

## Exploring Latent Factors Influencing University Students' Entrepreneurial Career Intentions: An Exploratory Factor Analysis at Adrar University - ALGERIA.

استكشاف العوامل الكامنة المؤثرة في نوايا الطلبة الجامعيين نحو ريادة الأعمال (المقاولاتية):  
تحليل عاملي استكشافي في جامعة أدرار - الجزائر.

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### Abstract:

This study investigates the latent factors influencing the entrepreneurial career intentions of university students at Adrar University, Algeria, through an Exploratory Factor Analysis (EFA). Drawing on the Theory of Planned Behavior and the concept of Entrepreneurial Self-Efficacy, the research addresses a critical gap in North African literature by localizing the motivational structures of Algerian youth. Data were collected from a sample of 100 students across various faculties using a validated 16-item questionnaire. The analysis yielded five underlying factors: (1) Self-Preparedness and Skill Set, (2) Social and Environmental Influence, (3) Direct Family Motivation, (4) Previous Practical Experience, and (5) Propensity for Adventure and Risk. The dominant factor, representing internal self-efficacy and competence, explained the largest portion of variance (23.74%). Findings reveal that students' entrepreneurial intentions are driven more by personal belief, readiness, and experiential exposure than by external social or familial pressures. Interestingly, psychological traits such as risk-taking emerged as standalone motivators. The results suggest a shift toward individual agency in entrepreneurial decision-making among Algerian youth, particularly in under-resourced regions like Adrar. Policy recommendations include integrating entrepreneurship into academic curricula, fostering university-business collaborations, and establishing supportive incubation environments. These initiatives can cultivate a self-sustaining entrepreneurial ecosystem tailored to local realities.

**Keywords:** Entrepreneurial Intention, Self-Efficacy, Factor Analysis, Algerian Youth, Higher Education.

**JEL Classification Codes:** L26, I23.

### ملخص:

تهدف هذه الدراسة إلى تحليل العوامل الكامنة التي تؤثر في نوايا الطلاب الجامعيين بجامعة أدرار في الجزائر لاختيار ريادة الأعمال أو المقاولاتية كمهنة مستقبلية، وذلك باستخدام أسلوب التحليل العاملي الاستكشافي. وتستند الدراسة إلى نظرية السلوك المخطط ومفهوم الكفاءة الذاتية الريادية، لتسدّ فجوة في الأدبيات المتعلقة بريادة الأعمال أو المقاولاتية في شمال إفريقيا من خلال فهم البنى التحفيزية لدى الشباب الجزائري. شملت العينة 100 طالب من مختلف التخصصات، وتم جمع البيانات باستخدام استبيان مكون من 16 بنداً. أظهرت النتائج خمسة عوامل كامنة رئيسية هي: (1) الاستعداد الشخصي والمهارات، (2) التأثير الاجتماعي والبيئي، (3) الدافع العائلي المباشر، (4) الخبرة العملية السابقة، و(5) الميل للمغامرة والمخاطرة. وبين التحليل أن العامل الأول (الكفاءة الذاتية والاستعداد الشخصي) هو الأكثر تأثيراً، حيث يُفسّر 23.74% من التباين الكلي. كما أظهرت النتائج أن

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نوايا ريادة الأعمال أو المقاولاتية تتشكل بدرجة أكبر من الثقة الذاتية والخبرة الشخصية، وليس من الضغوط العائلية أو الاجتماعية. وأشارت النتائج إلى بروز صفات نفسية مثل حب المغامرة كمحركات مستقلة لاتخاذ القرار الريادي أو المقاولاتي. توصي الدراسة بإدماج التعليم الريادي ضمن المناهج الجامعية، وتعزيز الشراكات مع القطاع الخاص، وإنشاء بيئات حاضنة للابتكار داخل الجامعات.

كلمات مفتاحية: نية ريادة الأعمال أو المقاولاتية، الكفاءة الذاتية، التحليل العاملي، الشباب الجزائري، التعليم العالي.

تصنيفات JEL : L26, I23.

### INTRODUCTION:

Entrepreneurship has increasingly been recognized as a vital engine for economic growth, job creation, and social mobility, especially in regions facing high youth unemployment (UNDP, 2022). In many developing economies, where the labor market cannot absorb the growing number of graduates, entrepreneurship provides an alternative and sustainable pathway to economic independence. Particularly among young people, entrepreneurial activity fosters innovation, reduces dependence on government employment, and stimulates private-sector dynamism. In Algeria, a country characterized by a youthful demographic and a fragile labor market, entrepreneurship has the potential to act as a catalyst for both individual empowerment and broader economic transformation. Nevertheless, despite institutional encouragement and policy reforms, the entrepreneurial engagement of Algerian university graduates remains modest and uneven across regions and educational backgrounds (Kherroubi & Djellal, 2021). Although entrepreneurship is encouraged in national strategies and educational reforms, most Algerian university students demonstrate low interest in starting their own businesses after graduation. A significant number still prefer public-sector jobs or remain unemployed, which raises concerns about the effectiveness of current support structures and educational interventions. Empirical indicators suggest that entrepreneurial programs and national campaigns often fail to translate into real entrepreneurial actions or intentions among university graduates. This issue is particularly acute in marginalized or remote areas, such as Adrar, where institutional support and business infrastructure are limited, further discouraging entrepreneurial initiatives.

**Research Gap:** While global literature has provided robust models for understanding entrepreneurial intentions—particularly through the Theory of Planned Behavior (Ajzen, 1991) and Entrepreneurial Self-Efficacy theory (Bandura, 1997)—few studies in North Africa have empirically validated these frameworks using local data. Most existing Algerian studies rely on confirmatory analysis with pre-existing scales developed in Western contexts, without exploring the indigenous cognitive and motivational structures of local students (Belkhodja & Wafi, 2018). The lack of exploratory factorial studies adapted to Algerian universities creates a methodological and empirical vacuum that hinders the formulation of effective policy and curricular responses. Thus, a need exists for localized research capable of uncovering latent factors specific to Algerian university students.

This study aims to identify and interpret the latent factors that influence the entrepreneurial career intentions of students at Adrar University. Using Exploratory Factor Analysis (EFA), the research intends to extract underlying psychological, social, and experiential components that

shape students' entrepreneurial thinking. By doing so, the study contributes to the development of more context-sensitive models that reflect the unique socio-economic and institutional realities of Algerian higher education.

**Research Questions or Hypotheses:** Although the study is primarily exploratory, it is informed by the hypothesis that self-efficacy, social environment, and prior experience are among the most significant predictors of entrepreneurial intention among Algerian students, in line with findings by Chen et al. (1998) and Krueger et al. (2000).

## **1. Literature Review**

Entrepreneurship creates jobs, economic growth and development of a nation. It is crucial to drive a nation's economy. An entrepreneur setup a new business, take risk and faces uncertainty to make profit and grow the business by identifying available opportunities, gather the necessary resources to exploit those opportunities that were identified. Entrepreneurs prefer to be in control of their own resources, prefer to take calculated risk, and possesses attributes of confidence and belief in self, self-reliance, perseverance, traits for immediate feedback, with higher level of energy which are usually higher than the average person. They dream big and are achievement motivated (Kim-Soon, 2018).

**1.1. Theoretical Framework:** Entrepreneurial career intentions among university students have increasingly been studied through established theoretical lenses, most notably the Theory of Planned Behavior (TPB) by Ajzen (1991). TPB posits that intention is shaped by attitudes, subjective norms, and perceived behavioral control, offering a robust framework for predicting entrepreneurial behaviors. In this model, entrepreneurial intention is not a random outcome but a reasoned decision process rooted in cognitive evaluation (Krueger et al., 2000). Building on this, the concept of Entrepreneurial Self-Efficacy (ESE) introduced by Bandura (1997) and extended by Chen et al. (1998), refers to an individual's belief in their ability to successfully launch and manage entrepreneurial ventures. ESE plays a crucial mediating role in transforming entrepreneurial attitudes into real intentions, particularly among youth (Zhao, Seibert, & Hills, 2005). Thus, the combined influence of TPB and ESE provides a multidimensional understanding of the cognitive, psychological, and social mechanisms underpinning entrepreneurship.

**1.2. Empirical Studies:** Numerous exploratory and confirmatory factor analysis studies globally have identified the underlying dimensions influencing entrepreneurial intentions. For example, Liñán and Chen (2009) validated the Entrepreneurial Intention Questionnaire (EIQ) in multiple cultural contexts and found that personal attitude, perceived behavioral control, and social norms consistently emerged as key factors. Similarly, studies in France and Canada confirmed that entrepreneurial education and exposure to role models significantly predict entrepreneurial intention (Fayolle & Gailly, 2015; Lévesque & Minniti, 2006). In the MENA region, especially in Tunisia and Morocco, research by Belkhodja and Wafi (2018) identified cultural values, access to capital, and perception of entrepreneurship as major latent variables. However, while these studies offer critical insights, most have focused either on broad national samples or used confirmatory models without testing emergent local factors.

**1.3. Gaps Identified:** Despite the growing academic interest in entrepreneurship in North Africa, there remains a clear empirical gap in validating latent factors specific to Algerian universities. Existing regional research often replicates western-developed scales without adapting them to the socio-cultural and institutional realities of Algeria (Kherroubi & Djellal,

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2021). Additionally, few studies have conducted exploratory factor analysis to uncover indigenous motivational structures. This lack of localized factorial validation limits the reliability of policy interventions and curriculum development aiming to foster entrepreneurship in Algerian higher education institutions. Therefore, there is a strong need for empirical models grounded in the lived experience of Algerian students and aligned with local entrepreneurial ecosystems.

### 2. Methodology

**2.1. Research Design:** This study employed a descriptive and exploratory research design to identify and analyze the latent factors influencing the entrepreneurial career intentions of university students at Adrar University in Algeria. The descriptive approach allowed the researchers to outline the characteristics and tendencies present within the student population, while the exploratory nature of the study provided a foundation for uncovering underlying constructs not previously tested in this specific context (Saunders, Lewis, & Thornhill, 2019). The design aligns with prior entrepreneurial intention studies that emphasize the significance of context-sensitive, preliminary investigations in non-Western settings (Gartner, 1988; Fayolle & Gailly, 2015).

**2.2. Population & Sample:** The population targeted consisted of university students enrolled at Adrar University. A stratified sampling technique was employed to ensure proportional representation across the main faculties of the institution. The final sample comprised 100 students, including participants from the Faculty of Technology (32%), the Faculty of Economic and Management Sciences (27%), the Faculty of Humanities and Sharia Sciences (26%), as well as smaller proportions from the Faculties of Arts (10%) and Law (5%). This stratification was crucial in capturing the diversity of academic exposure and its potential influence on entrepreneurial orientation (Hair et al., 2014).

**2.3. Instrument:** Data were collected using a structured questionnaire consisting of 16 items that assessed a range of entrepreneurial motivations, attitudes, and influences. The questionnaire was developed based on existing literature and validated frameworks in entrepreneurship research, ensuring content validity (Krueger, Reilly, & Carsrud, 2000). It addressed individual-level psychological traits, social influences, and prior experiences believed to shape students' entrepreneurial intentions.

**2.4. Data Collection:** A mixed-mode data collection method was adopted, with 88 responses gathered via paper-based forms and 12 via an online survey. This approach facilitated broader access and inclusivity across different student groups while ensuring a full 100% response rate. Mixed-mode collection is particularly effective in institutional settings where internet accessibility varies (Dillman, Smyth, & Christian, 2014).

### 3. Data Analysis:

#### 3.1. Descriptive Analysis of the Variables :

The study relied on a questionnaire distributed to a sample of 100 university students and collected in full, yielding a 100 % response rate (12 online questionnaires and 88 paper questionnaires), which is suitable for statistical analysis. The distribution by academic major showed unequal representation across faculties: the Faculty of Technology constituted the largest share (32 %), followed by the Faculty of Economic Sciences and Management Sciences (27 %), then the Faculty of Humanities and Sharia Sciences (26 %). Lower shares were recorded in the Faculties of Arts (10 %) and Law (5 %). Regarding the level of study, most respondents were undergraduate (Bachelor's) students (66 %) versus Master's students (34 %). Female respondents dominated the sample (68 %) compared with males (32 %). As for employment status, 87 % of the students had no formal job, while 13 % were employed. Furthermore, 24 % of the respondents reported engaging in freelance work, whereas 76 % did not. These socio-demographic and educational characteristics help contextualize the study and offer an initial picture of the university environment targeted in the analysis.

The descriptive results also revealed variation in students' response levels across the 16 studied variables. The strongest motivation was "Because I have profitable project ideas" with a mean of 3.54 and a standard deviation of 1.201, reflecting the centrality of innovative ideas as symbolic capital that spurs entrepreneurial initiative. Conversely, "Because my parents push me toward entrepreneurial work" recorded the lowest mean (2.49), indicating a weak direct familial influence on entrepreneurial decisions.

| Variable                                    | Mean | Standard Deviation | N   |
|---------------------------------------------|------|--------------------|-----|
| I have ideas for profitable projects        | 3.54 | 1.201              | 100 |
| I possess personal capabilities for success | 3.40 | 1.146              | 100 |
| I love adventure                            | 3.38 | 1.339              | 100 |
| I dream of being wealthy                    | 3.32 | 1.332              | 100 |
| My parents push me toward entrepreneurship  | 2.49 | 1.243              | 100 |

Source: SPSS

### 3.2. Testing Measurement Adequacy and Factorability

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy reached 0.798, which is within the acceptable range ( $> 0.60$ ). Bartlett's test of sphericity was highly significant ( $\chi^2 = 390.202$ ,  $df = 120$ ,  $p = 0.000$ ), indicating that the data meet the conditions for applying exploratory factor analysis.

### 3.3. Extraction of Underlying Factors

Principal Component Analysis (PCA) with Varimax rotation extracted five fundamental factors with eigenvalues  $> 1$ , explaining a total of 60.76 % of the overall variance.

| Factor   | Eigenvalue | Variance Explained | Cumulative Variance |
|----------|------------|--------------------|---------------------|
| Factor 1 | 3.799      | 23.74 %            | 23.74 %             |
| Factor 2 | 1.979      | 12.37 %            | 36.11 %             |
| Factor 3 | 1.524      | 9.53 %             | 45.64 %             |

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| Factor   | Eigenvalue | Variance Explained | Cumulative Variance |
|----------|------------|--------------------|---------------------|
| Factor 4 | 1.347      | 8.42 %             | 54.06 %             |
| Factor 5 | 1.073      | 6.70 %             | 60.76 %             |

Source: SPSS

### 3.4. Naming and Interpretation of the Factors

High loadings ( $\geq 0.30$ ) on the Rotated Component Matrix yielded five principal factors, named according to the semantic content of their associated variables and in line with methodological traditions in exploratory factor analysis within the behavioral and managerial sciences.

| Factor No. | Proposed Label                            | No. of Variables | Variables with High Loadings                                                                                                                                                                                                                                                                                                                                                                                   | Conceptual Interpretation                                                                                                                                                               |
|------------|-------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1          | <b>Self-Preparedness and Skill Set</b>    | 11               | “I have ideas for profitable projects”; “I possess personal capabilities”; “I prefer entrepreneurship to employment”; “My university major is suitable”; “I know profitable projects”; “I have previous business experience”; “I received appropriate training”; “I dream of being wealthy”; “I studied entrepreneurship course”; “I attended training workshops”; “A family member works in entrepreneurship” | Represents cognitive, skill-based, and psychological self-formation enhancing students' inclination toward entrepreneurial initiative, reflecting positive self-efficacy and readiness. |
| 2          | <b>Social and Environmental Influence</b> | 2                | “I have successful entrepreneur friends”; “Media and advertising promoting entrepreneurship”                                                                                                                                                                                                                                                                                                                   | Captures the role of social and cultural environment as motivators, reflecting imitation of successful models and the impact of awareness campaigns and media.                          |

| Factor No. | Proposed Label                           | No. of Variables | Variables with High Loadings                             | Conceptual Interpretation                                                                                                            |
|------------|------------------------------------------|------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 3          | <b>Direct Family Motivation</b>          | 1                | “Because my parents push me toward entrepreneurial work” | Denotes the authoritative familial dimension as a pressure force toward students’ career choices; relatively weak in mean value.     |
| 4          | <b>Previous Practical Experience</b>     | 1                | “Because I worked in family or friends’ projects”        | Highlights the importance of direct business experience in gaining confidence and leaning toward economic independence.              |
| 5          | <b>Propensity for Adventure and Risk</b> | 1                | “Because I love adventure”                               | Reflects the psychological dimension related to entrepreneurial personality, particularly readiness for uncertainty and risk-taking. |

#### Analytical Notes

- Factor 1 is the most comprehensive in terms of variable count and forms the primary axis upon which the remaining motivations are built.
- Factors 3, 4, and 5 show conceptual independence despite having fewer variables, demonstrating the distinctiveness of those dimensions in the factor model.
- The conceptual categorization aligns with entrepreneurship literature that differentiates between internal (intrapersonal) and external (contextual) motivators.

#### 3.5. Inter-Correlation Matrix

The correlation matrix indicated several strong positive associations, notably between “I have ideas for profitable projects” and “I possess personal capabilities” ( $r = 0.524$ ), and between “I love adventure” and “I have ideas for profitable projects” ( $r = 0.436$ ), underscoring the interweaving of psychological and cognitive motivations.

The extracted factor structure suggests that students’ entrepreneurial decisions primarily rest on self-related factors linked to competence and cognitive-experimental mastery rather than

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responses to familial pressure or environmental influences. Psychological readiness for risk constitutes an independent dimension that nonetheless reinforces students' orientation toward entrepreneurial endeavors. Accordingly, the findings recommend that educational institutions focus on strengthening self-empowerment and entrepreneurial skills while fostering an environment conducive to idea generation and development within an integrated training framework.

### 6. Discussion of Findings

#### 6.1. Interpretation

The exploratory factor analysis reveals that entrepreneurial intentions among students at Adrar University are predominantly driven by internalized cognitive and psychological factors. Factor 1 ("Self-Preparedness and Skill Set"), which explains 23.74% of the total variance, encompasses 11 variables related to self-efficacy, including confidence in possessing profitable ideas (mean = 3.54), personal capabilities (mean = 3.40), and prior training or experience. This aligns with Bandura's (1997) theory of self-efficacy, where belief in one's competence acts as the primary catalyst for action. The prominence of this factor underscores that entrepreneurial intent is not merely reactive to external pressures but stems from cognitive readiness and skill-based self-assessment (Chen et al., 1998). Further, Factor 5 ("Propensity for Adventure and Risk") highlights intrinsic traits like risk tolerance as a standalone motivator, reinforcing that internal dispositions anchor entrepreneurial decisions more than societal or familial expectations.

#### 6.2. Comparison with Prior Literature

These findings partially align yet meaningfully diverge from global and regional studies. Consistent with Liñán and Chen's (2009) cross-cultural validation, self-efficacy and perceived behavioral control emerge as universal pillars of entrepreneurial intent. However, while Western literature emphasizes subjective norms (e.g., familial support) as equally influential within the TPB framework (Ajzen, 1991), this study reveals its minimal role (Factor 3 mean = 2.49). Similarly, prior MENA research identified cultural values and family networks as dominant (Belkhodja & Wafi, 2018), yet here, "Direct Family Motivation" explains only 9.53% of variance and loads weakly. This divergence suggests that TPB's universal applicability requires contextual recalibration, particularly in distinguishing between collectivist societal norms and individual agency in non-Western youth (Zhao et al., 2005).

#### 6.3. Cultural or Institutional Insights

The Algerian context elucidates these nuances. The weak familial influence contrasts sharply with regional studies in Tunisia or Morocco (Belkhodja & Wafi, 2018), possibly reflecting Algeria's unique socio-institutional landscape. With 87% of respondents unemployed and 24% engaged in freelance work, economic necessity may drive students toward self-reliance rather than dependence on traditional support systems. Further, institutional voids in entrepreneurship ecosystems—such as scarce funding and underdeveloped mentorship programs (Kherroubi & Djellal, 2021)—likely amplify the reliance on personal readiness (Factor 1) over external enablers. The dominance of female respondents (68%) also signals shifting gender dynamics in

Maghreb entrepreneurship, where education fosters greater autonomy in career choices despite patriarchal norms (UNDP, 2022).

#### **6.4. Unexpected Results**

Two outcomes defy expectations: First, parental influence ("My parents push me") registered the lowest mean (2.49) and formed a distinct but minor factor, contradicting MENA literature framing family as pivotal (Belkhodja & Wafi, 2018). This may indicate generational shifts toward individualism among Algerian youth or skepticism toward entrepreneurship as unstable employment. Second, social/environmental motivators (Factor 2) showed limited impact despite media campaigns and peer networks, suggesting top-down awareness initiatives may be ineffective without structural support. The emergence of "love of adventure" as a standalone factor (8.42% variance) also diverges from studies prioritizing rational economic motives (Lévesque & Minniti, 2006), highlighting psychological traits as understudied drivers in austerity contexts.

Ultimately, this study confirms that entrepreneurial intent at Adrar University is less a product of external persuasion than of internal capacity-building. Policymakers should thus prioritize experiential learning (e.g., incubators, skill workshops) over familial or media-centric campaigns. Future research should test this factor model in other Maghreb universities to disentangle national idiosyncrasies from broader regional trends.

#### **Conclusion :**

This study explored the underlying psychological and environmental factors influencing the entrepreneurial intentions of students at Adrar University in Algeria. Using Exploratory Factor Analysis (EFA), five latent dimensions were identified: (1) Self-Preparedness and Skill Set, (2) Social and Environmental Influence, (3) Direct Family Motivation, (4) Previous Practical Experience, and (5) Propensity for Adventure and Risk. Among these, the most influential factor was the first, representing internal cognitive readiness and personal efficacy. It encompassed variables such as confidence in profitable ideas, possession of entrepreneurial skills, relevant educational background, and prior business exposure. This finding confirms that individual belief in one's entrepreneurial competence is a primary driver of intention, in line with Bandura's theory of self-efficacy.

While existing literature in the MENA region often highlights social norms and family support as strong predictors of entrepreneurial behavior, this study diverged by showing that external motivators like parental pressure and media influence played a minimal role in the Algerian context. Moreover, the emergence of psychological traits like adventure-seeking as standalone motivators indicates the presence of unique individual dispositions influencing entrepreneurial aspirations. These findings suggest a shift toward personal agency and internal motivation among Algerian youth, particularly in under-resourced regions like Adrar.

- **Policy Recommendations :** To foster entrepreneurial intention more effectively, three key policy directions are recommended:
- **Integrate Entrepreneurial Training into Curricula:** Formal coursework, workshops, and experiential learning components should be embedded across academic disciplines to enhance students' entrepreneurial skills and self-efficacy.

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- **Promote University-Business Collaboration:** Institutions should create partnerships with private sector actors to provide mentorship, internships, and funding pathways, making entrepreneurship a tangible career option.
- **Establish Incubation Environments:** Universities must invest in idea labs, innovation hubs, and incubators that allow students to test and develop business concepts in a supportive environment.

**Future Research Suggestions :** future research should employ cross-regional comparisons within Algeria and across North Africa to explore how institutional and cultural variables interact with entrepreneurial intentions. Longitudinal studies could provide insights into how these intentions evolve over time, while confirmatory factor analysis (CFA) could be used to validate the five-factor structure identified in this study. Such investigations would offer more robust models to guide educational and policy reforms in the region.

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