation also requires the researcher to prepare forms containing spaces specifically designed for recording all observations sequentially, making it easy thereafter to organize, analyze, and reach interpretations about them. Some research situations may require the researcher to use audio recording devices or stationery or moving cameras.

The observation method for collecting data requires the researcher to perform the following(Semmak, 2009, p.69):

- Communicate the research objectives to the researcher.
- Link information and its results to research hypotheses.
- Subject collected information to scientific control.

The researcher should expedite the following steps before beginning the observation process:

- Determine the research objective.
- Determine how to record and document data and information.
- Identify the variables, topics, or aspects of the phenomenon that must be observed.
- The extent of the stability and continuity of these research occurrences in the study population.
- Their value in the specialized field.
- Determine procedures for testing the accuracy of information.
- Determine the type of relationship with the phenomenon to be studied in advance.
- Respect the aspects of the phenomenon observed in general human geography research, and social geography in particular, without imposing personal impressions on observations.

Since the observation method has numerous advantages in geographical research in general, its adoption in social geography research achieves additional benefits, as long as it aids in exploring the depths of society and various social phenomena.

Data resulting from observation is useful and appealing because it provides the researcher with the opportunity to collect live data in live situations, giving him the chance to observe what is occurring on-site rather than what is available at hand.

This enables the researcher to understand program context, maintain an open and inductive mind to see things that might otherwise remain unconscious, and discover matters those participants may not speak about freely if interviews were used. It also provides the opportunity to transcend perception-based data and arrive at personal knowledge.

Because observed events are less predictable, this type of data maintains its vibrancy(Bakr, p.263). Observation enables the collection of various data and information on the following matters:

- Physical circumstances, for example physical environment and its organization methods.
- Human circumstances, for example shared characteristics of observed individuals and social classes.
- Interactive circumstances, for example social relationships that occur, regardless of whether they are planned or unplanned, verbal or non-verbal.

2- Practical Steps for Good Observation:

- Precisely determine the research problem and the objectives to be achieved, because in light of the nature of the research problem and the type of objectives to be achieved, the researcher can determine the nature of his observation and specify its type and dimensions.

- Different individual differences among observers must be noted. These differences can be overcome by increasing researcher training and clarifying behavior categories completely and precisely, as this factor is among the most important factors that reduce the effect of researcher subjectivity during observation.

- Determine the observation unit, its timing, and location. For example, the researcher must determine whether the observation unit is an individual, a subgroup, groups, or certain individuals, and must determine the time units during which observation will occur.

- Simplify observation procedures whenever possible. For example, behavior category divisions should be at the narrowest possible scope so as not to affect observation accuracy. Also, observation duration should not be prolonged for the researcher to prevent affecting accurate observation.

- Engage multiple observers, as they differ in many matters, most notably their varying abilities to observe all behavior patterns. On this basis, engaging multiple observers in studying the phenomenon location means

providing data or information containing a degree of objectivity(Bassiouni, p.168).

- It is preferable to repeat the use of observation on a group of individuals "*observers*" before applying it to the sample, to ensure its stability and validity, as well as to achieve correspondence between observations recorded by the researcher and what individuals under observation did or felt while conducting them.

3- Types of Observation:

Observation types are multiple as follows:

A- According to Degree of Control: These are divided into: 74

- Simple Observation:

This is incidental observation where the researcher observes the behavior of a number of individuals without taking specific measures or using precise measurement devices or tools to determine characteristics of the studied phenomenon to ensure accuracy and objectivity of observation.

Simple Observation includes simple forms of viewing and listening, where the researcher observes phenomena and events as they occur naturally in their natural conditions without subjecting them to scientific control(Dilimi, 2016, p.132). This occurs in two ways:

- Participatory Observation:

Where the observer engages with research subjects in the practice and experience of what he wishes to observe, spending as much time as possible with them. This type is considered more accurate.

- Non-Participatory Observation:

Where the observer monitors research subjects without directly engaging with them(Teib, p.353).

- Scientific Observation:

This is a scientific method for collecting data that the researcher adheres to, or the means or methodology of systematic scientific research, starting from the stage of seeking a specific problem and defining concepts, adopting testable hypotheses, to utilizing the latest developments in scientific and technical progress in the field of monitoring and observing various phenomena.

This differs significantly from simple observation, as embodied in scientific control, objective examination, and precise determination of phenomena. It is also subject to a high degree of scientific control regarding both observation and the matter of observation, with observation conditions such as time and place being specified(Zibari, p.133).

This type of observation is used in descriptive-causal studies because of the accuracy, depth, and focus it provides, whereas the simple observation method is used only in descriptive studies(Mohcene, 1971, p.312).

B- According to Organization: It can be divided into organized and unorganized observation.

- Organized Observation:

This is observation that is well-prepared, and this preparation requires determining the type of behavior to be observed, recording observations precisely, and determining the time and place in which recording occurs. On this basis, organized observation is far superior to unorganized observation, as information collected through it is more accurate.

- Unorganized Observation:

This is observation conducted without prior arrangements or preparation. The researcher may be forced to conduct this type of observation for several reasons, most notably time constraints or lack of experience in this field.

4- Pros and cons of Observation:

The observation method for gathering information, like other methods and tools, has advantages and disadvantages, primarily consisting of the following:

A- Advantages:

- Observation provides information about observed behavior in completely natural settings, which increases the accuracy of obtained information.

- It enables the researcher to record behavior at the time it occurs(Bassiouni, p.190).
- Possibility of using it in different situations.
- It enables the researcher to study individuals' behaviors independent of their desire for verbal expression of behaviors.
- It offers relatively high predictive ability due to relative similarity with expected behavior.
- It uniquely obtains information that cannot be provided by other methods, especially in research requiring continuous recording of observations.

B- Disadvantages:

- Many people may resort to artificiality and display false reactions and impressions to the person conducting research when they know they are under observation. The research participant's awareness that he is being observed may lead him to change his behavior(Kendildji, p.189).
- It is limited by the time during which events occur and may occur in scattered locations where the researcher cannot be present in all of them. Consequently, it is very difficult for him to collect necessary and required data and information.
- It is difficult to predict a spontaneous event in advance when the researcher will be present at that time, and in many cases the waiting

period may be exhausting and take a long time(Bouhouch & Dhnibet, p.186).

- Regarding people's private lives, there are certain difficult cases where observation may not be allowed or where it may not be helpful at all.
- The observer may be affected by his philosophical, religious, or national ideas, so he does not observe what he truly sees but rather observes what he imagines he sees under the influence of his emotions, thoughts, and philosophy, causing errors in interpreting observed behavior(Djouda, pp.84-86).

5- Observation Problematics:

After determining observation advantages and disadvantages regarding scientific research, it can be said that one of the most important criticisms directed at research depending on the observation tool, especially regarding qualitative research, is the question of its credibility, particularly if we consider that various interpretations offered by the researcher can be affected by his subjectivity.

These criticisms may have justification when we add that human attention to what occurs in observation, as well as his encoding of collected data and his memory of situations will be transitional, thus affecting study validity(Kendildji, p.195). Perhaps the most prominent problems posed by observation are as follows:

A- Selective Attention:

Humans receive information related to observation through their senses. Consequently, attention to stimuli in the initial stage of building various knowledge is closely linked to interest, expectations, and abilities, in addition to characteristics of the exciting situation itself. The observer then pays more attention to what aligns with his interests and expectations. On this basis, the process itself is transitional.

B- Selective Coding and Recording:

Various preexisting expectations about events affect how they are recorded and encoded, which may result in coding and recording that differs somewhat from what is actually seen, and consequently the picture does not give the true reality of the observed event or thing.

C- Factors Related to Interpersonal Relationships:

The researcher's mixing and interaction in the early stage of observation can occur with a limited number of members of the participating group being studied. This interaction may lead to researcher bias and being affected by the opinions and ideas of certain participating individuals without this reflecting the true opinions of the group as a whole.

Second: The Interview

1- Its Definition:

The interview is considered one of the principal tools for gathering information and data in the study of individuals and human groups, and is one

of the most commonly used and effective means of gathering information for obtaining necessary data about any event. The interview is not simple but rather is a technical matter(Ziad, 2002, p.154).

On this basis, we can define the interview as a flexible and direct tool for collecting data that possesses numerous advantages. It provides the researcher with the opportunity to modify his interpretations and answers through his expressions and manner of speaking, and creating normal atmospheres free from his answers and restrictions in other methods such as observation and questionnaires(Semmak, p.71).

Interview is an organized personal communication and direct verbal interaction conducted by one person with another, or with a group of individuals, aimed at stimulating certain types of information and data for use in scientific research in order to analyze a specific phenomenon, diagnose difficulties facing it, and work on describing its treatment(Mechadani, p.156).

Accordingly, the interview is a conversation within the scope of research objectives aimed at gathering facts for use in directing research.

The interview is distinguished by its participation in the style of conversation or dialogue, as there are vocal tones, facial expressions, eye contact, and movement gestures that help the researcher understand the personality of the person he is meeting and his reaction to posed questions.

In many studies related to the humanities, researchers find that the personal interview is the best means for obtaining information, although they may be able to obtain certain facts and opinions through mail or telephone.

However, there is data that can only be obtained through face-to-face interviews(Gheraibia, F., & al., 2002, p.62).

It should be noted that the interview, as a scientific research tool, is not merely an incidental encounter but rather a methodical and technically sound process, in every sense of the word, whether at the level of preparation and planning or at the level of implementation and evaluation. The interview is distinguished by a number of characteristics, perhaps most notably:

- It is a verbal interaction that allows research subjects to transcend the boundaries of abstract answers to the researcher's questions, reaching complete freedom to answer questions in the manner they deem appropriate, and then expressing their opinions, thoughts, and beliefs(Abdelhamid, 2015, p.574).

- It is an organized method based on a set of scientific and methodological steps and procedures that organize the meeting and manage the dialogue within the framework of research objectives for organizing the interview.

- It is not ordinary dialogue between two parties but rather aims to achieve a specific objective related to the nature of the problem or phenomenon under study, or the nature of the data, or characteristics of the research subjects(Mechadani, p.158).

It should be noted that for the interview to be successful and achieve its objectives, the researcher must observe the following aspects:

- Inform the respondent of the project's nature and encourage cooperation with him.

- Be forthright with the respondent so that the truth is not hidden from him.
- The purpose of the interview must be clear.
- Frame questions well and determine the discussion framework.
- Train individuals assisting the researcher in conducting interviews.
- Observe scientific criteria when selecting individuals.

The interview is typically resorted to in the following cases:

- When the entire research sample or most of it consists of illiterates who cannot read and write.
- When the target sample individuals are limited and small and can be easily reached(Teib, p.345).
- When the researcher believes that posed questions are complex and require explanation and clarification.
- When the researcher estimates that the nature of questions and research topic requires the necessity of directly monitoring research subjects' reactions, as written answers are insufficient for obtaining needed information.
- In cases where the research topic has a secret nature, where the research subject cannot disclose or provide certain information except to the researcher alone without others.

2- Interview Techniques:

When the researcher uses interviews in scientific research, he must be able to employ specific interview techniques, which we will clarify as follows:

A- Interview Preparation:

The researcher must follow the following steps when preparing for an interview:

- **Determine Interview Objectives:**

The interview primarily aims to obtain data or information that the researcher needs to answer posed questions. Accordingly, the researcher must determine the type and nature of information he needs and formulate these objectives specifically so he can prepare appropriate means and direct them to obtain information and opinions in accordance with the defined objectives.

- **Determine Individuals Involved in the Interview:** This is accomplished through:

- Determine the original population of the study.

- Determine a sample representative of the original population(Zibari, p.140).

- **Determine Interview Questions:**

For the interview to succeed, the researcher must determine questions in advance and be prepared to pose them to obtain the answers or information he needs. Questions must be clear, specific, and objective, and should be arranged.

- **Determine Time and Place of Interview:**

The researcher must determine the time and place of the interview, considering the conditions of research subjects so that the interview achieves its objectives.

B- Interview Implementation:

Before actual interview implementation, the researcher needs good training in conducting interviews and creating a friendly atmosphere with respondents, in posing questions and directing discussion and listening, and encouraging respondents to continue speaking. The researcher then actually begins interviewing the respondent while observing the following matters:

- Begin with engaging, uncontrived conversation, then gradually clarify objectives to be achieved.
- Begin by discussing topics that do not carry a private nature for the respondent.
- Frame questions clearly and precisely with clarification if necessary.
- Grant sufficient time to the respondent to answer questions.
- Avoid attacking questions or those implying accusation.

C- Recording the Interview:

The researcher must record facts and information obtained from respondents after verifying their accuracy, as respondents may speak about information distant from them in time and place(Dhoukan, p.119).

Additionally, they may err in remembering important aspects of discussed topics, and may not be objective when recounting facts or events, transmitting them from their personal perspective. They may also intentionally conceal information or facts for personal reasons.

Multiple means can be used to record data. The interviewer may use an interview form. The more standardized the form with specified answers, the easier the recording process.

However, if the interview is not standardized, everything the respondent says must be recorded literally without modifying language or removing colloquial terms, as these characteristics are relied upon when studying the individual's attitudes and personal characteristics.

The interviewer can also employ automatic recording devices, which are more accurate and stable than interview forms, but they lead to fear and anxiety in the respondent, preventing him from expressing his opinions freely and honestly.

Also, the recording device does not record facial expressions, gestures, and body movements that the respondent makes while answering questions, which play an important role in the interview, as they require direct observation by the interviewer.

2- Types of Interviews:

The interview branches into several types of which we mention:

A- According to Number of Clients or Interviewed Subjects:

It can be divided into two main types(Bouhouch & Dhnibet, p.77):

- **Individual Interview:**

Conducted between the researcher and the respondent and is considered the most common type, as it occurs between the interviewer and respondent.

- **Group Interview:**

Conducted between the researcher and a number of individuals in one place and at one time in order to obtain more in-depth information and enrich answers in less time and effort. However, recording answers and observations in writing is difficult and usually requires mechanical recording.

B- According to Degree of Organization and Precision:

It is divided into standardized and non-standardized interviews.

- **Standardized Interview:**

Means directing the same questions in the same manner to each respondent according to a predetermined list and in light of the interview prepared for it. Such interviews are practical in nature, as they provide necessary controls allowing for formulating practical generalizations and are characterized by precision, control, organization, and obtaining the greatest number of answers.

This type of interview is also characterized by precision, control, and ease of quantifying and analyzing answers.

- **Non-standardized Interview:**

This type of interview is characterized by flexibility, as constraints imposed on respondents are few, and posed questions can be modified and information obtained incidentally. It is possible to follow expected signals and gestures.

This type of interview is valuable in exploratory studies as it helps the researcher select and formulate questions, as the transition from one section to another occurs without sequence, and questions are characterized by spontaneity, naturalness, and fluidity without being predetermined.

C- According to Purpose: These are divided as follows:

- **Survey Interview:**

Used to obtain information and data from different fields, frequently used in political polls and measuring public opinion and attitudes toward specific topics or gathering information about development problems in all life spheres. It is also used in surveying attitudes toward educational programs or teaching bodies in educational institutions, or determining teachers' opinions toward educational policy(Abdessalem, 2020, p.50).

- **Diagnostic Interview:**

Primarily aimed at understanding a specific problematic and comprehending methods that led to problem emergence and its severity or gravity(Bouhouch & Dhnibet, p.76).

- **Therapeutic Interview:**

Aimed at helping the research subject better understand himself and develop a treatment plan and treat causative factors, achieving and improving emotional life, where the situation is treated according to the respondent's beliefs and conditions and convictions, and according to the theoretical perspective and actual school that the therapist believes in.

- **Guidance or Counseling Interview:**

An interview aimed at understanding the problem faced by the client and providing assistance to him, guiding him to overcome administrative or personal problems he faces.

3- Pros and cons of the Interview:

A- Advantages: The interview achieves a number of advantages that we summarize as follows(Mechadani, p.162):

- It can be used in cases where questionnaires are difficult to use, such as when the sample consists of illiterate or special needs individuals.
- Provides depth in answers due to the possibility of clarifying the question tool, and for this to occur it requires a trained interviewer.
- Solicits information from the respondent that is difficult to obtain by any other method, because people generally prefer speaking over writing.
- Considered the best means for testing and evaluating personal qualities(Bouhouch & Dhnibet, p.78).

- Provides the possibility of obtaining answers from most of those interviewed—95% and possibly more if compared to questionnaires at approximately 40% without follow-up.
- Provides non-verbal indicators reinforcing answers and clarifying feelings such as voice tone, facial features, and eye and head movements.
- Flexibility and possibility of explaining and clarifying questions if difficulty or lack of understanding occurs.
- Behavior monitoring, where the researcher can monitor the respondent's behavior and reactions and infer his statements and their authenticity regarding the self.
- Control the environment surrounding the interview regarding quiet, privacy, and other conditions.
- Question sequence, where the researcher ensures the respondent answers in logical sequence without jumping from one question to another, as the researcher controls questions.
- Spontaneity, meaning the researcher's ability to record answers and the respondent's naturality.
- Interview timing, where the researcher can record the time and place of the interview.
- The researcher can discover contradictions in the respondent's answers from his observations and environment monitoring and comparison with all provided answers, giving him the opportunity to review them.

- The interview can be used with observation to verify information obtained through correspondence(Badr, p.353).

B- Disadvantages: Interview disadvantages are as follows:

- Requires a large number of data collectors who are selected and trained carefully.
- High costs of travel for those conducting interviews, thus making its cost higher when compared to other tools such as questionnaires(Bassiouni, p.201).
- The interview requires considerable time and effort to obtain necessary data.
- The researcher faces great difficulties stemming from the respondent's desire to exaggerate events and give an impression of himself as an important person when the reality is otherwise.
- The interview is affected by surrounding circumstances during its conduct(Chroukh, p.40).
- The researcher may struggle in entering accurate information about the topic, or may miss writing certain words and sentences, affecting information accuracy and precision, although this negative aspect can be overcome by using recording devices(Kendildji, p.69).
- Interview success depends on the respondent's willingness to speak and ability to accurately express what he wishes to disclose.

- The interview is affected by multiple factors such as psychological pressure, tension, and other factors that may affect both the interviewer and respondent. The latter may attempt to display advantages and disadvantages and may hesitate in disclosing unpleasant facts.
- Difficulty recording answers or recording devices in the interview place that the respondent usually determines.
- Difficulty quantifying responses or subjecting them to quantitative analysis, especially in open interviews.

Third: The Questionnaire

1- Its Definition:

The questionnaire is considered a primary tool for gathering data that the researcher needs within the framework of his study of social phenomena and events. It is considered one of the best-known and most-used tools among researchers in the fields of sociology and other social and humanities sciences for obtaining information and data about individuals.

This is because the questionnaire is relatively economical, can be sent to people in distant areas, questions are standardized from one person to another, can ensure speed of answers and confidentiality, and questions can be formulated to suit specific purposes(Zibari, p.143).

On this basis, the questionnaire may be used in a broad or narrow framework according to the study's nature, and naturally it differs in length and degree of complexity.

The greatest effort in the questionnaire is directed toward building new and good paragraphs, obtaining complete responses, and it is important that research questions and hypotheses be clear and known so that paragraphs can be properly built(Dhamen, p.91).

We must clarify distinctions between basic terms. The term "questionnaire" is a research form containing a set of open or closed questions that the researcher directs to research subjects so they answer without researcher intervention.

In the Wasit Dictionary, "*questionnaire*" means appeared and became clear, and the thing means he clarified and defined it. The definition appeared in the sociology dictionary as a form of research using a set of questions about a specific topic.

Usually, the questionnaire is used when the respondent is educated, where he is asked to write the answer to questions himself. It may sometimes be used when the respondent is uneducated, where the researcher records the answer on his behalf. However, questions must carry the same true meaning and intent for all respondents, and questions must be placed in the same system and the same words.

Also mentioned in the Social Sciences Dictionary is that the questionnaire is "*a means used to gather data or information from a certain number of individuals regarding a matter or topic, with the objective of learning about its reality and these individuals' ideas about it, their opinions regarding it, or their positions toward it. This data or facts or information is then analyzed after being classified, allowing the researcher to interpret it*"(Teib, p.326).

The questionnaire form is implemented either through personal interviews or the form is sent to research subjects through mail, termed in this case the mail questionnaire. The term "*interview form*" or "*questionnaire*" (Zibari, p.144) refers to a set of questions the researcher directs directly to the research subject through telephone call or pre-arranged interview. The researcher also deviates from the framework of questionnaire form questions by asking questions required by interview circumstances.

Although the questionnaire is a scientific method for gathering data within the framework of scientific and academic research projects whose researcher needs to prove the validity or invalidity of study hypotheses being conducted, at the same time it is considered a skill reflecting to a significant degree the researchers' ability to create and innovate, especially when it comes to formulating questions in clear and specific manner.

The questionnaire is a science that is applied and in which the researcher commits to the foundations and rules of scientific research, especially that related to the connection between the questionnaire and the study's hypothesis or hypotheses(Khechim, 2002, p.218).

2- Specifications of a Good Questionnaire:

The researcher must consider a set of matters to obtain a good questionnaire that achieves research objectives, and accordingly, a set of specifications and characteristics must be present, primarily consisting of the following:

- Understandable language and clear style that achieves research purpose, where language used in the research is clear and understandable and does not

bear multiple interpretations and unclear terminology, because this may lead to multiple interpretations among people intended to answer, which ultimately results in the researcher obtaining inaccurate answers to questionnaire questions. Also, short sentences that are easy to follow and that establish connections between meanings should be used.

- Consideration of the time element granted to people to answer questionnaire questions. Accordingly, questions should not be lengthy, distancing individuals from cooperating with the researcher in completing questionnaire information and responding to inquiries(Kendildji, p.170).

- Consideration of sufficient flexibility in answers and presented choices. This is because some questions may allow more than one answer aspect, and consequently providing sufficient number of choices and flexibility in answers enables those intended to answer to accurately express their opinions and answers.

- Necessity of considering the connection element between various questions placed in the questionnaire and that connection with the research problem and topic, and not overlooking the type of important questions in the questionnaire.

- Avoiding as much as possible using compound questions containing more than one idea about the research topic, because this may confuse those intended to answer.

- Provide individuals or entities intended to answer the questionnaire with various instructions that must be followed when answering questions, as well as clarifying the questionnaire's purpose and the areas in which information the researcher will obtain will be used.

3- Questionnaire Form Design:

Questionnaire design means preparing the initial form of the questionnaire, where the initial questionnaire form consists of pages including questionnaire cover, correspondence addressed to research subjects and basic information, and questionnaire paragraphs or questions that concern research objectives. Questionnaire design requires observing the following rules:

- Determine the purpose of questionnaire use, which usually concerns research objectives or research questions.
- Derive secondary paragraphs or questions related to research objectives or questions, after comprehensive review of writings related to the research problematic(Lanzi & al., 1999, p.135).
- Observe necessary guidelines when formulating questionnaire paragraphs or questions, such as ease of paragraphs or questions so they do not bear multiple meanings and can be clearly understood. Begin with easy paragraphs or questions then move to difficult ones, avoid questions suggesting answers, avoid sensitive or provocative questions, and consciously determine questionnaire paragraphs or questions.
- Test the questionnaire in its initial form by presenting it to two groups—the first consisting of individuals from the original study population to ensure clarity of paragraphs or questions and adequacy, and the second consisting of specialists in the problem field whether academics or practitioners. Accordingly, make necessary modifications based on observations suggested by both groups(Mechadani, p.164).

- Ensure questionnaire validity and reliability using statistical methods in this field.

4- Types of Questionnaires:

A- Open Questionnaire:

This type is widely used, and its characteristic is that answers come diverse, numerous, and broad. For this reason, it is difficult for the researcher to organize and categorize them.

However, this type gives complete freedom for expressing the respondent's opinions in detail, giving the opportunity to discover his motives and attitudes, and suits this type of questionnaire for exploring previously unknown opinions. It also gives the opportunity for other answers(Mahdjoub, 2005, p.159).

B- Closed Questionnaire:

This type of questionnaire is characterized by ease of answering its questions, as it does not require lengthy time from the respondent and does not require writing anything on his part.

While this type of question provides the researcher with information and data that helps him understand more factors, motives, and causes, the researcher may sometimes miss certain choices that may be necessary for answering questions.

Therefore, it is recommended when using closed questions to place in the last set of choices an option such as "other than that" or "other matters" or "specify," to avoid the reasons mentioned lastly.

C- Open-Closed Questionnaire:

This type contains questions with predetermined, specified answers and a number of other questions with free, open answers, or questions with specified answers followed by a request to explain the choice. This type is considered better than the previous two types because it eliminates weaknesses of each.

5- Data Tabulation and Questionnaire Analysis:

After the researcher collects questionnaires from the study sample, they must review each one to verify the seriousness of the respondents and exclude questionnaires in which the respondent's lack of seriousness becomes apparent, such as contradictory answers that can be detected through screening items, as well as incomplete questionnaires.

This is necessary to ensure that the objectivity and accuracy of the results are not affected. Subsequently, the researcher proceeds to tabulate the data and conduct the necessary statistical analyses(Bakr and Feriel, p.257).

Between receiving questionnaire responses and reaching conclusions and writing the research, several phases must be undertaken, which are essentially represented as follows:

- Tabulating questionnaire responses and explaining them with precision
- Commenting on, explaining, and analyzing responses where necessary
- Explaining results, as one should not merely comment on responses but rather explain the results obtained
- Using statistical methods, as serious research tends to translate factual findings into numerical results
- Generalizing results and indicators, which is considered the ultimate fruit of all research
- Adhering to academic integrity, a fundamental principle in all research, by attributing ideas and opinions to their authors in the reference list (Abdelhamid, 2015, pp.73-74)

6- Advantages and Disadvantages of the Questionnaire:

A- Advantages:

The questionnaire possesses numerous advantages, primarily represented as follows:

- The researcher can collect data from a large sample in a short period at minimal financial cost
- It saves considerable time and effort for the researcher in the data collection process, especially if the form is sent via electronic mail to respondents

- The questionnaire provides respondents with complete freedom to choose an appropriate time and circumstances for completion(Zibari, p.151)
- It does not require the researcher to explain or clarify the questions in the form to the respondent
- The questionnaire reduces the possibility of bias on the part of the researcher or respondent, especially when compared to observation or interview methods
- It allows researchers to provide precise interpretation of certain secondary and specialized issues
- It ensures the opportunity to obtain answers characterized by accuracy and clarity(Abdetaouab, 2009, p.200-201)

B- Disadvantages:

- The quality of data obtained by the researcher may be poor in terms of accuracy and completeness, as research participants may intentionally or inadvertently omit answers to some questions(Hamdani et al.? p.237)
- The motivation to respond to the questionnaire is often weak, as the participant may not find a compelling reason to expend effort and time completing the questionnaire
- Responses from individuals interested in the research may reflect certain viewpoints, and therefore their answers may contain some bias(Bouhouch & Dhnibet, p.75)

- Research participants may interpret the same question differently, which affects the validity of the questionnaire
- It cannot be applied to individuals who are illiterate or lack writing and reading skills
- The response rate for distributed forms is often low, especially if distributed by mail
- There is no ability to observe reactions due to lack of personal contact
- Questions that are too lengthy may bore the respondent

Fourth: Sampling

1- Definition:

Statistics in general serves as the researcher's guide toward the correct method and sound results in scientific research. The topic of sampling is considered one of the most important topics in statistics, and it necessitates the ability of researchers in various disciplines to master it.

The selection of a sample for research constitutes an essential part of research methodology in social and human sciences, and this section of methodology has received considerable attention from researchers because it forms the foundation upon which field research is built(Mesbah, 2010, p.211).

A sample is defined as: *"A part of the population in which this part possesses the same characteristics as the population itself. The rationale for conducting research on a sample is that in many cases it is impossible to*

conduct research on the entire population. Therefore, sample selection is undertaken with the objective of reaching results that can be generalized to the population. This becomes possible if the sample's characteristics represent the population's characteristics regarding the largest possible number of variables"(Zidane, 1980, p.46).

It is also defined as: *"The statistical method of making judgments about a specific number of phenomena by considering them as a representative sample, selected randomly, for the purpose of reaching what is known as the law of statistical regularity"*(Guebbadi, 1982, p.155).

Random selection requires that we choose a statistical sample representing all required unit elements, as the sampling method necessitates selecting a portion of the total phenomena such that this portion represents the entire group.

On this basis, the sample is a group of individuals selected from the research population based on clear scientific principles, taking different forms depending on the nature and circumstances of the research, and has been used to facilitate the scientific research process(Mesbahi, p.211).

Sampling is a decisive and fundamental process in scientific research, as it determines and affects all research steps. If the results obtained cannot be generalized, even minimally, beyond the scope of the sample used in the research or study, then this research adds nothing new to scientific knowledge and will not contribute to advancing practical practices in the field of the discipline where the problem lies.

Furthermore, sample selection must be carried out based on a procedure that allows us to estimate the degree to which sample members represent the population from which they were selected, concerning certain variables relevant to the research or study we plan to conduct. The word *"representative"* does not mean the sample is completely identical or similar to the study population regarding the variables under study(Hamdani, p.193).

However, the term *"approximately"* implies the existence of differences between the study population and the sample, though it is very difficult to determine the extent of such differences unless we measure all population members regarding the aspects of interest and then compare these measurements with the same measurements of the sample.

This requirement obligates the researcher to ensure that the study sample is reasonably large, providing confidence that the sample is representative of the study population.

2- Steps in Sample Selection:

The sample selection process proceeds through the following steps:

- **Defining the original population for the study:**

At this step, the researcher must define the original population for their study clearly and precisely(Diab, 2003, p.91). Additionally, the population from which the sample is drawn (called the *"sampling population"*) must be similar to the population intended to be studied (called the "*target population*"). On this basis, the demographic, geographic, and

administrative boundaries of this population must be determined(Motlag, 2009, p.34).

- **Identifying members of the original study population:**

Here, the researcher is tasked with preparing a list of individuals in the original study population. The researcher must ensure that the sources used to identify members of the original population are complete and current.

- **Selecting and determining the type of sample:**

At this stage, the researcher selects the model required for their research, which will distribute the questionnaire to its members. If the original population is homogeneous in the characteristics to be studied and identified, any type of sample will suffice.

However, if differences emerge and variation appears in the aspects to be studied—which is usually the case—specific conditions must be met for the samples, such as proportional stratified sample, systematic sample, or random sample, which gives every member of the original population the opportunity to be included(Serhan, 2019, p.163).

- **Determining the required number of individuals or units in the sample:**

After determining the size and number of units in the original study population, the researcher must determine the sample size for questionnaire distribution, noting that several factors affect sample size, such as research objectives, the size of the original study population, the amount of time

available to the researcher, and the degree of homogeneity of the study population.

3- Types of Samples:

1- Simple Random Sampling:

This is one of the simplest types of samples, also called probability samples. It is used when the research population is small or homogeneous. The term *"simple random sample"* refers to selecting a specific number from an original population(Mechadani, p.90) on the condition that all units have equal chances of selection.

This method requires that all elements comprising the research population be enumerated and known. Thus, the probability of each element appearing is known and predetermined. This method is difficult to apply in dispersed, scattered, or numerically large populations. Simple random sampling is considered the best type of sample if it can be applied.

2- Systematic Random Sampling:

In systematic random sampling, units are selected from the population by dividing the total population number by the required sample size, then distributing the original population units equally and regularly across the resulting quotient. This means the researcher selects the first unit randomly, then proceeds to select subsequent units at regular numerical intervals among all units.

3- Stratified Sampling:

Stratified sampling is used to ensure representation of various groups within the research population in the research sample. The population is divided into specific strata according to known specifications, and units are taken from each stratum to obtain a sample composed of these parts(Marouan, 2000, p.162).

Therefore, stratified sampling significantly reduces exclusion possibilities, as available information about the study population is used to divide it into groups sharing certain characteristics.

4- Cluster Sampling:

Also called multistage sampling, this involves selecting the study population as clusters or groups, where each group contains several units from the population. This type of sample is used when the study population is large and it is difficult to obtain a population frame.

In this sampling type, the population is divided into subgroups (not necessarily homogeneous), then these subgroups are further divided into smaller subgroups, and so on, with the smallest group called a cluster. Then, a simple random sample is selected from each cluster to ultimately represent the cluster sample(Mechdani, p.94).

4- Advantages and Disadvantages of Sampling:

A- Advantages:

The sampling method is characterized by several properties, which can be identified as follows:

- Selecting a sample from the original population is an appropriate and easy method that shortens distances for the researcher and saves effort and time during research. No researcher, even in the form of a team or institution, can study all population members, and sampling is the correct path forward.
- If the researcher adheres to sample selection criteria, regardless of its form, type, or category, it will achieve the research objectives they seek.
- The ability to control and ensure precision weakens with increasing data size and effort required for collection. Using a sample reduces the possibility of losing precision.
- When the homogeneity condition within the study population is observed, the results obtained from the studied sample possess high scientific credibility and generalizability potential.

B- Disadvantages:

- Among the disadvantages of sampling is its inability to encompass all elements of the original study population if it is heterogeneous, and it cannot include all characteristics of the study population, regardless of its level of coherence and similarity(Mesbah, p.223-224).

- Some experimental designs require the existence of experimental groups, meaning a large sample size must be selected to represent members of the original population, a difficult task in experimental research, especially regarding control and management of variables.
- Accurate results require a large sample size for generalizing findings to the large original population, which is not always feasible in all sample types.
- Studies based on researching a sample from the study population require expertise in another scientific discipline: statistics. Without statistical analysis and interpretation of statistical data, the study loses its scientific value.
- The necessary precision may not be available in testing. In such cases, the sample does not adequately represent the original population(Douidri, p.315).

Fifth: Tests

1- Definition:

Tests are considered important means for data collection and are used by researchers in various fields to gather data, in addition to other means such as interviews, questionnaires, observation, and sampling.

Researchers in educational, psychological, and social fields have many standardized tests prepared by experts. These tests are distinguished by their quality of preparation and construction.

These tests are accompanied by specific instructions for application and interpretation of results, and they possess scientific characteristics such as validity, reliability, objectivity, and standards(Behi & Mouna, 2015, p.91).

Some have defined them as: *"Oral, written, pictorial, or graphic questions prepared to measure certain behavior quantitatively or qualitatively, and tests are used to measure and identify differences between individuals, groups, or performances"*(Dhoukan, p.158)

It should be noted that practical difficulties may prevent the use of an existing test. A researcher may find and recognize the required test by name but discover it does not represent only the desired function but also measures other functions that may be irrelevant to the studied problem.

In such a case, the test lacks validity, and the researcher must prepare a test measuring the required function. Additionally, researchers are constrained by a specific timeframe for executing the test. If an existing test requires more time than available in the schedule, its use becomes impossible and a test must be prepared that achieves the objective within the specified timeframe.

Furthermore, some tests require substantial expenses that the researcher's budget or the research-conducting institution cannot bear, necessitating preparation of a more economical test.

2- Characteristics of a Good Test:

Multiple tests measure the same trait and serve the same purpose. Therefore, researchers face the problem of selecting the most appropriate test.

This means there is a set of characteristics that must be present in a good test, primarily represented as follows:

A- Objectivity:

A test is considered objective if it yields the same score regardless of who corrects it. Therefore, well-designed measurement tools are constructed such that the score can be obtained without the corrector's subjective judgment intervening.

B- Validity:

A test is valid if it measures what it claims to measure. Given the paramount importance of validity, researchers provide evidence supporting their claims regarding what their tests measure, using several methods to achieve this validity(Bassiouni, p.242).

The researcher measures their test's validity empirically through two methods:

- External Validity (Face Validity):

This occurs when the researcher proves their research's validity through data obtained by comparing it with similar data, since the measured tool has not previously been measured by researchers.

- Internal Validity (Content Validity):

This involves analyzing the test's or measurement's content by testing respondents' inherent abilities against re-evaluation of the test through statistical methods to prove its correctness. In other words, the researcher

proves that the results obtained by respondents stem from their inherent ability and not from chance(Mahdjoub, p.186).

C- Reliability:

This refers to the test producing the same results if used more than once under similar conditions, meaning consistency in results(Mechdani, p.167). A trial yields the same results if a group is tested repeatedly.

Several factors affect test reliability, such as increasing sample size reducing the effect of validity factors, while increasing individual homogeneity reduces test reliability. However, ease of experimentation or questions may cause the test to lose discrimination ability between samples.

D- Comprehensiveness:

This does not mean the test has a large number of items but rather that items are a representative sample of the trait being measured.

E- Gradation:

Test items should progress from easy to difficult, meaning easy items should appear at the beginning of the test, then gradually increase in difficulty(Bassiouni, p.242).

3- Types of Tests:

Tests are classified according to several categories:

- **Based on prevalence rate:**

Tests are divided into two categories: standardized and non-standardized tests. Standardized tests are those whose credibility and

reliability have been verified, with a specialist in a specific field formulating them.

They serve multiple purposes, most notably achievement tests, mental ability tests, and aptitude tests. Non-standardized tests include tests related to specific geographic, social, and cultural environments developed by local researchers(Selama, p.170).

- **Based on administrative procedures:**

Tests are divided into individual tests (designed to measure individual traits in a person) and group tests (designed to measure traits in a group).

- **Based on instructions:**

There are oral tests presented openly to the subject and written or essay tests presented to the subject on paper.

4- Objectives of Tests:

Tests reveal characteristics and traits of individuals, helping determine individual competence, psychological and social adjustment, mental health, or functional qualifications through traits(Abdessalem, p.71).

- Tests are effective means for judging the accuracy of data and information obtained from individuals.
- Measuring performance and achievement and predicting success or failure.
- Predicting and measuring growth rates.

- Diagnosis and identification of strengths and weaknesses.
- Surveying and evaluating individuals.

5- Advantages and Disadvantages of Tests:

A- Advantages:

- The researcher has sufficient time to prepare, validate, pilot, and modify tests before application, enabling their potential success.
- Tests are important means for measuring people's experiences, interests, and attitudes.

B- Disadvantages:

- Spatial facilities, procedures, and administrative arrangements for tests.
- Requiring the researcher's high expertise and knowledge to develop a good test incorporating scientific criteria(Abdelhamid, pp.84-85).
- Difficulty in interpreting responses in some cases.

Sixth: Documents

1- Definition:

Various information sources and containers have always represented important tools of scientific research. The researcher collects such sources and documents in their various forms and types, then begins to sort what is needed, and after recording the information received from them, begins

analyzing that information and providing required observations(Kendildji, p.158).

A scientific document is defined as all sources and references that contain materials and information that collectively constitute the intellectual output necessary for scientific research and its practical application(Chroukh, p.47).

It must be emphasized that when using sources and documents as a tool for data and information collection, researchers must pay attention to several matters and act accordingly. The most important include:

- Relying on primary sources for information gathering before resorting to secondary sources when primary sources are difficult to obtain.

- Confirming whether sources and documents are the only tool relied upon in research data analysis, or if they complement other tools such as questionnaires or observation. In other words, the researcher must determine whether they will depend on sources and documents to collect and analyze information, or whether they will use another information-gathering tool supplemented by sources and documents. In the latter case, sources and documents become a secondary/supportive tool, with the other information collection tool being primary.

- Confirming the nature of information containers the researcher will rely upon: whether books, published research, studies, and articles, or technical and annual reports(Kendildji, p.159).

2- Types of Documents:

Documents are classified into several categories, among which are the following:

Classifications of documents based on document material, divided into primary and secondary documents

A- Primary Documents:

Also called primary or direct documents, and known in Western historical research as testimony—that is, materials specifically prepared for history or resulting from historical events, materials written or prepared first by their authors, by those who witnessed the event and recorded it without using intermediate documents or sources in transmitting information.

B- Secondary Documents:

These are documents that typically transmit their information from primary sources, directly or indirectly. That is, data and information available in secondary sources may be transmitted from other sources or translated from another language in which those data and information originally appeared, either directly or transmitted/translated through another secondary or tertiary source, with information having been relayed from the primary source indirectly.

1- Document classifications based on their material:

Document materials vary, potentially being printed, manuscript, audio, or visual. What is handwritten may be on skin, parchment, paper,

metal, or other materials. A document may be a building, part of a building, machine, weapon, or otherwise(Chroukh, pp.48-49).

2- Document classifications based on location and acquisition method:

Regarding location, they include: issuing authorities, official institutions and official entities (whether official or unofficial), libraries, the Internet, national archives. Regarding acquisition methods: purchase, photocopying, borrowing, transfer.

Seventh: Content Analysis

1- Definition:

Content analysis is one of the commonly used scientific research methods in studying communication and media materials(Dhoukan, p.130). This method aims to identify in an organized manner the trends of the material being analyzed and understand its characteristics, with all of this conducted away from subjective impressions or random treatments.

It is noteworthy that content analysis has not been limited to educational and psychological matters; rather, this use has expanded and grown noticeably in the field of social studies(Bassiouni, p.289), particularly in studying mass communication materials, including newspapers, magazines, and radio or television broadcasts. Among the first to provide a specific definition in this field were **Letts and Paul** in 1943, limiting its definition to the following functions covered by content analysis:

- Analyzing the linguistic or semantic characteristics of communication symbols used
- Determining the frequency of appearance, occurrence, or incidence of these characteristics with a high degree of precise control, or determining the quantitative values of these frequencies
- The ability to distinguish these characteristics using terms of general nature
- The ability to distinguish them also using terms related to the nature of the study's hypotheses and fields
- Precise control of the terminology used in identifying the symbolic characteristics that have been studied

It should be noted that content analysis is of utmost importance, rising to the level of an independent methodology in addition to being a tool of scientific research(Chroukh, p.46).

Analysis is the reduction of something to its constituent elements, both material and immaterial, and exists in two types: theoretical and practical, the first occurring in the mind and the second in experimentation.

Content analysis is based on organized and precise understanding of the content and substance of written, audio, or visual texts by defining the study topics and objectives, defining the study population whose specific cases will be selected to study and analyze their content.

Content analysis requires that the researcher not be biased when selecting the sample of texts, audio, or visual materials to be studied and

analyzed, ensuring they objectively represent the research topic(Mechdani, p.176).

Content analysis is the most commonly used methodological design for media research generally and journalism research specifically. Content analysis as a data collection tool can be expressed in four words (objective, systematic, quantitative, manifest), these words being what distinguish scientific content analysis from ordinary analysis we all conduct daily when reading newspapers and magazines(Creswell, 2012).

2. Characteristics of Content Analysis:

- A research method or approach used alongside other tools.
- Content analysis aims to clarify the motives and objectives that the author or speaker intends to convey, and to understand the extent to which the content of communication material affects people's ideas and attitudes(Bassiouni, p.291).
- Content analysis seeks to describe the explicit content or apparent meaning of media material, and therefore it is a descriptive method.
- Content analysis is not limited to content alone; rather, it encompasses formal aspects as well, and therefore it addresses both form and content together.
- Content analysis is used in various research fields such as media, psychology, and education.

- Content analysis provides the reader with an objective, organized, and quantitative description of the content that the researcher has subjected to study, and therefore it is an organized and intelligent method.

- Content analysis is a purposeful process, meaning that it is not conducted merely for quantitative enumeration of the analysis unit alone, but rather extends to attempting to achieve a specific objective.

3. Functional Uses of Content Analysis:

Content analysis is used to analyze one of the following objectives(Dbissi, 2017, p.8):

- Describing the content of communication, which represents the traditional approach that focuses on describing the content provided by media outlets.

- Testing hypotheses related to message characteristics and properties.

- Comparing the content of communication messages with the real world (such as analyzing stereotypes).

- Monitoring media coverage trends to evaluate a particular group image in society (studying the quantity and quality of media coverage for all groups and communities in society)(Mechdani, p;179).

- Studying the characteristics and content of media outlets and their relationship to audience needs, as well as testing and developing scientific theories.

4. Fields of Application of Content Analysis:

At times, researchers resort to using content analysis instead of other scientific research tools such as observation, interviews, and questionnaires, for the purpose of identifying the trends and ideas of the studied subjects in cases where direct contact with them is difficult(Bhattacherjee, 2012).

An example of this is what researchers do when analyzing the content of messages directed through media outlets or media texts themselves, to identify the trends and opinions of media outlets toward a particular issue, or to reveal the functions performed by media organizations to achieve their objectives, or to hypothesize the possible effects they may have on the public(Attia, 2022, p.13).

On this basis, some of the fields in which this method is used can be identified as follows:

- Revealing the trends of individuals and groups regarding specific topics.
- Measuring the extent to which communication media apply media, cultural, and educational standards and principles.
- Comparing mass media outlets in terms of their topics, trends, and objectives.
- Diagnosing the characteristics of literary or journalistic style through analyzing different messages.
- Understanding the psychological and social situation of individuals and groups in emergency and routine conditions, through analyzing the messages through which they express themselves in any form.

- Obtaining hypotheses about the impact of communication media on the public.
- Enabling the state to acquire information about the intentions and objectives of other states, especially in cases of conflicts and wars.
- Understanding the knowledge, values, objectives, and effects carried by educational, cultural literature, and other books and curricula.

5. Analysis Tool:

The analysis tool refers to the form that the researcher designs to help him collect the required data and record it to find its frequency rates. This form contains the various main items that the analysis covers, as well as its sub-elements, so that all of them are placed in a column on the right side of the page, followed by a number of columns that show the degree of presence of each element in the content being analyzed.

The degree of presence is usually determined by a number of levels ranging from two levels (present, not present) to three (present to a large extent, present to some extent, not present at all), and sometimes more depending on the accuracy desired by the researcher.

On this basis, the management of analysis is useful to the researcher, as it helps him complete the analysis elements from one aspect and makes his work organized and purposeful from another aspect. It also makes him focus his attention on the items contained in it, thus not scattering his thoughts, and it also saves considerable effort and time.

After completing the form, the researcher must verify its validity and reliability. Validity here means that the form includes all elements that should enter into the analysis from one perspective and the clarity of its paragraphs and the terminology used in it from another perspective so that they are clear and understandable(Best, 1970).

As for the reliability element, it means the possibility of obtaining the same results if the same form were used again to analyze the same level. Validity is ensured in such cases through the opinions of arbiters to whom the form is presented along with its objective, in addition to a precise and complete description of the problem for which answers are to be found.

Here, the arbiters are asked to provide their opinions on the comprehensiveness of the main and sub-items of the form, as well as the clarity of the form's vocabulary and terminology. Reliability is verified through statistical methods that reveal the degree of agreement between the results of the analysis and the use of the tool for the same purpose(Dhoukan, p.138).

Eighth: Statistical Methods

1. Definition:

After completing the experiment and field work, the researcher arrives at a set of raw data, which consists of scattered numbers that need to be reviewed, organized, classified, and analyzed, so that they are transformed from incomprehensible raw data into useful and understandable information.

This is the ultimate goal of the statistical process, in addition to determining the statistical significance to reveal the relationship between variables. Statistics is a science that examines the methods and approaches of

data collection, presentation, classification, and analysis in a quantitative manner(Abdelli, p.72).

By statistics, we mean the actual numerical data that reflects specific problems and phenomena, such as social phenomena for example, or the description and analysis of numerical data, and the methods of obtaining conclusions. Most current social research and studies rely on the statistical sampling method, which requires the design and determination of samples using special scientific methods(Chroukh, p.50).

2. Importance of Statistical Data Analysis:

The process of statistical data analysis helps the researcher understand the relationships between variables and interpret values and statistical significance. Among the most important of these benefits are the following:

- It helps the researcher reach conclusions with precision.
- It compels the researcher to commit to precision in procedures and thinking.
- It helps the researcher summarize results in a clear and meaningful form.
- It helps the researcher extract conclusions from specifics to generalities.
- It helps the researcher predict results for a particular phenomenon.
- It helps the researcher analyze complex and interrelated factors and determine the effect of each of them.

3. Types of Statistics:

A. Descriptive Statistics:

There are multiple concepts and methods for summarizing, describing, and analyzing data to make it easier to interpret. The most important of these concepts and methods frequently used in social sciences include organizing data by preparing a frequency distribution displayed in a table or chart. Data analysis after organization is conducted by utilizing the following statistical measures:

- Measures of central tendency, which include the mean and mode.
- Measures of relative position, which include percentiles, deciles, and quartiles.
- Measures of dispersion, which include range, semi-range, quartile deviation, and standard deviation.
- Measures of relationship, namely Spearman's rank correlation coefficient, Pearson's correlation coefficient, partial correlation coefficient, and biserial correlation coefficient.

B. Inferential Statistics:

In this type, we generalize what we conclude from the sample under study to what is broader and more comprehensive than the sample. In other words, we attempt to identify the characteristics of a particular population by studying all its members through a random sample, providing equal opportunity for each individual in the population to be selected in the sample,

based on the statistical significance of the difference between independent means, the critical ratio, tests, and analysis of variance.

4. Discussion and Interpretation of Results:

After collecting and analyzing the data statistically, the stage of interpretation and discussion comes next. This stage clarifies the causes and factors that led to the emergence of that phenomenon, and explains the nature of the relationship between variables, supported by scientific evidence and real situations and results of previous studies.

The extraction of conclusions and the presentation of recommendations for new studies are all considered the culmination of the efforts expended during the various stages of the research(Abdelli, p.83).

A. Data Presentation:

The stage of data presentation comes after conducting the research, collecting data from the sample, analyzing it statistically, and presenting it in a quantitative manner.

The results are presented in a sequential and logical manner, according to the order of research questions and hypotheses. The researcher begins by presenting the first question, then the first hypothesis, then presenting the answer to it, and so forth with the remaining questions and hypotheses.

Whatever the method of presentation, the important thing is that it is presented in a clear and comprehensive manner so that it expresses the results.

The data resulting from the statistical process consists of data, numbers, percentages, and statistical significance that are not understandable. Here

comes the role of the researcher in reading and analyzing that data, and transforming it from numerical data into information that is easy to read, understand, and apply.

This is because the purpose of quantitative analysis is to make comparisons, examine relationships, test hypotheses, synthesize concepts and theories, and discover laws, principles, and generalizations.

B. Discussion of Results:

The information obtained by the researcher from the descriptive analysis process of data is considered preliminary information, and it cannot be relied upon unless supported by scientific and objective evidence that proves its accuracy.

This is done through interpreting the nature of the relationship between research variables and clarifying the causes and factors that led to its emergence, and extracting facts and generalizations supported by scientific and objective evidence, either through field reports, results of previous studies, or results of scientific research and conferences, so that it becomes a new scientific and knowledge product added to previous scientific knowledge.

The following points should be considered when presenting and discussing results:

- Results should be presented with precision and brevity.
- Research results should be based on sufficient evidence.
- Results should clarify the boundaries to which they will be applied.
- Results should be phrased in expressions that are subject to application.

Conclusion:

Scientific research is a systematic and purposeful process for collecting and analyzing data with the aim of reaching good and useful results, which can be used in developing scientific knowledge and solving existing problems. Legal scientific research does not deviate from this framework, since scientific methodology in legal sciences means the set of methods and steps that the legal researcher follows to study a particular legal phenomenon.

As we mentioned previously, scientific research is distinguished by a set of characteristics, perhaps most notably that its procedures are organized and designed with precision in order to achieve a set of objectives, such as the generalizability of the results of scientific research, as well as obtaining types of knowledge and dealing with them objectively and comprehensively, and developing them in a way that is consistent with the content and direction of current and future developments.

Furthermore, the diversity of scientific research—descriptive, theoretical, and others—is an absolute necessity because it relates to another matter, namely the objectives that the research seeks to achieve.

However, they share one common issue: the adoption of the scientific method in all types of research to be conducted, with the understanding that these objectives must be specific and of scientific value so that a greater number of people can benefit from them, rather than merely achieving personal benefits for the researcher.

The objectives of scientific research are derived from the question raised by the ambiguous situation in the research problem. These objectives are new

formulations of the question that necessitated analyzing the problem, breaking it down, deepening it, and confirming it.

Finally, we can say that the stage of data collection in scientific research is the fundamental stage and is the method of the research material and its substance. The researcher relies on various tools that he sees as appropriate to the requirements of his research and meeting them. Scientific research tools vary according to the type of research, its objective, the methodology followed, and the various standards that distinguish each research from another.

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