

Fostering sustainable entrepreneurship in higher education: The role of creativity and university support

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ABSTRACT

This study investigates the determinants of entrepreneurial intention (EI) among university students, focusing on the interaction between perceived creativity aptitude (PCA), attitude toward entrepreneurship (ATE), and perception of university support (US). Drawing on the theory of planned behavior, we test a structural equation modeling framework using data from 419 students enrolled in public and private universities in Tunisia. The findings reveal that PCA significantly enhances EI both directly and indirectly through its influence on ATE. Moreover, students' perceptions of US moderate the relationship between creativity and EI, emphasizing the critical role of institutional ecosystems in fostering entrepreneurial potential. This research contributes to the entrepreneurship literature by demonstrating the combined influence of individual creativity and US, and by providing actionable insights for higher education institutions. The results are particularly relevant for policymakers and educators in developing countries seeking to promote sustainable entrepreneurship and bridge the gap between academic preparation and entrepreneurial outcomes.

Keywords: perceived creativity, attitude toward entrepreneurship, entrepreneurial intention, university support

INTRODUCTION

Entrepreneurship is increasingly acknowledged as a central force for economic progress, contributing significantly to job creation, innovation, and the overall dynamism of labor markets across the globe (Barba-Sánchez et al., 2022). Although this phenomenon has long been associated with developed economies, its relevance has grown substantially in developing contexts, particularly in Tunisia. The country's persistent economic and political fluctuations have constrained traditional employment generation by the public and private sectors, positioning entrepreneurship as an alternative mechanism for socioeconomic inclusion. In an environment marked by high youth unemployment, new venture creation represents not only a source of income but also a path toward autonomy and empowerment (GUESSS Tunisia National Report, 2023). This growing entrepreneurial dynamism is observable through the steady increase in business registrations—from 11.97 thousand in 2014 to a projected 16.12 thousand by 2029 (Statista, 2024)—and the expansion of business density from 11.72 to 20.18 enterprises per 1,000 adults between 2010 and 2019 (World Bank, 2022). Furthermore, the GUESSS Tunisia National Report (2023)

documents a notable rise in entrepreneurial aspirations among university students, supported by the spread of creativity-oriented learning environments such as co-working spaces and fab labs.

Entrepreneurial intention (EI) constitutes one of the most reliable precursors of entrepreneurial behavior (Arasti et al., 2012a; Autio et al., 2001; Duong, 2022; Krueger et al., 2000). Since the 1990s, scholars have consistently highlighted the predictive value of EI in understanding the decision to create new ventures (Rezaei & Ortt, 2018). Within the academic sphere, fostering EI is viewed as a strategic means to shift students' perspectives from seeking employment to creating it—an essential transformation in economies struggling to absorb large numbers of graduates (Jiang & Sun, 2015; Nuan & Xin, 2012; Reuel Johnmark et al., 2016). Although Tunisia has improved its “ease of doing business” score—from 64.6 in 2016 to 68.7 in 2020 (World Bank, 2022)—structural challenges such as bureaucratic complexity and regulatory rigidity continue to hinder the realization of entrepreneurial potential among young people.

Existing research has mainly examined the individual and psychological antecedents of EI (e.g., Al-Ghazali et al., 2022; Handayati et al., 2020). However, the interaction between

cognitive and contextual factors remains insufficiently understood (Akbari et al., 2024). Nasri (2023) confirmed that attitudes, subjective norms, and perceived behavioral control (PBC) influence EI among Tunisian students, underscoring the importance of educational initiatives that cultivate favorable perceptions of entrepreneurship. Similarly, Kefi (2016), drawing on the big five personality traits, found that openness, honesty, and risk-taking propensity were significant predictors of entrepreneurial motivation in Tunisia. More recently, Galvão et al. (2024) showed that perceived educational support enhances students' self-efficacy and EI, but its effect depends on the relevance and adaptability of institutional initiatives. While several studies have explored sociodemographic and personality variables, fewer have investigated how cognitive dimensions—such as perceived creativity—combine with contextual enablers like university support (US) to shape EI. Although creativity is widely recognized as an essential component of entrepreneurship, its perceived contribution to EI, particularly within higher education settings, remains underexplored.

To address these research gaps, this study investigates the following research question: *How do perceived creativity aptitude (PCA), attitude toward entrepreneurship (ATE), and perception of US interact to influence EI among university students?*

The present work contributes to the literature in three main ways. First, it examines the mediating role of ATE in the link between perceived creativity and EI. Second, it introduces the moderating role of US, offering actionable implications for higher education institutions seeking to nurture students' entrepreneurial capacity. Finally, it provides policy insights for strengthening entrepreneurial ecosystems in developing contexts, with particular reference to Tunisia.

The article proceeds as follows. The next section reviews the theoretical background and formulates the research hypotheses. The methodology section outlines the research design and analytical approach. The empirical findings are then presented, followed by a discussion of their theoretical and practical implications and a concluding section.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Entrepreneurial Intention

EI refers to the mental orientation that directs an individual's focus, effort, and behavior toward the pursuit of a business creation goal (Bird, 1988). It represents the cognitive state preceding entrepreneurial action and is widely used to explain why and how individuals decide to engage in entrepreneurial activity. Over the past decades, numerous theoretical frameworks from social psychology and entrepreneurship research have attempted to clarify the mechanisms underlying this intention, emphasizing the interplay between individual dispositions, contextual factors, and situational influences.

One of the most influential contributions is Ajzen's (1991) theory of planned behavior (TPB), which conceptualizes intention as a function of attitudes toward behavior, perceived

social norms, and PBC. This model remains the most frequently applied in entrepreneurial studies due to its predictive power and integrative perspective combining rational and affective components. Nevertheless, TPB has been criticized for overlooking broader socio-economic and cultural dimensions. Complementary to TPB, Krueger and Carsrud's (1993) entrepreneurial event model, inspired by Shapero and Sokol (1982), highlights perceived desirability, feasibility, and the propensity to act as primary triggers of entrepreneurial behavior, emphasizing how experiences or contextual displacements can initiate entrepreneurial action.

Other conceptual frameworks have enriched this understanding. For instance, Learned (1992) underscored the role of environmental meaning in shaping entrepreneurial choices, while Boyd and Vozikis (1994) introduced an interactional approach that considers the combined effects of personal attributes and contextual influences. Similarly, Davidsson's (1995) psycho-economic model proposed a multidimensional explanation of intention formation, linking economic conditions and psychological readiness, though its empirical application remains limited mainly to student populations. Collectively, these models provide a strong theoretical basis but still reveal conceptual gaps—particularly regarding the integration of social and cultural variables and the dynamic interactions among predictors.

In light of these gaps, the present study focuses on the interrelations among perceived creativity, ATE, and US, seeking to deepen understanding of the cognitive and contextual determinants of EI among Tunisian students.

EI is widely recognized as one of the most robust predictors of entrepreneurial behavior and a key element in the process of venture creation and economic transformation (Arasti et al., 2012b; Autio et al., 2001; Chahal et al., 2024; Krueger et al., 2000; Pinazo-Dallenbach & Castelló-Sirvent, 2023; Sampene et al., 2023). In emerging economies, entrepreneurship constitutes an essential lever for innovation, employment, and social inclusion (Papaleontiou-Louca et al., 2014; Trapczyński, 2016). Promoting an entrepreneurial mindset among young people encourages proactive and opportunity-driven behavior that can contribute to productivity and long-term growth (Anjum et al., 2018; Farrukh et al., 2019).

Entrepreneurs typically exhibit high levels of innovation, creativity, and risk tolerance, which are crucial to processes of economic modernization (Abbas et al., 2016). Within the framework of the TPB (Ajzen, 1991), EI arises from the combined influence of ATE, subjective norms, and PBC—factors that jointly determine an individual's motivation to pursue an entrepreneurial path (Krueger & Carsrud, 1993). Importantly, this intention often develops well before the venture's formal establishment, reflecting both cognitive preparation and motivational commitment (Gartner, 1989; St-Jean et al., 2013).

In this regard, entrepreneurship education (EE) is a key mechanism for fostering the knowledge, skills, and attitudes needed to initiate and sustain entrepreneurial activities (Aga, 2023; Rocha & Freitas, 2014). Such education enhances creativity, interdisciplinary thinking, and innovation, thereby reinforcing students' intentions to engage in entrepreneurship and strengthening the overall entrepreneurial ecosystem (Bae

et al., 2014; Cunha et al., 2004). Since intention is a direct antecedent of behavior, its reinforcement improves the predictive accuracy of entrepreneurial action (Krueger et al., 2000). Consequently, understanding the determinants of EI—particularly among young people who represent the future drivers of economic development—remains essential for designing effective educational and policy interventions (Chahal et al., 2024; Galvão et al., 2024; Maheshwari et al., 2023; Sampene et al., 2023).

Beyond EE, the broader institutional and ecosystemic environment also plays a crucial role in shaping students' EIs. Universities are key actors within entrepreneurial ecosystems, providing education, networks, and resources that foster entrepreneurial behavior. According to entrepreneurial ecosystem theory (Isenberg, 2011), universities function as catalysts connecting talent, innovation, and industry collaboration (Ilie & Budac, 2023; Osano et al., 2021). Beyond their educational mission, they facilitate knowledge transfer and business engagement, thereby strengthening entrepreneurial capacity (Bedó et al., 2020; Belitski & Heron, 2017). From an institutional theory perspective (Scott, 2001), universities shape the norms, values, and structures that legitimize entrepreneurial activity. Empirical studies show that aligning internal and external institutional environments enhances students' EIs (Astuty et al., 2022). Recent research also highlights the need for context-sensitive and ecosystem-based approaches to understanding how institutional environments support entrepreneurship, particularly in developing countries (Mani, 2025). Overall, effective US requires holistic, experience-based ecosystems rather than solely classroom-based instruction.

Perceived Creativity Aptitude as a Catalyst for Entrepreneurial Intention

The aptitude for creativity exists at varying levels in all individuals. According to Guildford (1950), "the creative process can be replicated at will; it can therefore be taught and developed in a great number of individuals." Thus, creativity is partly innate but can also be cultivated through experience and education.

Creativity lies in the ability to innovate by combining and reorganizing existing knowledge in new ways. It reflects the human capacity to think differently, modify, discover, and create. The exploration and exploitation of new opportunities largely depend on an individual's capacity to identify and understand connections between ideas. Amabile (1996) defined creativity as the production of *new and useful* ideas. Similarly, Ward (2004) emphasized that such ideas are fundamental to entrepreneurship, where opportunity recognition and innovation are essential entrepreneurial attributes (Schumpeter, 1934).

A growing body of literature has emphasized the role of creativity in shaping EI (Kumar & Shukla, 2022; Tantawy et al., 2021). Hamidi et al. (2008) incorporated creativity into the theoretical model of EE and found that students' entrepreneurial ambitions increased through creative activities. Zampetakis et al. (2011) confirmed that individuals who perceive themselves as more creative tend to exhibit higher EIs. Likewise, Feldman and Bolino (2000) suggested

that individuals with higher creativity levels are more likely to pursue self-employment.

Recent studies further underline this relationship. Abdelfattah et al. (2022) found that self-perceived creativity significantly influences EI, and that social media use enhances this effect by facilitating the discovery and development of business ideas. Similarly, Duong et al. (2024b) demonstrated that perceived creative aptitude strongly affects attitudes toward digital entrepreneurship and, consequently, EI. These findings highlight the importance of nurturing creative skills to stimulate entrepreneurial aspirations—particularly within the digital economy.

Based on these arguments, we propose that:

H1. There is a positive relationship between PCA and EI.

Perceived creativity also shapes an individual's ATE, as creativity is a key component of entrepreneurial cognition and opportunity recognition (Fillis & Rentschler, 2010). ATE refers to an individual's predisposition to react favorably or unfavorably to the idea of entrepreneurship, influenced by prior experiences and beliefs (Ouellet, 1978).

Entrepreneurship is fundamentally a creative process that involves generating innovative solutions, identifying market gaps, and developing new business models (Zhou, 2008). Empirical evidence shows that engaging students in real-world problem-solving activities—such as maker education programs—enhances both creative confidence and entrepreneurial competence (Weng et al., 2022). Integrating creativity into EE, particularly through experiential and digital learning platforms, fosters a more positive entrepreneurial attitude by stimulating divergent thinking and proactive opportunity-seeking behaviors (Alemany Díaz et al., 2021).

Furthermore, individuals with higher self-perceived creativity tend to view entrepreneurship as both feasible and rewarding, which strengthens their entrepreneurial attitudes and intentions (Kakouris, 2021). Encouraging creativity in educational environments can thus cultivate a stronger entrepreneurial mindset, increasing the likelihood that students will engage in entrepreneurial ventures.

Based on these arguments, we propose that:

H2. There is a positive relationship between PCA and ATE.

Attitude Toward Entrepreneurship and Entrepreneurial Intention

ATE encompasses three components: behavioral, emotional, and cognitive (Ouellet, 1978). The behavioral component reflects the individual's tendency to act in a certain way toward entrepreneurship; the emotional component refers to the affective importance attributed to entrepreneurship, influenced by personal feelings; and the cognitive component comprises the beliefs, opinions, and knowledge associated with entrepreneurship.

Attitudes play a central role in predicting behavior, emerging from the interaction between emotions, cognition, and behavioral tendencies. As Ajzen and Fishbein (2003) argued, attitudes are fundamental to understanding human behavior because they shape intentions, which in turn predict actions. In the entrepreneurial domain, attitude reflects an individual's positive or negative evaluation of pursuing an

entrepreneurial career. A stronger positive ATE increases the likelihood of aspiring to self-employment and directly influences EI (Agolla et al., 2019; Douglas & Shepherd, 2002).

Recent research has examined the link between EE and EI through the lens of attitudes. Yousaf et al. (2021), for example, proposed a sequential mediation framework where EE influences EI through self-efficacy and attitude toward starting a business. Their findings confirmed that EE, self-efficacy, and entrepreneurial attitudes jointly foster the development of EI.

Similarly, Barba-Sánchez et al. (2022) explored EI among university students by integrating environmental awareness into the model. Their results indicated that attitude toward entrepreneurial behavior and PBC significantly influence EI, while environmental awareness strengthens these effects. This finding reinforces the importance of cultivating ecosystems that nurture positive entrepreneurial attitudes, consistent with Ajzen's (2005) TPB.

The impact of EE on entrepreneurial attitudes is further supported by Wijayati et al. (2021), who applied TPB constructs—attitude, subjective norm, and PBC—to show that EE positively affects entrepreneurial attitudes, which in turn influence intention. Notably, this effect was stronger among business students, underscoring the need for discipline-specific educational interventions.

Other contextual and individual factors also shape entrepreneurial attitudes. Amofah and Saladríguez (2021) investigated the role of parental self-employment as a role model and found that gender moderates its influence: male students exhibited a stronger association between parental self-employment and PBC. These findings highlight the complexity of the attitude–intention relationship, showing that external role models and demographic variables can modulate how entrepreneurial attitudes are formed.

Lüthje and Franke (2003) confirmed that entrepreneurial attitude strongly predicts EI and is itself influenced by personal traits such as risk propensity and internal locus of control. EI can thus be seen as a mental image of one's future entrepreneurial activities. Among the traits fostering such intentions, creativity stands out as a crucial one (Birdthistle, 2008). Creativity—defined as the ability to generate new ideas and solutions—is considered a core entrepreneurial competence (Kusmintarti et al., 2014).

Consistent with this view, Anjum (2020) demonstrated that ATE serves as a mediating variable linking psychological and personal traits to entrepreneurial outcomes. In other words, ATE translates individual dispositions—such as creativity or self-efficacy—into concrete EIs. This mediating mechanism has been repeatedly supported in recent studies (Kwapisz et al., 2021; Saoula et al., 2023), showing that students with higher self-confidence, creativity, and optimism toward entrepreneurship are more likely to pursue entrepreneurial careers.

EE, by enhancing emotional intelligence and self-efficacy, further strengthens this pathway from attitude to intention (Kwapisz et al., 2021; Saoula et al., 2023). Therefore, ATE can be seen as a proximal predictor of EI, while PCA represents a distal antecedent that indirectly influences intention through attitude.

Based on this reasoning, we propose the following hypotheses:

H3. There is a positive direct relationship between ATE and EI.

H4. ATE mediates the relationship between PCA and EI.

University Support as a Moderator

Universities are widely recognized as catalysts for innovation and entrepreneurship, capable of shaping students' intentions and abilities to engage in venture creation (Anjum et al., 2021). Through formal and informal learning environments, universities can equip students with the knowledge, skills, and mindset required to identify, evaluate, and pursue entrepreneurial opportunities. Targeted institutional support—such as mentoring, incubators, or business development assistance—can further help students transform ideas into viable ventures (Anjum et al., 2020).

Several studies highlight that experiential learning opportunities, such as internships or participation in university incubators, positively influence EIs (Fayolle & Gailly, 2015). This underscores the dynamic role of universities as both educational and motivational systems. Institutions can strengthen students' entrepreneurial drive not only by teaching business creation processes but also by cultivating a supportive climate that values innovation, experimentation, and risk-taking (Tran et al., 2025).

US also plays a psychological role. By providing encouragement, access to resources, and opportunities for experimentation, universities can enhance students' self-efficacy and motivation to engage in entrepreneurial activities (Lee et al., 2011; Sahban et al., 2016). Moreover, a supportive academic environment can amplify the influence of individual factors, such as creativity or PBC, on EI (Aman et al., 2012).

Institutional assistance can take many forms—ranging from market research support and seed funding to dedicated entrepreneurship centers or competitions (OECD, 2010). Collectively, these initiatives foster an “entrepreneurial university” model that promotes opportunity recognition and venture creation (Edelman & Yli-Renko, 2010; Urbano & Guerrero, 2013). US thus acts as a contextual driver that indirectly motivates entrepreneurial behavior by enhancing the factors known to predict intention (Johannisson et al., 2001; Wang & Verzat, 2011).

Empirical evidence also suggests that when universities integrate entrepreneurship training within broader curricula, students not only acquire technical knowledge but also develop creative and innovative mindsets necessary for identifying new market opportunities (Luca & Cazan, 2011). Creativity, while often considered an individual trait, is also shaped by environmental factors such as institutional culture and pedagogical design (Ward, 2004, 2005). Therefore, the university environment can play a decisive role in stimulating students' creative potential and entrepreneurial aspirations.

Despite growing research on entrepreneurial ecosystems, the interaction between US and individual traits—particularly creativity—remains underexplored (Liñán et al., 2011; Schwarz et al., 2009). It is plausible that US strengthens the effect of perceived creativity on EI by providing a nurturing

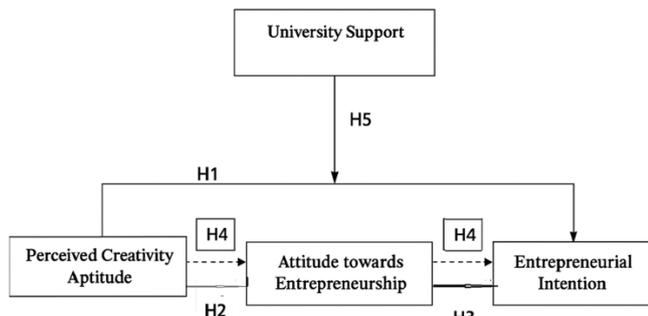


Figure 1. Conceptual framework (Source: Authors' own elaboration)

environment in which creative ideas can be tested and transformed into business opportunities.

Based on these arguments, we propose the following hypothesis:

H5. Perceived university support (PUS) moderates the relationship between PCA and EI, such that this relationship is stronger among students who perceive higher levels of US.

A conceptual framework is developed based on the above discussion and hypotheses, as presented in **Figure 1**.

METHODOLOGY

Sample and Data Collection

Data were collected through a structured online questionnaire distributed via email to a group of Tunisian university students. The instrument consisted of two main parts. The first part measured the key constructs of the study—EI, ATE, PCA, and PUS. The second part captured demographic and contextual variables, including age, region, academic background, type of institution, and prior professional or freelance experience.

A total of 419 valid responses were obtained. The demographic analysis shows that 72.3% of respondents were female and 26.7% were male. The majority (80.7%) were between 20 and 25 years old, while those below 20 years and above 25 years represented 3.3% and 16% of the sample, respectively.

From a regional perspective, 43.0% of respondents were from the Sousse, Monastir, and Mahdia governorates, followed by 26.8% from the North-East, 10% from the South-East, 7.6% from the Center-West, 4.5% from the North-West, and 2.4% from the South-West regions.

In terms of institutional affiliation, the majority of students (92.4%) were enrolled in public universities, while 7.6% attended private institutions. Regarding educational level, 57.3% were undergraduate students and 46.9% were enrolled in master's programs. Additionally, 6% were pursuing engineering degrees, 8% followed integrated or single-cycle programs, and a small proportion were enrolled in doctoral (1.2%) or preparatory (1%) cycles.

With respect to professional experience, 44.6% of the respondents reported no prior work experience, whereas 55.4% indicated having some form of professional exposure. Moreover, 34.8% of students reported having engaged in

freelance or independent work, while 65.2% had no prior freelance experience.

We can consider our sample as sufficiently large, as it meets the commonly recommended standards for structural equation modeling (SEM). Specifically, SEM requires a minimum of 200 cases (Kline, 2015) and/or a ratio of at least 10 observations per estimated parameter (Hair et al., 2019). Therefore, our sample of 419 students is adequate for conducting confirmatory factor analysis (CFA) and structural model testing using SEM.

Measures of Constructs

To operationalize the study's variables, validated measurement scales from the literature were adapted to the Tunisian context. All items were rated on a seven-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). The internal consistency of each construct was assessed using Cronbach's alpha (α) and composite reliability (CR), both exceeding the recommended thresholds ($\alpha > 0.70$; $CR > 0.70$), indicating good reliability.

- **EI:** EI was measured using five items adapted from Farrukh et al. (2019). An example item includes: "I intend to set up a company in the future." ($\alpha = 0.909$; $CR = 0.836$).
- **ATE:** This construct was measured using the scale developed by Liñán and Chen (2009). An example item includes: "Being an entrepreneur would entail great satisfaction for me." ($\alpha = 0.917$; $CR = 0.887$).
- **PCA:** Measured with eight items adapted from Anjum et al. (2020), this construct captures students' self-perception of their creative capacity. An example item is: "I always propose innovative solutions to problems." ($\alpha = 0.944$; $CR = 0.917$).
- **US:** US was also measured using the scale by Anjum et al. (2020), comprising five items assessing perceived institutional encouragement and EE. An example item is: "The entrepreneurship course enables students to acquire the necessary knowledge to start a new business." ($\alpha = 0.810$; $CR = 0.860$).
- **Control variables:** Several control variables were included in the analysis: age, gender, region, type of university (public or private), and professional experience.

RESULTS

Descriptive Statistics

Table 1 presents the descriptive statistics, including means, standard deviations, and Pearson correlations among the study variables. Results indicate that all independent variables—PUS, PCA, and ATE—are positively and significantly correlated with the dependent variable, EI.

Regarding the control variables, age, gender, field of study, and region did not show a significant association with EI. In contrast, professional experience exhibited a negative and significant relationship with EI, whereas the type of university (public vs. private) showed a positive and significant effect.

Table 1. Descriptive statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. InEn	5.45	1.521	1									
2. PerSu	3.77	1.421	.243**	1								
3. CréPerD	4.91	1.325	.727**	.314**	1							
4. AttiEnE	5.74	1.425	.834**	.152**	.703**	1						
5. Sexe	1.72	0.448	-.077	.049	-.101*	-.038	1					
6. Age	2.13	0.422	-.036	-.081	.019	.005	.029	1				
7. Region	2.65	1.386	.016	-.055	-.041	.100*	-.031	-.019	1			
8. Type de l'université	1.09	0.284	.100*	.136**	.113*	-.010	-.052	.106*	-.044	1		
9. Spécialité d'Etude	2.93	2.238	-.004	.013	.013	-.010	.072	-.067	.093	-.073	1	
10. Expérience professionnel	1.45	0.498	-.120*	-.120*	-.135**	-.121*	-.002	.201**	-.015	-.026	.116*	1

Note. SD: Standard deviation & The correlation is significant at the 0.01 level (two-tailed)

Table 2. Measurement model

Latent variables	CR	AVE
PUS	0.860	0.555
EI	0.836	0.508
Perceived creativity disposition	0.917	0.581
ATE	0.887	0.613

These findings suggest that students' perceptions of creativity, their ATE, and the level of US are important drivers of EI, while some demographic and contextual factors may play a more limited or nuanced role.

Model Reliability and Validity

Prior to hypothesis testing, the measurement model was evaluated to ensure the reliability and validity of the constructs. CFA was conducted to assess factor structure, internal consistency, and overall model fit.

Factor loadings were first examined to ensure that each item significantly loaded onto its intended construct, with recommended thresholds set at 0.70 or higher (Hair et al., 2017). Results indicate that all items exceeded this threshold, demonstrating strong item reliability.

Next, the constructs' internal consistency was evaluated using CR. All CR values were above the standard cutoff of 0.70, indicating high internal consistency across constructs.

Construct validity was assessed through convergent and discriminant validity (Campbell & Fiske, 1959). Convergent validity was evaluated using the average variance extracted (AVE), with a minimum acceptable value of 0.50 (Fornell & Larcker, 1981). As shown in **Table 2**, all constructs achieved AVE values above 0.50, confirming satisfactory convergent validity.

These results provide confidence that the measurement model is reliable and valid, supporting the subsequent hypothesis testing using SEM.

To assess discriminant validity, the square roots of the AVE for each construct were compared with the correlations among the constructs, following the approach recommended by Fornell and Larcker (1981). Discriminant validity is established when the square root of a construct's AVE exceeds its correlations with all other constructs. Our analysis indicates that, for each construct, the square root of the AVE is greater than its correlations with the remaining constructs, confirming satisfactory discriminant validity.

Table 3. Direct effect

Hypothesis	Estimate	SES	SE	CR	p
H1. IntEnMoy	<---	CréP_Moy	0.492	0.427	0.042
H2. Atti_Moy	<---	CréP_Moy	0.756	0.703	0.037
H3. IntEnMoy	<---	Atti_Moy	0.690	0.645	0.037

Note. SES: Standardized estimate

Model Fit Indices

We conducted a CFA to assess the distinctiveness of the constructs. The results show that the overall measurement model fits the data well. The fit indices meet the recommended thresholds ($\chi^2/df = 4.5$; CFI = 0.998; TLI = 0.995; RMSEA = 0.055), which confirms an acceptable model fit according to established SEM standards (CFI and TLI ≥ 0.90 ; RMSEA ≤ 0.08).

Structural Model Assessment

SEM was employed to test the hypothesized relationships in the proposed model. SEM was chosen due to its ability to simultaneously estimate multiple causal relationships among latent variables, providing robust insights into complex theoretical frameworks (Gkypali et al., 2018).

Direct effect

The results of the structural model indicate a positive and significant relationship between PCA and EI ($\beta = 0.427$, $p < 0.001$), supporting **H1**.

Similarly, PCA shows a significant positive effect on ATE ($\beta = 0.703$, $p < 0.001$), confirming **H2**. Furthermore, ATE positively influences EI ($\beta = 0.645$, $p < 0.001$), providing support for **H3**.

These findings suggest that students' perceived creativity not only directly enhances their EI but also shapes their ATE, which in turn further strengthens their intention to engage in entrepreneurial activities (**Table 3**).

Mediation analysis (indirect effect)

The indirect effect of PCA on EI through ATE was tested using bootstrapping with 5,000 resamples. The standardized indirect effect was 0.453 and statistically significant ($p < 0.001$), indicating that ATE partially mediates the relationship between PCA and EI.

These results provide empirical support for **H4**, suggesting that students' ATE act as a critical intermediary, translating their perceived creative abilities into stronger EIs (**Table 4**).

Table 4. Indirect effect

Hypothesis	Path	Efind	SES	p
H4	CréPerD → AttiEnE → IntEn	0.522	0.453	0.000

SES: Standardized estimate

Table 5. Moderation effect

Hypothesis	Path	Estimate	E	R	p
H5	Cré_Per → IntEn	-0.056	0.020	2.845	0.004

Moderation analysis

H5 was tested using a moderation analysis with bootstrapping (5,000 resamples) conducted using IBM AMOS version 26. A product indicator approach was employed to examine whether PUS moderates the relationship between PCA and EI.

Results indicate a significant moderation effect ($\beta = -0.056$, $p = 0.004 < 0.05$), suggesting that the relationship between PCA and EI is strengthened for students who perceive higher levels of US.

These findings confirm H5, highlighting the crucial role of the university environment in enhancing the effect of students' creative abilities on their EIs. This underscores the importance of providing institutional support, such as entrepreneurship courses, mentorship, and incubator programs, to foster student entrepreneurship (Table 5).

The moderation plot (Figure 2) indicates that the effect of PCA on EI is consistently stronger for students with high PUS compared to those with low PUS, regardless of whether their EI is weak or strong. This pattern confirms that US amplifies the positive relationship between students' creative abilities and their EIs, providing empirical support for H5.

The findings of this study provide strong support for the hypothesized model. Specifically, PCA is positively associated with EI. Moreover, ATE functions as a mediator, transmitting the effect of PCA on EI. In addition, the PUS moderates this relationship, such that the link between PCA and EI is stronger for students who perceive higher levels of institutional support. The results also confirm that PCA positively influences ATE, and in turn, ATE positively impacts EI, highlighting the central role of entrepreneurial attitudes in shaping students' intentions to engage in entrepreneurial activities.

Regression analysis

To further examine the relationships between the dependent and independent variables, multiple linear regression was conducted. In the first step (model 1), the independent variables—PCA, ATE, and PUS—were included, with EI as the dependent variable.

In the second step (model 2), the interaction term between PCA and PUS was added to test the moderating effect of US on

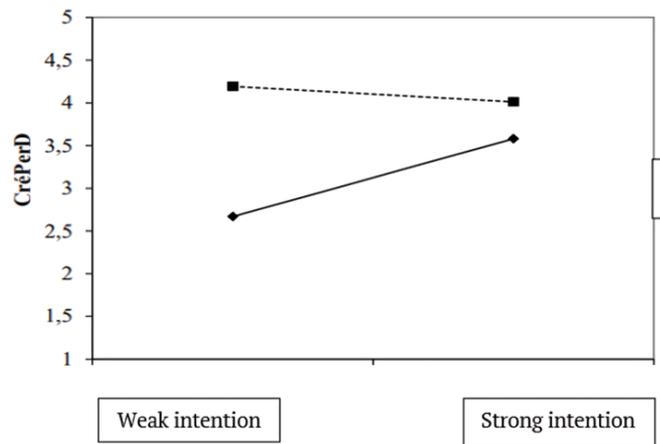


Figure 2. Graphical representation of the effects of the model with interaction between perceived creativity ability and perception of university support (Source: Authors' own elaboration)

the relationship between perceived creativity and EI. The goodness of fit for both models was assessed using the coefficient of determination (R^2) (see Table 6).

Results indicate that including the interaction term increased R^2 from 0.738 to 0.743, with a significant change ($\Delta R^2 = 0.005$, $p = 0.005 < 0.01$). This suggests that the interaction between PCA and PUS significantly improves the model, explaining 74.3% of the variance in EI. These findings confirm that US strengthens the positive effect of students' perceived creativity on their EIs, consistent with the moderation analysis reported earlier.

Robustness check

To address potential common method variance (CMV), several procedural and statistical precautions were implemented. Respondents were assured of anonymity, informed that there were no correct or incorrect answers, and encouraged to respond honestly, thereby reducing social desirability bias (Podsakoff et al., 2003). Additionally, Harman's single-factor test was conducted to assess CMV (Podsakoff et al., 2003). The results show that no single factor accounted for the majority of the variance, indicating that common method bias is unlikely to be a concern in this study. These steps support the robustness and reliability of the measurement approach and the validity of the findings.

DISCUSSION

This study examined the effects of PCA, ATE, and PUS on the EI of Tunisian university students. It also investigated whether PUS moderates the relationship between PCA and EI.

Table 6. Coefficient of determination R^2

Model	R	R^2	Adjusted R^2	Standard error of estimate	Change statistics (change in R^2)
1	0.859 ^a	0.738	0.737	0.781	0.738
2	0.862 ^b	0.743	0.741	0.774	0.005

Note. ^aPredictors: (Constant), Atti_Moy, PerSuMoy, CréP_Moy; ^bPredictors: (Constant), Atti_Moy, PerSuMoy, CréP_Moy, Cré_Per; & ^cDependent variable: IntEnMoy

The results demonstrate a positive association between PCA and EI, consistent with prior research suggesting that students who perceive themselves as creative are more likely to exhibit EIs (Abdelfattah et al., 2022; Duong et al., 2024a; Feldman & Bolino, 2000). In addition, PCA positively influences ATE, confirming that creativity fosters more favorable ATE. This result confirming previous work (Alemany Díaz et al., 2021; Kakouris, 2021). ATE, in turn, significantly predicts EI, reinforcing previous findings on the central role of entrepreneurial attitudes in shaping intention (Agolla et al., 2019; Douglas & Shepherd, 2002).

Importantly, ATE mediates the relationship between PCA and EI, suggesting that creative aptitude enhances EIs indirectly by fostering positive ATE. This aligns with the theoretical framework of the TPB and provides empirical support for the mechanism linking personal cognitive traits to entrepreneurial outcomes (Amofah & Saladríguez, 2022; Lüthje & Franke, 2003).

The study also highlights the moderating effect of PUS. The relationship between PCA and EI is stronger for students who perceive higher levels of US, consistent with prior evidence that institutional environments can amplify individual entrepreneurial potential (Aman et al., 2012; Anjum et al., 2020; Fayolle & Gailly, 2015). This finding underscores the critical role of universities in fostering entrepreneurship through targeted programs, incubators, workshops, and mentorship opportunities. Notably, students attending private universities appear to benefit from greater access to such entrepreneurial resources, suggesting that institutional differences may shape the extent to which students can leverage their creativity for entrepreneurial action.

Although the GUESSS Tunisia National Report (2023) documents a notable increase in entrepreneurial aspirations among university students, supported by the spread of creativity-oriented learning environments such as co-working spaces and fab labs, students still tend to rely more heavily on their individual resources to develop their EIs. While our findings are consistent with previous studies, they contribute to the literature by highlighting aspects specific to the Tunisian context. In particular, public universities appear to place less emphasis on entrepreneurship support programs, leading students to depend more on their personal traits than on institutional guidance. Furthermore, our results indicate that institutional initiatives do not benefit all students equally. Support programs in private universities appear to be better structured and more accessible than those in public institutions, resulting in inequalities in the opportunities available. This disparity underscores the need to strengthen support mechanisms in public universities in order to reduce gaps and foster a more inclusive entrepreneurial environment.

From a theoretical perspective, this research demonstrates that TPB can be effectively applied in a developing-country context, specifically Tunisia, to explain how cognitive and contextual factors jointly influence EI. The study extends the literature by integrating PCA, ATE, and PUS within a single framework, highlighting both mediating and moderating mechanisms that have been relatively underexplored.

Practically, these results carry several implications for universities and policymakers. Academic institutions should

actively promote entrepreneurship by integrating creativity-focused training, practical business exercises, and mentorship programs into curricula. Establishing entrepreneurship centers, incubators, and partnerships with successful entrepreneurs can enhance students' skills and motivation to launch ventures. Policymakers are encouraged to create supportive ecosystems by funding business incubators, facilitating access to microfinance, and promoting initiatives that increase awareness of entrepreneurship among young graduates. Strengthening institutional support and creating an enabling environment for creative students can thus significantly enhance the entrepreneurial capacity of the next generation.

In conclusion, this study highlights the interplay between personal creativity and institutional support in shaping EIs. By fostering both individual aptitude and an enabling environment, universities and policymakers can encourage students to pursue entrepreneurial careers, ultimately contributing to economic growth and innovation in Tunisia.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the use of a convenience sampling method may limit the generalizability of the findings, as there is no comprehensive database of Tunisian university students to ensure fully representative sampling. Future research could employ stratified or random sampling techniques to improve external validity.

Second, this study focused exclusively on EI rather than actual entrepreneurial behavior. While intention is a strong predictor of entrepreneurial action, it does not guarantee the translation of intention into behavior. Longitudinal research tracking the progression from intention to actual venture creation would provide deeper insights into the factors that sustain entrepreneurial motivation over time and the conditions that facilitate successful entrepreneurial outcomes.

Additionally, future studies could explore the role of other contextual and psychological factors, such as cultural norms, social networks, risk perception, or access to financial resources, which may interact with perceived creativity and US to influence entrepreneurial outcomes. Comparative studies across different countries or educational systems could also shed light on the contextual applicability of the findings.

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