The role of the Entrepreneurial Ecosystem on Digital Entrepreneurship: A Case Study of Logistics Companies in Algeria

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Received: 08/10/2024 *Accepted*: 15/11/2024 *Published*: 14/12/2024

Abstract:
This study aims to explore How the different dimensions of the entrepreneurial ecosystem affect digital entrepreneurship in Algerian logistics companies. To address the research questions, Quantitative research approach was adopted throught the distribution of questionnaire to a random sample of 28 logistics companies in Algeria , using the SPSS statistical analysis software, version 25. The findings revealed that the entrepreneurial ecosystem positively contributes to enhancing digital entrepreneurship within these companies, particularly in the areas of government policies, entrepreneurial culture, and education and training, which showed a significant impact. Based on these results, the study recommends the need to strengthen and develop the entrepreneurial ecosystem to achieve higher positive levels, thereby improving and advancing digital entrepreneurship in logistics companies.

***Key Words*:** Entrepreneurial ecosystem, Digital entrepreneurship, Logistics companies.

JEL Classification: L26, O33, L91.

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Introduction

With the rapid advancement of digital technology, it has become essential for companies across all sectors to adopt digital strategies to remain competitive in the global market. This challenge is particularly significant for logistics companies, which rely heavily on technology to improve efficiency, reduce costs, and enhance customer experience. The entrepreneurial ecosystem plays a crucial role in either supporting or hindering the growth of digital entrepreneurship in this sector.

In Algeria, logistics companies are a vital part of the national economy, playing a central role in facilitating the movement of goods and services. However, to successfully achieve digital transformation, these enterprises require a supportive environment that includes adequate funding, a favourable regulatory framework, conducive market dynamics, and advanced technological infrastructure.

With the help of a logistics company-focused questionnaire, we will investigate how different ecosystem dimensions affect the adoption and growth of

digital entrepreneurship in this sector. The purpose of this article is to investigate the influence of the entrepreneurial ecosystem on digital entrepreneurship in Algerian logistics companies. With the goal of enhancing digital transformation, this study will assist identify opportunities as well as gaps and obstacles. It will also provide a policy makers with useful advice on how to improve the entrepreneurial climate to meet the needs of the digital age.

Research question: Despite the growing recognition of digital transformation as a key driver of competitiveness and efficiency . Adopting and utilizing digital technology presents substantial obstacles for many logistics firms. The goal of this research is to pinpoint the elements of the entrepreneurial environment that either facilitate or obstruct this digital revolution. The following query might be used to define the research problem:

To what extent do the different dimensions of the entrepreneurial ecosystem affect digital entrepreneurship in Algeria's logistics companies ?

To answer this research question, several sub-questions are posed:

- Do financial resources influence digital entrepreneurship in Algerian logistics companies?
- Does government policy affect digital entrepreneurship in logistics companies in Algeria?
- Does the support and mentoring system affect digital entrepreneurship in logistics companies in Algeria?
- Do cultural factors influence digital entrepreneurship in logistics companies in Algeria?
- Does the market influence digital entrepreneurship in logistics companies in Algeria?
- Does education and training influence digital entrepreneurship in logistics companies in Algeria?

Hypothesis:

- At a significance threshold of $\alpha = 0.05$, there is a statistically significant impact of financial resources on digital entrepreneurship in logistics companies in Algeria.
- At a significance threshold of $\alpha = 0.05$, there is a statistically significant impact of government policies on digital entrepreneurship in logistics companies in Algeria.
- At a significance threshold of $\alpha = 0.05$, the support and mentorship system has a statistically significant impact on digital entrepreneurship in logistics companies in Algeria.
- At a significance threshold of $\alpha = 0.05$, cultural factors have a statistically significant impact on digital entrepreneurship.
- At a significance threshold of $\alpha = 0.05$, the market has a statistically significant impact on digital entrepreneurship in logistics companies in Algeria.
- At a significance threshold of $\alpha = 0.05$, education and training statistically impact digital entrepreneurship.

Aims of the study: By exploring these questions and testing these hypotheses, the study aims to provide a comprehensive understanding of the factors within the entrepreneurial ecosystem that influence digital entrepreneurship in the Algerian logistics sector. This will help identify specific areas where interventions are needed to foster a more conducive environment for digital transformation.

I. Theoretical Background :

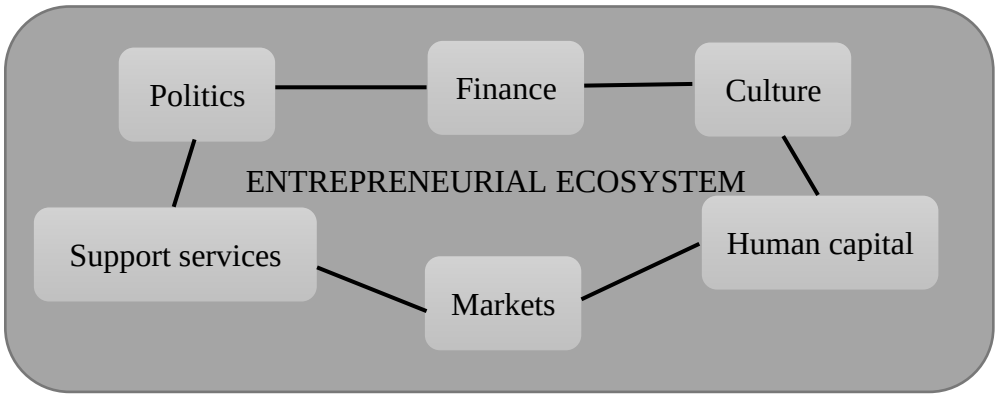
1. Entrepreneurial ecosystem concept :

1.1. Definition :

In this topic, research about an entrepreneurial ecosystem have evolved during the last fifteen years, despite the fact that the concept is relatively new. Although their extensive use, researchers and practitioners are still unable to come to a consensus on a definition for entrepreneurial ecosystems. In the 1980s and 1990s, the fundamental ideas of entrepreneurial ecosystems were developed. Moore first described and launched it in 1993. He defined it as "a space of interconnection and mutual dependence among economic agents, where their collective well-being is crucial for the success and survival of organizations" (Gonzalez Flores & Katonane Kovacs, 2018). Structures, participant interactions, modes of connectivity, and a variety of functions are all included in this concept. This period, beginning in the early 2000s, marked a transition in entrepreneurship studies from a focus on individual traits and personalities to a broader community perspective, leading to a new approach new approach considers the influence of social, cultural, and economic forces in the entrepreneurial process (Stam & Ven, 2019). An ecosystem for entrepreneurship is a web of interconnected institutions, investors, business owners, and support groups. These networks, which are intended to support the expansion and success of enterprises inside a particular area or community, are formed by cultural and normative forces. (Wurth & Stam, 2023). As a result, because of its complexity, the idea of entrepreneurial ecosystems has drawn the interest of politicians, social and political leaders, and policymakers to develop and put into practice plans for more sustainable growth. This growth is achieved through the rich integration of core capabilities and social norms, aimed at fostering long-term entrepreneurial activity and cultivating an innovation mindset (Ahmad B. , Ayub, Kausar, & Rashid, 2023).(Isenberg, 2010) Suggests that an entrepreneurial ecosystem encompasses and simultaneously fosters business activity within a specific geographical region. Also he provides a methodology that takes into account six domains for assessing the condition of such an ecosystem at the moment. Consequently, of entrepreneurs, investors, institutions, and supporting organizations are interrelated and constitute the idea of entrepreneurial ecosystems. These ecosystems support the expansion and success of businesses in certain areas and are impacted by social, cultural, and economic factors. In order to assess these ecosystems and determine their efficacy and influence, other domains may be taken into account.

1.2. Elements of the entrepreneurial ecosystem:

Fig.1 : «Elements of the entrepreneurial ecosystem»



Source : Isenberg, D. (2010). How to start an entrepreneurial revolution . *Harvard business review*, 46.

- **Culture :** National culture shapes entrepreneurial behavior through values and norms. It influence how risk, opportunity, and innovation are perceived and embraced within a society (Isenberg D. , 2011).
- **Finance :** Access to financial resources is critical for startups. This includes venture capital, loans, and alternative funding sources. Regional and hybrid venture capital funds, which combine public and private sector financing, are examples of efforts to address market failures and support entrepreneurial ventures (Jovanović, .Jevtić, & Petković, 2018).
- **Institutional Support :** Institutional frameworks and infrastructure, including formal institutions, physical resources, and networks, provide essential support for entrepreneurship. Effective institutions facilitate economic activity, while networks enhance the flow of knowledge and resources (Jovanović, .Jevtić, & Petković, 2018).
- **Human Capital :** Human capital refers to the skills, education, and experience that individuals bring to entrepreneurship. It is measured by educational attainment, skills, and the impact on entrepreneurial performance, such as profitability and growth (Stam & Van de Ven, 2021).
- **Market :** The growth and development of markets for new technologies are crucial for entrepreneurship. The presence of potential spin-offs and industry conditions can influence entrepreneurial opportunities and innovation (Acemoglu, Johnson, & Robinson, 2005).
- **Policy and Leadership :** Effective leadership and policy frameworks guide and support entrepreneurial activities. This includes both individual leaders and broader leadership structures, such as interest groups and public-private partnerships. Leadership impacts the direction and success of innovation projects and regional economic development (Sotarauta, Beer, & Gibney, 2017).

Digitalization is an element that has introduced a significant change in the structure of the entrepreneurial ecosystem.

2. Digital entreperneurship :

2.1. Definition :

Digital entrepreneurship is defined as "the pursuit of opportunities leveraging digital media and other information and communication technologies" (Davidson & Vaast, 2010). (Naudé, Amoros, & Bruck, 2023) state that "digital entrepreneurship differs from traditional entrepreneurship because the digital aspect of the opportunity shapes the entrepreneurial process."

Digital entrepreneurship is fundamentally different from traditional entrepreneurship, as identified by the European Commission in 2013. A digital knowledge base and ICT market, a digital business environment, financial accessibility, digital skills and e-leadership, and an entrepreneurial culture make up its five pillars (Vineela, 2018). The digital knowledge base involves technologies that store and manage both structured and unstructured data, facilitating complex decision-making processes. ICT, plays a crucial role in this, enabling the electronic transmission of information across industries. The digital business environment refers to virtual spaces where business interactions and data storage occur, often through social networking sites that allow for widespread information sharing. Access to finance is a critical component, providing businesses with the necessary financial services, such as credit, insurance, and risk management, essential for both short-term operations and long-term growth. Managing these financial resources effectively is vital to minimizing risks. Digital skills and e-leadership are also imperative, as they equip individuals with the knowledge and abilities to navigate the digital landscape effectively. Finally, an entrepreneurial culture promotes innovation and risk-taking within an organization, encouraging employees to develop and express their creative ideas. E-leadership supports this culture by fostering an environment where entrepreneurial thinking is encouraged and rewarded. Together, these elements form the foundation of digital entrepreneurship, driving its growth and evolution in the modern business world.

2.2. Key Elements of Digital Entrepreneurship:

Digital entrepreneurship is characterized by several key elements that distinguish it from conventional business approaches. These fundamental aspects include:

- **Digital artifacts:** digital features or applications that enhance new products or services, providing value to users. They can include elements from physical objects, transforming them into useful digital goods and services. Examples include apps on smartphones, smartwatches or other devices, as well as integrated technologies in household items and wearables (Lusch & Nambisan, 2015).
- **Digital platforms :** Digital platforms are spaces where information, products, or services are exchanged between producers and consumers, supported by a community that interacts with the platform. They generate value for users and profit for platform operators through models like advertising, subscriptions, and pay-per-use (Sharma, 2021).

- **Digital infrastructure :** Digital infrastructure consists of essential services and tools, such as cloud computing and data analytics, that support the information technology capabilities of organizations or regions. It plays a crucial role in modern economies, fostering innovation and entrepreneurship through connected technologies like social media, 3D printing, and digital marketplaces.

II. Methodology and instrument :

1. Study Population and Sample:

There are 84 logistics enterprises in Algeria that make up the study population. With 28 enterprises in the sample, 33.33% of the population is represented.

2. The methodological approach and the research instrument :

The quantitative approach is best suited to answering our research topic, hence the questionnaire serves as our research tool. It divided into two parts. The first part addressed demographic characteristics, while the second part focused on the study variables (entrepreneurial ecosystem and digital entrepreneurship). The responses were designed using a five-point Likert scale.

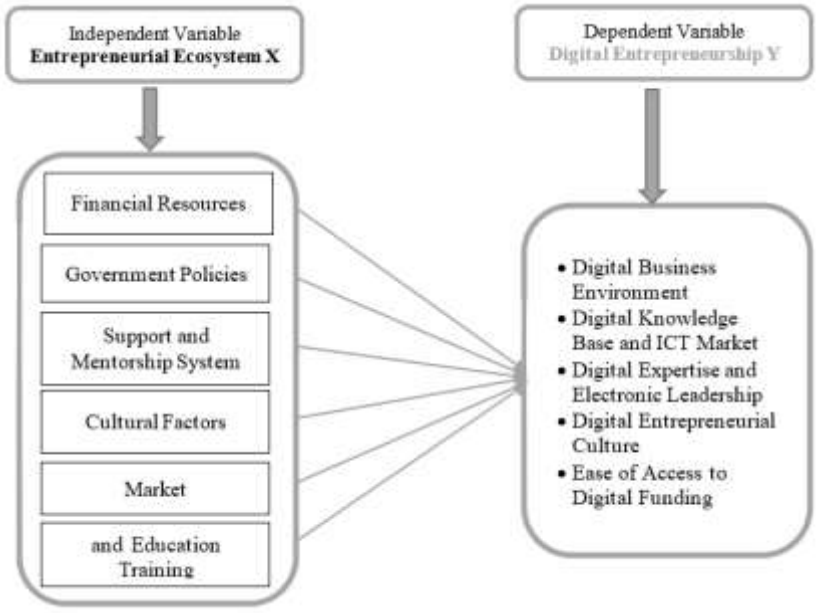
3. Statistical Analysis:

The SPSS software (version 25) was employed to derive various statistical results. The analysis utilized several statistical methods, including arithmetic mean, standard deviation, Pearson correlation coefficient, Cronbach's alpha reliability coefficient, Shapiro-Wilk test, variance inflation factor (VIF), and multiple linear regression.

4. Study model:

The independent variable is the entrepreneurial ecosystem X, which branches into 6 sub-independent variables: financial resources, government policies, support and mentoring systems, cultural factors, market education, and training. The dependent variable is digital entrepreneurship Y. This figure illustrates the study model.

Fig.2 : « The study model»



Source : made by the researchers

The association between digital entrepreneurship as the dependent variable and the entrepreneurial environment as the independent variable is depicted in the model. It illustrates the ways in which different facets of the entrepreneurial ecosystem impact the growth of digital entrepreneurship. These dimensions include: financial resources, which refer to the availability of funding to support entrepreneurial ventures; government policies, representing the regulations and governmental support that foster a conducive business environment; support and mentorship systems, providing guidance and expertise through mentors; cultural factors, relating to the societal and cultural influence on entrepreneurship; the market, which reflects the business opportunities available; and education and training, which contribute to the development of entrepreneurial skills. These factors have a direct + impact on the dimensions of digital entrepreneurship.

5. statistical data processing :

5.1. Research Tool Reliability: The Cronbach's alpha results are shown in the following table:

Table.1 : « Statistiques de fiability»

Cronbach's Alpha	Statements' Number
0.906	44

Source: made by the researchers, and based on the outcomes of SPSS 25.00

Every statement on the questionnaire had a reliability value of 0.906, which was higher than the predefined 60% dependability threshold of 0.6. Therefore, it can be concluded that the questionnaire is reliable when it comes to investigating and evaluating the research question, ensuring more consistent results.

5.2. Validity of the Study Tool : The questionnaire form was sent to a group of university professors in the same field as the supervising Groupe of three university professors in order to evaluate its validity and degree of achievement of the study's goals. It was concluded that the questionnaire form is valid for measuring the research variables after the required modifications were made in response to the critiques and recommendations of the reviewers.

5.3. Internal Consistency Validity of the Study Tool : Table.2 presents the Pearson correlation coefficients for the items of the study instrument. The table aims to assess the internal consistency of the research tool, which is divided into various dimensions related to entrepreneurial factors such as financial resources, government policies, support and mentorship systems, cultural factors, the market, education and training, as well as digital dimensions of digital entrepreneurship. The term "ITEM" followed by a number is used to reference each statement or question in the tool, allowing for a concise and organized presentation of the data. This approach facilitates a clear understanding of the relationships between the different items and dimensions, while keeping the focus on statistical data without repeating full sentences.

It is evident from the results in (Appendix) that the Pearson correlation coefficients between all items and the overall score of their respective dimension are positive and strong. All correlations are statistically significant at a level of less than 0.05, confirming that all items are consistent and valid in measuring the dimension they were designed to assess.

6. Results and Discussion :

6.1. Demographic Characteristics of the Study Sample: Based on the study sample's demographic distribution, men made up 82.1% of the sample with 23 persons, while women made up 17.9% with 5 individuals. Regarding age, the group aged 36 to 45 years was the largest, comprising 42.9% of the sample, followed by the 25 to 35 years age group at 39.3%, the 46 to 55 years group at 17.9%, and lastly, the group aged 55 and above at 0%. In terms of educational qualifications, the majority held a university degree, representing 92.9% of the sample, followed by those with postgraduate education at 7.1%, and none had vocational training qualifications (0%). As for the age of the organizations, the category of more than 10 years was the largest, accounting for 53.6%, followed by the 6 to 10 years category at 32.1%, and finally, the 2 to 6 years category at 14.3% of the total sample.

6.2. Analysis of Descriptive Statistics Results for the Study Variables : The two following tables display the study sample's perspectives concerning the assertions made regarding the digital entrepreneurship axis and the dimensions of the entrepreneurial ecosystem.

6.2.1. Descriptive Statistics Results for the Entrepreneurial Ecosystem Axis:

Table.2 : «Arithmetic Means and Standard Deviations of the Variables of Entrepreneurial Ecosystem Axis»

Dimensions	Arithmetic Mean	Standard Deviation	Rank	Decision (Degree of Approval)
Financial Resources	3.16	0.790	4	**Moderately Flexible**
Government Policies	3.08	0.532	5	**Moderately Flexible**
Support and Mentorship System	3.00	0.569	6	**Moderately Flexible**
Cultural Factors	3.79	0.670	3	**Flexible**
Market	3.91	0.419	2	**Flexible**
Education and Training	4.04	0.425	1	**Flexible**
Entrepreneurial Ecosystem	3.50	0.353	/	**Flexible**

Source: made by the researchers, and based on the outcomes of SPSS 25.00

The table shows that the overall arithmetic mean for the entrepreneurial ecosystem axis is 3.50, indicating that this axis is considered to be flexible. The research sample's responses on the entrepreneurial ecosystem axis show a high degree of consistency and little dispersion, as indicated by the standard deviation of 0.35.

With an arithmetic mean of 4.04, the data indicate that the education and training component scores highest, suggesting flexibility. This highlights the significance of universities and their function in the ecosystem and implies that staff members are dedicated to teaching and learning. The market dimension follows in second place with an arithmetic mean of 3.91, also indicating flexibility. This reflects the importance of achieving a competitive position in the market and the effort to offer innovative projects to expand the customer base. Cultural factors ranked third with an arithmetic mean of 3.79, indicating flexibility within the cultural aspects of the sample. Financial resources come fourth with a moderately flexible mean of 3.16, suggesting a moderate ability to fund projects and secure loans to pay off debt. With mean ratings of 3.08 and 3.00, respectively, government policies and the assistance and mentorship program came in fifth place, suggesting a modest degree of flexibility. This illustrates that rules and regulations allow modest flexibility in enabling and developing ideas, and incubators and accelerators provide moderate assistance for the advancement of projects and firms.

6.2.2. Descriptive Statistics Results for the Digital Entrepreneurship Axis:

Table.3 : «Arithmetic Means and Standard Deviations of the Variables of Digital Entrepreneurship Axis»

Dimensions	Arithmetic Mean	Standard Deviation	Rank	Decision (Degree of Approval)
Digital Business Environment	3.41	0.63906	4	**Flexible**
Digital Knowledge Base and ICT Market	3.85	0.57907	1	**Flexible**
Digital Expertise and Electronic Leadership	3.82	0.59651	2	**Flexible**
Digital Entrepreneurial Culture	3.74	0.65079	3	**Flexible**
Ease of Access to Digital Funding	3.19	0.83432	5	**Moderately Flexible**
Digital Entrepreneurship	3.60	0.503	/	**Flexible**

Source: made by the researchers, and based on the outcomes of SPSS 25.00

With an overall arithmetic mean of 3.60, the table's data indicate that the research sample's responses on the digital entrepreneurship axis tended to be flexible. This suggests a generally flexible acceptance of digital entrepreneurship in the logistics companies covered by the study. The standard deviation, estimated at 0.50, indicates a low level of dispersion and a high level of consistency among the responses on the digital entrepreneurship axis.

The digital knowledge base and ICT market dimension ranked first with an arithmetic mean of 3.85, indicating a flexible level. This reflects the acceptable quality of the digital knowledge base and ICT market available in logistics companies. Key elements of this digital knowledge base include digital communication and collaboration networks, which improve communication with customers and partners.

In second place is the dimension Digital Expertise and Electronic Leadership, with an arithmetic mean of 3.82, which also indicates flexibility. This highlights the presence of digital skills in logistics companies, which are essential for dealing with digital technologies and business operations. It underlines the readiness of companies to adapt to technological advances and to meet future challenges.

Digital Entrepreneurial Culture ranked third with an arithmetic mean of 3.74, indicating a flexible degree. This suggests that the sample has a digital cultural aspect that encourages employees to be entrepreneurial by rewarding those who contribute to improving digital skills.

The Digital Business Environment dimension, with an arithmetic mean of 3.41, also indicates flexibility, ranking fourth. This suggests a flexible digital business environment in the sample, characterised by high-speed internet and communication networks, and the use of cloud computing and other technologies to share information among logistics employees.

Lastly, the dimension of ease of access to digital funding, although ranked last, received a flexible degree with an arithmetic mean of 3.19. This indicates that logistics companies have plans and strategies to support and finance digital projects. They are also working with external entities, such as banks and investors, to support digital transformation projects. This willingness and ability suggests that logistics companies are prepared to innovate and develop digital projects, both now and in the future.

6.3. Test the Research Hypotheses :

a. Distribution Normality Test :

Table.4 : « Distribution Normality Test »

	Shapiro-Wilk Test	
	Test Value	Significance Level
Entrepreneurial Ecosystem	0.937	0.091
Digital Entrepreneurship	0.961	0.369

Source: made by the researchers, and based on the outcomes of SPSS 25.00

The Shapiro-Wilk test value for the Entrepreneurial Ecosystem is 0.937 at the significance level of 0.091. Given that the significance level above the widely accepted threshold of 0.05, it can be concluded that the Entrepreneurial Ecosystem dimension data follow a normal distribution.

For the Digital Entrepreneurship axis, the test value is 0.961 with a significance level of 0.369. Similarly, the significance level is well above 0.05. This means that the data for the Digital Entrepreneurship dimension is also normally distributed.

In summary, both dimensions - Entrepreneurial Ecosystem and Digital Entrepreneurship - show a normal distribution in the data, as indicated by their respective Shapiro-Wilk test results and significance levels. This normality assumption is crucial for further statistical analysis.

b. Variance Inflation Factor Test (VIF) :

Table.5 : « Variance Inflation Factor (VIF) Test of the Independent Sub-variables »

Independent Sub-variables	Tolerance	VIF
Financial Resources	0.581	1.720
Government Policies	0.949	1.053
Support and Mentorship System	0.862	1.160
Cultural Factors	0.744	1.343
Market	0.764	1.309
Education and Training	0.619	1.614

Source: made by the researchers, and based on the outcomes of SPSS 25.00

The values of the Variance Inflation Factor (VIF) and Tolerance for the independent sub-variables are shown in the table. Overall, the VIF values are less than 5, indicating that multicollinearity is not a significant issue in this model. This suggests that the independent variables are sufficiently distinct and not highly correlated with each other, which is important for the stability and reliability of the regression coefficients.

c. Overall Significance Test for the Study Model : The overall significance of the relation between the independent and dependent variables in the research model is evaluated using Fisher's F-test. The purpose of this test is to determine if the independent factors collectively have a significant effect on the dependent variables. The test's results are shown in the table below:

Table.6 : « Analysis of Variance (ANOVA) for the Multiple Linear Regression Model »

Model	Sum of Squares	Degrees of Freedom (df)	Mean Square	F	Sig. Value
Regression	5.112	6	0.852	4.200	0.004
Residual	1.740	21	0.083	-	-
Total	6.852	27	-	-	-

Source: made by the researchers, and based on the outcomes of SPSS 25.00

According to the table, the data is significant at the 0.05 level since the F value is 4.200, which is higher than the 0.004 significance criterion. This shows that the dependent variable is significantly impacted by at least one of the independent factors.

d. Analysis of the Sub-Hypotheses' Test Results:

Table.7 : «Test Results of the Multiple Linear Regression between the Entrepreneurial Ecosystem and Digital Entrepreneurship»

Independent Sub-Variables	Regression Coefficient B	Coefficient β	Model Test	
			t Value	sig Value
Constant	1.326		1.187	0.249
Financial Resources	-0.080	-0.126	-0.556	0.584
Government Policies	0.232	0.257	2.392	0.026
Support and Mentorship System	0.142	0.160	0.865	0.397
Cultural Factors	0.372	0.451	2.500	0.021
Market	-0.005	-0.005	-0.023	0.982
Education and Training	0.576	0.486	2.223	0.037

Source: made by the researchers, and based on the outcomes of SPSS 25.00

At the 0.05 significance level, the regression coefficients B2, B4, and B6 in Table.8 are deemed significant due to their significant t-values of 0.026, 0.021, and 0.037, respectively. The regression coefficients B1, B3, and B5 have t values that above the significance level of 0.05, indicating that they may not be as significant as the study's assumptions. Thus, we draw the conclusion that.

Overall, the results indicate that government policies x2, cultural factors3 and education and training x6 are the dimensions in the study model that have statistical significance with a value less than 0.05, and they have a significant positive impact on digital entrepreneurship Y according to the study sample, while the remaining dimensions have no significant effect. Based on these findings, the second, fourth and sixth hypotheses of the study are accepted, while the remaining hypotheses are rejected, but still provide valuable context for understanding the broader factors at play.

e. Analysis of the Main Hypothesis' Test Results: The correlation coefficient R and coefficient of determination R^2 values for the research model are displayed in the following table :

Table.8 : Results of the Multiple Linear Regression of the Model

Model	Correlation Coefficient	Coefficient of Determination	Adjusted Coefficient of Determination	Margin of Error
	0.614	0.578	0.415	0.380

Source: made by the researchers, and based on the outcomes of SPSS 25.00

Table .8 displays the model's correlation and determination coefficients. The correlation value of 0.614 indicates a moderately positive relationship between the independent factors and the dependent variable (digital entrepreneurship). This implies that there is a positive shift in digital entrepreneurship that corresponds to improvements in the independent variables. The study's main hypothesis, that there is a statistically significant effect of the entrepreneurial ecosystem on digital entrepreneurship in logistics companies in Algeria at a significant level ($\alpha = 0.05$),

is accepted, as we also note that the coefficient of determination equals 0.578, meaning that 57.8% of the changes in digital entrepreneurship can be explained by the entrepreneurial ecosystem, with the remaining percentage being attributed to variables outside the study model. According to the previous results, the final mathematical form of the study model is as follows:

$$Y= 1.326+ 0.232x2+ 0.372x4+ 0.576x6$$

Accordingly, it can be argued that digital entrepreneurship in logistics companies in Algeria is equal to 1.195 in the absence of any entrepreneurial ecosystem dimension. It increases by 0.232 for each degree increase in government policies, by 0.372 for each degree increase in cultural factors and by 0.576 for each degree increase in education and training.

Conclusion

The entrepreneurial ecosystem plays a vital role in shaping digital entrepreneurship within logistics companies in Algeria. The research results demonstrate that the entrepreneurial environment has a major role in shaping the growth and prosperity of digital entrepreneurship. Despite the substantial challenges these companies face in adopting and implementing digital technologies, key factors such as government policies, cultural aspects, and education and training emerge as critical in promoting and fostering digital entrepreneurship. This emphasizes how important it is to have a welcoming environment for entrepreneurs that promotes technology adoption and innovation, eventually improving the efficiency and competitiveness of logistics companies in the digital age. The following is a summary of the results drawn from our study:

- The entrepreneurial ecosystem is essential for logistics businesses to pursue digital entrepreneurship, particularly given the current state of the digital revolution. Algerian logistics companies are increasingly aware that a supportive and dynamic entrepreneurial ecosystem is essential for successfully integrating digital technologies and fostering innovation ;
- By observing, and taking the opinions of 33.33% of logistics companies in Algeria, it becomes clear to us that the financial resources in the entrepreneurial ecosystem are relatively unsuitable concerning digital entrepreneurship ;
- Government policies are characterized by flexibility within the entrepreneurial ecosystem, which is confirmed by logistics companies in Algeria due to the laws and regulations that facilitate the development of digital entrepreneurship ;
- There is a negative impact of the Support and Mentorship System within the entrepreneurial ecosystem on digital entrepreneurship, as noted by logistics companies. Support and Mentorship System laws are seen as insufficient and ineffective in promoting digitalization and digital entrepreneurship within these organisations ;
- There is a positive interest from logistics companies in the entrepreneurial cultural aspect. The study summarized that the entrepreneurial culture within the ecosystem has a positive impact on digital entrepreneurship.

- The lack of adequate attention given to market variables by logistics companies has the potential to diminish their competitiveness and strength compared to their rivals in the sector.
- There is significant attention given to education and training by logistics companies in the realm of digital entrepreneurship and digitalization, driven by the increasing need for up-to-date knowledge.
- There is a significant positive effect of three dimensions of the entrepreneurial ecosystem on digital entrepreneurship in logistics companies: Government Policies, Cultural Factors, and Education and Training. In contrast, the remaining dimensions have only a minimal impact.

Recommendations

Based on the findings of this study, several recommendations are proposed to enhance the impact of digital entrepreneurship on the performance of logistics enterprises in Algeria :

- Educational institutions and professional training centers should offer specialized programs focusing on digital skills and entrepreneurship. This will equip the workforce with the necessary knowledge and competencies to drive digital transformation in the logistics sector.
- Efforts should be made to foster a culture that embraces digital innovation within logistics enterprises. This can be achieved through awareness campaigns, workshops, and seminars highlighting the benefits of digital technologies.
- Investment in digital infrastructure, such as high-speed internet and reliable digital platforms, is crucial for the successful implementation of digital solutions in logistics. The government and private sector should work together to enhance the digital infrastructure across the country.
- Creating platforms for collaboration between logistics enterprises, tech startups, and research institutions can spur innovation and the development of digital solutions tailored to the logistics industry. Networking events, industry conferences, and innovation hubs can facilitate such interactions.
- Establishing mechanisms for continuous monitoring and evaluation of digital entrepreneurship initiatives will help identify best practices and areas for improvement. This will ensure that efforts to promote digital entrepreneurship remain effective and relevant to the evolving needs of the logistics sector.
- Engaging in international collaborations can provide Algerian logistics enterprises with access to global best practices, advanced technologies, and new market opportunities. Partnerships with foreign companies, participation in international trade fairs, and involvement in global digital entrepreneurship networks can be beneficial.

By implementing these recommendations, Algeria can create a conducive environment for digital entrepreneurship, thereby enhancing the performance and competitiveness of its logistics enterprises in the digital economy.

References :

- Acemoglu, D., Johnson, S., & Robinson, J. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth*, 393.
- Ahmad, B., Ayub, U., Kausar, A., & Rashid, S. (2023). Knowledge spillovers and entrepreneurial ecosystem: A systematic literature review. *Knowledge Management & E-Learning, 15(4)*, 575–599.
- Davidson, E., & Vaast, E. (2010). Digital Entrepreneurship and its Sociomaterial Enactment. *In Proceedings of the 43rd Hawaii International Conference on System Sciences*, 3.
- Gonzalez Flores , K., & Katonane Kovacs, J. (2018). Defining the entrepreneurship ecosystem. *SEA practical application of science*, 300.
- Isenberg, D. (2010). How to start an entrepreneurial revolution . *Harvard business review*, 46.
- Isenberg, D. (2011). The entrepreneurship ecosystem strategy as a new paradigm for economic policy: Principles for cultivating entrepreneurship. *Dublin, Ireland*.
- Jovanović, M., .Jevtić, M., & Petković, J. (2018). The role of culture in entrepreneurial ecosystem: What matters most. *ISS,385*.
- Naudé, W., Amoros, E., & Bruck, T. (2023). State-Based Armed Conflict and Entrepreneurship: Empirical Evidence. *IZA Discussion Paper no. 15946, IZA,134*.
- Sharma, A. (2021). Digital Entrepreneurship: Need of the Era. *Maharaja Surajmal Institute*, 167.
- Sotarauta, M., Beer, A., & Gibney, J. (2017). Making sense of leadership in urban and regional development. . *Regional Studies* , 346.
- Stam, E., & Ven, A. (2019). Entrepreneurial ecosystem elements. *Springer*, 810.
- Stam, E., & Van de Ven, A. (2021). Entrepreneurial ecosystem elements. *Small Business Economics*, 821.
- Vineela, G. (2018). Digital Entrepreneurship. *IJIRMPS Volume 6*, 444.
- Wurth, B., & Stam, E. (2023). Entrepreneurial Ecosystem Mechanisms. *the essence of knowledge Boston*.

Appendix

Pearson Correlation Coefficient for the Statements of the Study Instrument

Statement	Correlation Coefficient	Significance Level
Dimension Of Financial Resources		
ITEM 1.1	0.860	0.000
ITEM 1.2	0.898	0.000
ITEM 1.3	0.849	0.000
ITEM 1.4	0.769	0.000
Dimension Of Government Policies		
ITEM 2.1	0.710	0.000
ITEM 2.2	0.804	0.000
ITEM 2.3	0.857	0.000
ITEM 2.4	0.710	0.000
Dimension Of Support And Mentorship System		
ITEM 3.1	0.766	0.000
ITEM 3.2	0.881	0.000
ITEM 3.3	0.765	0.000
ITEM 3.4	0.796	0.000
Dimension Of Cultural Factors		
ITEM 4.1	0.799	0.000
ITEM 4.2	0.899	0.000
ITEM 4.3	0.880	0.000
ITEM 4.4	0.739	0.000
Dimension Of Market		
ITEM 5.1	0.774	0.000
ITEM 5.2	0.703	0.000
ITEM 5.3	0.562	0.002
ITEM 5.4	0.807	0.000
Dimension Of Education And Training		
ITEM 6.1	0.748	0.000
ITEM 6.2	0.811	0.000
ITEM 6.3	0.654	0.000
ITEM 6.4	0.680	0.000
Dimension Of Digital Business Environment		
ITEM 7.1	0.550	0.002
ITEM 7.2	0.895	0.000
ITEM 7.3	0.945	0.000
ITEM 7.4	0.819	0.000
Dimension Of Digital Knowledge Base And Ict Market		

ITEM 8.1	0.826	0.000
ITEM 8.2	0.672	0.000
ITEM 8.3	0.865	0.000
ITEM 8.4	0.815	0.000
Dimension Of Digital Expertise And Electronic Leadership		
ITEM 9.1	0.683	0.000
ITEM 9.2	0.763	0.000
ITEM 9.3	0.864	0.000
ITEM 9.4	0.901	0.000
Dimension Of Digital Entrepreneurial Culture		
ITEM 10.1	0.776	0.000
ITEM 10.2	0.666	0.000
ITEM 10.3	0.877	0.000
ITEM 10.4	0.803	0.000
Dimension Of Ease Of Access To Digital Funding		
ITEM 11.1	0.790	0.000
ITEM 11.2	0.923	0.000
ITEM 11.3	0.971	0.000
ITEM 11.4	0.929	0.000

Source : made by the researchers, and based on the outcomes of SPSS 25.00