

## The challenges of research production in Algeria –an analytical descriptive study-

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**Abstract:** Research production in research institutions is considered the real indicator of the countries progress and their societies sophistication, accordingly, we must pay great attention to it by undertaking the centers and institutions responsible for producing these scientific researches. So that we aim through this study to shed light on the reality of scientific research in Algeria and the most prominent challenges it faces. Through it, we have deliberately referred to the concept of scientific research, its characteristics, basics and types, in addition to highlighting and monitoring the challenges facing scientific research in Algeria to reach the mechanisms for promoting this field and overcoming the issue of weak scientific research, the importance of this study appears in that it is among the transformations taking place in the field of scientific research, which requires decision-makers to take a number of measures within a framework of a reform required by this sector to advance it.

**Key words:** Research production, Scientific research, Algeria, Challenges.

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## **1- 1- Introduction**

Research production is considered one of the most prominent aspects in today's development, so that most countries realized that their progress and development depend on the extent of their contribution to the development of scientific research so, they started holding centers and institutions specialized in this field, and allocating large financial budgets for them, in order to enhance investment in the research field, which is one of the most important types of investment in this era, because of its association and its importance in developing and promoting the country, scientific production received great attention from the developed countries

Research institutions are interested in forming researchers and providing them with the necessary skills and knowledge, and these centers and institutions have played this role in most countries that have achieved development and progress in scientific production, because the results of scientific research are needed in various fields. research institutions in various countries of the world are making efforts to upgrade their research, and seek to develop scientific research and increase their efforts in acquiring knowledge in order to reach results to achieve excellence in many areas.

However, there are several factors and circumstances that can be considered responsible for the decline in the field of scientific production and its delay in various research institutions. In Algeria, the reasons for this decline can be monitored by many factors such as the lack of clear policies towards research institutions, and the weakness of the budgets granted to them, in addition to the lack of psychological, moral, and even financial motivation among researchers, and other reasons, all of them contributed to the deterioration in the situation and negatively affected the quality and quantity of scientific production.

### **First / The methodological aspect:**

#### **1\_1\_ The importance of the study:**

The importance of the current study appears in the fact that research production is a very important issue, and in fact, the development and progress of the country depends on the extent of the development and progress of scientific production in its research institutions, and even more than that, scientific research is able to find appropriate and logical solutions to the various problems facing society.

The importance of this study is evident through the results that will show the reality of scientific research in Algeria and the various challenges it faces, in addition to focusing on the task of the competent authorities in adopting strategies that ensure the advancement of scientific production and its various centers, As well as finding ways that contribute and allow for the exploitation of scientific research in the interests of solving social problems, including promoting openness and riding the wheel of progress, especially scientific and research progress.

#### **1\_2\_ Objectives of the study:**

- Shedding light on the nature of scientific research as the activity that produces the scientific product.
- Identifying the reality of research production in Algeria.
- Identifying the challenges facing scientific research in the Arab world, especially in Algeria.
- Providing recommendations for monitoring the reality of research in Algeria with an attempt to address it and provide appropriate solutions, in addition to opening many horizons for scientific research in various fields.

### **1\_3\_The problem of study:**

Today's world lives in a different reality, this fact forces it into a race to reach the greatest possible level of knowledge which is represented in scientific studies and research, which in turn advances scientific and research institutions and even the leading countries in this field. The developed countries are aware of research production through their interest in the importance of human capital, so it works to develop it scientifically, intellectually and skillfully, in order to increase its ability and production to achieve scientific and research goals through it, and developing scientific production in general contributes to the development of various social, economic, educational and other fields, so that scientific research becomes an urgent and an unbearable necessity, through which achievements and even national potentials can be measured and ways to enhance them, countries can prove their stage of development above other peoples.

The scientific research production of any country is considered its real capital, and thus determines its status and ranking among countries. Algeria, like other countries, is aware of the importance of scientific research and its role in imposing and determining its existence, so that a country cannot exist without the presence of scientific research, even if it is simple. Given the importance of this issue, we wanted to raise this topic through several questions to try to answer it.

### **1\_4\_Study questions:**

The main question came as follows: What is the reality of research production represented by scientific research in Algeria and the most prominent challenges facing it?

Partial questions:

- What is meant by scientific research?
- What are the most prominent challenges of scientific research in Algeria?
- What strategies can be developed to meet different challenges?

### **1\_5\_Methodology of the study:**

In this study, we relied on the descriptive and analytical approach, as an attempt on our part to diagnose the reality of scientific research in Algeria and monitor the most prominent challenges facing it.

Descriptive research aims to describe certain phenomena, events, or things, collect facts, information, and observations about them, describe their circumstances, and report their condition as they exist in reality . ( Van Dalen ,1994, p 292) Descriptive studies do not only provide us with practical

information that can be used to justify or improve the current situation, but also provide us with facts that raise the levels of scientific understanding on which to build.

### **Second/ Knowledge aspect:**

#### **1\_ Scientific Research:**

##### **1\_1\_ Historical introduction on scientific research:**

Since his inception, man faced many problems, some of them were related to meeting his needs and desires, and others attached to his adaptation to his environment. Man has tried to find many ways to discover solutions to these problems using various means, and he benefited from the previous experiences and experiences that he gained from the customs, traditions and books of the holy religions in the face of his questions.

Humanity has evolved with the emergence of controversy, meditation and logic, while circumstances appeared later that contributed to pushing a person to search for knowledge, but it seems difficult to follow human attempts to search for knowledge and scientific thinking from its inception, as many scholars assumed that the old man was unable to use scientific thinking, and that the beginnings of the sound scientific method were with Francis Bacon and John Dewey in the late sixteenth century.

The French sociologist Auguste Comte (1789-1857) believes that human thought in knowledge developed through three stages:

1 - The theological stage: This is the stage in which human thought was directed to searching for the origin and fate of things, and in which man interpreted all matters in a metaphysical theological explanation. ; That is, hidden unseen forces are behind all the phenomena that occur.

2- The metaphysical stage: This is the stage in which man realized that the causes of things do not have unseen causes, but rather are intrinsic causes that exist in the essence of the thing itself, but in which man did not reach accurate results and explanations.

3- The positive (scientific) stage: This is the last stage, in which man reached absolute knowledge through his faith, and in which phenomena were explained with reasons based on the scientific method and linking their causes with relationships without considering their essence, in the form of laws, At this stage, the tool of scientific observation replaced imagination, and scientific interpretation of a precise scientific nature replaced philosophical interpretation based on contemplation.

It should be noted that these stages were not completely separate in this way during the stage of scientific thinking, and that they also included methods and methods that are still in use to this day.

However, the West and Arabs alike realized the urgent need for a scientific method that contributes to promoting research on Knowledge, by adopting scientific tools and methods in scientific research work. In order to obtain knowledge, steps and methods were adopted through which research developed, until it became of a solid scientific nature.

Recently, many countries have allocated huge budgets to serve scientific research, whether by establishing specialized institutions or even in supporting and developing academic institutions and institutes. And laboratories, in order to develop scientific research and ensure the best quality in its production.

### **1\_2\_Definition of scientific research:**

Research in the Arabic language, as Ibn Manzur says, is “to ask about something and inquire.” As for knowledge in the language ( **Ibn Manzur, 1986, p 218**), it is the source of “knowledge” meaning “knowledge.” ( **Al-Fayrouzabadi, Al-Qamoos Al-Muhit 153/4**)

Hajji Khalifa believes that research and writing are nothing more than one of the following seven types:

- 1- Either something that he did not precede and invent.
- 2- Or something incomplete that he completes.
- 3- Or something closed that he explains.
- 4- Or something long that he summarizes without That it disturbs any of its meanings.
- 5- Or something separate that brings it together.
- 6- Or something mixed that it arranges.
- 7- Or something that the compiler made a mistake in, so he corrects it. (**Shaaban Abdel Aziz Khalifa, 1997, p 13**)

In addition, scientific research developed later, and began to include scientific hypotheses and questions, in addition to the emergence of causal and experimental research, which proceeds according to approved and specific scientific standards and methods.

As for the definition of research: it is a way of thinking and a way of looking at facts, with which the meaning of the data becomes It is collected clearly in the mind of the researcher, and it is the general plan of activities that scientists engage in in order to obtain knowledge that begins with visualizing reality and then testing it experimentally. (**Ali Muammar Abdel-Mumen, 2008, p74**)

As for terminology, there are several definitions of scientific research, including the following:

- It is an organized and precise investigation process to collect evidence with the aim of discovering new information or relationships, completing incompleteness, or correcting an error. ( **Ammar Qandiaji, 1999, p 5**)
- It is a means of organized and precise inquiry and investigation carried out by the researcher, for the purpose of discovering new information or relationships, in addition to developing, correcting or verifying the information that already exists, provided that in this careful examination and inquiry the steps of the scientific method are followed. (**Ahmed Badr, 1973, p. 18**)
  - Another common definition of scientific research is that it is a method or an organized attempt that can be directed to solving human problems using the scientific method and the rules of the scientific method in his quest to increase his control over his environment, discover its phenomena, and

determine the relationships between phenomena. (Ribhi Mustafa Alyan, 2000, p 17)

And based on the above definitions of scientific research, it can be noted that scientific research:

- It is a detailed study of a specific problem, by adopting scientific foundations and standards that the researcher follows until he finds the truth and essence of the problem to be discussed. As research of its various types is a source of enriching human knowledge.
- Scientific research is a search for facts and answering questions and solving various problems. The research seeks to reach interpretations of phenomena in a purposeful and organized way, as it clarifies the facts and explains them in a scientific way.
- Scientific research is a logical and organized method, through which we try to reach objective results according to scientific foundations and evidence.
- The researcher accomplishes scientific research without a theoretical background that he wants to support, but rather collects the facts and evidence that contribute to the interpretation of the phenomenon in a scientific way.

### **1\_3\_ Characteristics of scientific research:**

Scientific research is characterized by several characteristics that must be present, in order to reach the set goals.

- 2- Theoretical. : It formulates hypotheses based on a specific theoretical basis.
- 3- Experimental: Experiment is the basis of scientific research, such that research cannot be considered scientific research unless it is coupled with observation, experiment, testing, and hypothesis.
- 4- Interpretative: It is based on interpreting phenomena by means of a group of interconnected concepts as Theories that contribute to interpretation and analysis.
- 5 - Logical and objective: This means not being biased and avoiding subjectivity, and the necessity of conducting scientific research according to specific scientific steps that make collecting data and information and using various means objective and logical, through which to reach sound results, and the researcher's ability to Avoid the influence of his own and personal opinions on the credibility and transparency of the research results. (Munther Al-Damen, 2007, pp20-21)

### **1\_4\_ Fundamentals of scientific research:**

The basics of scientific research are considered the methodological framework upon which scientific research is based, so that they are prepared following a scientific approach that suits the nature of the study, which makes the researcher able to reach realistic and practical solutions to the problem that was presented in the study.

The researcher must focus on those The basics so that his study is directed towards the desired goal. There are those who prepare the study to publish the scientific material and benefit from it, or to obtain a scientific degree, or even for the stage after graduation, promotion, qualification, etc., and the basics of scientific research are based on the following:

- The researcher must be keen on researching About the real causes of events and phenomena, given that every event has a reason, and this means that he should not be satisfied with superficial justifications. His work must be characterized by accuracy in collecting evidence leading to judgments, and this means relying on documented sources, and therefore he should not rush to issue judgments without the availability of correct and sufficient evidence. He must be prepared to change his mind if it is proven that he made a mistake. (Reem Harfouche, 2018, pp1-2) Commitment to objectivity, objectivity is the pillar of scientific research, and this means judging the facts without bias or being affected by personal impressions.
- Dependence of the results on evidence and proofs, as the answer to the question does not intend to guess and intuition, and the information is collected through observation and experience, and the truth and stability of data after it is carefully confirmed and then analyzed in light of the appropriate statistical methods, then interpretation based on the results of the analysis.
- Using concepts, that we deal with the facts and tell them through our senses, and in order to deal with them, we use concepts, which are a logical building generated through our impression, our awareness and experience. Circular, science is not concerned with isolated accidents but rather a set of accidents.
- The ability to clarify, as the result reached by the researcher must be clear, and he must inform others about how he reached the results in light of his analysis of the data he used in his research.

Using logical trials and trials, the scientific method includes the logical trial that leads to the result. (Munther Al-Damen, 2007, pp18-19)

### **1\_5\_Types of scientific research:**

Research fields differ in terms of their multiplicity of scientific levels. The volumes of scientific research are not the same as literary, and literary are not the same as social and artistic research. However, what is agreed upon is that all research is divided into theoretical research and applied scientific research. However, it is difficult to divide research in this way, because applied scientific research must have a theoretical basis. In addition, the results of scientific research need a theoretical background that supports those results and serves as an explanatory theoretical incubator for those results. In general, the types of research are many and varied and can be distinguished and classified in different ways, in terms of:( Abdullah Al-Sharif, 1996, pp 16-17)

- 1- Field of research: There are educational, historical, literary, scientific, social, philosophical, and other research.
- 2- Research methods: historical, descriptive, experimental, Predictive, survey, etc.
- 3- Location: field, laboratory.
- 4- Nature of data: quantitative, qualitative.
- 5- Forms of thinking: deductive, inductive.

6- Introduction to scientific research: research with one approach, research with multiple approaches.

7- Researchers: individual research, group research.

8- Research level: academic research (at the university studies level and at the postgraduate level to obtain a master's degree and doctorate), specialized academic research, specialized non-study research presented to scientific conferences and specialized bodies.

In all research of its various types and purposes, the researcher must take the following steps when preparing the research:

1- Choose the research title and define the research problem.

2- Develop a research plan and begin preliminary readings.

3- Establish and formulate hypotheses for the research.

4- Determine the method and method of research and the method of collecting data and information.

5- Analytical reading of all sources of knowledge that are related to the subject of the research, while recording bibliographic data for all sources.

6- Writing a draft of the research and producing it according to scientific foundations and standards.

## **2\_Scientific research in Algeria:**

### **2\_1\_Challenges of Scientific Research in Algeria:**

Scientific research in this era is considered a distinguished and leading position and specifically in developed countries, as these countries have made scientific research as an essential engine in development and progress in various fields, if social, educational, economic or other fields have reached various goals thanks to scientific research and quality And its development.

As for the least advanced countries, including the Arab countries, they may suffer due to the lack of interest in scientific research multiple problems, so they do not achieve comprehensive development and progress as a result of not providing the necessary conditions for scientific research in universities and lack of interest in researchers, but the countries depend on various means that may not reach them to development and the required development .

Algeria is one of the Arab countries that face several problems in the field of scientific research, despite its recent interest in developing the higher education sector, but it faces a real crisis, by focusing on the educational process itself, without paying attention to scientific production and supporting researchers; That is, focusing on the inputs at the expense of the outputs, in addition to that, scientific research faces a defect and shortcomings embodied in the lack of allocating hours for scientific research among researchers, the absence of support for researchers to intensify their research production, neglecting the scientific research laboratories by weakening their budget, except that there is a separation between what is produced As scientific research and between the real problems in society; That is, scientific research does not contribute clearly to monitoring phenomena and knowing the needs of society and its problems to find solutions that suit it, but rather it appears as if it is separate from reality, most of these indications indicate that there is a



crisis in the field of scientific research. According to the agreed upon indicators, the evaluation of research and development activity is based on a set of standards related to three axes:

- Scientific production.
- Patents and various types of intellectual property.
- The strength, production and export of high-tech products. **(Muhammad bin Ahmed, 2003, p360)**

So we see that most of these indicators are not available in scientific research in Algerian research institutions in a way that contributes to social development and advancement. On the contrary, many problems are related to the lack of attention to these indicators that hinder and disrupt the process of scientific research and negatively affect its results.

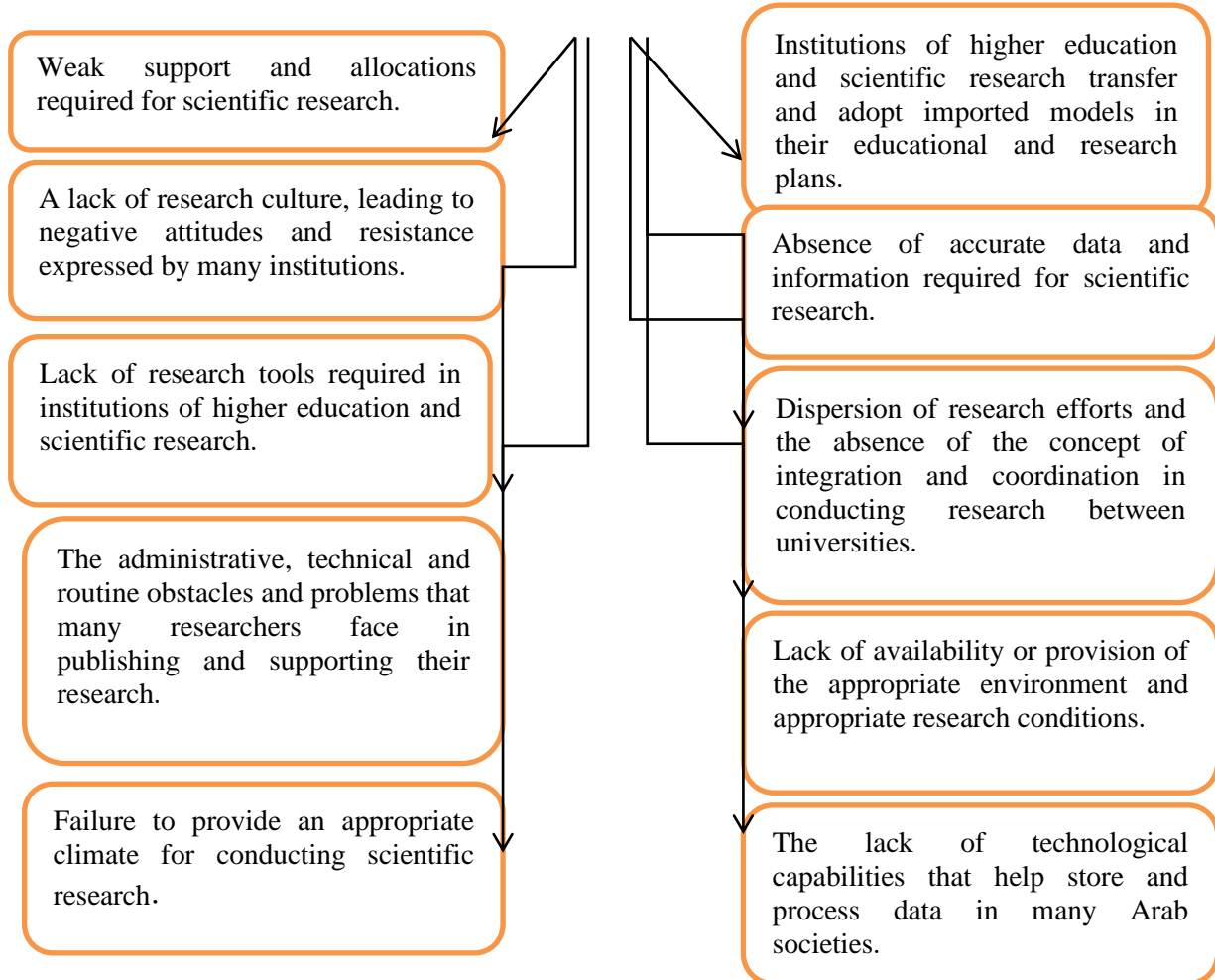
It is certain that a crisis The challenges of scientific research negatively affect the role of the Algerian university, by disrupting its performance to achieve the required goals in terms of production and development on the one hand, and community service on the other hand, and these challenges in turn hinder university professors, so that they face obstacles and disruption of the research movement instead of the presence of facilities therein.

Scientific research in Algeria faces many difficulties that negatively affect its profitability, despite the many attempts to develop and improve it. However, the challenges are still present and ongoing, due to the continued indiscriminate spending and misdirection of budgets allocated for this purpose. Financial support may be limited to conducting simple studies or... Scientific forums and issuing journals do not yield any results for comprehensive development. In addition to the various problems facing scientific research in most Arab countries through monitoring the results of Arab studies and research, which are as follows: **(Mtarios Michael, 2006)**

- The separation of research from practice, and the lack of a specific policy for research.
- Lack of awareness of the importance of research.
- The predominance of certain types of scientific research over others.
- Lack of a database, and insufficient financial resources.
- Weak communication between producers and consumers of scientific research, in addition to the small number of researchers and their assistants.
- Skill migration Scientific knowledge, and weak interaction between research and the educational system.
- Authority ignoring research, and lack of measurement tools.

We present the following chart, which explains the most prominent problems and challenges of scientific research in the Arab world: **(Amer Qandilji and Iman Al-Samarrai, 2009, p48)**

### Problems and challenges facing scientific research in the Arab world



We note through the plan that scientific research in general faces many problems, most of which are concentrated in the problem of the lack of the necessary capabilities and tools that contribute to the development of scientific research, due to our belief in a defect in the budget that is placed for this purpose, in which the modern technological means and the necessary tools are decreased, Scientific research centers of their difference do not play their real role, except for the absence of support from the responsible institutions to develop this sector.

Especially since Algeria is part of the great Arab world with which most of these problems and challenges face, so that the most prominent of these challenges is the presence of problems due to the weakness of scientific research, its production and quality. According to the database of 'Scopes', which contains summaries and references from articles published in academic

magazines, the Algerian universities published approximately 500 scientific papers during the year 2020, while King Fahd University of Petroleum and Saudi Minerals produced more than 2000 researches. The problem of quantitative and qualitative research production is mainly due to scientific research institutions and its ministries. Scientific research, specifically in the Arab countries, is closely related to educational institutions

## **2\_2\_ Mechanisms to advance the scientific research sector in Algeria:**

Scientific research must have in any country of the world and according to the circumstances and privacy related to it with clear goals. Scientific research needs qualified and trained human energies on the one hand, in addition to practical programs and plans on the other hand, in order to develop this field in line with the local environment. For the country, its plans and aspirations.

Perhaps the most prominent proposals to advance the process of scientific research, we mention it as follows:

- Providing the necessary enabling environments for scientific research and development. Perhaps the most important basics for achieving any work is providing the requirements and capabilities for carrying out this work, and scientific research is one of the most important priorities that developed countries struggle over, because progress and competitiveness have become dependent on the outputs of scientific research. The more countries succeed in providing... requirements, the better results you will get. These measures are represented in unleashing public freedoms, which university administrations must start from, in addition to allocating sustainable financial resources, and continuously measuring the state of the enabling environment, and even the state of knowledge in its various dimensions and elements, in order to provide the enabling environment and supply it with the needs that make its programs possible for investigation and achievement. **(The United Nations Development Programme, 2009, p209)**

- Adopting the university's university ranking criteria on the national and international ladder, which is based on the volume and quality of scientific production as a basis for the size of the government's budget allocated to the university compared to the rest of the universities, which will create an intense competitive environment and significantly develop the university's outputs and its scientific, economic and social role. **(Lamia Haroush and Muhammad Tawalbiyya, 2018, p 44)**

- The necessity of working to link scientific research to the problems of society and its various sectors, industrial, agricultural, and service sectors, private and governmental, through comprehensive surveys of these problems and the urgent need to solve them in a way that serves development and comprehensive development programs. Coordination here between research centers at the university and outside it plays an important role in This is an area to focus on qualitative research and prevent the repetition of research with similar problems, which would result in wasted spending, effort and time. **(Amer Saleh, 08/10/2021)**

- Academic freedom and support. It is necessary to secure a kind of academic freedom for researchers in Arab universities, in addition to financial and moral support and incentives for them, and to provide the widest opportunities for them to meet and interact with fellow researchers at the global level, through conferences and other scientific activities. (Amer Qandilji and Iman al-Samarrai, 2009, p50)

- It is necessary to develop electronic publishing and disseminate research on a large scale, by encouraging researchers to publish through various reliable scientific platforms, in order to provide this method in terms of effort, time, ease and availability, thus bypassing the researcher's connection to paper publishing, and then it is mandatory to create websites for every institution. Research, whether affiliated with university colleges or separate research centers, and constantly developing and updating it to keep pace with the current evolutionary situation.

### **Conclusion:**

Scientific research in research institutions is one of the most important indicators for the progress of countries and the promotion of their societies, as the production of scientific research has become in all its forms of theories, creativity, innovations and inventions at all levels, one of the important standards in global evaluation and classification, and it has also become one of the important demands to achieve comprehensive development, due to its plans to prioritize priorities Research.

However, Algeria, along the lines of other countries, has been overwhelmed by the importance of the role that scientific research causes to develop the state, and thus pushing the wheel of development towards investing these actions in favor of progress and development, but by describing and analyzing the status of scientific research in Algeria and its most prominent challenges, it shows us that the results of successive procedures It has not yet been promoted to the aspirations to be achieved. Rather, it is necessary to work more to raise and upgrade the level of scientific research and improve its outputs, and to carry out a set of reforms and procedures to achieve the expected results.

### **Recommendations:**

The study concluded with a set of recommendations, which are:

- Working to find appropriate solutions to the various problems that hinder the path of scientific research.
- It is necessary to provide peer-reviewed and classified international scientific journals affiliated with each college to contribute to increasing scientific publishing and improving its quality.
- Facilitating the tasks of researchers and supporting and encouraging them by the concerned authorities.
- Providing books and references in various scientific institutions to facilitate the scientific research process.
- Linking universities to each other, intensifying local and international cooperation between universities and increasing scientific exchange.

- Supporting and encouraging scientific researchers by improving Their living conditions, to focus more on the field of research and scientific production instead of thinking about ways to achieve a decent living.
- Facilitating field procedures for researchers in joint cooperation with various bodies, and setting decisions in this regard.
- Facilitate the participation of professors and students researchers to participate in conferences, set their own grants, and to include their expenses on the budgets responsible for developing scientific research.
- The state is built for distinguished research and raising recommendations and research to the relevant Ministry to diagnose and solve the various problems facing society.
- Working to establish a national body to evaluate scientific research and adopt the distinguished from it, and encourage researchers financially and morally, by setting annual titles and lists for distinguished researchers within local and international competitions and honoring them.
- Supporting research and scientific research centers financially and allocating budgets that are satisfied with them.

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