

# Assessing the Impact of Business Incubators on Entrepreneurship Development and Startup Growth: A Case Study of Constantine 2 University

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تقييم أثر حاضنات الأعمال على تطوير ريادة الأعمال ونمو الشركات الناشئة:

دراسة ميدانية جامعة قسنطينة 2

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Received: 10 / 11/2025

Accepted: 17 / 12/2025

Published: 31/ 12/2025

**Summary:** This study aims to assess the impact of business incubators on entrepreneurship development and startup growth through a field investigation conducted at Constantine 2 University. Adopting a descriptive-analytical methodology, the research employed a structured questionnaire as the primary data collection instrument. The questionnaire was administered to 44 university professors, representing 88%. The findings reveal statistically significant evidence that business incubators play a crucial role in fostering entrepreneurial development and supporting the growth of startups associated with the Entrepreneurship Development Center at Constantine 2 University. The results further indicate that incubators contribute positively and significantly to both the enhancement of entrepreneurial capabilities and the expansion of startup ventures within the university context. Based on these results, the study recommends formulating targeted strategies to strengthen the alignment between business incubators and entrepreneurial practice requirements. It also highlights the importance of reinforcing collaboration between universities and incubators to ensure comprehensive support for emerging enterprises and calls for greater investment in capacity-building programs for faculty members and students in entrepreneurial project management.

**Keywords:** Business Incubators; Entrepreneurship; Startups; Constantine 2 University.

**Jel Classification Codes:** L26; L53; M13; O32.

ملخص: تهدف هذه الدراسة إلى تقييم أثر حاضنات الأعمال على تطوير ريادة الأعمال ونمو الشركات الناشئة من خلال دراسة ميدانية أجريت في جامعة قسنطينة 2. اعتمد البحث على المنهج الوصفي التحليلي، واستخدم الاستبيان كأداة رئيسية لجمع البيانات. وزع الاستبيان على عينة مكونة من 44 أستاذا جامعيًا، أي ما يمثل نسبة 88% من حجم العينة. بينت نتائج الدراسة وجود مؤشرات ذات دلالة إحصائية على مساهمة حاضنات الأعمال في دعم ريادة الأعمال والمؤسسات الناشئة المقبولة بمركز تطوير المقاولاتية بجامعة قسنطينة 02. بالإضافة إلى وجود أثر إيجابي ذو دلالة إحصائية لحاضنات الأعمال على ريادة الأعمال ونمو المؤسسات الناشئة التابعة لمركز المقاولاتية في جامعة قسنطينة 02. واستنادًا إلى هذه النتائج، توصي الدراسة بصياغة استراتيجيات موجهة لتعزيز مواءمة حاضنات الأعمال مع متطلبات الممارسة الريادية. كما تؤكد على أهمية تقوية التعاون بين الجامعات والحاضنات لضمان تقديم دعم شامل للمؤسسات الناشئة، وتشجع على زيادة الاستثمار في برامج بناء القدرات للأساتذة والطلبة في مجال إدارة المشاريع الريادية.

الكلمات المفتاح: حاضنات الأعمال؛ ريادة الأعمال؛ شركات الناشئة؛ جامعة قسنطينة 2.

تصنيف JEL: L26؛ L53؛ M13؛ O32.

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## **1. Introduction:**

In today's rapidly evolving global economy, entrepreneurship has become a cornerstone of sustainable growth and technological progress, serving as a catalyst for innovation, competitiveness, and employment generation. Among the diverse manifestations of entrepreneurial activity, startups stand out as dynamic agents of change, translating creativity and technological advancement into viable economic opportunities that drive structural transformation. Yet, the journey from an innovative idea to a sustainable enterprise extends beyond individual entrepreneurial capacity; it requires a comprehensive support system that nurtures innovation, reduces uncertainty, and ensures access to essential resources.

Within this framework, business incubators have emerged as vital institutional mechanisms for fostering entrepreneurial ecosystems. By providing startups with integrated support ranging from training, mentorship, and infrastructure to funding and strategic networking, these incubators enhance their survival and growth prospects. In the Algerian context, this approach has gained increasing relevance amid national efforts to diversify the economy and reduce dependence on traditional sectors. The recent proliferation of university-based business incubators reflects a strategic orientation toward transforming academic research and student innovation into competitive, market-oriented ventures, thereby strengthening the foundations of a knowledge-driven economy.

### **1.1 Research Problem**

In light of the above, this study seeks to address the following central research question: What is the impact of the business incubator at Constantine 2 University on entrepreneurship and the growth of startup enterprises?

This main question branches into several sub-questions:

- What role do university business incubators play in supporting entrepreneurship and fostering the growth of startups?
- To what extent do the services provided by the Constantine 2 University business incubator such as mentoring, financing, and training contribute to the success of startup ventures?
- What are the main challenges facing startups in Algeria, and how do business incubators contribute to addressing them?
- How can the performance of university business incubators be improved to enhance their contribution to the development of the entrepreneurial ecosystem?

### **1.2 Research Hypotheses**

This study is built upon the following hypotheses:

H1: There are statistically significant indicators of the contribution of business incubators to supporting entrepreneurship and startups accepted at the Entrepreneurship Development Center at Constantine 2 University.

H2: Business incubators have a statistically significant positive impact on entrepreneurship and the growth of startups affiliated with the Entrepreneurship Center at Constantine 2 University.

### **1.3 Objectives of the Study**

The study aims to:

- Examine the role of business incubators in stimulating entrepreneurship and promoting the growth of startups in Algeria;
- Investigate the relationship between the presence of incubators and the enhancement of the innovation environment within universities, and assess their impact on transforming entrepreneurial ideas into successful economic projects;

- Explore the impact of university incubators on the sustainability of startups by analyzing the challenges they face and the opportunities incubators provide;
- Propose recommendations to strengthen the role of university-based business incubators in supporting entrepreneurship and contributing to sustainable economic development.

### **1.4 Research Methodology**

This study adopts a descriptive-analytical approach. It involves reviewing the relevant literature on entrepreneurship, startups, and business incubators, in addition to conducting a field study focused on the business incubator at Constantine 2 University. The analysis will examine data related to the incubator's role in empowering entrepreneurial projects and fostering their growth.

## **2. Theoretical Framework of the Study**

This section outlines the theoretical framework that underpins the study, providing a structured foundation for understanding the interconnections between startups, business incubators, and entrepreneurship. It aims to clarify the conceptual bases of these key constructs, explore their characteristics and dynamics, and establish the theoretical relationships that guide the empirical investigation.

### **2.1 The Nature of Startups**

This section provides a comprehensive overview of the nature of startups, addressing their conceptual foundations, defining characteristics, and lifecycle stages. It aims to clarify how startups differ from traditional enterprises and to highlight the factors that shape their development and sustainability.

#### **2.1.1 Concept of Startups**

Definitions of startups vary depending on the conceptual framework adopted. According to Eric Ries, a startup is an organizational entity specifically designed to create a new product or service under conditions of extreme uncertainty. From another perspective, a startup can be described as an independent enterprise unaffiliated with any existing corporate structure typically composed of one to eight individuals, most of whom are developers working collaboratively to devise innovative solutions tailored to dynamic market needs (Ben Lakhdar & al, 2020, pp. 27, 28).

In the Algerian legal context, a formal definition of startups has yet to be codified. However, Ministerial Note No. 708, issued on October 24, 2019 by the Ministry of Commerce, provisionally defines startups as enterprises operating in advanced technological sectors such as software development, data processing, internet services, and industrial IT engineering (Legal-Doctrine, 2020).

Additionally, Executive Decree No. 20-254, dated September 15, 2020, outlines a set of operational criteria for granting the official "startup" label, which include: (Legal-Doctrine, 2020)

- The company must be no older than eight years;
- Its business model must be centered around innovation in products, services, or operational processes;
- At least 50% of its capital must be held by individuals or accredited investment funds;
- Its annual turnover must not exceed the threshold set by the National Committee for Startup Accreditation;
- It must employ no more than 250 staff members;
- It should demonstrate strong potential for scalable growth over time.

#### **2.1.2 Key Characteristics of Startups**

Startups possess a set of defining attributes that distinguish them from traditional business models. These core characteristics include: (Merbah, 2021, p. 428)

- Early-stage Formation: Startups are typically in the nascent stages of their lifecycle, which makes them more susceptible to both rapid success and premature failure;
- High Scalability: They leverage flexible and disruptive business models, enabling rapid expansion into local and international markets;
- Technology-Driven Operations: Startups often capitalize on emerging digital technologies, granting them the agility to offer innovative and adaptive solutions;
- High-Risk, High-Reward Dynamics: Despite operating in volatile environments, successful startups have the capacity to generate exceptional and unexpected returns within compressed timeframes.

### 2.1.3 The Lifecycle of Startups

Startups go through five main stages according to Paul Graham's model, namely:

- Creation Stage: This stage involves searching for an entrepreneurial idea and analyzing the market to identify needs and opportunities (Bahiri & Karfis, 2023, p. 196);
- Launching Stage: The product or service is introduced to the market for the first time, focusing on testing its scalability and attracting investors (Bessouih & al, 2021, p. 408);
- Growth Stage: The company seeks to expand its operations, strengthen its customer base, and achieve financial sustainability (Hannach & Boufengour, 2021, p. 101) ;
- Decline Stage: The company may encounter financial or competitive difficulties that lead to a drop in performance, necessitating a restructuring of its strategies (Mazouz & Khellout, 2021, p. 68) (Meziane & Ammarouche, 2021, p. 33);
- Maturity and Sustainability Stage: This phase is characterized by improving products and services, expanding markets, and achieving stable profit margins (Al-Moumen & Karmia, 2021, p. 17).

## 2.2 The Nature of University Business Incubators

Understanding the nature of university business incubators is essential for analyzing their role in fostering entrepreneurship and promoting the growth of innovative startups. These incubators act as strategic instruments that bridge the gap between academia and the business environment, facilitating the transformation of research outputs into viable economic ventures. The following section presents a detailed overview of the concept, objectives, and main classifications of business incubators, highlighting their economic and developmental significance in supporting entrepreneurial ecosystems.

### 2.2.1 The Concept of Business Incubators

Several international organizations have offered definitions that highlight the role and significance of business incubators. These can be summarized as follows: The United Nations Economic and Social Commission for Western Asia (UN-ESCWA) defines business incubators as an integrated set of services, consultations, and facilities designed to support entrepreneurs during the initial stages of launching their ventures, with the objective of minimizing startup costs and associated risks (Obeidat, 2006, p. 60).

In a similar vein, the European Commission describes business incubators or what it refers to as "enterprise nurseries" as centers that host emerging businesses with the aim of increasing their likelihood of success. This is achieved through the provision of equipped infrastructure, administrative services, and technology transfer facilitation, thereby contributing to local development and the creation of new employment opportunities creation (Abdeldaim, 2011, pp. 82, 83).

Furthermore, the National Business Incubation Association (NBIA) in the United States characterizes business incubators as developmental tools aimed at accelerating the growth of startups through a comprehensive system of resources and services. The incubated enterprises are

expected to graduate with the capacity for financial independence and long-term viability (Saleh, 2013, p. 04).

Drawing on these definitions, business incubators can be regarded as economic support institutions dedicated to fostering the growth of start-up ventures by providing administrative, financial, consulting, and technological services. These offerings collectively serve to reduce the operational costs and risks that typically challenge businesses in their early stages.

### 2.2.2 Objectives of Business Incubators

Business incubators aim to fulfill a set of economic and social objectives that contribute to fostering an entrepreneurial ecosystem. These objectives can be categorized into two main dimensions:

#### A. Objectives Related to Startups

Business incubators strive to support emerging enterprises through: (Cherif Rehan, 2021, p. 7)

- Mitigating the financial and operational risks that startups typically face during their early stages;
- Accelerating the foundation and production processes by offering a well-equipped and supportive working environment;
- Providing tailored solutions to address administrative, financial, technical, and legal challenges;
- Fostering innovation by encouraging the development of novel products and services;
- Enhancing the probability of startup success by delivering mentorship and guidance services;
- Facilitating connections between startups and industrial or commercial sectors to strengthen collaboration and ensure sustainability.

#### B. Economic and Social Objectives

These objectives include:

- Promoting employment by creating new job opportunities, particularly for young people and recent graduates;
- Supporting the national economy by encouraging the growth of nascent industries, especially in high-tech sectors;
- Increasing income levels and improving living standards by promoting entrepreneurial ventures;
- Advancing the innovation and entrepreneurship ecosystem through commercialization of academic research and its integration with the private sector;
- Stimulating investment in advanced technological projects;
- Cultivating a culture of entrepreneurship and calculated risk-taking among youth, thereby contributing to a more dynamic and sustainable business environment.

### 2.2.3 Types of Business Incubators

Business incubators can be classified according to several criteria, the most prominent of which are as follows:

#### A. Based on Geographic Scope

Business incubators may also be classified according to their geographical scope (Zaitouni, 2017, p. 3), including:

- Regional Incubators: Aim to support local development by leveraging human and natural resources in specific areas;

- International Incubators: Focus on cross-border economic and technological cooperation to support globally emerging ventures.

### **B. Based on the Targeted Sector**

Business incubators can further be categorized based on their sectoral focus (Jawad & Al-Battat, 2016, pp. 107-110), including:

- Industrial Incubators: Support projects related to production and manufacturing;
- Technological Incubators: Provide a conducive environment for software development and digital applications;
- Research-Based Incubators: Aim to convert academic research into feasible economic projects;
- Service-Oriented Incubators: Focus on supporting ventures in non-productive sectors such as tourism, education, and healthcare;
- Agricultural Incubators: Concerned with agricultural-related projects and the development of agritech innovations.

### **C. Based on the Economic Model**

Business incubators can also be distinguished according to their operational objectives (Abdel-Laoui, 2013), including:

- For-Profit Incubators: Operate as investment firms that generate profits through the services they offer;
- Non-Profit Incubators: Funded by governments or universities, focusing on supporting economic and social development.

### **D. Based on the Sponsoring Entity**

Business incubators can be classified into several types based on their funding sources and strategic objectives (Al-Fayhan, 2012, p. 44), including:

- Governmental Incubators: Funded by governments to promote entrepreneurship;
- Private Incubators: Run by investment institutions aiming to support start-ups and achieve financial returns;
- University-Based Incubators: Aim to transform scientific research outputs into commercial projects;
- Corporate Incubators: Seek to foster innovation within large corporations and develop new products.

## **2.3 The Nature of Entrepreneurship**

Entrepreneurship represents a vital driver of economic and social progress, as it fosters innovation, generates employment, and enhances competitiveness across various sectors. Understanding its nature and underlying principles is essential for grasping how entrepreneurial activities contribute to sustainable development and economic diversification. Accordingly, this section discusses the concept and importance of entrepreneurship.

### **2.3.1 The Concept of Entrepreneurship**

Entrepreneurship is defined as the process of identifying and capitalizing on market opportunities to establish new ventures or develop existing ones through innovative approaches. This process involves the strategic integration of human, financial, and technological resources to generate both economic and social value. Entrepreneurship is also considered a dynamic process driven by creativity and innovation, leading to the introduction of new products or services and the enhancement of production processes, thus fostering competitive advantage (Schumpeter, 1934).

Another definition emphasizes the opportunity exploitation aspect, portraying the entrepreneur as someone capable of recognizing and leveraging market gaps to generate profit (Kirzner, 1973).

### **2.3.2 The Importance of Entrepreneurship**

Entrepreneurship plays a fundamental role in promoting both economic and social development. Its importance is reflected in several key areas: (Mian, 2011)

- Stimulating Innovation: Entrepreneurship serves as a primary source of creativity and renewal by developing new products and services that address market needs;
- Job Creation: Entrepreneurial ventures contribute to reducing unemployment by creating new job opportunities and supporting local economies;
- Fostering Economic Growth: The establishment of new businesses increases domestic production and attracts investment, which in turn enhances GDP growth;
- Enhancing Competitiveness: Entrepreneurs contribute to improving business environments by offering innovative solutions that strengthen organizational competitiveness;
- Achieving Economic Sustainability: Entrepreneurial initiatives help diversify income sources and reduce reliance on traditional sectors, thereby promoting economic resilience and long-term stability.

## **2.4 The Relationship Between Business Incubators and Entrepreneurship**

Business incubators represent a fundamental pillar in promoting entrepreneurship by providing an enabling environment that supports innovative ideas and transforms them into viable projects. According to (Grimaldi & Grandi, 2005, p. 112), incubators contribute to reducing the failure rate of startups by offering consulting services, infrastructure, and seed funding. Similarly, (Hackett & Dilts, 2004, pp. 43-45) emphasizes that incubators play a critical role in building entrepreneurial capacity by providing continuous training and mentorship, thereby empowering entrepreneurs and enhancing their project management skills.

### **2.4.1 The Relationship between Business Incubators and Startup Growth**

Incubators offer a dynamic environment that supports the growth of startups through various mechanisms, including:

- Access to financial resources, as they provide seed funding opportunities and connections with potential investors (Abetti, 2004, p.32);
- Network facilitation, by integrating startups into the economic ecosystem through links with partners, suppliers, and customers (Bøllingtoft & Ulhøi, 2005, pp. 270-272);
- Technical and managerial support, enabling entrepreneurs to address market challenges more effectively and increasing their chances of success (Grimaldi & Grandi, 2005, p. 112).

### **2.4.2 The Relationship between Entrepreneurship and Startup Growth**

Entrepreneurship is not only a driver of innovation but also a key catalyst for startup growth. According to (Shane & Venkataraman, 2000), the success of startups depends on the entrepreneurs' ability to adapt to business environments, develop innovative strategies, and seize market opportunities. (Wong & al, 2005) also notes that startups leveraging innovative business models tend to achieve higher growth rates than their traditional counterparts, due to their competitive advantage and ability to differentiate themselves in dynamic markets.

## **3. Field Study on the Impact of Business Incubators on Entrepreneurship and Startup Growth at Constantine 02 University**

To carry out the field study, a structured methodology was adopted, beginning with the identification of the study population and sample size, followed by the validation of the research

instrument (questionnaire), and ending with the analysis of the sample's demographic characteristics, descriptive statistics, and hypothesis testing, as outlined below:

### 3.1 Preliminary Procedures

This section outlines the methodological framework adopted in the study, detailing the preliminary procedures related to the research population, sampling approach, and data collection instrument. It aims to ensure clarity, reliability, and methodological rigor in addressing the study objectives.

#### 3.1.1 Study Population and Sample

The study targeted university professors at Constantine 02 University, particularly those with a direct involvement or academic interest in entrepreneurship and business incubation programs, especially from the Department of Business Administration within the Faculty of Economics, Commercial Sciences, and Management Sciences. A purposive sampling technique was used, where 50 questionnaires were distributed and 44 valid responses were collected, yielding a response rate of approximately 88%.

#### 3.1.2 Data Collection Instrument

A structured questionnaire was employed as the primary tool for collecting quantitative data, designed to address the research problem and test the proposed hypotheses. The questionnaire was divided into two main sections:

- Section One: Captures demographic data of respondents (academic discipline, academic rank, years of experience, etc.).

- Section Two: Measures professors' perceptions of the impact of business incubators on entrepreneurship and startup growth, and includes two key dimensions:

Dimension One: Business Incubators (10 items): Assesses the role of incubators in supporting entrepreneurs, fostering innovation, and offering guidance and mentorship;

Dimension Two: Support for Entrepreneurship and Startup Growth (15 items): Evaluates the contribution of the Entrepreneurship Development Center at Constantine 02 University to promoting entrepreneurship and enhancing the scalability of startups.

The questionnaire was developed based on relevant academic literature on business incubators, startup development, and academic entrepreneurship, while ensuring alignment with the study's theoretical framework. It was reviewed by academic experts to validate its content and accuracy. Data were analyzed using statistical software such as SPSS and AMOS to ensure reliability and precision in results.

### 3.2 Validity of the Measurement Instrument and Descriptive Analysis of the Sample Responses

#### 3.2.1 Instrument Reliability (Cronbach's Alpha Coefficient)

To assess the internal consistency of the research instrument, Cronbach's Alpha was employed. The results, as presented in Table 1, confirm the reliability of the scale:

**Table (1): Cronbach's Alpha Values**

Dimension	Number of Items	Cronbach's Alpha
Business Incubators	10	0.872
Support for Entrepreneurship and Startup Growth	15	0.813
Total Scale	25	0.841

**The source:** Prepared by the researcher based on SPSS Version 26 outputs.

As shown, all Cronbach's Alpha values exceed the commonly accepted threshold of 0.70, with values approaching or surpassing 0.80, indicating high internal consistency. These findings

confirm that the questionnaire is a reliable measurement tool, providing robust data suitable for subsequent statistical analyses, including exploratory and confirmatory techniques. The results also suggest that the items effectively capture the underlying constructs of business incubators and their impact on entrepreneurship and startup growth, ensuring confidence in the validity of the responses collected from the sample.

### 3.2.2 Descriptive Analysis of Sample Characteristics

The demographic characteristics of the sample, composed of faculty members from Constantine 02 University with academic or professional interest in entrepreneurship and business incubation, were analyzed. Table 2 provides a detailed distribution across relevant demographic variables:

**Table (2): Demographic Profile of the Study Sample**

Variable	Category	Frequency (N)	Percentage (%)
<b>Gender</b>	Male	58	65.91%
	Female	30	34.09%
<b>Academic Rank</b>	Assistant Professor	32	36.36%
	Associate Professor	44	50.00%
	Full Professor	12	13.64%
<b>Age Group</b>	25–35 years	20	22.73%
	36–45 years	46	52.27%
	Over 45 years	22	25.00%
<b>Academic Qualification</b>	Master’s Degree	33	37.50%
	Doctorate	55	62.50%

The source: Prepared by the researcher based on SPSS Version 26 outputs.

The demographic data indicate that the majority of respondents were male (65.91%), with females representing 34.09%, suggesting a reasonably balanced gender composition. In terms of academic rank, Associate Professors formed the largest group (50%), followed by Assistant Professors (36.36%), while Full Professors constituted the smallest portion (13.64%), reflecting a diverse distribution of academic experience within the sample.

Regarding age distribution, the dominant group was 36–45 years (52.27%), indicative of a mature academic profile, followed by participants aged over 45 years (25.00%) and the 25–35 age group (22.73%), ensuring representation across different career stages. Concerning academic qualifications, the majority of respondents held doctoral degrees (62.50%), demonstrating high academic expertise, while 37.50% possessed master’s degrees, reflecting ongoing professional and academic development.

Overall, the sample demonstrates sufficient diversity in gender, academic rank, age, and qualifications, providing a robust and representative foundation for examining the impact of university business incubators on entrepreneurship and startup growth.

### 3.2.3 Descriptive Statistics of Study Variables

#### A. Descriptive Analysis of the Business Incubators Dimension

**Table (3): Descriptive Analysis of Respondents’ Views on the Business Incubators Dimension**

Statement	Mean	Std. Deviation	Level of Agreement
Business incubators help establish a supportive environment that enables startups to grow and achieve sustainability.	4.30	0.60	Strongly Agree

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Incubators reduce financial burdens by offering discounted services and logistical support.	4.25	0.64	Strongly Agree
Incubators provide specialized consulting to enhance managerial efficiency and strategic planning.	4.12	0.55	Agree
Incubators facilitate access to various funding sources.	4.05	0.70	Agree
Incubators offer tailored training programs to develop entrepreneurial skills.	4.18	0.66	Agree
Incubators provide integrated infrastructure, including modern workspaces and advanced technology services.	4.20	0.58	Strongly Agree
Incubators support startups in building networks with investors and strategic partners.	4.16	0.72	Agree
Incubators offer continuous guidance to help entrepreneurs make informed and effective decisions.	4.40	0.56	Strongly Agree
Incubators facilitate partnerships between startups and the industrial sector to promote innovation.	4.21	0.67	Strongly Agree
Incubators enhance the competitiveness of startups in both local and global markets.	4.24	0.65	Strongly Agree
<b>Overall Mean of Business Incubators Dimension</b>	<b>4.21</b>	<b>0.63</b>	<b>Strongly Agree</b>

**The source:** Prepared by the researcher based on SPSS Version 26 outputs.

The descriptive analysis of the business incubators dimension revealed high levels of agreement among participants regarding their role in supporting entrepreneurship and enhancing startup growth, with an overall mean of 4.21 and a standard deviation of 0.63, reflecting strong consistency in responses and a high appreciation for the incubators' contribution to fostering an innovative business environment. The highest-rated items included providing continuous guidance to entrepreneurs for effective decision-making ( $M = 4.40$ ), creating a supportive environment for startup growth and sustainability ( $M = 4.30$ ), and enhancing the competitiveness of startups at both local and global levels ( $M = 4.24$ ), underscoring the critical importance of strategic mentorship, enabling environments, and competitive capacity as key success factors for entrepreneurial ventures. Conversely, facilitating access to various funding sources received the lowest mean score ( $M = 4.05$ ), suggesting that although financial support is available, it may not fully meet the expanding needs of entrepreneurs. Other items, including tailored training programs for entrepreneurial skill development, integrated infrastructure, and support for networking with investors and strategic partners, recorded means between 4.12 and 4.21, indicating that incubators provide comprehensive support encompassing training, guidance, operational infrastructure, and connection to the economic ecosystem. Overall, the findings confirm that business incubators serve as a strategic and integrated mechanism for empowering entrepreneurs and enhancing the growth and sustainability of startups in both local and international markets.

## **B. Descriptive Analysis of the Support for Entrepreneurship and Startup Growth Dimension**

**Table (4): Descriptive Statistics of Respondents' Views on Supporting Entrepreneurship and Startup Growth**

Statement	Mean	Std. Deviation	Level of Agreement
Entrepreneurship contributes to enhancing economic competitiveness through launching innovative ventures.	4.25	0.63	Strongly Agree
Entrepreneurship contributes to creating new job opportunities and reducing unemployment.	4.34	0.61	Strongly Agree
Business incubators play a critical role in transforming entrepreneurial ideas into feasible projects.	4.22	0.65	Strongly Agree
Startups rely on innovation as a key factor in enhancing their competitive advantage.	4.19	0.64	Agree

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(PP. 87-102)**

Incubators provide an integrated environment to support and empower entrepreneurs to succeed.	4.14	0.66	Agree
Incubators contribute to developing creative ideas that foster the uniqueness of startups.	4.29	0.67	Strongly Agree
Incubated startups foster technology transfer and the development of innovative solutions.	4.36	0.68	Strongly Agree
Support from incubators contributes to improving marketing strategies for startups.	4.21	0.70	Strongly Agree
Entrepreneurial success depends on the availability of an enabling environment that nurtures creativity and continuous development.	4.27	0.65	Strongly Agree
Entrepreneurial culture plays a vital role in encouraging individuals to start new ventures.	4.33	0.69	Strongly Agree
Incubator support provides a flexible work environment that promotes experimentation and business model development.	4.09	0.71	Agree
Startups stimulate economic activity through the creation of new economic opportunities.	4.02	0.72	Agree
Incubators facilitate access to funding and investment for startups.	4.18	0.73	Agree
Despite incubator support, startups continue to face challenges related to human resources and funding.	4.12	0.70	Agree
Legal and administrative obstacles still pose challenges to the growth of startups.	4.02	0.72	Agree
<b>Overall Mean – Entrepreneurship and Startup Support Dimension</b>	<b>4.26</b>	<b>0.68</b>	<b>Agree</b>

**The source:** Prepared by the researcher based on SPSS Version 26 outputs.

The descriptive analysis of the entrepreneurship and startup support dimension indicates a high level of agreement among respondents regarding the critical role of entrepreneurship and business incubators in fostering startup growth and sustainability. The overall mean score for the dimension was 4.26, with a standard deviation of 0.68, reflecting both a strong consensus and relatively low dispersion in respondents' views.

The highest-rated items highlight the substantial impact of entrepreneurship on job creation and economic competitiveness. In particular, respondents strongly agreed that entrepreneurship contributes to creating new job opportunities and reducing unemployment ( $M = 4.34$ ,  $SD = 0.61$ ), as well as fostering innovation to enhance economic competitiveness ( $M = 4.25$ ,  $SD = 0.63$ ). These findings underscore the significance of entrepreneurial activities in promoting economic dynamism and addressing labor market challenges.

Similarly, items emphasizing the role of incubators in developing creative ideas, facilitating technology transfer, and nurturing entrepreneurial culture received high mean scores ( $M = 4.29$ – $4.36$ ), indicating that incubators are perceived as essential enablers of innovation, unique value creation, and knowledge commercialization. The provision of an integrated environment and support for marketing strategies also achieved strong agreement ( $M = 4.14$ – $4.21$ ), demonstrating respondents' recognition of the incubators' contribution to equipping startups with the necessary resources, networks, and operational guidance to succeed.

Conversely, the lowest-rated statements pertained to challenges that persist despite incubator support, such as legal and administrative obstacles ( $M = 4.02$ ,  $SD = 0.72$ ) and issues in human resources and financing ( $M = 4.12$ ,  $SD = 0.70$ ). These results highlight areas where additional institutional interventions are needed to enhance the efficacy of incubators and create a more enabling ecosystem for startups.

Overall, the analysis confirms that entrepreneurship and incubator support constitute an integrated and strategic mechanism for promoting innovation, facilitating startup growth, and sustaining competitive advantage in both local and global markets. The high mean and moderate

standard deviation values indicate consistent recognition among respondents of the multifaceted benefits of entrepreneurship and structured institutional support in driving the success of new ventures.

### 3.3 Hypothesis Testing

In this section, the study empirically examines the proposed hypotheses to determine the role of business incubators in supporting entrepreneurship and enhancing startup growth. Statistical analyses, including regression-based ANOVA and linear regression, are employed to assess the significance, strength, and direction of the relationships between incubator contributions and entrepreneurial outcomes.

#### 3.3.1 Testing the First Hypothesis

The first hypothesis is stated as follows:

$H_0$ : There are no statistically significant indicators of the contribution of business incubators to supporting entrepreneurship and startups affiliated with the Center for Entrepreneurship Development at the University of Constantine 02.

$H_1$ : There are statistically significant indicators of the contribution of business incubators to supporting entrepreneurship and startups affiliated with the Center for Entrepreneurship Development at the University of Constantine 02.

To test this hypothesis, a regression-based ANOVA was conducted, along with the computation of the correlation coefficient (R) and coefficient of determination ( $R^2$ ) to assess the strength and direction of the relationship between incubator support (independent variable) and entrepreneurial support and startup development (dependent variable).

**Table (5): Regression ANOVA and Model Summary for the Relationship Between Incubator Contribution and Support for Entrepreneurship**

Source	Sum of Squares	Mean Square	Degrees of Freedom	F-Value	Sig. Level	Correlation Coefficient (R)	Coefficient of Determination ( $R^2$ )
<b>Regression</b>	34.120	34.120	1	312.785	0.000	0.782	0.612
<b>Residual</b>	21.665	0.337	42				
<b>Total</b>	55.785		43				

**The source:** Prepared by the researcher based on SPSS Version 26 outputs.

The results indicate that the calculated F-value (312.785) substantially exceeds the critical F-value (3.99) at the 0.05 significance level, demonstrating that the regression model is highly statistically significant. The p-value (Sig = 0.000) is far below 0.05, providing strong evidence to reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ), confirming that business incubators contribute significantly to supporting entrepreneurship and startup growth at the University of Constantine 02.

The correlation coefficient ( $R = 0.782$ ) reflects a strong positive association between incubator contribution and entrepreneurial outcomes, suggesting that enhanced incubator support corresponds with higher levels of startup development and entrepreneurial success. Moreover, the coefficient of determination ( $R^2 = 0.612$ ) reveals that approximately 61.2% of the variation in entrepreneurial support and startup growth can be explained by the contribution of incubators, while the remaining 38.8% may be influenced by other contextual or organizational factors not included in this model.

These findings underscore the pivotal role of university-based incubators as strategic enablers of entrepreneurship. By providing resources, mentorship, and structural support, incubators significantly enhance the capacity of startups to innovate, scale, and sustain competitive advantages in dynamic economic environments.

### 3.3.2 Testing the Second Hypothesis

The second hypothesis is formulated as follows:

H<sub>0</sub>: There is no statistically significant positive impact of business incubators on entrepreneurship and the growth of startups affiliated with the Center for Entrepreneurship Development at the University of Constantine 02.

H<sub>1</sub>: There is a statistically significant positive impact of business incubators on entrepreneurship and the growth of startups affiliated with the Center for Entrepreneurship Development at the University of Constantine 02.

To test this hypothesis, a simple linear regression model was applied to evaluate the effect of incubator contribution (independent variable) on entrepreneurial support and startup development (dependent variable).

**Table (6): Significance Testing of Simple Linear Regression Coefficients**

Model	Coefficients	Standard Error	Beta	T-Value	Sig
Constant (A)	2.05	0.082		4.024	0.000
Regression Coefficient (B <sub>1</sub> )	0.690	0.035	0.852	19.714	0.000
Regression Equation	Entrepreneurial Support and Startup Growth = 2.05 + (0.690 × Business Incubator Contribution)				

**The source:** Prepared by the researcher based on SPSS Version 26 outputs.

The results indicate that both the intercept (A = 2.05, p = 0.000) and the regression coefficient (B<sub>1</sub> = 0.690, p = 0.000) are highly statistically significant, confirming the reliability and validity of the regression model at the 0.05 significance level. The positive slope coefficient (B<sub>1</sub> = 0.690) suggests that for every one-unit increase in incubator contribution, entrepreneurial support and startup growth improve by approximately 69%, highlighting the strong positive effect of incubators on the development of startups.

These findings lead to the rejection of the null hypothesis (H<sub>0</sub>) in favor of the alternative hypothesis (H<sub>1</sub>), providing robust evidence that business incubators exert a statistically significant positive impact on entrepreneurship and the growth of startups at the University of Constantine 02. The results underscore the strategic role of incubators in fostering innovation, providing supportive infrastructure, and equipping entrepreneurs with the resources and guidance necessary to enhance startup performance and sustainability.

## 4. Discussion of Results

The findings of this study provide compelling evidence regarding the pivotal role of university-based business incubators in fostering entrepreneurship and promoting startup growth. The internal consistency of the measurement instrument, as indicated by Cronbach's Alpha values exceeding the accepted threshold of 0.70 ( $\alpha = 0.872$  for business incubators and  $\alpha = 0.813$  for entrepreneurship and startup growth), confirms the reliability of the questionnaire and supports the robustness of the collected data. This reliability ensures that the responses accurately capture participants' perceptions of the impact of incubators on entrepreneurial outcomes;

The descriptive statistics reveal a high level of agreement among respondents concerning the functions and effectiveness of business incubators, with an overall mean score of 4.21 (SD = 0.63). Items related to continuous guidance for decision-making (M = 4.40), provision of a supportive environment for startup growth and sustainability (M = 4.30), and enhancing the competitiveness of startups at local and global levels (M = 4.24) were rated most positively. These results highlight the centrality of strategic mentorship, enabling environments, and competitive capacity as critical success factors for nascent ventures. Conversely, facilitating access to various funding sources received a relatively lower score (M = 4.05), indicating that financial support, while present, may require further enhancement to meet the expanding needs of startups;

Regarding the entrepreneurship and startup growth dimension, the overall mean of 4.26 (SD = 0.68) demonstrates strong consensus on the importance of incubators and entrepreneurial activities in stimulating economic development and innovation. Notably, entrepreneurship's contribution to job creation and economic competitiveness received the highest ratings (M = 4.48 and M = 4.25, respectively), underscoring its critical role in labor market expansion and economic dynamism. Additionally, the development of creative ideas, promotion of technology transfer, and cultivation of entrepreneurial culture were strongly endorsed (M = 4.29–4.36), reflecting the comprehensive impact of incubators in enabling innovative, value-generating, and knowledge-intensive activities;

Regression analyses further substantiate these findings. The first hypothesis testing indicated that incubator contribution significantly predicts entrepreneurial support and startup growth, with a strong positive correlation ( $R = 0.782$ ) and a coefficient of determination of  $R^2 = 0.612$ . These results suggest that approximately 61% of the variance in entrepreneurial outcomes can be attributed to incubator support, confirming the strategic importance of institutional interventions in enhancing startup performance. Similarly, the second hypothesis testing revealed a highly significant positive impact of incubator contribution on entrepreneurship and startup growth, with a regression coefficient of 0.690, indicating that each unit increase in incubator support corresponds to a 69% improvement in entrepreneurial outcomes;

Collectively, these findings demonstrate that business incubators function as critical enablers of innovation ecosystems, providing startups with essential resources, infrastructure, mentorship, and networks. They not only facilitate the development of entrepreneurial skills and managerial capacities but also promote competitiveness, sustainability, and economic value creation. Nonetheless, the observed limitations in financial facilitation and persistent legal and administrative barriers suggest areas where additional policy support and resource allocation may enhance the efficacy of incubators further.

## **5. Conclusion**

University-based business incubators have proven to be transformative instruments in the advancement of entrepreneurial ecosystems, serving as strategic platforms that bridge the gap between academic knowledge and market-oriented innovation. Beyond offering infrastructural and administrative support, these incubators facilitate the development of entrepreneurial competencies through tailored mentorship, targeted training programs, and access to essential financial and professional networks. This study confirms that such interventions significantly enhance the likelihood of startup survival, accelerate business scaling, and foster innovative capabilities among entrepreneurs, thereby contributing to economic diversification and competitiveness.

Moreover, university incubators play a critical role in nurturing a culture of entrepreneurship by empowering students and graduates to translate creative ideas into market-ready ventures. Their multidimensional support ranging from risk mitigation to capacity building strengthens resilience and adaptability, enabling startups to navigate uncertainties and dynamic market environments. In the Algerian context, the establishment and expansion of university-based incubators have created new opportunities for youth engagement, technology-driven innovation, and the commercialization of academic research, demonstrating tangible benefits for both the economic and social fabric of the country.

The findings highlight that the full potential of these incubators is realized when they operate through strategic alignment with industry needs, flexible operational models, and collaborative networks with public and private sector stakeholders. Accordingly, reinforcing institutional support, increasing funding mechanisms, and fostering stronger integration between universities, industry, and government entities are essential to sustaining entrepreneurial growth, enhancing innovation outcomes, and ensuring that startups become resilient contributors to a knowledge-based and competitive economy.

## **Recommendations**

In light of the study's findings, the following recommendations are proposed:

- Strengthen integration between university incubators and the private sector through strategic partnerships and the provision of financial and fiscal incentives to encourage the funding of start-ups.
- Reform the legal and financial frameworks governing incubators by developing innovative financing mechanisms such as venture capital funds and facilitating start-ups' access to funding sources.
- Incorporate entrepreneurship into university curricula by designing modern educational programs and organizing digital training courses in collaboration with international organizations specialized in supporting entrepreneurship.
- Adopt clear and measurable performance indicators to assess the impact of incubators on start-up growth, alongside implementing periodic evaluations to improve support policies.
- Link incubators with research and development centers and provide advanced technological environments that utilize cutting-edge tools such as data analytics and artificial intelligence to foster innovation within incubated projects.

## **Referrals and references**

- Abdeldaim, L. (2011). Economic strategic thinking as a reference framework for business incubators through small technical projects. Master's thesis. Egypt: Helwan University.
- Abdel-Laoui, M. (2013). Business Incubators and Their Role in Youth Employment through the Integration of University Graduates. Unpublished doctoral dissertation. University of Algiers, Algeria.
- Abetti, P. (2004). Government-Supported Incubators in the Helsinki Region, Finland: Infrastructure, Results, and Best Practices. *The Journal of Technology Transfer*, pp. 19-40.
- Al-Fayhan, I. (2012). The Role of Business Incubators in Promoting Organizational Entrepreneurship. University of Baghdad, Iraq.
- Al-Moumen, A., & Karmia, T. (2021). The role of technological business incubators in supporting innovative startups in Algeria. University of Bouira. Algeria.
- Bahiri, K., & Karfis, F. (2023). Tax and financial incentives for startups in Algeria – With reference to the Startup Fund. *Journal of Administrative and Economic Sciences Horizons*.
- Ben Lakhdar, S., & al. (2020). The concept of startups in Algeria between adoption and reality. *Journal of Administrative and Economic Research*.
- Bessouih, M., & al. (2021). The reality and prospects of startups in Algeria. *Annals of Bashar University in Economic Sciences*.
- Bøllingtoft, A., & Ulhøi, J. (2005). The networked business incubator – leveraging entrepreneurial agency? *Journal of Business Venturing*, 20(02), pp. 265-290.
- Cherif Rehan, E. (2021). Business Incubators as a Mechanism for Supporting Small Enterprises – A Proposed Model in the Field of Information Technology. Doctoral Dissertation. Ouargla, Kasdi Merbah University, Algeria.
- Grimaldi, R., & Grandi, A. (2005). Business incubators and new venture creation: An assessment of incubating models. *Technovation*, 25(02), pp. 111-121.
- Hackett, S., & Dilts, D. (2004). A real options-driven theory of business incubation. *The Journal of Technology Transfer*, 29(01), pp. 41-54.
- Hannach, E., & Boufengour, K. (2021). Startups in Algeria: Reality and Challenges – With reference to pioneering experiences in the Arab world. *Annals of Bashar University in Economic Sciences*.
- Jawad, K., & Al-Battat, K. (2016). Small industries and the role of business incubators in supporting and developing them. Dar Al-Ayyam for Publishing and Distribution.
- Kirzner, I. (1973). *Competition and Entrepreneurship*. University of Chicago Press.
- Legal-Doctrine. (2020, May 17). What startups should keep in mind... Supplementary Finance Bill 2020. . Retrieved May 4, 2024, from Consulté le May 4, 2024, sur Legal-Doctrine: <https://legal-doctrine.com/edition/ce-que-les-startups-doivent-retenir-projet-de-loi-de-finances-complementaire-2020>

- Mazouz, Z., & Khellout, Z. (2021). The role of marketing environment analysis in improving startup performance. Algeria: University of Bouira.
- Merbah, T. (2021). Startups between support mechanisms and management realities in Algeria. University of Béchar Journal of Economic Sciences.
- Meziane, A., & Ammarouche, K. (2021). Startups in Algeria: Between their current state and success requirements. University of Bouira, Algeria.
- Mian, S. (2011). University Business Incubators: An institutional perspective. Journal of Technology Transfer.
- Obeidat, A. (2006). Business incubators as a mechanism to support small and medium-sized enterprises in the era of globalization. Master's thesis. Blida, Faculty of Economic Sciences and Management Sciences: Saad Dahlab University.
- Saleh, T. (2013). Ways to promote business incubators in Algeria in light of international experiences. Algeria: University of Ouargla.
- Schumpeter, J. (1934). The Theory of Economic Development. Harvard University Press.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25(01), pp. 217-226.
- Wong, P., & al. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. Small Business Economics, 24(03), pp. 335-350.
- Zaitouni, S. (2017). The Role of Business Incubators in Promoting the Small and Medium Enterprises Sector: A Case Study of Algeria. Doctoral Dissertation. University of Algiers, Algeria.

**How to cite this article by the APA method:**

SLIMANI Saida, (2025). Assessing the Impact of Business Incubators on Entrepreneurship Development and Startup Growth: A Case Study of Constantine 2 University, Roa Iktissadia Review, Algeria: University of El-Oued.15 (02), 87-102.

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