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The Role of the Legislative and Legal Framework in Promoting Scientific Research in the Arab World between Current Reality and Future Prospects. (A Case Study, United Arab Emirates)

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Abstract

Proceeding from the current status of scientific research in the Arab world and the need to develop it since societies' progress and international position depend on it, the present research sheds light on the current situation of scientific research in the Arab World, emphasizing the legislation's role in enhancing and promoting it. This study also aimed to provide valuable suggestions and legal recommendations to promote scientific research in the Arab world. In particular, this research highlights the UAE model as one of the leading countries in this field, which has found a place in the international arena through its interest in scientific research.

Keywords

Not given

JEL Classifications: J11, F43

1. Introduction

The interest in scientific research has increased dramatically with the advancement of various sciences. The allocation of considerable budgets to researchers and their scientific research studies in developed countries stems from the realization of these countries that the keys to their progress lie in supporting scientific research related to their various development programs¹.

Accordingly, global experiences confirm the importance of scientific research and its impact on developing nations and peoples, as it reflects positively on human

¹ - Dr. Fikri Ahmed Noman, *Legal Research: Its Basics, Theories, and Scientific Origins*, United Arab Emirates - Dubai - Al Bayan Commercial Printing Press, 2004-2005, p. 70 (slightly adapted).

progress in various dimensions. Scientific research is one of the main pillars for achieving sustainable development and is considered one of the most significant indicators of advancement and growth. The increasing demand for it justifies the importance of scientific research, especially in countries that rely on it to ensure the continuity of their progress and development and thus achieve growth and prosperity for their citizens.

If human progress is dependent on the progress of scientific research, in that case, university scientific research is then one of the areas that allow intellectual and creative advancement as a fertile field for communication and innovation through scientific production, which prompted many developed countries to adopt strategies that encourage innovation, authorship and scientific publishing. Hence, research has become scientific and technical research has long been one of the elements of universal human rights and the actual locomotive for the economic, industrial, social, and cultural development of society.

Scientific research in the Arab world is described as repetitive, consumed, and low in productivity. Indeed, the reality reflects the crisis the field experiences due to the low budget and the little amount spent on it; 1% of the gross national income. In addition, the most prominent feature is the absence of an inclusive and integrated legislative system that would make scientific research the cornerstone and the main engine for all sectors. Despite realizing the importance of knowledge production in achieving growth and development in the Arab world, the region is still lagging behind many Western Asian countries in research production. On the world level, Western academic and research institutions still lead in research volume and quality and monopolize knowledge and debate about the Middle East region, which affects global geopolitical² perceptions and actions.

If scientific research is one of the foundations of progress and development, in that case, the legislative framework's role in enhancing and empowering scientific research cannot be hidden. This view depends on the development of an entire system of education, and this matter is related dialectically to the existence of legal references that guarantee effective institutionalization of the field of scientific and technical research alike. In other words, this system is an integrated and intersecting legal system that incorporates all stakeholders in the public and private sectors and the possible festivities to help develop the field and make it one of the pillars of sustainable development in the Arab world. Legal references remain the cornerstone for advancing scientific and technical research in the Arab world. The legislative framework also dramatically supports and enforces one of the universal human rights recognized by nations within the economic, social, and cultural rights.

The lack of the necessary infrastructure for research constitutes an obstacle in some Arab countries. However, the lack of well-defined strategies and effective public policies is common in all Arab countries. This issue is closely related to the legal and legislative system's weakness in education, training, and scientific and

² Executive summary of a symposium on the topic "Scientific Research in the UAE between Present Challenges and Future Opportunities", Knowledge and Policies Council, Mohammed bin Rashid School of Government, May 2015.

technical research. Determining these strategies or policies stems primarily from the highest legislation within the state, which is the constitution that defines the normative or standard rules. The corporate or membership laws, then the ordinary laws or legislation that give public strategies and policies their legal support and explain their foundations and general directions, have no room for a public policy to be untranslated to legal and constitutional requirements.

This paper seeks to cover one of the significant aspects of scientific research that many social and legal science students overlook. This aspect relates to the role that the legal requirement can play in developing and strengthening the field of scientific and technical research. The significance of this issue stems from the crisis in which the latter is floundering and which is reflected in all other economic, social, and cultural areas, whether related to weak allocated budget or weak infrastructure and lack of governance, the spread of bureaucracy and administrative and organizational problems and the lack of convergence of programs and strategies. All of these problems can answer part of the question. A significant concern is the regulatory legal and legislative framework and its efficacy, which requires us to address several issues; the most important ones are as follows:

1. What is the current reality of scientific research in the Arab world?
2. What is the role of the legal framework in developing scientific research?
3. To what extent can the legal dimension enhance the presence of scientific research?
4. How can the legal framework contribute to the development of scientific research?

These problems are mainly related to the initial hypotheses, which are:

- The crisis experienced by scientific research is dialectically related to the weakness of the legal system organizing this field.
- The legislative framework can answer, to a large extent, the problems of weak scientific research in the Arab world.
- An effective and efficient legal system that contributes to the development of scientific research and the advancement of the field of innovation and creativity.

Answering these problems and verifying the hypotheses put forward can be done through the following axes:

First Research Investigation

The crisis of Scientific Research in the Arab World, a Diagnosis of Reality

Preamble:

In this section, we will address the current reality of scientific research in the Arab world. We will cover the various elements that constitute the crisis of

scientific research in the Arab world, with data and statistics on the extent of this crisis.

Knowledge is the new type of capital based on ideas, experiences, and best practices because it is the most valuable. It is an infinite resource characterized by abundance rather than scarcity, unlike the traditional factors of production that were limited to money, land, work, and organization³.

Therefore, we will address this issue through the following demands:

First Demand

Theoretical Rooting of Scientific Research

The definition of scientific research refers to the definition of two concepts: Research and Science. The first is linguistically related to the verb, so it is said that he searched for something, that is, he looked for it and asked about it⁴, and the concept linguistically also refers to tracking and investigation; the Almighty said: "God sent a raven searching the earth." Surat Al-Ma'idah: 131 indicates that research is a concept that refers to exploring a specific issue to discover its truth, whatever it is. Technically, research relates to the resulting information and the study based on the investigation and follow-up of a specific topic according to a unique approach to achieving a particular goal, whether by adding, collecting, arranging, or other purposes.

As for the concept of science, it is considered more ambiguous, as it is a language that is related to knowledge, and as a term, it is a group of human knowledge that would help to increase human well-being. Thus, the sum of human experiences makes man able to predict. On the other hand, Science also means understanding the universe's phenomena, causes, and effects⁵. Therefore, Science is the realization of a thing with its reality; this realization does not come except through understanding or prediction and linking causes to causes. Accordingly, Science is a set of issues and holistic principles that revolve around one subject and are treated with a specific approach and end up with some theories and laws, such as the Science of agriculture and the Science of law (. .).⁶

In combining the two concepts of science and research, we can define *scientific research* as "the realization of thought and an organized mental effort around a set of issues. Scientific research requires searching and investigating the principles or relationships to reach the truth that is the key to the best solutions⁷. " It was also defined as "a method that aims to Disclose new information, facts, and relationships and ensure their correctness in the future, in addition to reaching

³ - Dr. Najm About Najm, Knowledge Management Concepts, Strategies and Operations, Jordan, Al-Warraq Publishing and Distribution Corporation, 2005, p. 21

⁴ Mukhtar Al-Sahah, by Sheikh Imam Muhammad bin Abi Bakr bin Abdul Qadir Al-Razi, Dar Al-Maaref edition, Cairo - 1990, p. 41

⁵ Jaber Gad Nassar: The Origins and Arts of Scientific Research, Dar Al-Nahda Al-Arabiya, Cairo - 2002 - p. 12.

⁶ Ahmed Abdel Karim Salama : Methodological Principles for the Preparation of Scientific Research - First Edition - pg. 13,

⁷ Ahmed Abdel Karim Salama : The previous reference - p. 14

the public college, i.e., deepening knowledge, revealing the truth, and searching for it through the analysis of phenomena, facts, and concepts⁸.

Scientific research is a systematic effort to understand. It results from an acknowledged need or difficulty in studying a complex phenomenon whose interest transcends personal and immediate concerns. It presents the problem's solution in the form of a hypothesis and thus is a systematic practice that concerns the study of a problem or question and involves facts. They must be verified to achieve an end: to solve a problem or answer a previous question or hypothesis, which makes scientific research de facto an act of interpretation. And if science is the organized tabulation of knowledge, research is the means of science or its tool to reach the facts, rules, and laws used to explain phenomena and predict their behavior. Scientific research means the organized study to get solutions to solve problems, and because it is scientific, it must be systematic. That is, it has methods and procedures, rules, and steps⁹.

Scientifically speaking, research is a well-structured human behavior that aims to investigate the validity of information or hypothesis, clarify a situation or phenomenon, and understand its causes and mechanisms of treatment. Research requires finding a pivotal solution to specific problems or social behaviors relevant to individuals and society. In addition, it might require testing the degree of the success of new technologies for development, as some consider it a behavioral system aimed at the growth of human cognition and increasing its ability to benefit from above and below the soil and to provide a decent civilized life for the individual and society. It is therefore a conscious procedural behavior that occurs through various planning and implementation processes to obtain results¹⁰. Scientific research has goals that it aspires to achieve. On the one hand, it aims to solve problems systematically and thus reach innovations or modern inventions in a particular field or specialization. It also aims to get results that one can codify, generalize, and implement and then work to take specific actions and procedures. That will facilitate the implementation of the obtained results¹¹.

As a dynamic process or rational approach, scientific research allows for examining phenomena and problems to be solved and getting accurate answers from investigations. The process associated with it is characterized by a rigorous methodology that leads to acquiring new knowledge. Its functions describe, explain, understand, control, and predict facts, phenomena, and behaviors.

The method of scientific research changed with the Second World War. The research was no longer carried out in small teams and it moved from a craft organization to an industrial organization, where learning the rules of research

⁸ Jaber Gad Nassar: The previous reference, p. 14, also see: Dr. Zain Badr Farraj: The Origins of Legal Research - Arab Renaissance House - 2000, p. 19.

⁹ Salah El-Din Fawzy: Methodology in the Preparation of Legal Letters and Research, Dar Al-Nahda Al-Arabiya -2000 -p. 2.

¹⁰ Hamdan Mohamed Ziyad: Scientific Research as a System. Modern Education Series. House of Modern Education, 1989 edition, Amman - Jordan, p. 304.

¹¹ Ali Sayeh Jabbour : Scientific Research in the Arab World : Obstacles and Development Mechanisms, Al-Shamil Journal of Educational and Social Sciences, Martyr Hama Al-Akhdar University - Al-Wadi, Vol. 1, No. 1, June 2018, p. 111.

through individual movement within the research activity was no longer possible. The number of collaborators in the team increased. In addition, the pace of production accelerated in such a way that researchers will have to familiarize themselves with the rules of research before practicing it. For the rules of scientific research to be transferable and known by the mass of researchers, it was necessary to codify them. Thus, the methodology is considered a subject of modern teaching.

With this change, scientific research has been reclassified according to UNESCO into:

- **Basic research Studies:** They are mainly concerned with an in-depth understanding of phenomena and discovering new areas of study, from which it is originally intended to develop our scientific knowledge. This concept occurs by developing existing knowledge and initiating new knowledge from existing theories.

- **Applied research Studies:** They are research studies directed to serve a purpose in one of the fields where the results of applied research are used to produce new materials and new devices or to invent systems and new ways to address some issues¹².

It also defines three basic levels in social sciences and humanities research: With this change, scientific research has been reclassified, according to UNESCO.

- **Description:** The description is to identify the nature and characteristics of phenomena and sometimes to establish links between them. The explanation may be the purpose of a research project: for example, to highlight all aspects of a service, department, agency, or business. The description may also constitute the first stage of the research; In this case, it may specify the results of an observational or exploratory investigation. Rigorous methodology and assumptions must support this assumption.

- **Classification:** a grouping or arrangement that allows drawing comparisons or making adjustments. Thus, the observed facts are organized, structured, and categorized under headings and categories to facilitate comprehension and understanding.

- **Interpretation/understanding:** through which to answer the question why? It is to show how this phenomenon is born and how it is. Interpretation consists in clarifying the relationships between phenomena and determining the cause or conditions for the occurrence of such phenomena or events.

On the other hand, since scientific research is one of the three functions on which university education is based, universities are expected to generate the required knowledge. To gain knowledge and understanding, universities should promote scientific research to access human knowledge. They should also put it at the service of researchers and find appropriate scientific solutions for the development of life in societies where it is not possible to talk about a university in the true sense in the absence of scientific research. Based on Talcott Parsons' perception of the university, the latter represents a sub-form related to the systems, organizations, and other social institutions. In addition, this source

¹² (The same reference) pg. 112

provides the labor market with the disciplines and human resources necessary for the requirements of comprehensive development in society. Thus, according to Parsons, it represents the university, the mother organization for all other organizations¹³.

The Second Demand

The crisis of Scientific Research in the Arab World

It is almost unanimous for those interested in social studies that scientific research in the Arab world is still modest. Despite the collective awareness of the importance of scientific research in achieving development and advancement, however, the reality of the crisis experienced by the field translated by scientific studies, especially statistical ones, which indicate in numbers and without any additions that scientific research in the Arab world is dying and living in the reality of a structural and functional crisis.

Addressing the scientific research crisis in the Arab world undoubtedly triggers discussion about the causes of Arab backwardness from the path of civilization and the successive scientific developments in the civilized countries of the world. This crisis, if it is related to what is structural, is also due to what is functional and is linked more to the financial, as the existence of a developed and active scientific and research field depends on the presence of areas of spending on it, and investing in it as an area that generates wealth. Compared to developed countries and its Asian counterparts, the Arab world produces far fewer scientific publications, with the region collectively contributing more than 1% of US research publications, 3% of UK publications, and 16% of Chinese publications spending more than 1%. Social scientific research in the Arab world suffers from a lack of funding, and even the richest Arab countries depend on scientific research and development in terms of GDP. The United Arab Emirates leads the Arab world in terms of publications of social scientific research. Still, despite this, it spends a large proportion of its GDP on research and intellectual contributions compared to other countries such as Jordan and Egypt, which spend 0.43% of their GDP on research. In comparison, Japan spends 3% of its social GDP on scientific research, while Finland spends about 4% and Israel 4.3%.¹⁴

The published Arab scientific production (2008-2018) amounted to approximately (410,549) research papers and scientific papers. The Kingdom of Saudi Arabia stood as the most productive in research production (25%). In comparison, Egypt's production rate was 24%, and Tunisia's 11%, while the

¹³ Gharbi Sabah : The role of higher education in the development of the local community, an analytical study of the trends of administrative leadership at the University of Biskra, Mohamed Khider University of Biskra, thesis for obtaining a PhD in Sociology, specialization in development, academic year 2013-2014, University of Mohammed Khider Biskra, Faculty of Humanities and Social Sciences, Department of Social Sciences, p. 24

¹⁴ Executive summary of a symposium entitled "Scientific Research in the UAE between Present Challenges and Future Opportunities", Knowledge and Policies Council, Mohammed bin Rashid School of Government, May 2015.

scientific output of each Algeria and Morocco was limited and did not exceed 8% in Algeria and 6% in Morocco. In comparison, other Arab countries witnessed a weakness in scientific publications during this period that did not reach 5%¹⁵. The field of electrical and electronic engineering is the most popular. It topped the domains in (16) Arab countries: Saudi Arabia, Egypt, Tunisia, Algeria, Morocco, UAE, Jordan, Qatar, Lebanon, Iraq, Kuwait, Oman, Sudan, Palestine, Libya, and Bahrain. It also topped the field of agricultural science in Syria and materials science in Yemen. Scientific research on infectious diseases is produced in Mauritania, Djibouti, Comoros, and research on occupational and environmental public health is produced in Somalia.¹⁶

In a scientific research output in the Arab world, a study carried out by the Arab Scientific Society Organization in 2021 investigated the number of scientific papers published in international scientific journals as one of the indicators of the outputs of scientific production; during this study, the focus was shed on Arab research production during the last twenty years. , i.e., from 2001 to 2020, Dr. Mozah bint Muhammad Al-Rabban noted that the number of papers and publications has increased from about eight thousand papers in the year 2001 to about eighty-four thousand in the year 2020, which is more than tenfold. This growth in number is not limited to the Arab countries; it is a global phenomenon triggered by the growing interest in the role of science in the economy and well-being, in addition to the availability and development of research measuring tools and devices. Not to mention the global revolution in the means of communications and transportation. As a result, global production has increased from about 747,855 sheets of paper in 2001 to 2,047,897 in 2020, just under three times since most global production comes from countries that have reached or are close to flattening their curve, unlike developing countries that are still seeking to increase their research output¹⁷.

According to the same researcher, the total number of papers produced by researchers from Arab countries during the study period was 601,425 papers, while the world had 25,600 articles; this means that the ratio of Arab production to the world is about 2.35%, noting that the proportion of the population of the Arab world to the world's population according to the statistics of the World Bank is about 5.2%, which indicates a weakness in scientific production for the world. For comparison, the output of the University of California alone in the same period was 635,663 research papers, which is more than the production of all Arab countries. On the other hand, compared to other countries such as Iran and Turkey, the

¹⁵ Khalil Muhammad Al-Khatib: The Reality of Scientific Research in the Arab World 2008-2018, an analytical descriptive study, the official website of the Arab Scientific Society Organization, <https://arsco.org/article-detail-1656-8-0>

¹⁶ (The same reference)

¹⁷ Moza bint Muhammad Al-Rabban : Scientific Research in the Arab World 2001/2020 Arab Scientific Research 2001-2020 An Overview of Arab Scientific Research in Twenty Years, the official website of the Arab Scientific Society Organization, previous reference

number of published papers is high compared to what was published in the Arab world during the same period.¹⁸

Scientific research in developed countries constitutes 88% of the total work burden of a faculty member. In contrast, it represents, at best, only 2% of the total workload of a faculty member in the Arab world. In addition, in most Arab universities, scientific research is oriented and it is conducted, most often for academic promotion and confirmation, and rarely addresses community problems and issues¹⁹.

In addition, another indicative factor for the cognitive and scientific decline in the Arab world is the academic ranking index of international universities. The ranking is presented by the Times Higher Education World University Rankings, which is the most significant and most prominent ranking of universities in the world, considered only one Arab university to be ranked.

Providing financial resources in some Arab countries might be the reason for the weakness and regression in scientific research. However, the provision of financial resources is not a problem in some other countries, such as the Gulf countries, with a simple comparison between the abundance of the allocated financial resources and the volume of scientific production for these countries. Some researchers, experts, and thinkers might consider this issue unsatisfactory. According to one of the scientific university leaders in the Arab Gulf, "if the Gulf countries, in particular, have achieved through great financial wealth, significant achievements in vital areas in the infrastructure of the state, its active contributions in employing all that financial abundance in the direction of the construction of infrastructure, in the field of knowledge production, are still modest if not simple and superficial ²⁰contributions.

On the other hand, financial resources (in the form of government support) can negatively affect the development of scientific research in higher education. The best illustration is the Tunisian experience before 2010, for example, but not limited to, where the development of scientific and university research did not reflect positively on economic and social growth through the different classes of society and failed to create jobs. The reasons for this were, at least in part, a lack of academic freedom and the fact that regime loyalty was considered more important than competence²¹.

Other manifestations of the scientific research crisis in the Arab world ²²are related to the brain drain. Arab countries are losing large numbers of their scientists and their high competencies due to what is known as brain drain or brainwashing,

¹⁸ (The same reference)

¹⁹ Ali Sayeh Jabbour : Scientific Research in the Arab World: Obstacles and Development Mechanisms, previous reference, p. 112.

²⁰ Abdullah, Youssef Abdel Ghaffar, Production of Scientific Awareness, Illuminations for the Role of Arab Universities in Scientific Research and Community Service, first edition, Arab Thought House, Cairo, Egypt, mentioned by Khalil Muhammad Al-Khatib: The Reality of Scientific Research in the Arab World, p. 5

²¹ UNESCO Science Report 2015-2030, previous reference.

²² Gharbi Sabah : The role of higher education in the development of the local community, previous reference, p. 72

most of which are heading to developed and industrialized countries. This phenomenon constitutes a severe loss for Arab development and affects scientific research institutions to acquire capacities that contribute to the production and exchange of knowledge. This phenomenon played a crucial role in deepening Arab scientific research crisis and the gap between Arab countries and other developed countries at the development level.

The association of scientific research with higher education since its foundation has made the latter responsible for expanding the horizons of knowledge and a means to enhance it. In the Arab countries, the focus is “theoretically” on this role as one of the main goals of higher education. However, the current situation indicates that scientific research and knowledge development do not receive enough attention or priority from the faculty members. There is neither a supportive environment for promoting research studies nor sufficient and adequate funding from the governments. Often, research in Arab universities studies come as a repetition of previous research or a compilation of scattered studies, papers, and reports.²³ According to the UNESCO Science Report 2015-2030, few teaching staff in Arab universities conduct and publish research in refereed scientific fields and are registered in international lists. According to the same report, the research activities of faculty members in public and most private universities represent 10% of their total academic duties, compared to 35-50% in European and American universities. Most scientific research studies in the Arab world are carried out through the higher education system, which suffers from its problems, including the scarcity of resources and the increasing number of students. With the spread of obsession with world university rankings, university presidents became confused about whether their institutions should target knowledge generation, i.e., scientific publications, or knowledge transfer, i.e., teaching²⁴.

The Second Research Investigation

The Role of Law in the Development of Scientific Research

There is no doubt that the legal system has a leading role in developing and advancing the fields of human life, including the scientific research field. Referring to the Arab case, it is noticeable that there is no Arab country that does not have councils or studies and research centers established by laws that define strategies and public policies in scientific research and its advancement. However, the question that remains on the table is mainly related to these legislations’ role in developing the field of scientific research. The most important thing is to enable the latter to play its essential role in achieving the development and development of societies because the legislative framework is an important pillar that translates

²³ Gharbi Sabah : The role of higher education in the development of the local community, previous reference, p.

²⁴ UNESCO Science Report 2015-2030 dated 10 November 2015.
https://unesdoc.unesco.org/ark:/48223/pf0000235406_eng

the conditions of convergence and coherence between public policies and strategies.

Therefore, we will dedicate this axis to a briefing about some of the legislations and laws that frame the scientific research system in some Arab countries, comparing them with the legislations in developed countries to touch on the legal system's role in developing and promoting scientific research.

The First Demand

The Legal System and its Contribution to the Development of Scientific Research in the Arab World

The Universal Declaration of Human Rights issued in 1948 stipulated many economic, social, and cultural rights as general principles, such as the right to work and the right to rest, the right to social security, and the right to an adequate standard of living for the maintenance of health and well-being. The right to education provided that it is free in its early stages, the right to participate in cultural life, enjoy the arts, contribute to scientific progress and benefit from its results, and the right to protect the moral and material interests resulting from an individual's scientific, literary or artistic production. Although the International Covenant on Political and Civil Rights issued in 1966 also stipulated some economic and social rights, such as the right of individuals to form and join trade unions. The United Nations has preferred to issue a separate international agreement that provides social, economic, and cultural rights. This agreement resulted in the International Covenant on Economic, Social, and Cultural Rights, which included a set of rights and freedoms, including (...) the right to education and culture (Article 13). Article 14 stipulates free education in its early stages and the right of the individual to participate in cultural life, the right to enjoy the benefits of scientific progress and its applications, and benefit from the protection of material and moral interests resulting from scientific, artistic, and literary works.

Since the right to education is one of the basic human rights, the Arab constitutions included a large number of human rights and liberties stipulated in international charters and norms in general, and the two International Covenants on political and civil rights and freedom and economic and social rights and privileges in particular, even if they differed in that amount and the level of guarantees. Provided from one constitution to another. The amended Egyptian Constitution of 2019, especially in its article²⁵ 23, considered that "the state guarantees freedom of scientific research and encourages its institutions, as a means to achieve national sovereignty, build a knowledge economy, sponsor researchers and inventors, and allocate to it a percentage of government spending not less than 1% of the national product." Gradually escalate until it is in line with global rates. The state also guarantees ways for the effective contribution of the

²⁵ UNESCO Science Report 2015-2030 dated 10 November 2015.
https://unesdoc.unesco.org/ark:/48223/pf0000235406_eng

private and civil sectors and the contribution of Egyptians abroad to the renaissance of scientific research. It is in this chapter that it supports, through the highest legislation in the state, the freedom of scientific research as a mechanism to achieve national sovereignty. International gross national calendar and global rates, and with the contribution of all actors to the development and advancement of scientific research, as well as linking it to human rights, given that higher education and scientific research are human rights²⁶.

For its part, the Jordanian constitution singled out Article 6 of Chapter Two, entitled Jordanians' Rights and Duties, by defining the right to education as "the state guarantees work and education within the limits of its capabilities and guarantees tranquility and equal opportunities for all Jordanians." While the Jordanian constitutional legislator, in Article 15 of the same chapter, recognized the freedom of scientific research, making it among the state's tasks and duties to guarantee freedom of scientific research and literary, artistic, cultural, and sports creativity in a manner that does not violate the provisions of law, public order or morals.

In the same fashion, the Moroccan constitutional legislator also approved in Article 26 of the 2011 Constitution the support of the Moroccan public authorities by appropriate means, the development of cultural and artistic creativity, scientific and technical research, and the promotion of sports. The same authorities also seek to develop and regulate these areas independently. According to Article 31 of the Moroccan Constitution, and on a controlled democratic and professional basis, the state and public institutions and the territorial authorities are working to mobilize all available means to facilitate equal rights and access (...) of male and female citizens to modern and quality education, in addition to facilitating young people's access to culture, science and technology, art, sports, and recreational activities while providing the appropriate conditions to unleash their creative energies in all these areas.²⁷

The Moroccan constitutional legislator has assigned the jurisdiction of legislation, defining directions, and general organization of the fields of education, scientific research and professional training to Parliament, as it is a legislative and representative authority of the nation, responsible for identifying the major milestones in the field of scientific research in Morocco. It also stipulated the necessity of creating an authority entrusted with the concern of all matters of public policy in the field of education, training, and scientific research. This body was represented by what was stipulated in Article 168 of the Constitution and was called the Supreme Council for Education, Training and Scientific Research, which is an independent advisory body, its mission is to express an opinion on all public policies and issues of a national nature that concern the fields of education, training, and scientific research. As an independent advisory body for good governance, sustainable development, and participatory democracy, this council seeks to be a

²⁶ Article 24 of the amended Egyptian constitution for the year 2019, previous reference.

²⁷ Article 33 of the Moroccan Constitution of 2011.

crucible for strategic thinking on issues of education, training, and scientific research and a pluralistic space for discussion and coordination on various issues related to these areas. One of its roles is to enlighten decision-makers, doers, and public opinion, through quantitative and qualitative, regular, and accurate evaluations of the various components of the education and training system and scientific research that he accomplishes.²⁸

Governments should sponsor sciences, literature, arts, and national cultural heritage, preserve them, help disseminate them, and encourage scientific research²⁹. The Iraqi constitution of 2005 made it a means to achieve peace, as it stipulates in article 34 that the state shall encourage scientific research for peaceful purposes that serve humanity. It will support excellence, creativity, innovation, and various manifestations of creativity.

If some Arab constitutions have clearly stated the priority of attention to scientific research as a tributary of development, others have made it among the human rights issues, as education is considered an essential factor for the progress of society, which is compulsory in its primary stage and accessible at all locations within the union. The law lays down mandatory plans for the dissemination and generalization of education at its various levels and the eradication of illiteracy. In some countries, the legislation regulating the field of scientific research and higher education remained inappropriate to the constitutional texts and the requirements contained in the revised constitutions after the Arab Spring. The Kingdom of Morocco did not update the legislation in the practical research field (Law 00.001) despite the constitutional review of 2011, which prompted the Supreme Council for Education and Training in Morocco to issue a report and recommendations calling for more attention to the organization of the field of scientific research, whether independently of Higher Education or within the legislation of the latter where he called for upgrading the scientific research system, by building a national and institutional system integrated between scientific research institutions, to reduce the prevailing dispersion, simplify administrative and financial procedures, motivate researchers, and the optimal investment of financial resources through their development and diversification.³⁰

As we have already mentioned, the Arab countries face many obstacles, including the lack of a focus on scientific research priorities and strategies, insufficient funding to achieve research goals, lack of awareness of the importance of sound scientific research, inadequate networking among researchers, limited cooperation efforts and brain drain. These factors result in weak profitability in this field and affect other linked and relevant areas.

On the other hand, and at the level of Arab strategies for the development of scientific research, the proposal of the "Arab strategy for scientific and technical

²⁸ The official website of the Moroccan Higher Council for Education, Training and Scientific Research <https://www.csefrs.ma/>

²⁹ Article 24 of the Qatari constitution

³⁰ The opinion of the Supreme Council for Education, Training and Scientific Research on a draft law to change and supplement Law No. 01.00 related to higher education, opinion No. 1/2015, issued by the Council in April 2015.

research and innovation in the world in 2009” was presented, which came to implement the recommendations of several conferences of ministers responsible for higher education and scientific research in the Arab world, this strategy was approved by the Minister’s Conference that was held in Riyadh in 2014. It aimed to help identify research and development sectors of mutual benefit and develop them in areas of common interest in the region, as well as simplify research and development funding in the region to avoid duplication of efforts. The strategy aimed to link the field of scientific research with economic development. It also aims to link higher education with research, especially with regard to pushing towards building a partnership between scientific research, universities, and the private sector, including working with government officials, decision-makers, the media, companies and citizens, and investing in training and higher education as a means to help in building a block of science and technology³¹ experts. For example, but not limited to, the Moroccan system of science and technology is mainly centered around the Ministry of Higher Education, Scientific Research and Training of Executives and the Permanent Ministerial Committee for Scientific Research and Technological Development formed in 2002 in addition to a number of centers and institutions that contributed to the formulation of the national support program and a future vision for scientific research in Morocco and the development of the field based on national innovation and allocating a percentage of GDP for research and development activities to reach 2% by 2030. The Moroccan innovation strategy was launched during the first national innovation summit in June 2009, and the idea is to create a network of influencers in innovation, including researchers, students and academics, to help them develop innovative projects through public-private³² partnerships.

As part of its plan to embrace the knowledge economy, the Kingdom of Saudi Arabia has launched a multi-billion-budget development program to build six cities, green fields, and industrial zones. The Kingdom is keen to develop centers of cooperation with the outside world, invest more in information technology, and adapt science and technology to preserve its natural resources and protect the environment.³³

The Second Demand

The Role of the UAE Legislation in Promoting Scientific Research

Any discussion about the future must include scientific research in it, as it is an essential and pivotal part, whether it is related to higher education, technical, or the field of innovation and invention. Education is a means of preparing people and providing them with the knowledge and skills necessary to meet the challenges of the future and to operate the community process. Also, it is a tool that ensures

³¹ UNESCO Science Report 2015-2030, previous reference.

³² The same reference

³³ The same reference

participation in the practical and technical revolution sweeping the world and investing its products to attain the goals that contemporary societies aspire to achieve.³⁴

The UAE aspires to achieve a knowledge economy (that depends on an effective university infrastructure) through the establishment of governmental and independent research institutions supporting research and innovation and the improvement of higher education curricula in a way that encourages creativity and effectiveness. Yet, until 2015, it did not spend more than 2.0% of its GDP on development and research³⁵. This prompted many experts and researchers in the field to call for developing policies that support scientific research and drawing future plans to increase the percentage of spending on knowledge production to reach 5.1% of its GDP, three times what it currently spends.

On this premise, the UAE focused on achieving the knowledge economy, as it is not possible to talk about the latter without scientific research, which prompted the United Arab Emirates to develop the 2011-2013 government strategy. This plan was adopted in 2010 and it included several priorities; one of them was the development of a competitive knowledge economy. With this priority, the goal is to increase and improve innovation and research and development activities, in partnership with the public and private sectors, with the aim of developing the pillars of the knowledge economy. In 2014, the UAE government announced new plans.³⁶

"Undoubtedly, the rapid and successive development of information and communication technology beyond geographical boundaries has forced educational institutions and educational decision makers to redefine the nature of traditional education, teaching methods and the school,"³⁷ and the trend towards creating new spaces for innovation and scientific creativity, and in this regard, the United Arab Emirates launched in 2018 the Emirates Platform for Scientific Laboratories, where the platform works to link laboratories in the country with scientists and experts, as well as providing scientists with the opportunity to directly and quickly access more than 150 distributed accurate research devices all over the country, in addition to world-class research equipment and devices, with the aim of enhancing the local scientific research effort, supporting researchers and academics, and developing scientific and technological capabilities in the UAE³⁸.

In the same context and in order to promote the knowledge economy, the UAE government launched the UAE Advanced Science Agenda 2031, which aims to employ advanced sciences in developing and innovating solutions to future

³⁴ Gharbi Sabah : The role of higher education in the development of the local community, previous reference, p. 74

³⁵ Executive summary of a symposium entitled "Scientific Research in the UAE between Present Challenges and Future Opportunities", previous reference

³⁶ UNESCO Report 2015- 2030

³⁷ Dr. Abdullah Muhammad Al-Amiri's intervention at the Second Annual Conference for Education on the topic "The Role of National Legislation in Developing the Sector", October 11, Al-Ittihad Newspaper <https://www.alittihad.ae/article>

³⁸ See the Emirates Science Laboratories Platform, <https://u.ae/ar-ae/about-the-uae/science-and-technology/inspiration-behind-the-advancement>

challenges and supporting the government's efforts to achieve the goals of the national agenda in the UAE Vision 2021, by supporting science and sectors related to science and technology outputs through three successive strategies, starting from the 2018³⁹-2021 strategy.

As the UAE seeks to promote a knowledge economy, it is working in this regard to encourage research production, with a special focus on science. Increasing the percentage of investment in science with the establishment of government funds dedicated to supporting new technologies and bringing in global talent to build capacities and a number of branches of Western educational institutions. In addition, the UAE supports research institutions (such as the National Commission for Scientific Research and scientific research for new generations, which comprises 79 accredited higher education institutions, including public and private universities), It also works within the strategy of developing and advancing the field of education to grant individuals, research teams, institutions and companies at the national level competitive academic and scientific scholarship opportunities. The UAE has also sought to achieve an advanced scientific leap and draw a new knowledge reality that consolidates its position locally and globally. The UAE Vision 2021 is one of the inspirations for progress, ambition, and determination; a vision that aspires to make the UAE one of the best countries in the world by 2021⁴⁰. The UAE vision includes a basic pillar based on devoting a knowledge-based and competitive economy, driven by innovation, research, science, and technology, and led by skilled Emirati competencies.

In 2021, the UAE government launched a policy for the governance of research and development (R&D). It established the Emirates Research and Development Council to promote a national knowledge system that supports the national economy and the country's position as a global center for science, technology, research, and development, in order to improve the quality of research and development in all sectors. This adopted policy aims to establish an integrated and strong national system for research and development, unifying its orientations and efforts to build a knowledge-based economy and to attract specialized expertise and talents in a way that enhances the country's position as a global center for science, technology, research and development. As well as focusing investment on research and development to meet national challenges, the existence of a mechanism to ensure the activation of operational plans to achieve the goals of national priorities, and the identification of a central body for the governance of research and development, responsibilities and a clear definition of roles. The activation of a mechanism at the national level to unify the data of research and development activities and facilitate the process of collecting and

³⁹ See the UAE Agenda2031 <https://u.ae/ar-ae/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/national-advanced-sciences-agenda-2031>

⁴⁰ Executive summary of the scientific research symposium in the UAE between present challenges and future opportunities, previous reference.

analyzing them, monitoring their performance, and determining their economic and social ⁴¹effects.

2. Conclusion

The revolution today depends on advanced scientific knowledge and the optimal use of flowing information, and that the human mind is the first pillar in this revolution, where competition between the countries of the world will not be in the field of their material or natural wealth only or in the field of military power, but in the field of wealth human minds, and the ability of these minds to innovate, create and excel, and here is the decisive role of scientific research in the development of this human wealth

Social science research provides countries and future generations with access to local information and knowledge. Researches are also of great importance in preserving national identity through a deep contemplative examination of the lives of individuals, dealing with the rich history and culture of the Arab world, and identifying the stages of their impact on economic and social forces through documents and analyses developed in the light of events and circumstances because of globalization⁴².

3. First: Research Findings

We concluded from the foregoing that the reality of scientific research in the Arab world does not require further examination and scrutiny, as the current situation of scientific research has become clear to all observers. The responsibility is out of their hands. They have provided many solutions for the advancement of Arab scientific research, and the role of decision-makers in implementing these solutions remains on the ground.

4. Second: Recommendations:

Accordingly, we conclude from the foregoing the following recommendations:

1. Enacting laws that criminalize plagiarism of scientific research and prevent the tampering of scientific research by proxy in order to establish minds that think, research, advance, innovate and produce new knowledge that matches the world.
2. Establishing institutions that sponsor scientific research and honor researchers with awards on behalf of different types of thought and knowledge.

⁴¹ See UAE Research and Development Governance Policy, <https://u.ae/ar-AE/about-the-uae/science-and-technology/the-research-and-development-governance-policy>

⁴² Executive summary of a symposium on the topic "Scientific Research in the UAE between Present Challenges and Future Opportunities", Knowledge and Policies Council, Mohammed bin Rashid School of Government, May 2015.

3. Compulsory twinning between various government institutions and private sectors with universities and scientific research centers in order to address real-world problems.
4. Effective use of scientific research by government agencies for preparing strategies and setting policies.
5. Raising the level and percentage of liaison and coordination between government agencies and academic institutions to produce knowledge that benefits the preparation and implementation of public strategies and policies.
6. Disseminating largely the scientific research carried out by the institutions that have been entrusted with carrying it out,
7. Involving and motivating the private sector to support research in areas of national priority while promoting a culture of research and encouraging the private and government sectors to spend on research
8. Allocating national budgets for research and funding for a variety of fields, regardless of the applied benefits to any specific sector or field.

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