

# The Impact of Business Incubators on Fostering Entrepreneurial Orientation Among University Students: A Case Study of the Faculty of Economic Sciences, University of El Oued

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## Abstract:

This study investigates the effectiveness of business incubators in fostering entrepreneurial orientation among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued. It examines key dimensions of entrepreneurial orientation, including innovativeness, autonomy, proactiveness, competitive aggressiveness, and risk-taking propensity. The study is significant in that it highlights the role of university-based business incubators as a crucial element in shaping students' entrepreneurial awareness and addresses the question of how incubators influence this orientation.

The findings indicate a strong awareness among students of the importance of business incubators, along with a positive impact on the various dimensions of entrepreneurial orientation. The highest scores were observed in the dimension of proactiveness, while a relatively lower score was noted in risk-taking. Based on these findings, the study recommends strengthening mentorship programs within incubators, integrating entrepreneurship education into academic curricula, and expanding both financial and technical support services. It also advocates for enhanced collaboration between the university and both public and private sector entities to support the realization of student-led projects.

**Keywords:** Business Incubators, Entrepreneurial Orientation, Innovativeness; Proactiveness, Risk-Taking, Autonomy, Competitive Aggressiveness.

**JEL Classification:** L26, O31, M13, I23

## 1. Introduction:

In light of rapid economic transformations and the increasing need to cultivate initiative and innovation among youth, universities are expected to play a more proactive role in preparing students to enter the business world with confidence. Business

incubators have emerged as one of the key mechanisms adopted by academic institutions to create an environment conducive to entrepreneurship by offering technical support, mentorship, and access to resources.

Nevertheless, the actual effectiveness of these incubators in fostering entrepreneurial orientation among students remains a subject of ongoing debate, particularly in view of the varying degrees of entrepreneurial awareness and student involvement in entrepreneurial activities.

Accordingly, the central research problem of this study can be formulated as follows:

**To what extent do business incubators contribute to enhancing the entrepreneurial orientation of students at the Faculty of Economic Sciences, University of El Oued?**

This central question leads to the following sub-questions:

1. What is the extent of business incubators' contribution to entrepreneurial orientation among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued?
2. Is there a statistically significant impact of business incubators on the dimensions of entrepreneurial orientation among these students at a significance level of  $\alpha = 0.05$ ?

### **1.1 Research Hypotheses**

#### **Main Hypotheses:**

- Business incubators contribute effectively to fostering entrepreneurial orientation in all its dimensions among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued, at a significance level of  $\alpha = 0.05$ .
- There is a statistically significant impact of business incubators on the dimensions of entrepreneurial orientation among these students at the  $\alpha = 0.05$  level.

### **1.2 Significance of the Study**

The importance of this study stems from the significance of its variables, particularly its focus on a globally and nationally relevant topic—promoting entrepreneurial spirit within academic environments. It highlights one of the most prominent mechanisms in the Algerian context: university business incubators, which the government considers vital for launching startups expected to drive the Algerian economy forward in the coming years.

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

This study seeks to achieve several objectives, including:

- Identifying the concept and functions of business incubators.
- Understanding entrepreneurial orientation and its key dimensions.
- Assessing the contribution and impact of business incubators in promoting entrepreneurial orientation among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued, and examining the prevalence of this orientation within the academic environment.

### **1.4 Research Methodology**

This study employed a descriptive-analytical method appropriate to its nature. The statistical package **SPSS Version 25** was used to test the hypotheses and analyze the data. A case study approach was adopted to examine the role of business incubators in enhancing entrepreneurial orientation within the academic environment. A random sample of graduate students

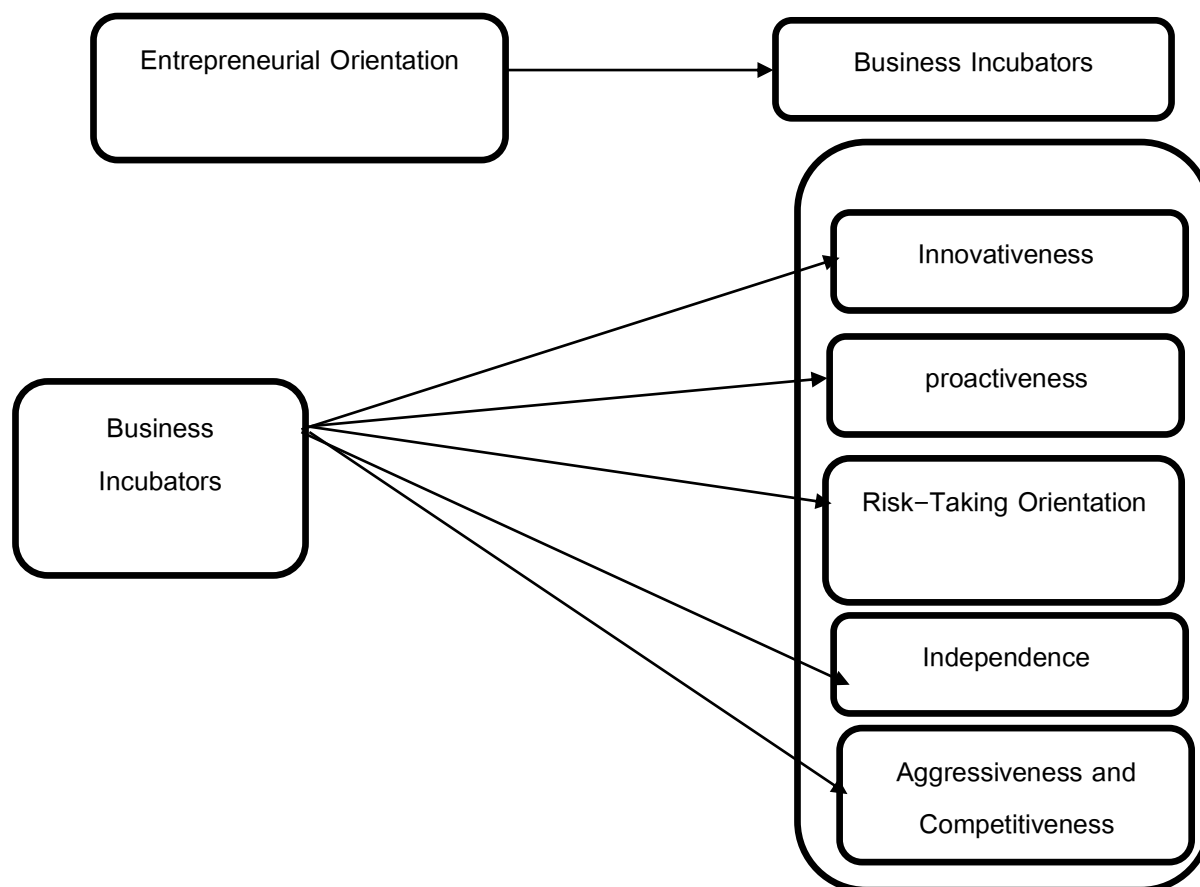
from the Faculty of Economic Sciences at the University of El Oued was selected, and a questionnaire was used to collect the relevant data.

### 1.5 Study Delimitations

- **Human Delimitation:** The study was conducted on a random sample of master's and doctoral students at the Faculty of Economic Sciences, University of El Oued.
- **Spatial Delimitation:** The research took place within the Faculty of Economic Sciences at the University of El Oued.
- **Temporal Delimitation:** The study was carried out from **April 25, 2024, to May 25, 2024.**

### 1.6 Study Model

To achieve the objectives and test the hypotheses, a conceptual model was developed to study the impact of business incubators on enhancing entrepreneurial orientation within the university environment at the Faculty of Economic Sciences, University of El Oued, as illustrated below:



Source: prepared by researchers

### Theoretical Framework and Literature Review:

**Independent Variable:** Business Incubators

**Dependent Variable:** Entrepreneurial Orientation and its five dimensions: Innovativeness, Proactiveness, Risk-Taking, Autonomy, and Aggressiveness/Competitiveness

## 2. Theoretical Foundation of Business Incubators and Entrepreneurial Orientation

This section reviews key concepts related to business incubators and entrepreneurial orientation as follows:

### 2.1. Business Incubators

#### Definition of Business Incubators:

- The **National Business Incubation Association (NBIA)** defines business incubators as: "Entities designed to support innovative start-ups and new entrepreneurs by providing the means, support, and expertise necessary to overcome the challenges of the launch and establishment phase." (Ben Saada & Gourari, 2022, p. 118)
- The **Algerian legislator**, in Executive Decree No. 20-254, defines a business incubator as: "Any structure under the public, private, or public-private partnership sector, whose mission is to support start-ups and innovative project holders by providing hosting, training, consulting, and financing services. In return, they benefit from several advantages, particularly in terms of tax exemptions and financing/funding facilitation." (Executive Decree No. 20-254, 2020).

Therefore, business incubators are **support mechanisms for innovative start-ups during the launch phase**, offering a comprehensive range of services that ease the process of business creation, including infrastructure (offices, technical equipment), procedural services (business model development), and strategic support (access to funding).

#### Key Functions of Business Incubators:

- Hosting and equipping start-ups with appropriate workspaces
- Assisting entrepreneurs with licensing and legal procedures
- Supporting in business plan development and feasibility studies (Al-Harithi, 2021, p. 73)
- Providing specialized training, especially in business, accounting, and legal matters
- Offering logistical support: IT tools, meeting rooms, and high-speed internet (Boukhmiss, 2019, pp. 65–66)
- Helping start-ups develop prototypes
- Assisting incubated start-ups in finding financing and facilitating market access (Ben Dredi, 2020, pp. 78–79)
- Delivering procedural, strategic, and infrastructure services (Madkhal, 2021, pp. 72–74).

### 2.2. Entrepreneurial Orientation

This section presents key definitions and the main dimensions of entrepreneurial orientation:

#### Definition:

- **Tajeddini Kayhan (2010, p. 225)**: "A tendency toward creativity, risk-taking, a willingness to change, and proactiveness that is reflected in launching new ventures, giving firms a competitive advantage and improving performance."
- **Covin & Slevin (1988, p. 218)**: "The degree to which top managers are inclined to take risks related to business activity, prefer change and innovation, and aggressively compete with rivals to gain competitive advantage."

Thus, **entrepreneurial orientation** is the **ability to create and innovate** through strategic, proactive, and risk-taking behavior aimed at sustainable competitiveness.

#### Main Dimensions of Entrepreneurial Orientation:

- **Innovativeness**: The foundation of EO; refers to distinctiveness and novelty in ideas, services, or products (Mutaeb & Radi, 2017, p. 42)
- **Proactiveness**: Anticipating environmental changes and future needs ahead of competitors (Al-Issawi et al., 2012, p. 77)

- **Risk-Taking:** Inclination to invest in high-risk/high-reward ventures such as new markets or untested technologies (Al-Mukhtar, 2018, p. 41)
- **Autonomy:** The ability of individuals or teams to independently initiate and implement ideas (Eka & Mohammad, 2019, p. 34)
- **Aggressiveness/Competitiveness:** The firm's active and direct efforts to outperform competitors and gain market position (Lumpkin & Dess, 1996, p. 148).

### 3. Previous Studies

#### 3.1. Arab Studies

- **Zakia Maqri & Asia Chenna (2015)** – Role of Entrepreneurial Orientation in University Research Labs and Start-Up Creation Key Findings: Strong correlation between EO in research labs and startup creation; significant impact of innovativeness and initiative; no significant impact of risk-taking.
- **Kaouache Djamel Eddine, Chafik Chater & Cherif Amara (2023)** – Measuring EO among female students at the Faculty of Economic Sciences, University of Jijel Findings: High overall EO; top dimension: proactiveness, followed by innovativeness; risk-taking scored lowest; no significant differences based on academic or demographic factors.
- **Bouamar Sabrina (2022)** – Business Incubators as a Mechanism for Start-Up Launch and Sustainability Findings: Business incubators are crucial for start-up support; prior to Decree 20-254, Algerian legislators confused incubators with nurseries; Decree 20-254 clarified the concept and defined forms of institutional support.

#### 3.2. International Studies

- **GHERBI Laid (2023)** – The Role of Business Incubators in Supporting Entrepreneurship in Algeria: The El Oued Incubator Model Findings: Incubator activity level at El Oued University is relatively high (mean = 3.804); entrepreneurial inclination among students is strong; weak positive correlation ( $r = 0.257$ ) between incubator activity and student entrepreneurship.
- **REDOUANE Adel & MIGHRI Zouhayer (2022)** – University Business Incubators in Supporting Entrepreneurship: Case of El Oued University Findings: El Oued University achieved notable success, especially in patents and supporting innovation projects; incubators should focus on solving community problems and converting ideas into start-ups.
- **Betáková, Okręglicka Havierníková & Havierníková (2019)** – Entrepreneurial Orientation Among Male and Female Entrepreneurs in Polish SMEs Findings: Among 220 small firms, both genders exhibited similar EO levels across all five dimensions; EO positively linked with economic performance.

#### 3.3. Differences Between Current and Previous Studies

The table (01): outlines the key differences between this study and previous research.

Aspect	Previous Studies	Current Study
<b>Environment</b>	These studies were conducted in foreign, Arab, or national contexts, except for the studies by GHARBI and REDOUANE Adel, MIGHRI Zouhayer, which were conducted in El Oued.	Our study was conducted in a local national context, specifically in the Wilaya of El Oued.

Aspect	Previous Studies	Current Study
<b>Objective</b>	Previous studies focused on examining one of the study variables in relation to another variable.	Our current study focused on examining the impact of business incubators on entrepreneurial orientation and the emergence of entrepreneurs among researchers and university students at Martyr Hamma Lakhdar University.
<b>Period</b>	These studies were conducted in earlier periods, the most recent being in 2023.	Our study was conducted during the second half of 2024.
<b>Dimensions</b>	The referenced studies on entrepreneurial orientation mostly addressed its three main dimensions, except for the study by Janka Betáková, Małgorzata Okręglińska, and Katarína Havierníková.	Our study examined all five dimensions of entrepreneurial orientation—both primary and secondary—considering that the Algerian studies reviewed addressed only the three main dimensions.

### 3.4. Areas of Benefit from Previous Studies

Previous studies were beneficial to our current research in the following ways:

- They contributed to establishing the **theoretical framework** of the present study.
- They helped identify **appropriate statistical tools and research methodology** suitable for our research context.

## 4. Field Study

### 4.1. Methodology, Population, and Research Instrument

- **Research Methodology:** To achieve the objectives of the study, the **descriptive-analytical method** was adopted, as it aligns with the nature of the topic: “*The impact of business incubators on enhancing entrepreneurial orientation in university settings.*” The **SPSS software package** was used to test the hypotheses.
- **Study Population and Sample:** The population consists of **master’s and doctoral students** at the Faculty of Economic Sciences, University of El Oued. Out of 275 distributed questionnaires, 270 were returned, with **266 valid for analysis**.
- **Research Instrument:** The primary data collection tool was the **questionnaire**, as it is the most suitable instrument for gathering information from the study sample. It included **two main sections** with **38 questions**, in addition to questions on personal information.
- **Instrument Validity:**
  - **Face Validity:** Verified by presenting the questionnaire to the **supervising professor** and three academic **subject-matter experts**, who assessed its logical flow and linguistic clarity. Their feedback was incorporated in the revision process.
  - **Internal Consistency (Reliability):** Internal consistency was measured using **Cronbach’s Alpha** for the questionnaire items. The results are shown in the following table:

**Table (02): Cronbach’s Alpha Results for Questionnaire Sections**

Questionnaire Sections	Number of Items	Cronbach’s Alpha
Business Incubators	15	0.9180

Questionnaire Sections	Number of Items	Cronbach's Alpha
Entrepreneurial Orientation Dimensions:		
– Innovativeness	4	0.7020
– Proactiveness	4	0.7600
– Risk-Taking	5	0.6250
– Autonomy	5	0.6970
– Aggressiveness & Competitiveness	5	0.5630
<b>Total Instrument Reliability</b>	<b>38</b>	<b>0.9170</b>

Source: Prepared by the researchers using SPSS v25 results.

Despite relatively **lower reliability** in the *risk-taking* (0.625) and *aggressiveness/competitiveness* (0.563) dimensions, the **overall reliability** of the questionnaire was excellent (0.917), indicating strong internal consistency, making the tool **highly reliable** for academic use.

**Table (03): Sample Distribution by Academic Degree**

No.	Variable	Category	Frequency	Percentage	Total
03	Academic Degree	Master	186	69.9%	100%
		Doctorate	80	30.1%	

Source: Prepared by the researchers using SPSS v25 results.

The above table shows that **master's students made up nearly twice the number of doctoral students**, with 69.9% of the sample holding a master's degree. This indicates a clear majority of participants were enrolled in master's programs. Doctoral students accounted for 30.1%, representing a solid academic level as well.

#### 4.3. Analysis and Description of Study Variables

This section presents an analysis of the sample's opinions based on their responses. A **three-point Likert scale** was used to calculate means and standard deviations regarding the role of business incubators in enhancing entrepreneurial orientation. Statements within each axis were ranked based on their **weighted mean**, as shown below:

**Table (04): Three-Point Likert Scale Ratings**

Disagree	Neutral	Agree
1	2	3

To define the range for each Likert cell:

- **Range** =  $3 - 1 = 2$
- **Cell length** =  $2 \div 3 = 0.66$

**Table (05): Weighted Mean Ranges and Interpretation**

Weighted Mean Range Likert Scale Level Interpretation		
1.00 – 1.66	Disagree	Weak
1.67 – 2.32	Neutral	Moderate
2.33 – 3.00	Agree	Strong

**Source:** Prepared by the researchers.

This scale was used to interpret all the study dimensions and variables.

## 5. Hypotheses Testing

### Testing the First Main Hypothesis:

This hypothesis investigates whether business incubators **significantly contribute** to enhancing entrepreneurial orientation (in all dimensions) among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued, at a significance level of  $\alpha = 0.05$ .

### 5.1. Analysis of Business Incubators Axis:

This is the second main axis after the personal information section. It consists of **15 statements**. The following table presents the analysis of responses to each statement:

**Table 06: Analysis of Business Incubator Statements**

No.	Statement	Disagree(%)	Neutral(%)	Agree(%)	Mean	Std. Dev.	Rank	Level
01	The incubator provides a suitable environment for launching innovative projects.	10.2% (27)	15.8% (42)	74.1% (197)	2.64	0.659	02	Good
02	The incubator seeks to link projects with markets.	8.3% (22)	23.7% (63)	68.0% (181)	2.60	0.638	03	Good
03	The incubator creates job opportunities in the community it serves.	17.7% (47)	43.2% (115)	39.1% (104)	2.21	0.724	15	Average
04	The incubator works to prevent problems and challenges that innovative projects may face.	8.3% (22)	25.9% (69)	65.8% (175)	2.58	0.641	05	Good
05	The incubator aims to turn students' and researchers' ideas into marketable products.	13.9% (37)	19.9% (53)	66.2% (176)	2.52	0.728	08	Good
06	The incubator offers consulting, training, and skills to help students launch their projects.	9.4% (25)	27.8% (74)	62.8% (167)	2.53	0.662	07	Good
07	Students benefit from experts and consultants brought in by the incubator to develop business models and plans.	10.2% (27)	24.1% (64)	65.8% (175)	2.56	0.672	06	Good



No.	Statement	Disagree(%)	Neutral(%)	Agree(%)	Mean	Std. Dev.	Rank	Level
08	The incubator evaluates hosted projects, identifies weaknesses, and works to improve them.	10.2% (27)	30.8% (82)	59.0% (157)	2.49	0.675	09	Good
09	The incubator offers various consulting, training, and development services to its members.	11.3% (30)	30.8% (82)	57.9% (154)	2.47	0.690	11	Good
10	The incubator encourages students and researchers, even those with no experience, to launch their own businesses.	12.4% (33)	38.7% (103)	48.9% (130)	2.36	0.694	14	Good
11	The incubator provides information and expertise to help students create more job opportunities in the future.	18.8% (50)	24.8% (66)	56.4% (150)	2.38	0.783	13	Good
12	The incubator aims to produce successful projects capable of solving community problems and sustaining in the future.	14.7% (39)	27.1% (72)	58.3% (155)	2.44	0.735	12	Good
13	The incubator works to turn student research into marketable projects or products in the future.	12.0% (32)	27.8% (74)	60.2% (160)	2.48	0.701	10	Good
14	The incubator provides an environment that gives startups the opportunity to succeed and grow.	7.1% (19)	26.3% (70)	66.5% (177)	2.59	0.620	04	Good
15	The incubator aims to reduce costs, effort, and time needed to launch and develop projects.	3.8% (10)	27.1% (72)	69.2% (184)	2.65	0.550	01	Good

**Source:** Prepared by the researchers based on SPSS Version 25 results.

From the above table, it is clear that Statement No. (15) ranked first with a mean score of 2.65 and a standard deviation of 0.5500, indicating that respondents perceive this feature as one of the most prominent roles of incubators. This reflects their awareness of the importance of competence in launching projects. Meanwhile, Statement No. (03) ranked last with a mean of 2.21 and standard deviation of 0.7240, which suggests that respondents believe the incubator's impact on job creation is limited or indirect.

Overall, the general mean was 2.50, meaning the respondents' attitudes tended toward agreement with the effectiveness of business incubators in enhancing entrepreneurial orientation, at a "Good" level. The standard deviation across all items ranged between 0.550 and 0.783, indicating a moderate to low variance in respondents' views, reflecting a general consensus on most statements.

## 5.2. Analysis of Entrepreneurial Orientation Axis Statements:

This is the third main axis of the study, covering **five dimensions**, which will be analyzed as follows:

### 5.2.1. Analysis of the Innovativeness Dimension:

Table No. (07): Analysis of Innovativeness Dimension Statements

No. Statement	Disagree	Neutral	Agree	Mean	Std. Dev.	Rank	Level
	Count / %	Count / %	Count / %				
01 I tend to try new and unconventional ideas that involve some creativity	15 (5.6%)	68 (25.6%)	183 (68.8%)	2.63	0.589	01	Good
02 I like to generate ideas and products that are entirely different from what exists in the market	23 (8.6%)	76 (28.6%)	167 (62.8%)	2.54	0.650	04	Good
03 I am willing to try new creative approaches to solve problems in nontraditional ways	15 (5.6%)	84 (31.6%)	167 (62.8%)	2.57	0.599	03	Good
04 I take advantage of change to create new opportunities that allow me to offer innovative products or services in the market	23 (8.7%)	70 (26.3%)	173 (65.0%)	2.62	0.640	02	Good

General Mean: 2.59 → Good

Source: Prepared by the researchers based on SPSS Version 25 results.

The table above shows that all statements within the innovativeness dimension received a rating of “Good”, with closely aligned mean values, indicating a consistent tendency toward agreement. This suggests a genuine willingness to adopt innovative ideas and experiment with non-traditional solutions.

### 5.2.2. Analysis of the Proactiveness Dimension:

This is the **second dimension** of entrepreneurial orientation and consists of **five statements**. The analysis of each statement is presented in the following table:

Table No. (08): Analysis of Proactiveness Dimension Statements

No. Statements	Disagree	Neutral	Agree	Mean	Std. Dev.	Rank	Level
	Count / %	Count / %	Count / %				
01 I believe in the necessity of prior planning before starting any project or task, no matter how small	15 (5.6%)	55 (20.7%)	196 (73.7%)	2.68	0.575	02	Good
02 I like to be the first to offer new products and ideas to solve current problems	10 (3.8%)	50 (18.8%)	206 (77.4%)	2.74	0.520	01	Good
03 I seek to provide products and services that meet the evolving needs of the market	15 (5.6%)	81 (30.5%)	170 (63.9%)	2.58	0.597	04	Good
04 I prefer to be one step ahead of my competitors rather than merely reacting to their actions	10 (3.8%)	80 (30.1%)	176 (66.2%)	2.62	0.558	03	Good

Overall Mean: 2.655 → Good

Source: Prepared by the researchers based on SPSS v25 results.

This table shows that all statements in this dimension were rated “Good” and leaned toward agreement. The close means reflect a strong tendency among participants toward initiative, proactive planning, and staying ahead in the market.

## 5.2.3. Analysis of Risk-Taking Dimension Statements

Table No. (09): Analysis of Risk-Taking Dimension Statements

No.	Statements	Disagree	Neutral	Agree	Mean	Std. Dev.	Rank	Level
01	I am bold enough to introduce new products in the market instead of copying existing ones	15 (5.6%)	83 (31.2%)	168 (63.2%)	2.58	0.598	02	Good
02	I am ambitious to launch a completely new and original entrepreneurial idea	10 (3.8%)	55 (20.7%)	201 (75.6%)	2.72	0.528	01	Good
03	I can market my ideas/products in environments beyond my local market	22 (8.3%)	96 (36.1%)	148 (55.6%)	2.47	0.645	03	Good
04	I invest significant time, effort, and money into high-return activities	30 (11.3%)	85 (32.0%)	151 (56.8%)	2.45	0.689	04	Good
05	I am capable of taking calculated high risks related to my business	47 (17.7%)	92 (34.6%)	127 (47.7%)	2.30	0.752	05	Moderate

Overall Mean: 2.50 → Good

Source: Prepared by the researchers based on SPSS v25 results.

Although Statement 05 received a "Moderate" rating, the rest of the items were rated "Good", indicating a generally **positive but cautious attitude toward entrepreneurial risk-taking and innovation**. The standard deviations reflect a strong consensus, especially in statements related to ambition.

## 5.2.4. Analysis of Autonomy Dimension Statements

Table No. (10): Analysis of Autonomy Dimension Statements

No.	Statements	Disagree	Neutral	Agree	Mean	Std. Dev.	Rank	Level
01	The incubator enabled me to rely on myself in scheduling my work	15 (5.6%)	131 (49.2%)	120 (45.1%)	2.39	0.594	04	Good
02	The incubator taught me how to independently define the procedures and steps to implement my work	15 (5.6%)	94 (35.3%)	157 (59.0%)	2.53	0.602	03	Good
03	The incubator accustomed me to a degree of freedom in choosing appropriate methods and forming the right team in cooperation with it	20 (7.5%)	84 (31.6%)	162 (60.9%)	2.53	0.633	03	Good
04	I can immediately seize emerging market opportunities and track new ideas to develop my business field	8 (3.0%)	87 (32.7%)	171 (64.3%)	2.61	0.547	01	Good
05	I work independently, generate new ideas, and strive to turn them into real products	10 (3.8%)	94 (35.3%)	162 (60.9%)	2.57	0.566	02	Good

Overall Mean: 2.53 → Good

Source: Prepared by the researchers based on SPSS v25 results.

All statements in this dimension were rated “Good” and leaned toward agreement. Statement 04 had the highest mean, reflecting participants' sense of opportunity recognition. The relatively low standard deviations suggest a high level of consensus, especially regarding tracking market trends and making independent decisions.

### 5.2.5. Analysis of Aggressiveness & Competitiveness Dimension Statements

**Table No. (11): Analysis of Aggressiveness and Competitiveness Statements**

No.	Statements	Disagree	Neutral	Agree	Mean	Std. Dev.	Rank	Level
01	I seek to challenge my competitors to improve my company's position in the market	15 (5.6%)	50 (18.8%)	201 (75.6%)	2.70	0.569	03	Good
02	I am ambitious to be the top in the market and outperform all competitors	15 (5.6%)	76 (28.6%)	175 (65.8%)	2.60	0.595	04	Good
03	I am convinced that my business must outperform all competitors	5 (1.9%)	55 (20.7%)	206 (77.4%)	2.76	0.472	01	Good
04	I strongly believe that attack is the best defense, and I apply this by offering new services/products to maintain market share	45 (16.9%)	82 (30.8%)	139 (52.3%)	2.35	0.754	05	Good
05	I seek to offer innovations that expand my market share and increase customer loyalty	17 (6.4%)	33 (12.4%)	216 (81.2%)	2.75	0.563	02	Good

**Overall Mean: 2.63 → Good**

**Source:** Prepared by the researchers based on SPSS v25 results.

All statements in this dimension received a “Good” rating. Statement 03 was rated the highest, showing strong competitive conviction. Statement 04, while ranked lowest, still achieved a "Good" score, reflecting a moderate belief in aggressive strategies. The consistency in responses shows a clear competitive and strategic orientation among respondents.

From the table above, it is evident that all items under the aggressiveness dimension achieved a “Good” level. The majority of responses were in agreement with the statements, leading to an overall mean score of 2.63, which falls within the “Good” range. This indicates that participants demonstrate a positive competitive inclination and a readiness to engage in competition to improve their institutions' market positions. Statement No. 03 ranked first with a mean score of 2.76, while statement No. 04 ranked last, although it still achieved a good level.

### Response to the Second Main Hypothesis:

This hypothesis aimed to examine the impact of business incubators on enhancing entrepreneurial orientation among postgraduate students in the Faculty of Economic Sciences at the University of El Oued. The following table presents the regression analysis:

Table (12): Regression Analysis of Business Incubators on Entrepreneurial Orientation

Dependent Variable	Independent Variable	Correlation Coefficient (R)	Coefficient of Determination (R <sup>2</sup> )	F-value	Significance (p)	Beta	Variance Inflation Factor (VIF)
Entrepreneurial Orientation	Business Incubators	0.437	0.191	62.203	0.00	0.337	1.000

Source: Prepared by the researchers based on SPSS output.

The table shows that the coefficient of determination (R<sup>2</sup>) for business incubators is 0.191, indicating that 19.1% of the variance in entrepreneurial orientation is attributable to the influence of business incubators. Although the effect is modest, it still confirms the existence of a statistically significant relationship. The computed F-value is 62.203, which is significant at the 0.05 level, confirming the validity of the model. Additionally, the Variance Inflation Factor (VIF) value of 1.000 is well below the critical threshold of 3, indicating no multicollinearity issues. The correlation coefficient (R) of 0.437 suggests a moderate and meaningful association, confirming the regression model's adequacy.

The resulting regression equation is:

$$Y = 38.184 + 0.337X$$

This suggests that business incubators have a statistically significant impact on enhancing entrepreneurial orientation among master's and doctoral students in the Faculty of Economic Sciences at the University of El Oued at the 5% significance level.

### Discussion and Interpretation of Results:

□ Table 03 shows that 69.9% of the sample consisted of master's students, while 30.1% were doctoral students. This distribution is reasonable, considering that admission to master's programs in Algeria is more direct, whereas doctoral programs are highly selective and competitive.

□ Table 06 indicates that the overall mean score for the business incubators dimension was **2.50**, corresponding to a "Good" evaluation by the respondents. This suggests a generally favorable perception of the role and effectiveness of incubators in promoting entrepreneurial orientation. The standard deviation ranged between **0.550** and **0.783**, pointing to a moderate to low degree of dispersion and a general consensus among participants. This highlights a clear awareness of the incubators' contribution to nurturing entrepreneurial tendencies among students.

□ Tables 07 to 11 demonstrate that all dimensions of entrepreneurial orientation reached a "Good" level, with responses generally leaning toward agreement. The **proactiveness** dimension achieved the highest mean score (**2.655**), indicating strategic alertness and a forward-thinking mindset among participants. This was followed by **competitive aggressiveness** (**2.63**), **innovativeness** (**2.59**), and **autonomy** (**2.53**). The **risk-taking** dimension scored the lowest (**2.50**), which may reflect a relative caution or hesitancy toward uncertain ventures.

□ Overall, the sample displays a strong entrepreneurial orientation and a proactive outlook. This supports the conclusion that business incubators play an effective role in fostering entrepreneurial tendencies among postgraduate students at the Faculty of Economic Sciences, University of El Oued.

□ Table 12 confirms that business incubators explain **19.1%** of the variance in entrepreneurial orientation, highlighting their measurable—though moderate—impact on shaping students' entrepreneurial attitudes.

### Conclusion

This study aimed to examine the effectiveness of business incubators in fostering the key dimensions of entrepreneurial orientation among university students. The findings demonstrate that the student community acknowledges the pivotal role

business incubators play in enhancing entrepreneurial traits. However, while incubators offer a supportive environment and a range of services, there is still a need to reinforce certain fundamental elements to ensure the emergence of a generation of students capable of entering the business world with confidence and autonomy.

**Key Findings:**

- The study sample exhibited a clear and comprehensive awareness of the vital role of business incubators in cultivating entrepreneurial characteristics.
- Business incubators were perceived to contribute positively across all dimensions of entrepreneurial orientation in the student environment.
- A statistically significant—though moderate—impact of business incubators on enhancing entrepreneurial orientation was confirmed among master's and doctoral students at the Faculty of Economic Sciences, University of El Oued.

**Recommendations:**

- Strengthen mentoring and coaching programs within incubators by involving experienced entrepreneurs and industry professionals to deliver practical content and share real-world insights.
- Integrate entrepreneurial thinking and initiative-driven skills into academic curricula across disciplines to build early awareness and a mindset open to innovation and risk-taking.
- Expand the scope of incubator services to include financial facilitation and material incentives, especially for innovative and tech-oriented student projects.
- Foster strategic partnerships between incubators and both public and private sector stakeholders to better align student projects with market demands and facilitate their transition into viable economic ventures.
- Intensify entrepreneurship awareness campaigns within universities through workshops, competitions, and exhibitions that promote creativity and encourage students to transform their ideas into actionable projects.

**Final Note:**

The field of business incubation and entrepreneurship remains a fertile ground for further academic inquiry, both by the present researchers and by others. As one of the most dynamic and rapidly evolving areas of study in Algeria, it continues to attract growing attention within academic and policy-making circles.

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