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Artificial Intelligence and Marketing in Algerian Startups: A Qualitative Study within Incubation Programs

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Abstract

Artificial Intelligence integration has become vital for startups in their early development stages. This study investigates the perceptions and readiness of student entrepreneurs in Algerian university incubators to adopt AI, focusing on marketing and training. Using a qualitative approach, 11 semi-structured interviews were conducted with participants from varied academic and sectoral backgrounds. Data were analyzed thematically with NVivo15, incorporating matrix coding and frequency mapping, and cross-referenced by participant attributes. Findings highlight that training and institutional support are critical prerequisites, especially for non-technical students. Marketing is seen as the most promising area for AI application.

Keywords : University incubator, Startups, Artificial Intelligence, Marketing
Jel Classification Codes :M13, M31, M53, M33, L26.

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1. INTRODUCTION

Startups, as young and innovative ventures with high growth potential, have emerged as key drivers of economic diversification and value creation. In Algeria, the ambition to reduce dependence on hydrocarbon revenues and to capitalize on a young, educated population has fostered the development of a knowledge-based economy, particularly through the promotion of student entrepreneurship. This momentum can be attributed to several factors, including anticipated graduate unemployment, digital literacy, and the influence of successful young entrepreneurs. During the early development phase, several dimensions are critical to a startup's viability: business model, financial management, human resources, regulatory compliance, and marketing. Among these, marketing plays a central role in testing the feasibility of the business idea, validating product, market fit, and attracting initial customers. In an environment characterized by rapid technological advancement, artificial intelligence (AI) has emerged as a strategic tool to enhance both operational efficiency and project quality, especially through its ability to support personalized and optimized marketing initiatives for startups. AI improves not only time efficiency but also the quality of strategic decisions, thanks to its capacity to rapidly process large volumes of information and generate targeted solutions (Kalleya, et al., 2024).

The question of the study:

How do incubated student startups perceive and use artificial intelligence in their marketing and market research activities, and what skills or support do they need to use it more effectively?

The Objectif of the study:

This study aims to analyze how AI is perceived by student entrepreneurs, particularly regarding its role in supporting marketing strategies and the perceived need for training to ensure its effective use.

The importance of the study:

This study contributes to understanding how student entrepreneurs in Algerian university incubators perceive and adopt Artificial Intelligence (AI), particularly in the areas of marketing and training. By addressing a gap in the local academic literature, this research provides insights into the readiness and challenges faced by early-stage startups in integrating AI tools. Beyond its theoretical value, the study also offers practical recommendations that can support incubators, policymakers, and entrepreneurs in enhancing training programs, fostering innovation, and strengthening the entrepreneurial ecosystem in Algeria.

Methodology

A qualitative research design was adopted, based on semi-structured interviews analyzed through thematic analysis within an inductive framework. The study is structured around four main sections. The first provides a review of the literature, examining previous work related to student entrepreneurship, the role of university incubators, and the integration of AI in innovative ventures. This section establishes the theoretical and conceptual framework of the research. The second section presents the adopted methodology, including the qualitative approach, sample characteristics, data collection instruments, and analytical techniques. The third section reports the findings, highlighting the perceptions, practices, and expressed needs of project holders regarding AI. Finally, the fourth section discusses the results and provides interpretations, focusing on managerial and practical implications as well as directions for future research.

2. Literature Review

Prior to presenting our empirical study, we first define the key foundational concepts that inform this research.

2.1 Startup

The concept of a startup has attracted increasing attention from scholars, resulting in various interpretations.

2.1.1 Definition of a startup: According to Google and PwC (2013), cited in Skala (2019), a startup is characterized by the following features:

-A technology-centric product or service;
-Scalability (strong leverage effect on revenue per additional employee);
-A disruptive nature of innovation;
-Annual revenue of less than USD 5 million. (Skala, 2019)
The earliest definition of a startup in the academic literature dates back to 1976, when Keeble described it as the creation of an entirely new company that did not previously exist (Al Ehsan, 2021). In summary, a startup can be defined as a fast-growing, innovative, and technology-driven company that operates based on a scalable business model.

2.1.2 Early-Stage Startups: Early-stage startups refer to ventures that are in their initial formation phase and undergoing structuration. Their growth depends on several capabilities, including sales capacity, scalability, entrepreneurial competence, adaptability, innovation potential, absorptive capacity, and the ability to attract external funding (Griva, Kotsopoulos, Karagiannaki, & Zamani, 2023)**.** At this stage, teams are small, resources are limited, and risks are high. According to Jones and Schou (2022), early coordination challenges should be anticipated by drawing on existing frameworks and experimenting with coordination tools (Jones & Schou, 2022)**.** Suppliers often perceive startups as unreliable and risky partners due to their novelty, lack of legitimacy, high failure rate, and absence of operational history or

market reputation. As a result, startups may face higher prices or be excluded from certain collaborations. (Tessaro & Harms, 2023)

2.1.3 Student Startups: Entrepreneurial initiatives led by students or recent graduates often suffer from a lack of historical legitimacy. Nonetheless, many of the world's leading companies, including Microsoft, Google, and Meta, were founded by novice entrepreneurs.Dalziel and Basir (2024) show that indirect exposure to R&D activities within academic departments or through internships can leave a technological imprint on student startups. This effect is reinforced when influencers are affiliated with prestigious institutions or innovative employers, and when students possess strong software skills. Technological imprints from diverse sources are complementary, and even short exposure to inventive environments can create multiple layers of technological marking modulated by the students' technical abilities. (Dalziel & Basir, 2024)

2.2 Artificial Intelligence and the Marketing Approach of Startups:

In 1956, Marvin Lee Minsky defined artificial intelligence (AI) as the construction of computer programs that perform tasks which, for the time being, are more effectively carried out by humans because they involve high-level mental processes. (Haiech, 2020)

Today, AI applications are projected to spread across almost all sectors that rely on human intelligence (Oztemel & Gursev, 2018). Giuggioli & Pellegrini, (2023), explore the importance of AI for entrepreneurs, especially in terms of identifying opportunities, decision-making, performance, and innovation (Giuggioli

&Pellegrini, 2023). AI is built on 12 core technologies, among which: Neural networks (simulate brain-like structures via algorithms); Machine learning (enables computers to learn from data using mathematical and statistical methods); Other key technologies: autonomous systems, virtual agents, natural language processing (NLP), and conversational bots (Taibi & Lamri, 2021).

In the Algerian context, (Mekimah, et al., 2024), recommend that startup projects focus on marketing intelligence to support informed business decisions. This includes leveraging competitive intelligence to swiftly identify emerging threats and opportunities. According to Kouf (2024), marketing AI refers to the application of AI techniques to analyze customer data and develop highly personalized, targeted marketing strategies aimed at enhancing engagement and meeting individual needs. Similar insights are shared by (Dianti, Mualifah, & Dirgantara, 2024)

2.3 Artificial Intelligence and the Role of University Incubators

Startups require structured support and guidance to ensure their success, especially during the early stages. University incubators play a critical role in integrating startups into entrepreneurial ecosystems, particularly during the early-stage phase (Pinto & Rua, 2023)

The adoption of AI in university-based entrepreneurial projects in Algeria holds strong potential but also presents significant challenges. Addressing these challenges requires institutional reforms, infrastructure development, and targeted awareness initiatives. With increased support from local actors, including government bodies, academic institutions, and the private sector, Algeria could foster a dynamic and competitive innovation

ecosystem conducive to the emergence and growth of technology-based startups.(Bouacha & Ould Ferroukh, 2024)

2.4 University Incubator Support and Artificial Intelligence

Startups require incubators' advice and assistance for their success. University incubators assist in integrating startups into the ecosystem, particularly in the initial-stage phase (Pinto & Rua, 2023)

The application of artificial intelligence to Algerian university initiatives has great potential, but also great challenges. Overcoming these challenges involves embracing institutional changes, strengthening infrastructure, and focused awareness campaigns. With increased support from local stakeholders—such as the government, universities, and private sector—Algeria is able to create an innovative and competitive framework in which technology start-ups can grow and thrive (Bouacha & Ould Ferroukh, 2024).

3. Methodology

3.1 Research Objectives

- Analyze the perceptions of artificial intelligence (AI) among the sample.
- Examine how AI is integrated into marketing activities.
- Assess the level of competence in using AI tools, by the interviewees.
- Identify the training and support needs related to AI adoption.

3.2 Target Population and Sampling Method

This research adopts a qualitative and exploratory design. The target population consists of senior undergraduate and graduate students, at the bachelor's, master's, or professional master's level,

regardless of field of study, who are incubated at the university incubator of Annaba (Algeria).

The sample includes early-stage project holders who are actively integrating AI into their startup development. A non-probability convenience sampling strategy was employed, following several selection stages arrive at a final sample size of eleven (11) interviewees.

Qualitative research often relies on 6 to 20 participants when using semi-structured interviews, as suggested by. (Guest, Bunce, & Johnson, 2006). In this study, the focus was placed on depth of understanding and the richness of insights generated from the data rather than on statistical generalizability.

Table .1 Participants profiles

Case	Gender	Level	Field	Sector
01	Male	M2**	Letters&Langages	Digital & AI-based Solutions
02	Male	M2	Technology	Digital & AI-based Solutions
03	Female	M2	Humanities	Health&MedicalTechnology
04	Female	L3*	Letters&Langages	Digital & AI-based Solutions
05	Female	L3	Economy	Digital & AI-based Solutions
06	Female	M2	Technology	Environment&SustainableEnergy
07	Female	L3	Economy	Environment&SustainableEnergy
08	Female	L3	Technology	Health&MedicalTechnology
09	Female	L3	Economy	Environment&SustainableEnergy
10	Male	M2	Sciences	Industry&Manufacturing
11	Female	M2	Technology	Industry&Manufacturing

*L3: 3rd year of Licence**M2: 2nd year of academic Master

Source: Developed by the authors.

Females form the majority of the sample, with other characteristics relatively balanced, indicating a representative range of academic and entrepreneurial profiles among incubated project holders.

3.3 Data Collection Method

Data were collected through semi-structured individual interviews, organized around three thematic dimensions (Appendix 1), with participants selected from the sample described above. The data collection process followed a four-stage procedure:

Stage 1 – Mid-June: An initial face-to-face meeting was held with potential participants at their university incubator. The purpose of this meeting was to present the research objectives and collect participants' contact information. A preliminary pool of 60 students was identified during this phase.

Stage 2 – Late June: Contextual (filtering) questions were administered (see Appendix 1) to refine the sample and ensure alignment with the study's criteria. Specifically, participants had to be project holders who had integrated some form of AI technology into their venture and were willing to engage in an interview under the given conditions. Based on these criteria, a pre-selected group of 25 participants was retained.

Stage 3 – Early July: The selected participants were interviewed individually via WhatsApp. Interviews followed the semi-structured guide and focused on participants' experiences with AI integration in marketing practices.

Stage 4 – Mid-July: The interview phase concluded with the elimination of 14 participants whose responses were either out of

scope or incomplete. As a result, the final sample analyzed in the thematic analysis consisted of 11 participants, whose responses met the inclusion criteria and provided sufficient depth for qualitative interpretation.

3.4 Data analysis

A thematic analysis was adopted for this study, due to its flexible nature and suitability for a wide range of qualitative inquiries. It allows for a rich and detailed account of participants' perspectives (Braun & Clark, 2006). The qualitative data analysis software NVivo was used to record, code, and evaluate the participants' responses. (Plard & Martineau, 2019)

The 2024 version of NVivo includes enhanced features such as cloud-based collaboration and an improved, streamlined user interface, enabling a more efficient and collaborative analytical process.

An inductive approach was employed (Nina, Cho, & Lochmiller, 2020), which minimizes the risk of researcher bias by focusing on the data itself rather than being driven by pre-established theoretical frameworks. This method does not necessarily mirror the exact structure of the interview questions but instead allows themes to emerge organically from the participants' discourse. (Braun & Clarke, 2019)

All interviews were transcribed and formatted in English using Microsoft Word, ensuring grammatical accuracy while preserving the original ideas and style of the respondents. Transcripts were then imported into NVivo for systematic coding and thematic analysis.

Table.2 Thematic Analysis Process Using NVivo

Step	Process
01	The transcription of the data, their assignment to relevant codes, and the development of meaningful themes.
02	The coding of excerpts in such a way that each expresses a theme, later used to validate the study's findings (Attride-Stirling, 2001)
03	Finally, the identified themes are reviewed by revisiting the data and transcripts to first check whether there is sufficient data under each theme, and second, whether the separation of themes is justified (Kiger & Varpio, 2020)

Source: Developed by the authors, based on referenced methodologies.

4. Results

Several fundamental queries are employed to analyze the data, specifically:

- Word Frequency Analysis, which allows for the identification of common expressions and terms across the dataset.
- Textual Search, represented here through the text query tree, which visually maps relationships between key terms and phrases.
- Matrix coding, allowing deeper insight into theme interactions.
- Cross-tabulation Matrix, which enables the cross-analysis of interviewee groups (defined by an attribute) with the generated themes.

4.1 Word Frequency Analysis:

Table.3 Top 40 Most Frequent Words Grouped by Semantic Similarity

Word	Length	Count	W %	Word	Length	Count	W %
Training	8	26	3,48	Needs	5	6	0,58
Marketing	9	26	3,41	Believe	7	4	0,54
Intelligence	12	20	2,28	Decision	8	4	0,54
Project	7	18	2,05	Digital	7	4	0,54
Support	7	14	1,67	Competitor	11	4	0,47
Incubator	9	11	1,47	Trends	6	4	0,47
Integration	9	8	1,07	Behavior	8	3	0,40
Learning	8	8	1,07	Experience	10	3	0,40
Content	7	8	1,00	Future	6	3	0,40
Analysis	8	7	0,94	Innovation	10	6	0,40
Startup	7	7	0,94	Sector	6	3	0,40
Human	5	8	0,87	Costs	5	3	0,33
Technical	9	7	0,87	Accelerator	11	2	0,27
Program	11	7	0,85	Application	12	2	0,27
Artificial	10	6	0,80	Ideas	5	2	0,27
Efficiency	10	6	0,80	Monitoring	10	2	0,27
Design	6	11	0,71	Opportunity	13	2	0,27
Analyze	7	5	0,67	Performanc	11	2	0,27
Customer	8	5	0,67	Strategies	10	2	0,27
Solutions	9	5	0,67	Workshops	9	2	0,27

W %: Weighted Percentage
Source :Nvivo 15

The terms training, marketing, and intelligence appear at the core of the dataset. Other frequently occurring words, such as needs, believe, decision, competitor, trends, and innovation, reflect participants' concerns regarding market expectations, competitive dynamics, and the pursuit of innovation within their startup projects.

Fig.1. Word Cloud Visualization



Source :Nvivo 15

In line with the previous table, the word cloud further confirms that the most prominent terms in the analyzed corpus include training, marketing, intelligence, project, support, and incubator.

This visual representation illustrates the central role of training, the marketing function, and intelligence (most often artificial) in incubated startup projects. The relative size of each word reflects its importance in the dataset, based on frequency or weighted relevance.

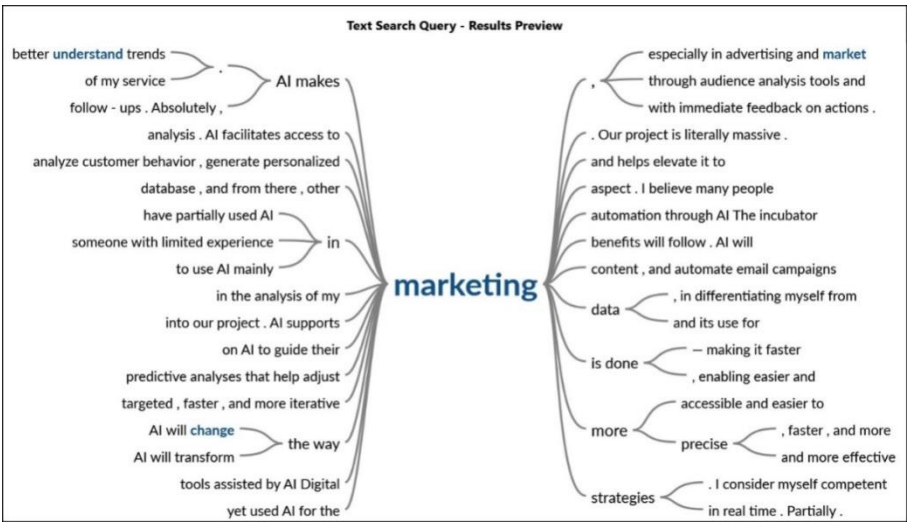
4.2 Text Search Query

As part of the text search analysis, we generated a query tree for the term "Marketing" to explore its associative relationships within the dataset.

This choice is justified by the fact that marketing plays a critical role in the early-stage development of startup projects. Investigating how this concept is articulated in the interviews allows us to better understand the extent to which incubated entrepreneurs perceive marketing not only as a communication function, but also as a strategic tool for positioning, user engagement, and market adaptation.

The query tree illustrates the co-occurrence and contextual proximity of "marketing" with other relevant terms (e.g., strategy, visibility, digital, customer, training), highlighting the multidimensional nature of marketing practices adopted at this phase.

Fig.2. Applications of AI in Marketing



Source: Nvivo 15

The analysis of the query tree reveals three thematic clusters:

1-Marketing and Artificial Intelligence

-AI is strongly linked to marketing, viewed as both an automation tool and a strategic enabler.

-Key applications include customer behavior analysis, personalized content/database generation, and predictive analytics for strategy refinement.

2-Operational Applications

-AI supports concrete practices such as audience analysis/targeting, campaign automation, and optimization of marketing efforts.

-Early-stage entrepreneurs show growing integration of data-driven tools.

3-Perceptions and Expectations

-Entrepreneurs recognize AI's transformative potential but adoption levels vary, reflecting different stages of digital maturity.

-Incubators play key role in facilitating AI integration in marketing strategies.

4.3 Matrix Coding

The use of coding enables a systematic structuring of the thematic analysis. The project includes eight main codes, grouped under six parent codes. First, we created parent codes directly related to the three main themes of the interview guide: AI Definition, AI & Marketing, and AI & Training. This categorization made it possible to extract a shared definition of AI as perceived by the participants. Then, based on the results of the textual analysis, we developed three additional parent codes:

- Incubator Training: this includes three subcodes (Training, Support, Incubator), which all refer to the same analytical

axis or objective, namely the support and training provided by the incubation structure.

- Marketing: this code encompasses all expressions that relate directly to marketing activities and strategies within the corpus.
- Intelligence: similarly, this code integrates all mentions and expressions related to artificial intelligence (AI), regardless of the context in which they were discussed.

4.4 Matrix coding query

We conducted a cross-analysis between interviewee attributes (gender, education level, field of study, and sector of activity) and the codes resulting from matrix coding. This analytical approach allows for a deeper understanding of the emerging themes.

Table.4 Cross-tabulation between interviewee gender and themes

		Incubator training	Intelligence	Marketing
Female (08)	Mention	32	14	17
	Frequency	4	1.75	2.13
Male (03)	Mention	13	8	7
	Frequency	4.33	2.67	2.33

Source : Nvivo 15

Based on relative frequency values rather than absolute counts, male participants expressed a comparable number of mentions across the themes.

Table. 5 Cross-tabulation between interviewee education level and themes

		Incubator training	Intelligence	Marketing
L3 (05)	Mention	21	11	12
	Frequency	4.2	2.2	2.4
M2 (06)	Mention	24	11	12
	Frequency	4	1.83	2

Source : Nvivo 15

Students at the L3 (third-year undergraduate) level mentioned training, AI, and marketing slightly more often than M2 (Master's level) students.

Table. 6 Cross-tabulation between interviewee field of study and themes

		Incubator training	Intelligence	Marketing
Humanities (06)	Mention	25	13	14
	Frequency	4.17	2.17	2.33
Sciences (05)	Mention	20	09	10
	Frequency	4	1.8	2

Source : Nvivo 15

The Humanities category includes social sciences, literature, languages, and economics, while Sciences refers to exact sciences and technology fields.

The results show that, in both absolute and proportional terms, students from Humanities fields mentioned the themes slightly more frequently than those from science and technology backgrounds.

Table. 6 Cross-tabulation between sector of activity and themes

		Incubator training	Intelligence	Marketing
Digital & AI-based Solutions (4)	Mention	19	11	10
	Frequency	4.75	2.75	2.5
Environment&SustainableEnergy (3)	Mention	9	4	5
	Frequency	3	1.33	1.67
Health&MedicalTechnology (2)	Mention	8	0	3
	Frequency	4	0	1.5
Industry&Manufacturing (2)	Mention	9	7	6
	Frequency	4.75	3.5	3

Source : Nvivo 15

For Training: Projects in the Digital & AI-based Solutions sector reported the highest average number of mentions, followed by Industry & Manufacturing.

For Artificial Intelligence: The Industry & Manufacturing sector (3.5) and Digital & AI-based Solutions (2.75) showed the highest average number of mentions. The Health & Medical Technology sector recorded no mentions.

For Marketing: Projects in Industry & Manufacturing (3) and Digital & AI-based Solutions (2.5) appear to be more active in terms of marketing. In contrast, projects in Environment & Sustainable Energy and Health & Medical Technology displayed lower averages.

5. Discussion and Interpretation of Results:

The word frequency analysis shows that training and support are seen as essential for integrating AI in startups, confirming the role of university incubators (Pinto &Rua, 2023). Keywords highlight the role of AI as a lever for competitiveness. This aligns with Dianti, Mualifah, and Dirgantara (2024), who show that AI

enhances personalization, campaign optimization, and customer engagement.

The **textual analysis** shows that marketing is one of the areas most impacted by AI. The main AI-driven applications identified are:

1. Marketing Data Analysis
   - ✓ Market trend analysis (via web scraping, monitoring tools, etc.)
   - ✓ Customer behavior analysis
   - ✓ Audience segmentation and identification of specific needs
   - ✓ Demand forecasting and identification of promising markets
   - ✓ Strategic planning support
2. Content Creation and Generation
   - ✓ Generation of pitches, presentations, and landing page mockups
   - ✓ Personalized content for marketing campaigns (emails, messages)
   - ✓ Trend interpretation to adapt content to evolving expectations
3. Marketing Automation
   - ✓ Automated email campaigns and lead nurturing
   - ✓ Automation of prospecting processes
   - ✓ Real-time and behavior-adaptive customer responses
4. Targeting and Personalization
   - ✓ Precise targeting of the right customers at the right time
   - ✓ Marketing content tailored to customer interests and behaviors
   - ✓ Personalized interactions for improved customer experience
5. Strategic Support and Differentiation
   - ✓ Competitive differentiation strategies
   - ✓ Support for offer design

- ✓ Improved accessibility and faster execution of marketing activities
- ✓ Marketing cost reduction

These results are in line with the findings of Mekimah et al. (2024).
From the **cross-analysis**, several insights emerge in relation to participants' attributes:

-The necessity of using proportional or normalized analysis in qualitative research when comparing groups of different sizes. This methodological adjustment helps avoid interpretive bias, as seen in the gender-based comparisons.

-A more exploratory interest among L3 students, who are just discovering the entrepreneurial ecosystem and tend to show more openness to multiple dimensions such as training, AI, and marketing. In contrast, M2 students demonstrate greater project maturity, potentially focusing more on operational aspects and expressing their needs in a more targeted manner.

-Greater sensitivity to support mechanisms among Humanities students: This group seems more aware of the role of incubators, possibly because they view training and institutional support as essential to compensate for a relatively limited technical background compared to science students. Humanities students may place more importance on marketing and the strategic use of AI to showcase their projects, while Science students may concentrate more on the technical or product-oriented aspects.

-Projects in non-technological sectors or with environmental missions tend to show more moderate needs, particularly in relation to AI and marketing applications.

6. CONCLUSION

This study endeavored to explore how university incubator student entrepreneurs perceive and apply Artificial Intelligence (AI) in developing their startups, that is, marketing. The central research question was the meanings attributed to AI, roles enacted by AI in entrepreneurial activities, and conditions enabling or hindering its application.

The study confirms that the participants recognize AI as a transformative technology that can emulate human intelligence to automate procedures, predict results, support decision-making, and enhance general efficiency. AI is predominantly regarded as a key performance driver in startups by facilitating rapid innovation, advanced data analysis, and providing scalable, tailored solutions in more competitive contexts. In practical terms, AI has predominantly marketing functions, such as data analysis, content generation, campaign automation, personalization of interactions, customer need anticipation, and strategic optimization.

Managerial implications:

Managerially, the study suggests incubators would have to tweak support strategies based on the level of study of their cohorts. For students at undergraduate (L3) levels, there has to be an emphasis on core training and encouraging broad thematic exploration. In the case of master's-level students (M2), specialist, advanced-level modules aligned with the operational requirements of their startups are recommended. Furthermore, differences in interest and application of AI across industries indicate the value of sectorally differentiated support models, with intense AI/marketing modules in technology-based industries and commercialization emphasis in non-technology or socially oriented enterprises.While its strengths,

the study has limitations, including a relatively small sample and unit of analysis within a single national setting. Subsequent research could generalize the scope to comparative examinations cross-nationally or incubator models. Longitudinal studies would also be valuable to examine how AI uptake evolves over time for early-stage entrepreneurs.

Research Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the relatively small sample size and the focus on a single national and institutional context limit the generalizability of the findings. The perceptions and practices observed may therefore be influenced by contextual, cultural, educational, or regulatory factors specific to this environment. Second, the study relies primarily on self-reported perceptions of student entrepreneurs, which may introduce subjective bias or lead to an overestimation of the level and effectiveness of AI adoption. In addition, the cross-sectional design captures AI integration at a single point in time and does not account for how AI usage evolves as startups progress through different stages of development.

Future Research Directions

Building on these limitations, future research could broaden the scope by conducting comparative studies across countries, university incubator models, or entrepreneurial ecosystems to better understand contextual differences in AI adoption. Longitudinal research designs would also be valuable in examining how AI-related skills, marketing practices, and AI-driven decision-making evolve over time among incubated student startups. Furthermore, future studies could incorporate objective performance indicators to

assess the actual impact of AI-enabled marketing and market research on startup growth and competitiveness. Finally, further research could explore the role of institutional support mechanisms, as well as ethical and governance issues, in promoting responsible, effective, and sustainable AI integration within student entrepreneurship.

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8. Appendix

Appendix 01: Interview Guide Template

Contextual questions:

Q1-Please introduce yourself and your startup.
Q2- Do you agree to participate in this interview with us?
Q3-Do you integrate Artificial Intelligence into your startup idea?

1. **Thematic questions :**

Date : ……. Interview number…

Interview guide

Hello, We are marketing researchers, and are currently preparing an academic contribution focusing on startups as a driver of the economy in Algeria.
We have designed this guide around three main themes in order to gather your opinion on the topic of Artificial Intelligence in student startups. Thank you.

General informations

Name and Surname: ……. Project Idea:: ……
Level and Faculty: …… Contact Details: ……

Axis 1 : General perception of AI

Q1 : What does the term 'Artificial Intelligence' spontaneously evoke for you?
Q2 :What image do you have of its role in the world of startups?

Axis 2 : Marketing and Market studies

Q1 : Have you used AI to conduct your marketing research or activities ? How?
Q2 : Do you think AI is changing the way marketing is done?

Axis 3 : Training and skills

Q1 : Do you feel competent to use AI in your project?

Q2 : What types of training would you like to receive?

2.Consent-Form:

Our interview will be conducted either once or in several sessions, depending on your availability. It may take place in writing, by voice, or via video conference. You have the option to use Google Meet, phone, or WhatsApp.

Confidentiality: With your consent, the interview will be recorded. The information collected will only be used for the purposes of this research project and within a purely academic context.

Signatures: I hereby declare that I have read and understood the terms of this agreement.

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Appendix02: Screenshots of the NVivo interface

