

*University startups are the engine of economic growth  
in the age of knowledge economy*

**المؤسسات الناشئة الجامعية محرك النمو الاقتصادي  
في عصر اقتصاد المعرفة**

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**Abstract:**

This study aims to identify the growing role of university startups in Algeria and their role in national development, wealth creation and opening new fields of work, and its adoption as a strategic direction by the Algerian government by supporting innovative ideas and national capabilities for scientific research to allow them to improve their indicators to access the knowledge economy, based on presenting the reality of these institutions and ways to develop them.

This study showed that the field of startups is a promising one, which should be further developed according to an integrated strategy in which all sectors participate, such as the higher education and scientific research sector, the Ministry of Knowledge Economy and Startups in order to improve Algeria's ranking within the global knowledge index and push it to be a tributary to the level of ambition of the new economic model.

**Key words:** Startups, Knowledge Economy, University, Economic Growth.

**الملخص:**

تهدف هذه الدراسة إلى إبراز الدور المتنامي للمؤسسات الناشئة في الجزائر ودورها في التنمية الوطنية وخلق الثروة وفتح مجالات عمل جديدة، واعتماده كتوجه استراتيجي من قبل الحكومة الجزائرية من خلال

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دعم الأفكار المبتكرة والقدرات الوطنية للبحث العلمي بما يسمح لها تحسين مؤشراتها لولوج اقتصاد المعرفة، انطلاقاً من عرض واقع هذه المؤسسات وسبل تطويرها.

أوضحت هذه الدراسة أن مجال المؤسسات الناشئة مجال واعد، ينبغي العمل على مواصلة تطويره وفق استراتيجية متكاملة تشارك فيها جميع القطاعات كقطاع التعليم العالي والبحث العلمي ووزارة اقتصاد المعرفة والمؤسسات الناشئة، من أجل تحسين ترتيب الجزائر ضمن مؤشر المعرفة العالمي والدفع به ليكون رافداً في مستوى طموح النموذج الاقتصادي الجديد.

**الكلمات المفتاحية:** المؤسسات الناشئة، اقتصاد المعرفة، الجامعة، النمو الاقتصادي.

## ***Introduction***

In today's English language teaching, most emphasis is placed on spoken language rather than

There is no doubt that modern economic development is moving towards adopting the option of the knowledge economy, which among its manifestations is digitization and the spread of technology in all industries, where knowledge has become the most important resource for economic activity.

Startups play a crucial role in driving the enhanced economic growth of the knowledge economy in Algeria, One of the main challenges for these companies is the limited access to financing opportunities. In addition, the lack of supporting infrastructure and resources increases the difficulties they face. Moreover, regulatory barriers and bureaucratic processes create additional obstacles that must be overcome to promote their growth. Therefore, developing a supportive ecosystem for these companies and streamlining regulatory processes can also help create an environment conducive to their growth. Encouraging research and development activities and enhancing cooperation between academia and industry is also essential to nurturing entrepreneurship in Algeria. Through the above, we can pose the following problematic:

**To what extent do university startups in Algeria contribute to driving economic growth in the age of the knowledge economy?**

### ***1. Hypotheses of study***

In order to study this topic, the following hypotheses can be proposed:

- The Algerian state is working to formulate an integrated strategy in which all sectors participate in order to improve its ranking within the knowledge index.
- Algeria is betting on startups through its new economic policy aimed at developing an appropriate and strong ecosystem aimed at diversifying and multiplying the devices dedicated to establishing and supporting startups.
- Algeria's higher education institutions contribute to incubating startups that create wealth and jobs and thus contribute to economic development.

## **2. Research Objectives**

The objectives of this study are as follows:

- Recognize with modern concepts associated with start-ups and the knowledge economy;
- Learn about the reality of start-ups in Algeria;
- Recognize The role of start-ups in the development of the national economy and their contribution to raising the indicators of the knowledge economy in Algeria;
- Identify the role of university institutions in creating and accompanying start-ups that create wealth and jobs;

## **3. Methodology**

Based on the nature of the study problem, its objectives and the information to be obtained, the analytical descriptive method was adopted, through which the economic phenomena associated with both start-ups and the knowledge economy were described, and the most important indicators of the study variables were presented and analyzed economically.

## **4. Previous Studies**

Although the topic of startups and the knowledge economy is one of the modern topics in Algeria, there are several studies that dealt with it, and the following are the most important of these studies:

- a. (Bourouissa Mariam2022), "**Startups as a key pillar for building and developing the knowledge economy in Algeria** " the problematic of the study was as follows: " How can start-ups contribute to building and developing the knowledge economy in Algeria?

The researcher concluded that: Startups have an effective role in building a knowledge-based economy in Algeria, if they create the appropriate environment for their activity and stimulate the establishment of innovative projects, especially in the technological field.

- b.** (Motahari Kamal2023), "**Startups and the knowledge economy in Algeria are economic keys to achieving sustainable development**" the problematic of the study was as follows: " How can startups contribute to the establishment of a knowledge-based economy and the creation of sustainable development in Algeria ?", The study concluded that Algeria's orientation towards the establishment of startups and the provision of rehabilitation programs for these institutions, especially in the field of innovation in addition to the promotion of human capital in the technological sector, would give a strong impetus to the economic and industrial fabric in our country.

## **5. Study terminology:**

The study defines various important concepts and terms, which need to be explained to ensure that the reader understands them.

### **5.1. knowledge economy**

Many names have been adopted to indicate the knowledge economy, such as: the new economy, the electronic economy, the digital economy, the virtual economy, and the network economy, which indicates that the issue of developing one agreed concept for this economy did not meet with consensus among researchers, but there are several efforts that vary in their definition of this economy, including the following:

The economist machlup fritz, who is one of the pioneers of the knowledge economy, defines it as "the knowledge-based economy in which the labor force in the knowledge-producing sectors exceeds the rest of the other economic sectors"<sup>1</sup>.

It has also been defined by the organization for economic co-operation and development (oecd) as a type of economy based on the production, distribution and use of knowledge , and has been widely defined as an economy in which the production and use of knowledge plays the primary and important role to achieve well-being <sup>2</sup>

Through the above definitions, we can say that unlike the traditional economy in which the traditional elements of production

(labor, capital, land, and organization) are the basis for the creation of goods and services, the qualified human resource and the accumulation of knowledge are considered the most valuable productive assets within the framework of the knowledge economy.

The knowledge economy has characteristics that make it a new economic pattern, the most important of which are<sup>3</sup>:

- Knowledge in the new economy has become the main factor in production, unlike the situation in previous periods.
- It is networked, operating through an open global economy, thanks to tremendous technological advancements.
- It is hypothetical in the sense that we feel its effects and do not touch it.
- It adopts new technology, the development of the Internet has led to a qualitative leap in almost every business.
- It deals with new markets, where electronic markets have emerged as places for trade and exchange.

## **5.2. University**

The university is an institution that represents the top of the educational system, combining various disciplines that have a key role in diffusing knowledge and forming various frameworks that society needs for development in all fields, it has its own structure, budget and objectives that are consistent with the goals and policies of society, It is also known as the place where free and open discussion takes place between the teacher and the learner, with the aim of evaluating different ideas and concepts. It is also the place where the interaction takes place between faculty members from different disciplines, as well as regular students in these disciplines<sup>4</sup>.

## **5.3. Startups**

The term Startups did not receive a unified definition by researchers, as we will address in this section a group of definitions that differed and varied in their content about this term.

The English dictionary defined startups as: “A small project just started, and the word Startup consists of two parts, the first of which refers to the idea of starting, the second of which refers to the idea of strong growth<sup>5</sup> .

Paul Graham defined it in his famous article on growth as a company designed to grow quickly, and the fact that it is newly

established does not make it a startup in itself, nor does it have to be working in the field of technology, or to be funded by a risk or an adventurer or to have some kind of exit plan, the only thing that matters is growth, and according to Paul Graham, good growth is between 5-7percent per week, and sometimes exceptionally 10%<sup>6</sup>.

According to the Algerian legislator, each institution is considered an startups that meets the conditions stipulated in Executive Decree No 20-254 dated 15 September, 2020, which are as follows<sup>7</sup>:

- The age of the institution shall not exceed eight (8) years;
- The age of the institution shall not exceed eight (8) years;
- The annual turnover must not exceed the amount determined by the National Committee;
- The capital of the company shall be at least 50% owned by natural persons or approved investment funds or by other institutions bearing label of "startups".
- Enterprise growth potential must be large enough;
- The number of workers should not exceed 250 workers.

From the above, startups can be defined as small, fast-growing, technology-driven companies that start with an innovative idea to solve an issue in the face of risk and uncertainty.

#### **5.4 University start-ups**

They are promising and sustainable commercial companies that emerge from the university to exploit the results of its scientific research, established by the members of the university, whether a professor, a student or a graduate student with the support of the university. Professors work as technical advisors, or on boards of directors, and they may have a share of shares at the start of operation of these institutions.

There are two types of these institutions, the first type is where the owners of technological ideas have ideas and need to convert them into a good or service, while the second type is the entrepreneurs who have reached a new product and need their help in applying this product or service and marketing it through research centers in universities<sup>8</sup>.

### **6. Startups Ecosystem in Algeria**

In the context of rapid changes and geostrategic challenges taking place in today's world, Algeria has been forced to change its economic policies in order to achieve growth outside the volatile hydrocarbon

sector. The government has encouraged the trend towards a knowledge economy and the establishment of startups by taking several measures such as the establishment of investment funds dedicated to financing startups, the establishment of the Supreme Council for Innovation, which is the cornerstone of the new strategic direction by promoting innovative ideas and initiatives and the national potential for scientific research, and the creation of a ministry mandated for the knowledge economy and start-ups .

### **7.1. Label startups**

Article 02 of Executive Decree No 22-141 issued in 28 January 2023, defines the criteria that startups must meet to obtain label startups, Label startup in Algeria is an official certificate granted to startups that meet certain criteria, mainly related to innovation<sup>9</sup>:

- The company's activity shall be based on products, services, business model or any other innovative concept.
- The age of the company should not be more than eight years.
- The company should spend at least 15% of its turnover on research and development.
- Half of the members of the founding team must have a high university degree (master's or doctorate)
- Startups that meet these criteria can apply for label startups through the National Startup Portal.
- Label startups give startups many advantages, including:
- Exemption from certain taxes: Startups with label startups get exemptions from certain taxes, such as VAT and income tax.
- Obtaining financial support from the government: The Algerian government offers several financing programs for start-ups with label startups.

Possibility to participate in training and support programs: The Algerian government provides many training and support programs for startups with label startups.

According to the Ministerial Department, more than 5000 startup applications were registered in 2023, more than 1100 of which received a label startup or innovative project mark.

**Table 1: Number of startups in Algeria from 2020 to 2023**

| Year | Number of startups |
|------|--------------------|
| 2020 | 41                 |
| 2021 | 87                 |
| 2022 | 105                |
| 2023 | 800                |

**Source: prepared by the researcher based on: <https://www.startupranking.com/countries>**

In the latest Startup ranking, Algeria ranked second in Africa with 800 startups, after Nigeria with 803 companies, Thus, Algeria ranked 18th in the world for the most countries in which startups are available out of 206 countries. This indicates the beginning of the success of the strategies adopted by the Algerian state to accelerate the pace of growth outside the hydrocarbons sector.

## **7.2. Startups Fund**

The Algerian government has taken a series of decisions to support these institutions, especially:

- Establishing an investment fund dedicated to financing and supporting startups, This is included in the Supplementary Finance Law of 2020, as this fund was able to benefit from funds at the state level with a total envelope of 58 billion DZD, equivalent to one billion DZD per governorate, which will enable it to significantly increase its investments in startups, knowing that the fund invests between 5 million and 150 million DZD per project.
- In the year 2023, Executive Decree N° 22-141 dated on 28 January 2023, was issued regarding the establishment and regulation of venture capital funds.

Venture capital investment mutual funds in Algeria are investment funds that specialize in financing start-ups, these funds are created by a group of investors, and are managed by a specialized investment manager.

This decree specifies the conditions that venture capital funds must meet, including<sup>10</sup>:

- The capital of the fund shall not be less than 500 million DZD.
- The fund must be licensed by the competent authority.
- The fund shall be managed by a licensed investment manager.

### 7.3. Evolution of startup finance in Algeria

The following is the evolution of startup financing in Algeria for the years 2021, 2022, 2023:

**Table 02 : startups finance in Algeria**

| Year | Number of Financed Companies | Financing volume (in billion Dzd) |
|------|------------------------------|-----------------------------------|
| 2021 | 32                           | 2.5                               |
| 2022 | 49                           | 5.5                               |
| 2023 | 57                           | 7.5                               |

*Source: Prepared by the researcher based on the risk finance index report in Algeria issued every year by the Entrepreneurship Center in Algeria.*

From the table above, we note that there has been a steady increase in the number of funded companies and the volume of funding in Algeria over the past three years.

In 2021, 32 startups were funded with a value of 2.5 billion Algerian dinars, and this number has increased to 49 companies in 2022 with a value of 5.5 billion Algerian dinars, and then to 57 companies in 2023 with a value of 7.5 billion Algerian dinars so far.

This rise is due to several factors, including: the launch of the Algerian Startup Fund in 2020, which contributed to the provision of new funding sources for startups, as well as increased interest in startups in Algeria by local and international investors, along with the growth of the technology sector in Algeria.

By analyzing the growth data of startups and ways to finance them, Algeria seeks through its new economic policy to develop an appropriate and strong ecosystem aimed at diversifying and doubling the devices dedicated to establishing and supporting startups to make them the locomotive that leads the transition of the Algerian economy from a rentier system to a model that relies on other productive sectors and on the knowledge economy. The following is the global ranking of the environmental climate of startups in Algeria for the years 2021, 2022, 2023:

**Table 03 : Global ranking of Algeria's startup ecosystem**

| Year | Ranking |
|------|---------|
| 2021 | 110     |
| 2022 | 70      |
| 2023 | 40      |

**Source: Prepared by the researcher according to the Global Startup Ecosystem Report**

We note from the table above, there is a noticeable improvement in the environmental climate ranking of startups in Algeria during the past three years. In 2021, Algeria ranked 110th in the world, and this ranking rose to 70th in 2022, and then to 40th in 2023.

This improvement is due to several factors, including: the efforts of the Algerian government to promote entrepreneurship and support startups, as well as the increase in investment in the technology sector in Algeria, which led to the emergence of many successful startups in Algeria.

This trend is expected to continue to grow in the coming years, as Algeria seeks to become a hub for entrepreneurship and technology in the region.

## **7. The contribution of Algerian universities to economic growth by supporting startups**

The University of Algeria is one of the most important educational and cultural tools in the country, as it plays a vital role in supporting and developing start-ups and entrepreneurship. The University works to provide an encouraging environment for students and researchers to motivate them to innovate and achieve success in the labor market and in establishing their own projects.

### **7.1. The role of the Algerian University in providing higher education and scientific research**

The Algerian University is a major center for the provision of higher education and scientific research in the country as it seeks to provide distinct and diverse educational programs that suit the needs of the local and global labor market.

In addition, the university supports scientific research and technological development that contributes to innovative and sustainable solutions that support startups.

The higher education and scientific research sector in Algeria has witnessed a significant development and expansion in the university network, which includes:

**Table 04: Development of Higher Education Structures in Algeria**

| No | Designation                                      | Number                                     |
|----|--------------------------------------------------|--------------------------------------------|
| 01 | University                                       | 54                                         |
| 02 | University Centre                                | 9                                          |
| 03 | Higher National School                           | 37                                         |
| 04 | Higher Schools for Teachers                      | 12                                         |
| 05 | Authorized Private Higher Education Institutions | 17                                         |
| 06 | Number of students                               | One million and 700 thousand students      |
| 07 | Number of professors                             | 81000 teachers, 50% of whom are professors |

**Source: Prepared by the researcher based on the website of the Ministry of Higher Education and Scientific Research**

The total number of students in the academic season 2023/2024 is estimated at 1700000 students, including 310000 new students, who receive lessons through 114 higher education institutions, in addition to 53 Universities, 9 University Centers, 12 higher schools for professors, 15 colleges of medicine, and 14 medical attachés.

## **7.2. The contribution of the Algerian University in creating an ecosystem for entrepreneurship**

**Table 05: Algeria's Entrepreneurship Ecosystem**

| N° | Designation                         | Number |
|----|-------------------------------------|--------|
| 01 | start-ups                           | 734    |
| 02 | Incubators                          | 94     |
| 03 | Label Incubators                    | 17     |
| 04 | Entrepreneurship Development Centre | 84     |
| 05 | Artificial Intelligence House       | 17     |
| 06 | Label Innovative Projects           | 234    |
| 07 | Patents                             | 853    |

**Source: Prepared by the researcher based on the website of the Ministry of Higher Education and Scientific Research**

The number of start-ups reaches 734 institutions, 94 business incubators, 17 incubators on Label mark, in addition to 84 contracting development centers, 17 artificial intelligence houses, 234 Label Innovative Project Tag, in addition to 853 patents.

#### ***7.4. Resolution 1275 related to the certificate (start-up enterprise - patent)***

Embodying the strategies of the higher education sector to build the knowledge economy and contribute to economic development, Resolution 1275 was issued on 27 September 2022, which is concerned with valuing the work and projects completed by students during their educational trajectory, within the framework of the mechanism of a start-up institution certificate and a patent certificate<sup>11</sup>.

This decision aims to determine how to prepare a graduation memorandum project to obtain a university degree. It is an emerging institution by higher education institutions in order to create a generation of entrepreneurial students with the ability and desire to move towards innovative entrepreneurship and create creative startups for wealth and jobs.

The management of university business incubators also ensures that these students are accompanied by projects that have an innovative project mark for the immediate transformation into start-ups with a label by the National Committee for Granting Label Mark, then the distinguished projects are registered in a national competition and the winning projects are valued with financial support from the Ministry and the economic and social partners interested in this field.

### **8. Conclusion**

At the conclusion of this study, it can be said that startups have an effective role in building the knowledge economy in Algeria, through their contribution to creating added value, providing job opportunities, and promoting innovation.

In order for start-ups to achieve their full contribution to the knowledge economy, it is necessary to create the appropriate environment for their activity.

### **9. Study Findings**

The study reached a set of results represented in:

- Startups play a pivotal role in promoting growth and economic and social development, as they are a small project whose task is to innovate and develop new products or services with a high degree of risk.
- The Algerian state has been able to formulate an important arsenal of laws and strategies that serve to support and finance this type of institution, believing in its importance and role in the development of countries.
- The Algerian government has worked to create a favorable environmental climate for startups that helps them face various challenges, whether human, financial, organizational or even technological.
- The following are the most important recommendations that can be made to enhance the contribution of start-ups to the knowledge economy in Algeria:
- Promote public-private partnership by establishing partnerships between start-ups and large companies, and supporting research and development in the private sector.
- Developing education and training in the field of technology and innovation, through the introduction of technology in the curricula, and the establishment of specialized training programs in the field of entrepreneurship and innovation.
- Achieving these recommendations would contribute to enhancing the role of start-ups in building the knowledge economy in Algeria, and achieving sustainable economic development.

## ***References***

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<sup>1</sup> Ahmed Abdel Hakim bin Baatoush, Samira Laghwail, University institutions and the knowledge economy in Algeria, Arab Journal of Literature and Human Studies, 2020, p 185.

<sup>2</sup> Maryam Bourouissa, startups as a key pillar for building and developing the knowledge economy in Algeria, Journal of Cognitive Issues, 2022, p 81.

<sup>3</sup> Ahmed Hanish,. Knowledge Economy in the Arab Countries - An Analytical Study of the Global Knowledge Index, Journal of Economic Reforms and Integration in the World Economy , 2022, p 63.

<sup>4</sup> Radhia Yousfi, Amal Youb, The importance of universities in human resource training and their role in activating the orientation towards the creation and management of entrepreneurial projects, Journal of Social and Human Sciences, Volume 11, Number 1, Tébessa, 2018, p. 329.

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<sup>5</sup> Marini Najlaa, Activating mechanisms for financing and supporting startups in the prizes, Initiatives for contemporary works between accompaniment and sustainability requirements The case of startups, Arab Democratic Center for Strategic Studies, Berlin, 2023, p 45.

<sup>6</sup> Massoud Bouibaoun, The Reality of Innovation in startups: A Case Study of Algeria, Initiatives for Contemporary Business between Accompaniment and Sustainability, Arab Democratic Center for Strategic Studies, Berlin, 2023, p 66.

<sup>7</sup> Houria Soueiki, Startups and Business Incubators in under the provisions of Executive Decree N° 20-254, Algerian Journal of Rights and Political Sciences, Volume 06, Issue 02, 2021, p 74.

<sup>8</sup> Aya Ahmed El-Sayed Shatta, Start-ups from universities and their role in achieving economic and social development, Journal of Legal and Economic Research, Vol. 12, N°. 82, Mansoura University, Egypt, 2022, p 18.

<sup>9</sup> Executive Decree N° 20-254 dated on 15 September 2020, establishing a national committee to award the "startup", "innovative project" and "business incubator labels".

<sup>10</sup> Executive Decree N° 22-141 dated on 28 January 2023, relating to the establishment and regulation of venture capital funds.

<sup>11</sup> Hayat Bordousen, Mahmoud Karziz, Ministerial Resolution N° 1275 concerning the Certificate of a start-up institution, a patent certificate and its role in promoting the values of citizenship among university students, Journal of Human Studies and Research, 2023, p 444.