The paradox of digital entrepreneurship in Algeria: intentions, self-efficacy and systemic barriers.

BRAHITI Ibtissem [1], MOHAMMED BELKACEM Faïza [2]

[1]Ecole des Hautes Etudes Commerciales (HEC), PERMANAN Laboratory, Algéria,
[2] Ecole des Hautes Etudes Commerciales (HEC), PERMANAN Laboratory, Algéria.

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Abstract:

This study analyses the paradox of digital entrepreneurship among Algerian students, characterized by high levels of intention but low rates of project implementation. Based on a qualitative phenomenological approach involving 25 students in an incubator program and a thematic analysis (NVivo), the results show that perceived digital self-efficacy is a key determinant of entrepreneurial intention. However, this confidence is often disconnected from actual technical skills, fuelling a gap between intention and action. This disconnect is exacerbated by structural constraints, notably the lack of suitable funding, insufficient specialized mentoring and the fragmentation of the ecosystem. The study thus highlights a 'digital self-efficacy paradox' and proposes a systemic understanding of entrepreneurship in an emerging context.

Keywords: Digital entrepreneurship; Entrepreneurial intention; Digital self-efficacy; Intention–action gap; Entrepreneurial ecosystem
Jel Classification Codes: L26, O33, M13, I25

***Corresponding author**: BRAHITI Ibtissem*

1. INTRODUCTION

Over the past few decades, entrepreneurship has established itself as a key driver of economic growth, innovation and social transformation, particularly in developing economies (Acs et al., 2012; Audretsch, 2015). In this context, technological changes linked to the digital transformation have profoundly reshaped the conditions under which entrepreneurial activities emerge and develop, redefining both the opportunities and constraints faced by entrepreneurs. With the emergence of digital technologies, this dynamic has intensified, giving rise to a new form of entrepreneurship characterized by the use of digital technologies to create, transform and disseminate value: digital entrepreneurship (Nambisan, 2017; Sussan & Acs, 2017).

The digital economy is fundamentally redefining business models by lowering certain barriers to entry, notably investment costs and market access, whilst opening up unprecedented opportunities for innovation and scalability (Elia et al., 2020; Kraus et al., 2019).

In this new environment, university students occupy a strategic position as potential actors in digital entrepreneurship. Their exposure to digital technologies and entrepreneurial education fosters the development of early entrepreneurial intentions. The literature highlights that intention is the immediate determinant of entrepreneurial behavior, in line with the theory of planned behavior (Ajzen, 1991), according to which attitudes, subjective norms and perceived behavior al control directly influence the formation of intention. This theoretical framework has been widely validated in the context of student and digital entrepreneurship (Ajzen, 1991), confirming its ability to explain the transition from cognition to entrepreneurial intention.

Among the cognitive determinants, entrepreneurial self-efficacy, derived from socio-cognitive theory (Bandura, 1997), emerges as a key factor. It refers to an individual's belief in their ability to mobilize the resources necessary to succeed in an entrepreneurial endeavor. In the digital context, this dimension takes on a specific form — digital self-efficacy — which influences both the formation of intention and the ability to cope with technological uncertainty. Several studies show that this perception plays a decisive role in entrepreneurial engagement, sometimes more so than objective skills themselves.

However, this cognitive dynamic is not sufficient to explain the transition to action. In emerging economies, entrepreneurial intentions often come up against structural constraints linked to the institutional environment, access to resources and the quality of support mechanisms (Mertzanis & Putrevu, 2025).

Thus, despite a high level of intention, the realization of projects remains limited, reflecting a disconnect between entrepreneurial ambition and on-the-ground reality, commonly referred to in the literature as the "intention–action gap" (Van Gelderen et al., 2015; Bogatyreva & Shirokova, 2017).

This tension highlights the decisive role of contextual factors in transforming intention into action, calling into question the linearity of the intention–behavior model, particularly in contexts

characterized by significant institutional and economic constraints (Inoubli & Gharbi, 2024; Meoli et al., 2019; and Albatran & Atikbay, 2025).

In the case of Algeria, this tension takes on a particular dimension. Despite a clear political commitment to promoting start-ups and innovation — particularly through university incubators — a paradox persists: whilst students demonstrate a strong entrepreneurial spirit, few digital projects reach a stage of viability or growth (Firlas & Izerkhef, 2025; Azzi, 2018).

This discrepancy highlights a contradiction between an expanding institutional environment and an entrepreneurial reality marked by persistent structural obstacles, particularly those linked to financial constraints, support and perceived feasibility conditions (Merabet et al., 2022; Daoudi & Zebouchi, 2022).

This research therefore adopts a critical perspective aimed at analyzing this "paradox of digital entrepreneurship" in Algeria, by exploring the tensions between individual aspirations and systemic constraints.

Within this framework, the central question of this study is as follows: **To what extent do individual factors (notably digital self-efficacy) and systemic factors (entrepreneurial ecosystem, funding, mentoring) explain the gap between entrepreneurial intention and the realization of digital projects among Algerian students?**

To structure the analysis, this research is based on the following hypotheses:

H1: Perceived digital self-efficacy influences entrepreneurial intention more than the actual level of technical skills.

H2: The lack of specialized mentoring in digital technologies constitutes a major obstacle to transforming intentions into viable projects.

H3: The mismatch between traditional financing mechanisms and 'asset-light' digital models generates a sense of institutional exclusion among student entrepreneurs.

H4: The gap between entrepreneurial intention and action is mediated by institutional and environmental constraints.

To address this issue, this study adopts a qualitative, phenomenological approach, aiming to gain an in-depth understanding of the lived experience of student-entrepreneurs in the Algerian context.

The sample consists of 25 student entrepreneurs from various university incubators (business schools within the Koléa University Cluster – Centre of Excellence), selected using a purposive sampling method to ensure a diversity of profiles.

Data were collected through in-depth semi-structured interviews lasting an average of 45 to 60 minutes, covering the following areas: entrepreneurial journey, motivations, digital self-efficacy, perceived skills, obstacles encountered, access to funding, mentoring and perceptions of institutional support mechanisms.

Data analysis is based on thematic coding using Nvivo software, following a three-stage process: open coding, axial coding and selective coding. This approach enables the identification of empirical patterns and the emergence of explanatory frameworks for the paradox under study.

The validity of the research is ensured by data triangulation, theoretical saturation and the rigor of the coding process.

2. Theoretical framework and development of hypotheses

2.1 The Theory of Planned Behavior (TPB) as the foundation of entrepreneurial intention

Understanding entrepreneurial intention relies heavily on models derived from social psychology, amongst which the Theory of Planned Behavior (TPB), developed by Ajzen (1991), constitutes the dominant theoretical framework. This theory posits that intention is the proximal determinant of behavior, and that it is itself shaped by three fundamental cognitive dimensions: attitude towards the behavior, subjective norm and perceived behavioral control.

In the field of entrepreneurship, PBT has been subject to extensive empirical validation, particularly in the analysis of students' entrepreneurial intentions, confirming its robustness and explanatory power in various contexts, including emerging economies (Krueger et al., 2000; Liñán & Chen, 2009; Tornikoski & Maalaoui, 2019).

- Attitude towards entrepreneurial behavior

Attitude towards entrepreneurial behavior refers to the overall evaluation, whether favorable or unfavorable, that an individual associates with entrepreneurial action. In the context of digital entrepreneurship, this attitude is strongly influenced by the perception of the opportunities offered by digital technologies, particularly in terms of innovation, autonomy and value creation.

Research shows that this dimension is one of the most powerful predictors of entrepreneurial intention, particularly among students exposed to educational environments that foster innovation (Liñán & Fayolle, 2015). Furthermore, in digital contexts, the perceived attractiveness of entrepreneurship is reinforced by low capital intensity and the possibility of accessing global markets.

- The subjective norm

The subjective norm refers to the perceived social pressure exerted by one's social circle (family, peers, teachers) on the decision to become an entrepreneur. It is based on normative beliefs regarding the expectations of significant individuals within the social environment.

In the case of students, and particularly in socio-cultural contexts such as that of Algeria, this dimension is of specific importance. Social support, the valuing of entrepreneurial status and institutional encouragement play a decisive role in the formation of entrepreneurial intention. Studies show that the subjective norm indirectly influences intention through its impact on attitude and self-efficacy (Kautonen et al., 2015).

- Perceived behavioral control (PBC)

Perceived behavioral control refers to an individual's perception of their ability to perform a given behavior, based on the resources, skills and opportunities available. It is conceptually similar to the notion of self-efficacy developed by Bandura (1997), and is a key factor in the transition from intention to action.

In the field of digital entrepreneurship, PBC is particularly critical due to the high technological demands and the complexity of digital environments. A high level of perceived control can reinforce entrepreneurial intention, but does not necessarily guarantee the realization of the project, particularly when structural constraints (funding, mentoring, access to resources) are significant.

- Limitations of the TCP and the emergence of the intention–action paradox

Despite its robustness, the TCP has certain limitations, particularly in its ability to explain the transition from intention to action. Indeed, several recent studies highlight the existence of an 'intention–behavior gap', which is particularly pronounced in the entrepreneurial field (Sheeran & Webb, 2016; Tornikoski & Maalaoui, 2019).

This gap is even more pronounced in emerging contexts, where institutional and environmental constraints can inhibit the realization of entrepreneurial intentions, despite a high level of individual motivation.

2.2 Digital Self-Efficacy: A Key Mediator of Entrepreneurial Intention

Self-efficacy, a central concept in Bandura's (1997) social cognitive theory, refers to an individual's belief in their ability to mobilize the cognitive, motivational and behavioral resources necessary to accomplish a specific task. Applied to the entrepreneurial context, it constitutes a major determinant of entrepreneurial intention and behavior, influencing the way in which individuals perceive opportunities, assess risks and persevere in the face of obstacles.

In the context of this research, we draw on the concept of digital self-efficacy, which goes beyond mere technical mastery to incorporate an adaptive dimension. It refers to an individual's confidence in their ability to learn, adopt and effectively utilize digital technologies in environments characterized by high uncertainty and rapid change. This conceptualization is consistent with recent work that distinguishes between objective digital skills and the subjective perception of mastery, the latter being a key determinant of entrepreneurial behavior.

- A key predictor of entrepreneurial intention

Recent literature confirms that digital self-efficacy is a key determinant of entrepreneurial intention in digital environments. Indeed, individuals with a high level of self-efficacy perceive technological challenges not as constraints, but as opportunities for learning and innovation. Several empirical studies show that self-efficacy acts as a psychological lever reinforcing entrepreneurial commitment, particularly among students.

- A mediating mechanism between skills and intention

A major contribution of recent research lies in highlighting the mediating role of digital self-efficacy. Indeed, several studies demonstrate that digital skills do not directly influence entrepreneurial intention, but pass through the filter of self-efficacy, which transforms these skills into operational confidence (Zhao et al., 2005).

In other words, it is not solely what individuals are capable of doing that determines their intention to start a business, but what they believe they are capable of doing with those skills. This mediating factor explains why some technically competent individuals do not take steps towards entrepreneurship, whilst others, who are less qualified, demonstrate strong and persistent intentions.

- Implications in the Algerian context: towards a cognitive paradox

In the context of Algerian digital entrepreneurship, this dynamic is of particular importance. The emergence of a generation of students heavily exposed to digital technologies is often accompanied by a high level of perceived self-efficacy, which is sometimes disconnected from actual technical skills.

This disconnect can create a cognitive paradox:

Strong entrepreneurial intent fuelled by high confidence, but difficulty in bringing projects to fruition due to technical and structural constraints.

2.3 The Entrepreneurial Ecosystem: Structural Constraints and Determinants of the Transformation of Intent

Beyond individual factors, the literature highlights that entrepreneurship is embedded within a complex ecosystem comprising interconnected actors (universities, investors, mentors, public institutions), whose interactions shape the creation and growth of start-ups (Stam & Spigel, 2016; Cavallo et al., 2021). These ecosystems play a fundamental role in providing critical resources such as funding, social capital, support and access to markets.

- The critical role of entrepreneurial mentoring

Mentoring is one of the fundamental pillars of entrepreneurial ecosystems, providing early-stage entrepreneurs with access to essential intangible resources such as expertise, networks and psychological support. Mentors facilitate decision-making, reduce uncertainty and contribute to the development of entrepreneurial skills.

Recent research confirms that mentoring significantly improves entrepreneurial performance, notably by facilitating access to finance and strengthening entrepreneurs' strategic capabilities.

Furthermore, within acceleration and incubation programs, the quality and intensity of mentoring appear to be key determinants of start-up success, influencing the development of human capital, networks and entrepreneurial legitimacy.

However, several studies highlight that mentoring programs, particularly in academic settings, often suffer from a lack of specialization and adaptation to the specific needs of tech start-ups, thereby limiting their actual effectiveness.

This limitation is particularly critical in the field of digital entrepreneurship, where projects require highly specialized support (AI, cyber security, digital platforms).

- Financing constraints in digital models

Access to financing is another major determinant of entrepreneurial success. However, digital start-ups have specific characteristics — notably their 'asset-light' nature (low reliance on tangible assets) — which make them difficult to align with traditional financing criteria based on physical collateral.

The literature highlights that young companies face increased difficulties in accessing bank financing, due to their lack of financial history and the high risk perceived by financial institutions.

In this context, the entrepreneurial ecosystem plays a crucial role in facilitating access to alternative sources of funding (venture capital, business angels, grants). However, in developing environments, these mechanisms often remain underdeveloped or difficult to access, thereby reinforcing barriers to entry for entrepreneurs.

2.4 Conceptual Research Model

In light of the preceding theoretical developments, this research proposes an integrative conceptual model aimed at explaining the observed gap between entrepreneurial intention and the realization of digital projects among Algerian students.

This model builds upon the Theory of Planned Behavior (Ajzen, 1991), whilst enriching it by integrating variables drawn from socio-cognitive theory (Bandura, 1997) and the entrepreneurial ecosystems approach (Stam & Spigel, 2016).

2. 4.1 Description of variables and relationships

The proposed conceptual model highlights a systemic interpretation of the digital entrepreneurial process among Algerian students, centered on the interaction between individual variables and ecosystem constraints.

- The cognitive lever: digital self-efficacy (central mediating variable)

Unlike linear approaches that directly link technical skills to entrepreneurial intention, this model positions digital self-efficacy as the central mediating variable. It represents an individual's belief in their ability to mobilize, adapt and utilize digital technologies in uncertain environments.

Thus, technical skills (programming, digital marketing, digital tools) only influence entrepreneurial intention when they are internalized as operational confidence. This cognitive transformation constitutes the true lever for transitioning to entrepreneurial intention.

- The behavioral predictor: entrepreneurial intention

Entrepreneurial intention is the central dependent variable of the model, in line with the Theory of Planned Behavior (Ajzen, 1991). It reflects a proactive cognitive stance expressing the desire to start a digital business.

In this context, intention is reinforced by a high perceived behavioral control, which is itself fuelled by digital self-efficacy. It thus represents an essential intermediate step between cognition and action.

- Structural barriers: ecosystem variables (moderators)

The transition from intention to action is influenced by contextual factors linked to the entrepreneurial ecosystem, which act as moderators:

Funding: this is a major constraint for digital start-ups, particularly due to the difficulty in accessing funding suited to intangible and scalable business models.

Specialized mentoring: this influences the quality of entrepreneurial support by providing the technological and strategic expertise essential for transforming ideas into viable projects.

Institutional support: this encompasses public and academic schemes. Its effectiveness determines the smoothness of the entrepreneurial journey and the reduction of administrative and organizational barriers.

These variables do not directly influence intention, but they strongly moderate the relationship between intention and entrepreneurial action.

4.2.2 Formalization of theoretical links

The model is based on an integrated relational structure centered on three main dynamics:

1. Relationship between skills and self-efficacy

Digital skills have a positive influence on digital self-efficacy, insofar as they reinforce the perception of mastery over technological tools and digital environments.

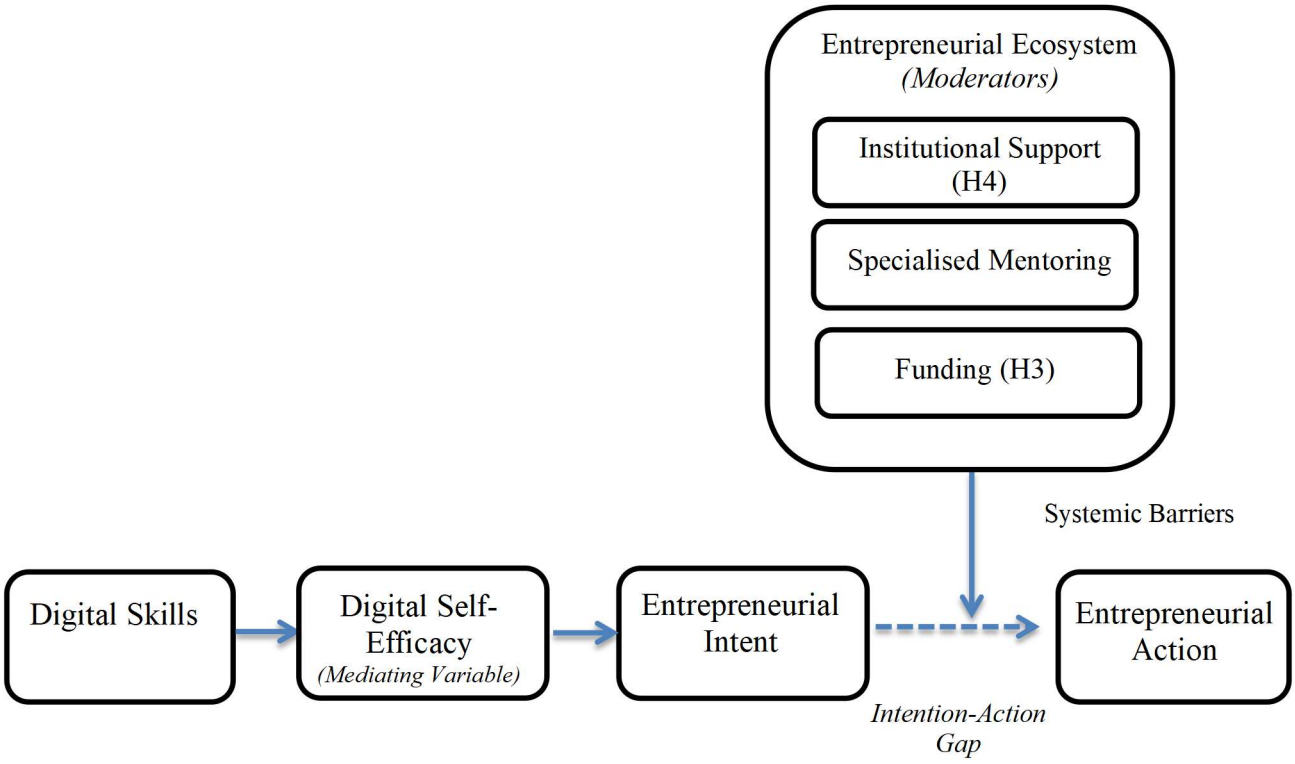
2. Self-efficacy → entrepreneurial intention

Digital self-efficacy is a major determinant of entrepreneurial intention. The more an individual perceives their ability to manage technological uncertainty, the greater their intention to set up a digital start-up.

3. Relationship between intention and action (moderated by the ecosystem)

The relationship between entrepreneurial intention and taking action is shaped by the characteristics of the entrepreneurial ecosystem. Constraints relating to funding, mentoring and institutional support can either facilitate or hinder the realization of projects.

Figure 1. Conceptual framework of the research



Source: Created by us

3. Research methodology

3.1 Research design

In order to address the issue of the gap between entrepreneurial intentions and systemic barriers in the context of digital entrepreneurship in Algeria, this study adopts an exploratory qualitative approach within an interpretative paradigm.

Unlike quantitative approaches, which aim to test relationships between predefined variables, qualitative research allows for an in-depth exploration of individuals' cognitive processes, perceptions and lived experiences (Hlady-Rispal et al., 2015).

It is particularly relevant in the field of entrepreneurship, which is considered a complex, contextual and socially constructed phenomenon requiring a nuanced understanding of subjective dynamics.

From this perspective, the choice of a phenomenological approach is justified by the desire to grasp the meaning that student-entrepreneurs attribute to their entrepreneurial experience. Phenomenology aims to understand reality through individuals' perceptions and interpretations, emphasing their lived experiences and representations (Raco & Tanod, 2014).

When applied to entrepreneurship, this approach enables us to move beyond a purely objective interpretation of the phenomenon and gain access to its subjective dimensions, notably motivations, perceptions of competence and perceived obstacles. As Jason Cope (2005) points out, phenomenological research is particularly well-suited to analyzing entrepreneurial trajectories in depth, using qualitative interviews centred on lived experience.

Furthermore, the interpretative phenomenological approach (IPA) is recognized as particularly relevant for studying entrepreneurship, insofar as it allows us to explore how individuals make sense of their entrepreneurial commitment in uncertain and constrained environments (Rajasinghe et al., 2018).

In the specific context of this research, this methodological approach appears particularly suitable for:

- Analyzing the cognitive mechanisms linked to digital self-efficacy,
- Understanding subjective perceptions of systemic constraints,
- And exploring the gap between intention and action in an emerging context.

Thus, the qualitative phenomenological approach enables the triangulation of experiential data, the identification of explanatory frameworks, and a better understanding of the entrepreneurial paradox under study.

3.2 Study setting and context

The empirical study was conducted within the Koléa university cluster, regarded as one of the most well-structured emerging academic ecosystems for entrepreneurship in Algeria. This

cluster brings together several higher education institutions, notably the École des Hautes Études Commerciales (EHEC), the École Nationale Supérieure de Statistique et d'Économie Appliquée (ENSSEA), the École Supérieure de Commerce (ESC), and the École Nationale Supérieure de Management (ENSM), which play an active role in promoting student entrepreneurship through incubation, training and support schemes.

The choice of this field site is part of a process of purposeful sampling of context, aimed at studying an environment particularly conducive to the emergence of digital entrepreneurial projects. Indeed, according to Yin (2018), the choice of field in qualitative research must be guided by its capacity to offer informational richness and analytical relevance. From this perspective, the Koléa cluster constitutes a "revealing case" allowing for the observation of entrepreneurial dynamics within a real-world context of institutional support.

Furthermore, this field can be likened to a localized entrepreneurial ecosystem, characterized by interaction between students, academic supervisors, incubators and public schemes, making it a suitable framework for analyzing the tensions between entrepreneurial intentions and systemic constraints.

Data collection took place over a four-month period (January–April 2026), allowing for a short-term longitudinal approach. This timeframe facilitated the observation of emerging entrepreneurial trajectories, from the ideation phase through to the first encounters with real-world constraints, particularly regarding funding and support.

3.3 Description of the qualitative sample

The study sample consists of 25 student-entrepreneurs, selected using purposive sampling, a method widely used in qualitative research to identify participants with experience relevant to the subject of the study (Patton, 2002).

The selection criteria used are as follows:

• Be enrolled in a university incubation program,
• Be leading an entrepreneurial project with a digital component,
• Be actively engaged in a development phase (ideation, prototyping or launch).

This methodological choice aims to ensure the relevance and depth of the data collected, by prioritizing profiles capable of providing rich insights into the phenomena under study.

The sample comprises a diverse range of profiles in terms of:

- Academic background (management, economics, engineering),

- Stage of project development,

- Level of exposure to digital technologies.

This heterogeneity helps to strengthen the external validity of the qualitative study by broadening the range of perspectives and experiences.

Furthermore, the sample size (n=25) is in line with the standards of phenomenological qualitative research, where the objective is not statistical representativeness but theoretical saturation (Guest et al., 2006). This is achieved when new data no longer provide any significantly new information.

Table 1. Descriptive characteristics of the participants (n = 25)

Profil	Characteristic	Details / Values
Age	Mean age	23,4 years
Location	Facilities	Kolea Campus
Programs	Academic diversity	Management (40%), Math/AI(35%), Finances (25%)
Project Maturity	Average incubation period	10,2 month
Gender	Breakdown	Mal(62%), Female(38%)
Status	Commitment	Active project leaders in incubator

Source: Compiled by us using interview data (2026).

This table presents an overall profile of young and dynamic project leaders, with an average age of 23.4 years, reflecting an early commitment to entrepreneurship. The diversity of fields, dominated by management, mathematics/AI and finance, shows an interesting balance between organizational, technical and analytical skills.

The average incubation period (10.2 months) indicates that projects are already in the development phase, though still requiring support. The gender breakdown, however, remains skewed in favor of men, highlighting an issue of inclusion.

Overall, this is an active and promising ecosystem, driven by committed individuals, but with room for improvement, particularly in terms of diversity.

3.4 Data collection tool

Data collection was carried out through semi-structured interviews, a method widely recognized in qualitative research for its ability to explore individuals' perceptions, experiences and representations in depth (Kvale, 1996; Brinkmann & Kvale, 2015).

This type of interview strikes a balance between structure and flexibility, allowing predefined topics to be addressed whilst giving participants the freedom to elaborate on their answers and introduce unexpected elements that are nevertheless relevant to the analysis (Saunders et al., 2019). In the field of entrepreneurship, semi-structured interviews are

particularly well-suited to capturing the subjective dimensions related to motivations, perceptions of competence and perceived constraints (Cope, 2005).

Table 2. Key themes of the semi-structured interview guide

Axes principaux	Dimensions explorées	Indicateurs / contenus abordés
1. Entrepreneurial profil and intentions	Academic and entrepreneurial	Education and prior entrepreneurial experience
	Background Entrepreneurial	Reasons for getting involved, triggering factors, personal influences
	Motivations Vision for digital project	Short-and medium-term goals, growth ambitions, proposed business model
2. Digital skills and self efficacy	Technical skills	Development, digital marketing, design, use of digital tools
	Exposure to emerging technologies	AI, cybersecurity, data science, digital platforms
	Perceived digital self-efficacy	Confidence in the ability to turn an idea into a viable project
3. Systemic barries	Access to financing	Funding difficultties, perceptions of banks and existing mechanics
	Entrepreneurial mentoring	Availability, specialization and quality of support
	Local entrepreneurial ecosystem	Administrative constraints, coordination among stakeholders, institutionnel environment
4. Role of institutions	University support	Role of incubators, quality of training, support mechanisms
	Publique policies	Entrepreneurship support programs, national initiatives
	Satisfaction with support mechanisms	Perception of the effectiveness of support structures

Source: Developed by us based on the literature review and theoretical framework (Ajzen, 1991; Bandura, 1997; Stam & Spigel, 2016).

3.5 Data analysis method

Qualitative data analysis was conducted using a thematic coding approach, enabling the identification, organization and interpretation of recurring themes emerging from the interviews. This method is particularly suited to exploratory research aimed at understanding complex and contextualized phenomena (Braun & Clarke, 2006).

1- Open coding (n=8)

This initial phase involved examining the verbatim transcripts line by line to identify relevant units of meaning. Key ideas were translated into initial codes reflecting the perceptions,

experiences and obstacles mentioned by the participants. Thus, the first 8 transcripts were used to establish an initial codebook, identifying the first units of meaning.

2- Axial coding (n=17)

The initial codes were then grouped into broader categories, establishing relationships between the different concepts. This step enabled the data to be structured around central dimensions such as:

- Digital self-efficacy,
- Entrepreneurial intentions,
- Systemic constraints (funding, mentoring, institutions).

This framework was then applied and refined across the remaining 17 interviews to stabilize the thematic categories.

3- Selective Coding

Finally, an integration phase enabled us to identify the dominant categories and construct an overall interpretation of the phenomenon under study. This stage aims to organize the results around a coherent explanatory framework, in line with the proposed conceptual model linking self-efficacy to ecosystem barriers.

Table 3. Interview guide and analytical coding grid (NVivo)

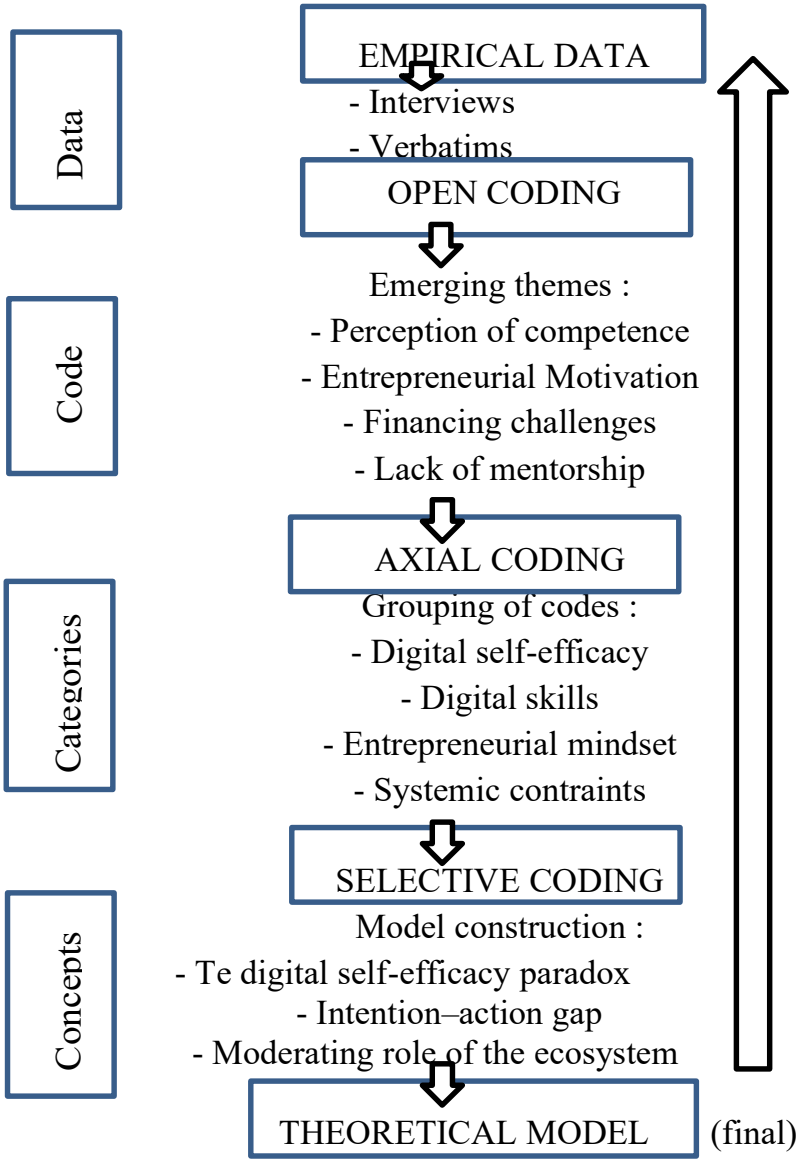
Interview themes	Dimensions explored	Open coding	Axial coding	Selective coding
1. Profile and entrepreneurial intentions	Academic, background, motivations, vision for the project	Studiant background, familialy influence, desir for independance, perceived opportunity	Formation of entrepreneurial intent	**Development of entrepreneurial intent**
	Entrepreneurial motivations	Autonomy, innovation, social success, emulation of roles models	Internes and external motivational Factors	
	Vision for the digital project	Tech Startup, growth, internationalization	Long-term entrepreneurial outlook	
2. Digital skills and sef-efficacy	Technical skills	Programming, digital marketing, design, digital tools	Digital skills portfolio	**Development of digital self-efficacy**
	Emerging technologies	AI, data, cybersecurity, digital plateforms	Technology exposure and learning	
	Perceived self-efficacy	Confidence, sence of mastery, perceived ability	Beliefs in entrepreneurial	

3. Systemic barriers	Access to financing	Difficulty obtaining credit, lack of capital , bank rejection	Structural financial contraints	**Intention–action gap (entrepreneurial paradox)**
	Mentoring	Lack of expertise, insufficient support	Lack of cognitive and strategic support	
	Local ecosystem	Bureauctratic red tape, institutional fragmentation	Inefficiency of the entrepreneurial ecosystem	
4. Role of institutions	University support	Incubators, training, support mechanisms	Formal institutional support	**Effectiveness of entrepreneurial ecosystem**
	Public Policies	Startup programs, National initiatives	Entrepreneurial governance	
	Satisfaction	Positive/negative perception, un expectations	Discrepancy betxeen initiatives and actual needs	

Source: Developed by us based on an analysis of qualitative data (semi-structured interviews) and thematic coding using NVivo.

This analytical framework enables us to link empirical data to emerging theoretical categories, ensuring consistency between verbatim transcripts, intermediate codes and the central concepts employed in the research model.

Figure 2. Coding process and construction of the theoretical model



Source : Created by us and adapted from strauss & Corbin (1998); Braun & Clarcke (2006)

To structure the analysis of data from the interviews, a three-step thematic coding process was implemented using Nvivo software. The figure above illustrates the analytical logic adopted, from the identification of units of meaning to the construction of core categories.

4. Analysis of results and discussion

The thematic analysis of the 25 interviews conducted at the Kolea university hub allowed us to achieve theoretical saturation regarding the dynamics of student digital entrepreneurship. The results highlight a fundamental tension between relatively high individual cognitive resources-particularly in terms of digital self-efficacy and institutional environment that remains insufficiently to the specificities of digital projects.

4.1. Digital Sef-Efficacy : A lever for resilience in the face of the Intention-Action Gap

In line with hypothesis H1, the results show that the entrepreneurial intent of the students surveyed relies more on their perceived capacity for learning and adaptation than on their initial level of technical skills.

"I don't have a degree in computer science, but I know I can learn to manage a platform. The key for me is understanding the logic of digital business. If i run into a bug, i'll find a solution online" (Participant E15, Management).

This verbatim illustrates a form of proactive digital self-efficacy, where confidence is one's ability to learn take precedence over immediate technical mastery. This finding is consistent with Bandura's (1997) socio-cognitive theory, according to with self-efficacy is a central determinant of human action.

From an analytical perspective, this self-efficacy acts as a cognitive compensation mechanism, enabling students to transform technical gaps into learning opportunities. It thus help reduce the "Intention-Action Gap", identified in the literature as the discrepancy between the desire to act and the actual taking of action (Van Gelderen and all., 2015).

4.2 The breaking point of mentoring: Limitations of traditional support

The results confirm Hypothesis H2 by highlighting a significant mismatch between the needs of digital project and the form of support available within university incubators.

"My mentor at the incubator is excellent for business plan, but when I talk to him about server architecture or data security, he's out of his depth. We feel alone as soon as the project becomes technically complex." (Participant E21, AI).

This testimony reveals a lack of specialized mentoring, particularly in advanced technological fields, (AI, cybersecurity, digital infrastructure). Xhile management support is generally valued, it appears insufficient to sustain the development of technology-intensive projects.

Theoretically, this finding aligns with the perspective of digital entrepreneurial ecosystems, where startups performance depends on access to specific cognitive and technical resources (Nambisan, 2017). The absence of these resources limits project leaders' ability to cross the critical threshold of technological development.

Thus, mentoring far from being a mere support factor, emerges here as a differentiating factor in the transformation of intention into action, confirming Spigel's (2017) work on the role of relational resources in entrepreneur ecosystems.

4.3 The paradox of "asset-light" financing : a structural mismatch

The results validate Hypothesis H3, by revealing a structural incompatibility between traditional financing mechanisms and the characteristics of digital startups.

"when I presented my project to the bank, they asked me what equipment I was going to buy. They wanted invoices for physical machines. How could I explain to them my value lies in my algorithm and my database ?" (Participant E13, Finance).

This cote highlights a clash between two economic logics: and industrial logic based on tangible assets, and a digital logic based on intangible assets.

This mismatch creates a form of institutional exclusion, where digital projects struggle to access financial resources due to the lack of physical collateral.

4.4 The intention-action gap mediated by institutional constraints

The results confirm Hypothesis H4: the gap between entrepreneurial intention and action is significantly mediated by the institutional and environmental constraints of the ecosystem.

"I intend to move forward, but every time I try to take a concrete step-financing, legalization, partnership, I hit an administrative wall. The ecosystem is still too fragmented to support us". (Participant E07, Management).

This testimony illustrates a systemic blocking mechanism where intentions, thought cognitively strong encounter repeated institutional friction. Even a high level of self-efficacy is not enough to produce action when the environment does not provide the minimum conditions for feasibility.

This finding aligns with the work of Van Gelderen and al., (2015) on *the intention-action gap* and confirm that the Algerian paradox-strong intention, weak implementation-stems less from an individual deficit then from an ecosystem that is still insufficiently structured around the specificities of the digital sector.

These findings align with the literature on entrepreneurial financing, with highlights the difficulties innovative and intangible firms face in accessing capital (Berger & Udell, 1998; Block and al., 2018). They also confirm that financial constraints constitute a major barrier to moving from the intention stage to the action stage, particularly in emerging economies.

5. Discussion

5.1 The limitation of intentional logic of TCP

The results confirm the explanatory relevance of the theory of Planned Behavior (Ajzen, 1991) in analyzing the formation of entrepreneurial intention. However, they highlight its limitations in explaining the transition to action, particularly in contexts characterized by high structural constraints.

Thus, this research proposes an extension of the PBT by explicitly integrating contextual variables as conditions for the realization of the intention, aligning with recent critical approaches to this model in emerging economies.

Indeed, the relationship between intention and behavior appears here to be non-linear and influenced by environment, with is consistent with the work of Van Gelderen and al. (2015), who identify the existence of an intention-action gap in the entrepreneurial process. In the Algerian context, this gap appears to be amplified by institutional, financial, and organizational factors, confirming that intention is not sufficient condition for taking action.

5.2 The ambivalent role the digital self-efficay

One of the major contributions of this study lies in highlighting the central-yet ambivalent-role of digital self-efficacy. In line with Albert Bandura's (1997) social cognitive theory, digital self-efficacy acts as a key determinant of entrepreneurial intention by strengthening individual's confidence in their ability to act in an uncertain technological environment.

However, the results also reveal a paradoxical effect: while self-efficacy stimulates entrepreneurial engagement, it can also lead to an overestimation of individual capabilities and underestimation of structural constraints.

Furthermore, the results confirm that technical skills only have an effect when they are internalized as beliefs about one's capabilities, challenging a purely "skills-based" interpretation of entrepreneurship. Self-efficacy thus emerges as a central cognitive mediator in the transformation of skills into intention.

This finding qualifies the work of Newman and al. (2019), showing that self-efficacy does not produce only positive effects but can also generate cognitive biases that influence the perception of risk and feasibility.

5.3 Toward a systemic understanding of the transition of action

The results highlight that the transition from the intension to entrepreneurial action cannot be understood without a joint analysis of individual and structural factors.

From this perspective, the entrepreneurial ecosystem including financing, mentoring and institutional support, plays a decisive role in converting intentions into concrete actions. This finding aligns with the literature on entrepreneurial ecosystem, particularly the work of Ben Spigel (2017), which emphasizes the importance of relational and institutional resources in startup development.

This contribution moves beyond a linear view of the entrepreneurial process to propose a systemic interpretation, where performance depends on the interaction between individual cognition and institutional structure.

5.4 Summary: "The Intention –Action Gap" in the Algerian context

The results allow us to conceptualize the Algerian case as a specific configuration of "the intention-action gap" characterized by a disconnect between: high entrepreneurial intentions, driven by strong digital self-efficacy, and low project implementation, linked to persistent systemic constraints.

The transition to action thus appears to be mediated by an acute perception of institutional constraint, particularly regarding financing, coordination among stakeholders, and access to specialized resources. This situations generates a sense of institutional exclusion among students, despite the existence of support mechanisms.

Fig.1. Summary of emerging themes and validation hypotheses

Hypothesis	Qualitative Findings	Key illustrative quote
H1	Validated	*"It is not what i know to do that matters, but what I believe I can accomplish ."*
H2	Validated	*"We need tech experts, not just business professors."*
H3	Validated	*"Banks don't understand the intengible."*
H4	Validated	*"The ecosystem is still too fragmented to support us."*

Source: developed by us based on the analysis of qualitative data (semi-structured interviews) and thematic coding assisted by Nvivo

6. Contributions, limitations, and outlook

6.1 Theoretical contributions

This research makes three major contributions to the literature on digital entrepreneurship.

First, it introduces the concept of digital entrepreneurship paradox, characterized by the coexistence of high entrepreneurial intentions and low project implementation. This finding enriches the literature on the intention-action gap by offering a contextualized analysis within emerging economies.

Second, it highlights the paradox of self-efficacy. While digital self-efficacy is a key of driver of entrepreneurial intention, it can also lead to an overestimation of individual capabilities in the face of underestimated systemic constraints. This contribution qualifies traditional approaches to self-efficacy in entrepreneurship.

Third, this research proposes an extension of the theory of planned behavior by explicitly integrating systemic factors (ecosystem, financing, mentoring) as variables that condition the transformation of intention into action.

The central contribution thus lies in the shift from a strictly individual interpretation of entrepreneurship toward an integrated socio-cognitive and institutional approach.

6.2 Managerial implication

At the operational level, the results highlight several levers for action for public policymakers and incubator managers.

First, they underscore the need to strengthen specialized technology mentoring, particularly in highly technical fields (AI, cybersecurity), to address the identified expertise gap among project leaders.

Second, they highlight the urgent need to adapt funding mechanisms to the specific characteristics of digital startups, with are characterized by “asset-light” models. The lack of recognition of intangible assets constitutes a major obstacle to the realization of projects.

Finally, they call for better coordination of support mechanics. Indeed, despite growing institutional momentum with over 120 university incubators and thousands of registered innovative projects, the ecosystem’s effectiveness remains limited by the fragmentation of stakeholders and mechanisms.

The key implication is that the performance of entrepreneurial ecosystems depends not only on their existence, but on their actual ability to transform intentions into viable projects.

6.3 Limitations of the Research

This study has certain limitations that should be highlighted.

One the one hand, its exploratory qualitative approach, while relevant for understanding subjective dynamics, limits the statistical generalizability of the results.

On the other hand, the simple size (n=25) and its focus on a single university hub (Koléa) limit the applicability of the conclusions to other academic or regional contexts.

Finally, the cross-sectional nature of the study does not allow for an understanding of the evolution of entrepreneurial trajectories over time, particularly the actual transition from intention to business creation.

6.4 Research Prospects

These limitations open up several promising avenues for research.

First, qualitative studies could be conducted to empirically test the proposed model on a larger sample, thereby validating the relationships between digital self-efficacy, systemic factors, and the transition to action.

Second, a longitudinal approach would make it possible to track student entrepreneurs over time, in order to analyze the actual trajectories of project implementation and identify breaking points.

Third, international comparisons, particularly with other emerging economies, would help better contextualize the Algerian case and identify similar or divergent patterns.

Finally, a conceptual deepening of the digital self-efficacy paradox appears necessary to empirically explore its ambivalent effects on decision-making and the management of entrepreneurial uncertainty.

7. Conclusion

The objective of this research was to analyze the gap between entrepreneurial intentions and the implementation of digital projects among Algerian students, using a qualitative phenomenological approach centered on the lived experiences of student-entrepreneurs.

The results highlight the existence of fundamental paradox in digital entrepreneurship xithin an emerging context, characterized by the coexistence of three contradictory dynamics: high entrepreneurial intention, strong digital self-efficacy, and low project implementation. This finding confirms that, although the theory of planned behavior provides a relevant framework for explaining the formation of entrepreneurial intentions (Ajzen, 1991), it remains insufficient to account for the transition to action in constrained institutional environments.

One of the main theoretical contributions of this research lies in highlighting the ambivalent role of the digital self-efficacy. In line with Bandura's (1997) socio-cognitive approach, this variable acts as a central driver of entrepreneurial intention; however, the results show that it can also produce a form of cognitive overconfidence when structural constraints are underestimated. This finding allows us to propose the concept of the digital self-efficacy paradox, thereby enriching the literature on the relationship between ability beliefs and entrepreneurial behavior.

Furthermore, this research confirms that the transition from intention to action depends heavily on the quality of the entrepreneurship ecosystem, particularly in terms of specialized mentoring, access to financing, and institutional coordination. In this sense, the results extend the literature on the intention-action gap by showing that this gap is not solely due to individual factors, but to an interaction between cognitive dimensions and systemic constraints (Van Gelderen and al.2015, Spigel, 2017).

Thus, the central contribution of this study is to propose an integrated understanding of digital entrepreneurship, linking individual self-efficacy and structural conditions, and moving beyond both purely intentional approaches and idealized idealized visions of entrepreneurial ecosystems. This perspective appears particularly relevant in emerging economies, where support mechanisms exist but still struggle to ensure the effective transformation of entrepreneurial intentions into value creation.

From a practical standpoint, these findings underscore that the development of digital entrepreneurship cannot rely solely on stimulating intentions but requires a qualitative transformation of support mechanisms, through enhanced technological mentoring, financing mechanisms tailored to digital models, and better coordination among ecosystem actors.

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