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## Role of Entrepreneurial Intention in Promoting Economic Growth

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### Abstract

*Given the importance of the entrepreneurial intention as a stimulus of the concrete entrepreneurial activity, the links between entrepreneurial intention and economic development deserves particular consideration and further investigation. This study explores the factors influencing the entrepreneurial intention among Tunisian engineering students and examines its impact on perceptions of economic development. The Entrepreneurial Intention Questionnaire (EIQ) is used to collect data from 200 final-year students. Statistical analysis including reliability checks, correlation, and regressions were conducted. Results show that attitude and perceived behavioral control significantly affect entrepreneurial intention, contrary to the subjective norms. The findings also suggest that entrepreneurial intention is positively and significantly associated with perceived economic growth, employment generation, and innovation capacity. The results highlight the importance of fostering entrepreneurial intention to support Tunisian economic development.*

**Keywords:** *Entrepreneurial Intention, Economic Growth, Innovation, Perceived Behavioral Control, Employment.*

### Introduction

Entrepreneurial intention plays a crucial role in driving entrepreneurial behavior and fostering economic development (Fayolle and Liñán, 2014a). A deep understanding of the factors influencing entrepreneurial intentions is essential to develop effective strategies to promote entrepreneurship, particularly in developing countries such as Tunisia. While several studies have explored the determinants of entrepreneurial intention (Fayolle and Liñán, 2014a; Kautonen et al., 2015; Fitouri and Zouaoui, 2024; Al-Omar et al., 2024; Bayona-Oré, 2023), few of them have examined these factors in relation with the broader economic context. Particularly, the potential effect of entrepreneurial intention on key drivers of economic development, such as job creation, innovation, and economic growth, remains underexplored. This research work investigates the impact of entrepreneurial intention on Tunisian economic development, with a focus on youth entrepreneurship. The study context is characterized by various challenges including high unemployment, economic instability, and the COVID-19 pandemic impact. The research seeks to address the topic by analyzing a conceptual model that highlights how entrepreneurial intention can contribute to economic development through the previous explanatory factors. It examines the entrepreneurial intentions of 200 final-year engineering students from different colleges of engineering in Tunisia and their perceived implications on economic indicators, by employing the Entrepreneurial Intention Questionnaire (EIQ) developed by Liñán and Chen (2009). Various statistical methods were used to analyze the key determinants of entrepreneurial intention, including attitude, perceived behavioral control, and

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subjective norms, and to explore their potential effects on economic outcomes such as job creation, innovation and growth.

### **Conceptual Foundations and Theoretical Framework**

In a context marked by structural economic challenges, the deep understanding of the conceptual underpinnings of entrepreneurial intention is essential. It allows the investigation of the entrepreneurial intention role in promoting economic growth, particularly in a situation of high unemployment rate and limited access to formal job market. Entrepreneurial intention has emerged as an important focus both in academic research and policy strategies. It serves as a key predictor of entrepreneurial behavior. The importance of such behavior results from its economic outputs, starting from individual-level intentions and reaching the expected economic outcomes, especially in developing countries where fostering entrepreneurship is seen to be a pathway to inclusive growth and innovation.

### **Entrepreneurial Intention: Foundations and Research Significance**

Entrepreneurial intention has emerged as a key construct in entrepreneurship research providing a reliable predictor of entrepreneurial behavior (Krueger et al., 2000; Fayolle and Liñán, 2014b). It refers to the cognitive state that can reflect an individual's commitment to start a new business venture, and it often precedes any concrete action. The analyze of the entrepreneurial intention is essential since such act is almost non-spontaneous. It is typically the result of a planned process rooted in personal motivation, opportunity perception, and other contextual factors (Bird, 1988). Shirokova et al. (2016) have integrated cognitive, emotional, and contextual dimensions to reinforce the statement that intention is the most reliable psychological precursor of the action in entrepreneurial processes. Entrepreneurial intention is not only an individual attribute but also a social and economic signal. As argued by Venesaar et al. (2022), entrepreneurial intention serves as an indicator of potential entrepreneurial activity and innovation capacity within a given economic and social framework. In this view, measuring and analyzing entrepreneurial intention provide valuable insights for a country's future economic prospects, especially in transitional economies. Furthermore, the relevance of entrepreneurial intention research has increased in the context of dynamic labor markets and economic uncertainty. Çera et al. (2022) showed that in a post-pandemic period, characterized by an accelerating digitalization and flexible work models, entrepreneurial intention has become an adaptive response to volatility and insecurity job, especially among educated youth. Thus, studying entrepreneurial intention helps to direct future entrepreneurs as well as to identify the motivational dynamics that could influence innovation, job creation, and economic transformation.

The most widely recognized theoretical foundation for studying entrepreneurial intention is the Theory of Planned Behavior (TPB) developed by Ajzen (1991). According to TPB, entrepreneurial intention is influenced by three key elements: i) Attitude toward the behavior: which assesses the individual degree to positively evaluate becoming an entrepreneur, ii) Subjective norms: which consider the social pressure from family, peers, or society to engage in entrepreneurship, iii) Perceived behavioral control: that reflects the individual's trust in own ability to perform entrepreneurial activities, often linked to self-efficacy.

Recent empirical studies have continuously validated and expanded upon the TPB framework in diverse contexts. A study developed by Bayona-Oré (2023) confirmed that subjective norms and perceived behavioral control significantly affect entrepreneurial intentions among university

students, suggesting the need for academic programs to enhance the future entrepreneurs' competencies and skills. Similarly, research conducted in Shandong Province, China, found that attitudes, subjective norms, and perceived behavioral control significantly influence students' entrepreneurial intentions, reinforcing the applicability of TPB across different cultural settings (Dong and Chang, 2024). Moreover, empirical studies have consistently validated the TPB in entrepreneurship contexts showing that its key elements strongly predict entrepreneurial intention among various samples including students, unemployed youth, and nascent entrepreneurs (Kolvereid, 1996; Liñán and Chen, 2009). Neneh (2022) highlighted the roles of entrepreneurial passion, creativity, and self-efficacy as significant predictors of entrepreneurial intention (EI), showing that the entrepreneurial passion mediates the relationship between creativity and intention. Furthermore, Anjum et al. (2024) emphasized the importance of the entrepreneurial education and the prompt exposure in shaping students' entrepreneurial intentions, indicating that the educational interventions can effectively foster an entrepreneurial mindset.

Previous other studies have increasingly highlighted the role of contextual and institutional factors in shaping entrepreneurial intention. Autio et al. (2014) found that national culture and the economic development degree influence the perceived entrepreneurship attitude of individuals. Also, Liñán and Santos (2007) demonstrated that educational systems and environmental policy can either foster or hinder entrepreneurial intention. Similarly, Nabi et al. (2017) found, in a meta-analysis of entrepreneurship education, that properly designed education programs enhance significantly students' intentions by strengthening entrepreneurial attitudes and self-efficiency. Notably, entrepreneurial intention research has extended to developing and transitional economies, where entrepreneurship is often considered as a tool to achieve economic growth and employment. Except, in regions like the Middle East and North Africa (MENA), studies have shown that while the strong entrepreneurial aspirations among youth, institutional barriers such as financing insufficiency, bureaucratic hurdles, and scarce support structures often suppress the transition of intention into action (El Harbi et al., 2009; El Nemar, 2016).

To recapitulate, the entrepreneurial intention is a multi-dimensional and context-sensitive concept. It is not only shaped by individual traits and cognitive evaluations but also embedded in broader social, educational, economic and institutional frameworks. By examining entrepreneurial intention through these lenses, researchers and economic policy makers gain valuable insights for guiding targeted interventions to stimulate entrepreneurial activity, particularly in countries where youth unemployment is high and structural reforms are ongoing (Tunisia, Egypt, Nigeria...).

### **Entrepreneurial Intention and Economic Growth: A Literature Review**

The direct/indirect links between entrepreneurship and economic growth has been a central theme in economic theory and the subject of continues debates. Schumpeter (1934) was among the firsts who emphasized the role of entrepreneurs as actors of innovation and creation, affirming that entrepreneurial activity is essential for economic renewal and long-term growth. Also, entrepreneurial intention is considered as the motivational root of entrepreneurship and can serve as an early premature indicator of economic dynamism. Empirical evidence supports the vision that entrepreneurial intention contributes indirectly to economic growth, by forecasting future entrepreneurial behavior, which creates jobs, generates innovation, and stimulates competition. In fact, Acs and Szerb (2007) highlighted that economies which foster a strong entrepreneurial culture tend to achieve more sustainable and inclusive economic growth.

In this view, high degree of entrepreneurial intention in a population indicates a readiness of engagement in productive entrepreneurial activity. Furthermore, Shirokova et al. (2016) explored the development of entrepreneurial intentions and emphasized the role of cognitive and contextual factors. They underscored that a supportive environment, including access to resources and favorable government policies, significantly influence individuals' intentions to contract in entrepreneurial actions, which subsequently boosts economic activity. Several other studies have focused on such connection. Brixy and Grotz (2007) showed that new businesses created by individuals with high entrepreneurial intention often led to greater survival rates and stronger employment generation. Similarly, Wennekers and Thurik (1999) found that entrepreneurship plays a key role in economic growth by the introduction of the innovation and the market efficiency increase, particularly in transitioning and developing economies. In the context of economic growth, Liñán and Fayolle (2015) highlighted that entrepreneurial intentions are a solid predictor of entrepreneurial behavior, which contributes to economic growth through the creation of new ventures and employment opportunities. Their research emphasized the need of suitable policies that support the transition from intention to action to reach the maximum economic benefits of entrepreneurship. Also, the research conducted by Oueddoubey (2015) highlights the importance of information and communication technologies in fostering innovation and encouraging youth to pursue entrepreneurship as a viable solution. The occurrence of high entrepreneurial intention suggests latent economic potential that can be activated by the appropriate reforms. In this context, Al-Omar et al. (2024) examined the impact of entrepreneurship education on university students' entrepreneurial intentions in Jordan. The findings revealed that entrepreneurship education positively and significantly affects students' entrepreneurial intentions, highlighting the importance of educational interventions in cultivating an entrepreneurial mindset. Besides, The Global Entrepreneurship Monitor (GEM) has consistently provided international data that illustrates how early-stage entrepreneurial activity, closely tied to the intention, correlates with economic growth indicators, such as GDP growth, employment rates, and innovation output (GEM, 2023). For example, countries with strong entrepreneurial intention among youth- such as Chile, Estonia, and South Korea- have shown higher level of opportunity-driven entrepreneurship and resilience during economic downturns. Furthermore, Kautonen et al. (2015) demonstrated that the entrepreneurial intention, supported by favorable institutional measures and entrepreneurial education, often transformed into concrete entrepreneurial behavior within two/three years. This delay reinforces the idea that intention is a leading indicator: it has not an instantly impact on economic growth, but it sets an important stage. The transition of entrepreneurial intention into economic impact is not systematic. Factors such as access to capital, market infrastructure, policy support, and socio-political stability play a crucial mediating role (Audretsch and Keilbach, 2004; Autio et al., 2014). The existence of a robust banking sector with reliable risk management tools, such as suitable credit risk transfer instruments, can provide the funding and stimulate entrepreneurial action with the maintain of banking and economic stability (Younes, 2022). Whereas, in countries facing economic crises or political transitions, like Tunisia and Egypt, the gap between high entrepreneurial intention and actual business creation can be extensive.

Hence, the literature confirms that entrepreneurial intention concerns not only a psychological concept but also a strategic indicator for economic planning and growth. It allows governments, educators, and investors to anticipate future waves of entrepreneurial activity and prepare appropriate circumstances in which these intentions can be concretized and converted into meaningful contributions to economic performance.

## **The Economic Landscape of Entrepreneurial Intention**

The development and expression of entrepreneurial intention do not occur randomly, they are deeply influenced by the surrounding economic environment. This section examines the broader economic conditions that outline individuals' motivation to involve in entrepreneurial activities, with particular interest to Tunisia as illustrative case. In fact, Economic factors such as unemployment, market access, institutional support, and socio-political stability play a crucial role in either enabling or constraining entrepreneurial initiatives. Therefore, identifying the economic landscape is essential for understanding how entrepreneurial intentions emerge and evolve, especially in developing countries where entrepreneurship is often promoted as a strategic lever for inclusive growth, innovation, and job creation. This section provides evidences and contextual analysis to highlight the dynamic relationship between entrepreneurial intention and economic development.

### **Circumstances and Realities: Observations from Developing and Developed Economies**

Entrepreneurial intention is monitored by individual-level factors such as attitudes, perceived behavioral control, and subjective norms, as well as by the broader institutional and economic contexts (Liñán and Fayolle, 2015). These contextual factors, ranging from financial infrastructure and education systems to cultural and regulatory norms, differ significantly between developed and developing economies and play a crucial role in influencing both the quality and quantity of entrepreneurial activity.

In developed economies, such as of United States, Germany, or Sweden, entrepreneurial ecosystems are well-developed, characterized by favorable regulatory environments, reliable access to venture capital, strong intellectual property protections, and advanced technological infrastructure. These features contribute to a good climate encouraging opportunity-driven entrepreneurship, where individuals engage in entrepreneurial activity based on market gaps or innovative potential rather than economic necessity. The United States has consistently been ranked among the top countries for entrepreneurial activity and innovation, driven by a culture that supports risk-taking, widespread university–industry collaboration, and a large pool of angel investors and venture capital (Autio et al., 2014). Similarly, Germany's *Mittelstand* (small and medium-sized enterprises) is worldwide recognized for its high levels of innovation and contribution to economic stability. Contrary, in developing economies, such as in Tunisia, Nigeria, or Bangladesh, the entrepreneurship landscape is often marked by structural barriers. They include limited access to formal funding, inconsistent regulatory standards, infrastructural weakness, and often fragile political institutions. Consequently, many individuals engage in necessity-driven entrepreneurship, pushed mainly by the scarcity of alternative employment (Acs and Szerb, 2007). For example, in Nigeria, a 2023 GEM report indicated that while entrepreneurial intention rates were globally among the highest, a high percentage of entrepreneurs operated in informal sectors with minimum scalability or growth potential. Similarly, in Bangladesh, micro-entrepreneurship operates in the absence of formal employment and entrepreneurs often struggle against low productivity and a difficulty of market access (Naudé, 2010).

Interestingly, some emerging economies are demonstrating hybrid models. China and India, for instance, have developed dynamic entrepreneurial ecosystems in urban centers- supported by government incentives, technological hubs, and worldwide investments while rural or underdeveloped regions still facing barriers, typical of developing countries. In India, the rise of technology-based startups in cities like Bangalore and Hyderabad coexists with informal,

necessity-driven enterprises in rural areas. This dual reality illustrates the complexity of linking entrepreneurial intention to economic development outcomes in transitional economies.

Figure 1 compares key components of entrepreneurial ecosystems between developing and developed countries via seven dimensions: access to capital, culture and mindset, infrastructure, market dynamics, talent and education, support services, and policy and regulation. Developed countries consistently outperform developing ones in all fields, as represented by the larger span of the dashed line. Most significant gaps are observed in access to capital and support services, indicating that entrepreneurs in developing economies face greater challenges in securing funding and receiving adequate operational assistance. Meanwhile, the gap is slightly narrow in areas such as culture and mindset. Developed economies maintain an overall stronger and more supportive entrepreneurial environment. Hence, this disparity highlights the need for targeted reforms and investments in developing ecosystems to foster sustainable entrepreneurial growth and benefit from its subsequent economic repercussions.

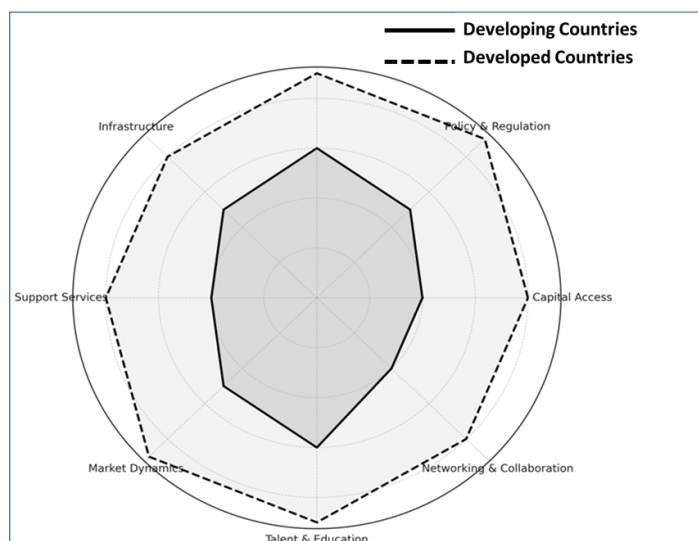


Figure 1. Entrepreneurial Ecosystem Comparison (Developing vs. Developed Countries)

According to Hofstede's dimensions (Hofstede, 2001), societies with lower uncertainty and higher individualism (e.g., the U.S., UK) tend to produce more entrepreneurs willing to innovate and take risks, while those with high uncertainty or collectivist traditions (e.g., Japan, some Arab countries) may exhibit more cautious or social embedded entrepreneurial behavior. In Saudi Arabia, despite of recent reforms under Vision 2030, cultural and institutional inertia continues to influence the practice of entrepreneurship. Family approval and social reputation remain important factors (Williams & Youssef, 2014). Furthermore, entrepreneurship education and policy frameworks differ considerably across regions. In developed economies, entrepreneurial education is integrated into second and third level of curricula, supported by national innovation strategies. However, developing economies frequently face a gap in entrepreneurship training, mentoring, and entrepreneurial policy implementation, leading to a lower entrepreneurial efficiency and higher failure rates (Liñán and Chen, 2009; UNCTAD, 2018).

The comparison of the circumstances across various economic contexts reveals that entrepreneurial intention is emerged from a complex interaction between personal motivations and structural conditions. While developed countries foster innovation-based entrepreneurship

with strong institutional support, developing economies often witness entrepreneurship as a survival process. Identifying these variances is essential for tailoring entrepreneurship policies and support measures, especially in Tunisian economic context, where the potential of youth-led entrepreneurship exists but stills constrained by economic and institutional challenges. Table 1 provides a comparative overview of entrepreneurial context across developed and developing economies. It highlights key distinctions in various dimensions, such as the type of entrepreneurship, access to finance, regulatory environment, infrastructure, and entrepreneurial education. Furthermore, table 1 shows the contrast between the opportunity-driven entrepreneurship in developed economies and the necessity-driven entrepreneurship prevalent in developing economies, underlining the challenges and support structures within each

<b>Dimensions</b>	<b>Developed Economies</b>	<b>Developing Economies</b>
<b>Type of Entrepreneurship</b>	Primarily opportunity-driven	Largely necessity-driven
<b>Access to Finance</b>	High – venture capital, angel investors, formal credit systems	Limited – informal financing, microcredit, family savings
<b>Regulatory Environment</b>	Stable, transparent, and business-friendly	bureaucratic, inconsistent, or weakly enforced
<b>Infrastructure</b>	Advanced (digital, transport, utilities)	Underdeveloped or uneven
<b>Entrepreneurial Education</b>	Integrated in the second and third level of curricula	Limited influence and quality
<b>Cultural Perception</b>	Positive – entrepreneurship is prestigious and socially valued	Mixed – may be viewed as a last resort or lacking prestige
<b>Innovation Orientation</b>	High – driven by R&D, tech, and patent systems	Lower – focused on replication or informal markets
<b>Support Ecosystems</b>	Robust – includes incubators, accelerators, mentorship, and innovation hubs	Weak or fragmented – limited institutional and private sector support
<b>Policy Support</b>	Proactive, well-funded entrepreneurship policies and frameworks	Reactive or poorly implemented
<b>Country Examples</b>	United States, Germany, Sweden, South Korea	Tunisia, Nigeria, Bangladesh, Egypt

framework.

Table 1: Comparative Overview of Entrepreneurial Intention in Developed and Developing Economies

### **Tunisian Economic Context: Challenges and Entrepreneurial Dynamics**

Tunisia, as a developing country, presents a complex entrepreneurial environment shaped by a combination of historical, economic, and political factors. Following the 2011 revolution, Tunisia's transition towards a democratic system has generated new opportunities for entrepreneurial activity, whereas it has also uncovered significant challenges. The entrepreneurial ecosystem in Tunisia is marked by both opportunity-driven and necessity-driven entrepreneurship, with distinct implications for economic growth.

The funding access is among of the primary challenges faced by Tunisian entrepreneurs. While financial inclusion has been improved in recent years, access to capital, especially for startups

and small businesses, remains limited. A 2019 World Bank report revealed that only 10% of Tunisian firms have access to bank credit (World Bank, 2019). This issue is compounded by a lack of venture capital and angel investment, which are critical for scaling innovative businesses. As a result, many entrepreneurs rely on informal financing, including personal saving or family financial support, which limits their ability to develop and innovate (Fitouri and Zouaoui, 2024). Additionally, bureaucratic inefficiencies and regulatory hurdles continue to constrain entrepreneurial activity in Tunisia. According to the World Bank's ease of doing business Index, Tunisia is ranked 78<sup>th</sup> in the world, a relatively delayed position compared to many other developing economies (World Bank, 2020a). These inefficiencies include business registration delays, long process to obtain entrepreneurial permits, and complex tax regulations that particularly affect small and medium-sized enterprises (SMEs). These barriers stifle the startups potential growth. Moreover, the political instability following the 2011 revolution continues to affect entrepreneurial confidence. The uncertain political atmosphere and social tension have created an aversion risk behavior amid potential investors and entrepreneurs. These conditions have led to hesitation among both local and foreign investors, especially in sectors such as technology, innovation, and infrastructure, which require important capital and long-term commitment.

Despite of these challenges, Tunisia has shown remarkable resilience and significant potential for entrepreneurial growth. Youth entrepreneurship has become a focal issue. Many Tunisians young are focusing on startups as a means of self-employment due to the high youth unemployment rate, attaining 36% in 2020 (ILO, 2020). The Tunisian government has introduced various policies to encourage youth entrepreneurship, including the Startup Act, which provides tax incentives, flexible funding mechanisms, and bureaucratic procedures simplification for new businesses. Additionally, Tunisia benefits with a strategic geographic location in the Mediterranean area, with access to both European and African markets. This allows to be positioned as a potential hub for trade and innovation, particularly in sectors such as agriculture, renewable energy, and technology (World Bank, 2020c).

Therefore, Tunisia has emerged as a significant hub for technology-based startups in North Africa, which contributes significantly on economic growth. According to the Challenge Fund for Youth Employment's Scoping Report on Tunisia (2022), the IT industry contributes approximately by 7% to the country's GDP and has created over than 100,000 jobs. More than 300 startups are active in sectors such as fintech, e-commerce, and software development. This evolution is attributed to government support, strategic location, cost-effective talent, and consistent technological education. The rise of digital entrepreneurship has also played a transformation role. Tunisia has witnessed a significant increase in technology-based startups, particularly in e-commerce, digital services, and software development which could contribute to economic growth. Younes and Oueldoubey (2025) reported recently that the digitalization can stimulate the economic growth. According to OECD (2024), digital platforms such as Tunisian Startups enabled networking and providing mentorship to youth ambitious entrepreneurs, thereby fostering a robust entrepreneurial ecosystem. Furthermore, the expansion of mobile internet and digital infrastructure have allowed entrepreneurs to reach a global market, particularly in the post-pandemic era where remote work and digital services have become increasingly normalized. Despite of these developments, the skills deficiency remains a persistent issue. There is a clear need for enhanced entrepreneurship education and training programs to provide the technical, managerial, and leadership skills required for successful business ventures. Higher education institutions, including engineering colleges, incorporated

entrepreneurship-focused curricula, but it remains a mismatch between the skills taught in academic training and the practical skills required in the marketplace (Liñán and Chen, 2009).

In summary, while Tunisia's entrepreneurial landscape is marked by significant challenges, particularly in finance access, regulatory complexities, and political instability, growing evidences of dynamic changes appears. Government reforms, youth-driven innovation, and increasing digital entrepreneurship offer a foundation for economic recovery. Tunisia's entrepreneurial potential, when entirely realized, might become a critical driver of future economic growth and stability.

## **Empirical Investigation: Methodology and Results:**

### **Research Methodology**

This empirical study adopts a quantitative, cross-sectional research design aimed to examine the determinants of entrepreneurial intention among Tunisian university students and its contribution to economic growth. The objective is to identify the influence of psychological factors such as attitude toward entrepreneurship, subjective norms, and perceived behavioral control on the intention to start a business, and to evaluate whether students who express stronger entrepreneurial intentions perceive entrepreneurship as a meaningful driver of economic growth, job creation, and innovation. To ensure the study's reliability and theoretical alignment, the developed approach in this research work is based on Ajzen's Theory of Planned Behavior (1991) as it is widely recognized in entrepreneurship research. This model was applied using the Entrepreneurial Intention Questionnaire (EIQ) advanced by Liñán and Chen (2009). This instrument has been validated in various cultural and academic contexts and can be fitted to Tunisian setting. The analysis are based on cross-sectional study, meaning that data were collected at a given point of time during the 2024-2025 academic year. The target sample involves students in final year of engineering studies. The used approach provides a snapshot students' entrepreneurial attitudes and perceptions as near future graduated. Similarly, the rationale behind choosing final-year engineering students is based on their specific features. They have acquired technical skills in addition to be addressed soon to the labor market. Hence, they are typical candidates to assess future entrepreneurial potential and its economic implications. In addition to the core psychological constructs of the TPB model, a custom-designed section was added to measure students perceived economic impact of entrepreneurship. This extension is necessary to align the study with Tunisia's ongoing economic challenges and focus policy interest in fostering innovation-driven entrepreneurship. For this end, the present study proceeds with validated scales, Likert-type response items, and standardized data analysis procedures (descriptive statistics, correlation, and regression analysis) to attend meaningful insights.

### **Research Hypotheses**

Based on the TPB (Ajzen, 1991), this study suggests that entrepreneurial intention (EI) is influenced by three key psychological backgrounds: attitude toward entrepreneurship, subjective norms, and perceived behavioral control. These factors have consistently been validated in empirical research as significant predictors of EI across various cultural and educational contexts (Liñán & Chen, 2009; Kautonen et al., 2015). Therefore, the following hypotheses are proposed:

- **H1:** Attitude toward entrepreneurship has a positive and significant effect on EI.
- **H2:** Subjective norms have a positive and significant effect on EI.

- **H3:** Perceived behavioral control has a positive and significant impact on EI.

Beyond the psychological determinants of intention, this study also explores the perceived economic implications of EI, particularly within the developing countries context such as Tunisia. Several studies have emphasized the role of entrepreneurship in driving economic growth, fostering innovation, and reducing unemployment (Acs and Szerb, 2007; Audretsch and Keilbach, 2004). Thus, EI is not only a psychological construct but also an important proxy of potential economic development outcomes. Based on this rationale, the study further examines the above hypothesis:

- **H4:** EI is positively associated with the perceived contribution to economic growth.
- **H5:** EI is positively associated with the perceived contribution to employment generation.
- **H6:** EI is positively associated with the perceived contribution to innovation.

These hypotheses serve as a foundation for the subsequent empirical analysis. Their examination aims to elucidate the dual role of entrepreneurial intention as an individual character and a potential driver of macroeconomic progress.

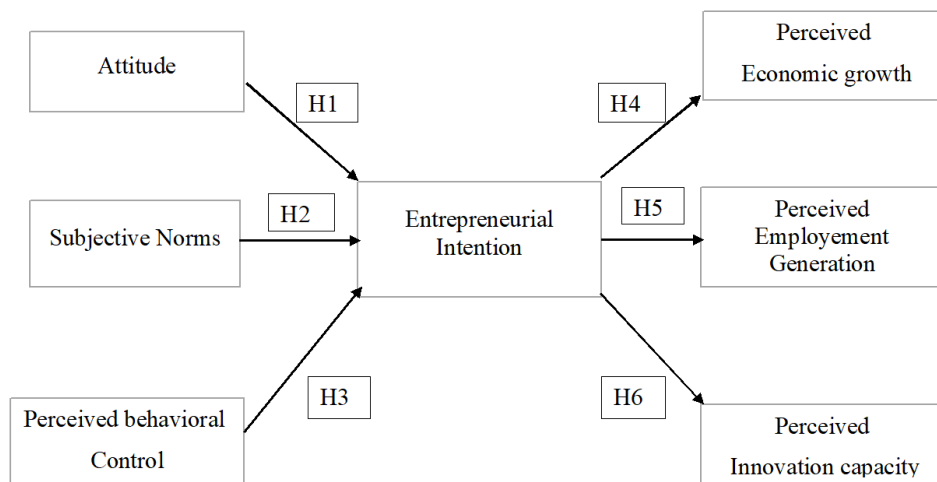


Figure 2. Conceptual Framework of the Empirical Study of Entrepreneurial Intention Impact on Economic Objectives

### Sample Selection and Data Collection

The data were collected during the academic year 2024–2025 from a sample of 200 final-year students registered in different colleges of engineering in Tunisia. These institutions comprise various departments (Electrical-Civil-mechanical-Industrial and computer science engineering). The survey was equitably distributed over these departments to ensure a well representativeness of the studied population. These students represent a relevant population, as being close to integrate the labor market and having already studied entrepreneurship during their curriculum. A structured questionnaire was developed and directed in two major distribution ways: Online via institutional mailing lists, and directly in classes with the collaboration of faculty members. The participation was voluntary and anonymous. Table 2 summarizes the demographic characteristics of participants and show that 12% of them reported precocious entrepreneurial

experience including entrepreneurship activities and involvement in family businesses, or personal entrepreneurial projects.

<b>Demographic Characteristics</b>	<b>Distribution</b>
Male	128 (64%)
Female	72 (36%)
Age, Mean (SD)	23.1 (1.2)
Participants with Entrepreneurial Experience	24 (12%)

Table 2. Demographic Distribution of 200 Participants.

### **Instrumentation**

The study adopts online and direct questionnaire distribution to ensure more accurate information due to the possibility to clarify questions if necessary. According to Evrard et al. (2003), direct contact with respondents enables the collection of more precise and relevant data. In entrepreneurship research, questionnaires are particularly effective because they allow researchers to assess psychological constructs such as intentions, beliefs, and perceived behavioral control, which are not obviously observable (Bird, 1988; Ajzen, 1991). To measure the entrepreneurial intention and its antecedents, the Entrepreneurial Intention Questionnaire (EIQ) developed by Liñán and Chen (2009) was employed. The EIQ is based on the TPB which considered amongst the most robust frameworks for studying entrepreneurial behavior (Krueger et al., 2000; Kautonen et al., 2015). The EIQ used in this study includes multiple items for each construct of the TPB:

- **Entrepreneurial Intention (EI):** 6 items assessing the individual's conscious intention to start a business in the near future.
- **Attitude Toward Entrepreneurship (ATE):** 5 items evaluating the perceived desirability and personal estimate to become an entrepreneur.
- **Subjective Norms (SN):** 4 items measuring perceived social support or pressure from peers.
- **Perceived Behavioral Control (PBC):** 6 items assessing the perceived facility or difficulty of creating a business, including self-confidence and competences.

All above items were measured using a 5-point Likert scale, ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”), allowing for nuanced responses and facilitating statistical analysis.

To address the impact of entrepreneurial intention on economic development perceptions, an additional scale was developed. This scale captured students’ perceptions of the entrepreneurship impact in three critical areas: job creation, economic growth, and technological innovation. It involves 5 items, also rated on a 5-point Likert scale. These items were inspired from previous research on the societal value of entrepreneurship (Audretsch and Keilbach, 2004; Acs and Szerb, 2007). To ensure content validity, the complete questionnaire was pre-tested with a small sample of engineering students (n = 15). Feedback was used to refine wording and improve clarity. Finally, internal consistency was assessed using Cronbach’s alpha for each scale, all of them exceeded the commonly accepted threshold of 0.70 (Nunnally and Bernstein, 1994), indicating strong reliability.

## **Results and Hypothesis Testing**

This section presents the findings of empirical study, organized around the six previously stated hypotheses. The analysis of the data, gathered from 200 final-year engineering students, provides valuable insights into their entrepreneurial mindset. It includes descriptive statistics, reliability checks, correlation coefficients, and multiple regression analysis to evaluate both the psychological antecedents of entrepreneurial intention and its perceived economic impact. All statistical studies were conducted using SPSS software Version 26, including reliability tests, correlation analysis, and multiple regression modeling. Additional steps were also performed:

**-Analyze of the missing values:** It is important to assess whether missing data exist. Any questionnaire containing more than 10% missing responses is excluded from the analysis to ensure the reliability of the dataset.

**-Analyze of the dimensions potential existence in the dataset:** The intent is to verify whether the data are sufficiently coherent to justify the identification of meaningful underlying dimensions, rather than statistical artifacts (Evrard et al., 2003). Two main indicators are used at this stage:

**i) Bartlett's Test of Sphericity**, which tests the null hypothesis of no correlation between variables. The result must be statistically significant ( $p < 0.05$ ) to confirm the presence of correlations and, therefore, justify a factor analysis.

**ii) The Kaiser-Meyer-Olkin (KMO) index**, which measures the sampling adequacy and the strength of partial correlations among variables. It ranges from 0 to 1. A value above 0.6 is considered acceptable for conducting a factor analysis (Tabachnick and Fidell, 2001).

**- Choose the appropriate rotation method for multidimensional scales:** Two types of rotation method can be applied, orthogonal and oblique. The most commonly used are Varimax (orthogonal rotation) and Oblimin (oblique rotation). The choice depends on the correlation between factors. An Oblimin rotation is first performed to examine the correlation matrix between factors. If the correlations are low ( $< 0.3$ ), Varimax is preferred; otherwise, Oblimin is retained.

**-Select items based on a set of statistical criteria:** If an item does not meet the necessary criteria at any stage, it is removed, and the factor analysis is repeated with the remaining items.

The selection criteria are as follows:

**i) Quality of the representation:** it refers to the percentage of variance in the item accounted by the extracted factors. Only items with a representation quality above 0.5 are retained.

**ii) Communality:** it indicates the contribution ability of the item to explain a given factor. A value above 0.5 is required (Evrard et al. 2003).

**iii) Item's exclusive correlation with a single factor:** The difference in correlation between an item and the various variables should be greater than 0.3. The correlation values are obtained from the component matrix (if no rotation method is applied), the pattern matrix (for Oblimin rotation), or the rotated component matrix (for Varimax rotation).

**- Total variance and internal consistency:** The total variance explained by the factor solution should be at least 60%. Only factors with eigenvalues greater than 1 are retained. Internal consistency is assessed using Cronbach's alpha coefficient. A minimum acceptable value is 0.7

for affirmative studies and 0.6 for explorative research (Hair et al., 1987). However, this coefficient may be limited when the number of items per dimension is small or when the Likert scale used has a limited number of points (e.g., a five-point scale).

### Factor Structure and Construct Validity

Before hypothesis testing, the adequacy of the model was assessed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of 0.86, indicating meritorious suitability for factor analysis. Results of Bartlett's sphericity test were significant ( $\chi^2(325) = 2148.37$ ,  $p < 0.001$ ) confirming the presence of sufficient correlations among variables. An Exploratory Factor Analysis (EFA) was conducted using Principal Axis Factoring with Varimax rotation. The analysis revealed five distinct factors consistent with the theoretical constructs: Attitude Toward Entrepreneurship, Subjective Norms, Perceived Behavioral Control, Entrepreneurial Intention, and Perceived Economic Impact. These factors accounted for 71.4% of the total variance. All items have demonstrated strong loadings on their respective factors, with communalities and quality of representation exceeding 0.5, with no significant cross-loadings. This supports the construct validity of the model and justifies subsequent regression analysis.

### Descriptive Statistics and Reliability

Participants reported generally high scores across key constructs: attitude toward entrepreneurship ( $M = 4.02$ ,  $SD = 0.65$ ), subjective norms ( $M = 3.85$ ,  $SD = 0.72$ ), perceived behavioral control ( $M = 4.10$ ,  $SD = 0.60$ ), and entrepreneurial intention ( $M = 4.15$ ,  $SD = 0.58$ ). These results indicate a strong entrepreneurial mindset among the surveyed students. Reliability analysis confirmed the internal consistency of all scales: attitude ( $\alpha = 0.81$ ), subjective norms ( $\alpha = 0.78$ ), perceived behavioral control ( $\alpha = 0.84$ ), and entrepreneurial intention ( $\alpha = 0.87$ ), all exceeding the acceptable threshold of 0.70. These findings confirm that the measurement instruments used are psychometrically robust and suitable for further analysis.

### Correlation Analysis

According to Cohen (1988), Pearson's correlation coefficient ( $r$ ) values of around 0.10 indicate a small effect size, around 0.30 a medium effect size, and 0.50 or above a large effect size, suggesting stronger relationships between the variables. In this study, Pearson correlation analysis was conducted to examine the relationships between the study variables. Results, illustrated in table 3, revealed that attitude ( $r = 0.58$ ,  $p < 0.001$ ), subjective norms ( $r = 0.47$ ,  $p < 0.001$ ), and perceived behavioral control ( $r = 0.68$ ,  $p < 0.001$ ) are positively and significantly correlated with entrepreneurial intention, providing initial support for H1 and H3. Although subjective norms were positively correlated with entrepreneurial intention, it was not statistically significant in the regression model, suggesting that H2 was not supported. Furthermore, entrepreneurial intention was positively and significantly correlated with perceived economic growth ( $r = 0.55$ ,  $p < 0.001$ ), perceived employment generation ( $r = 0.60$ ,  $p < 0.001$ ), and perceived innovation capacity ( $r = 0.63$ ,  $p < 0.001$ ), supporting H4, H5, and H6. These results suggest that a higher entrepreneurial intention is associated with stronger perceptions of positive economic impact particularly in terms of growth, job creation, and innovation.

Variable	r-value	p-value
Attitude	0.58	< 0.001

<b>Subjective Norms</b>	0.47	< 0.001
<b>Perceived Behavioral Control</b>	0.68	< 0.001
<b>Perceived Economic Growth</b>	0.55	< 0.001
<b>Perceived Employment Generation</b>	0.60	< 0.001
<b>Perceived Innovation Capacity</b>	0.63	< 0.001

**Table 3. Correlation Coefficients Between Studies Variables**

### Regression Analysis and Hypothesis Testing

A multiple linear regression was conducted to examine the effect of attitude, subjective norms, and perceived behavioral control on entrepreneurial intention. The model was statistically significant ( $F = 32.14$ ,  $p < 0.001$ ) and  $R^2 = 0.486$  is considered a satisfactory level in behavioral and social science research. The results align with previous studies based on the TPB, where  $R^2$  values typically range between 0.30 and 0.55 (Ajzen, 1991; Krueger et al., 2000; Liñán and Chen, 2009), indicating a moderate to strong explanatory power of the model.

Results recapitulated in table 4 show that attitude toward entrepreneurship significantly determined EI ( $\beta = 0.31$ ,  $t = 4.72$ ,  $p = 0.0001$ ), confirming H1. Subjective norms, however, did not have a statistically significant effect ( $\beta = 0.12$ ,  $t = 1.25$ ,  $p = 0.212$ ), leading to the rejection of H2. The lack of significance for subjective norms suggests that external social influences, such as family, peers, or institutional expectations, may have less effect in shaping entrepreneurial intention among Tunisian engineering students. This could reflect more individualistic orientation or cultural context, where entrepreneurship is viewed as a personal rather than socially driven decision (Autio et al., 2014). Perceived behavioral control had a strong and significant effect ( $\beta = 0.39$ ,  $t = 6.08$ ,  $p = 0.0000$ ), supporting H3.

<b>Variables</b>	<b><math>\beta</math> (Standardized Coefficient)</b>	<b>t-value</b>	<b>p-value</b>	<b>Hypothesis</b>	<b>Conclusion</b>
<b>Attitude toward Entrepreneurship</b>	0.31	4.72	0.0001	H1	Supported
<b>Subjective Norms</b>	0.12	1.25	0.212	H2	Not supported
<b>Perceived Behavioral Control</b>	0.39	6.08	0.0000	H3	Supported
<b><math>R^2</math></b>					0.486

**Table 4. Effect of TPB variables on EI**

To test hypotheses H4 to H6, simple linear regressions were conducted to evaluate the predictive effect of entrepreneurial intention (EI) on students' perceptions of economic development dimensions. Results summarized in table 5 indicate that Entrepreneurial intention significantly affects perceived economic growth ( $\beta = 0.39$ ,  $t = 6.04$ ,  $p < 0.001$ ), confirming H4. EI also impacts perceived employment generation ( $\beta = 0.36$ ,  $t = 5.72$ ,  $p < 0.001$ ), supporting H5. In addition, EI had a significant effect on perceived innovation capacity ( $\beta = 0.41$ ,  $t = 6.22$ ,  $p < 0.001$ ), confirming H6.

These results, recapitulated in table 5, reinforce the fact that the entrepreneurial intention is not only a personal aspiration but also reflects a broader perception of entrepreneurship as a vehicle

for economic prosperity. This perception is essential for shaping development strategies in developing countries like Tunisia (Acs and Zerb, 2007; Audretsch and Keilbach, 2004).

Variables	$\beta$ (Standardized Coefficient)	t-value	p-value	Hypothesis	Conclusion
Perceived Economic Growth	0.39	6.04	< 0.001	H4	Supported
Perceived Employment Generation	0.36	5.72	< 0.001	H5	Supported
Perceived Innovation Capacity	0.41	6.22	< 0.001	H6	Supported

Table 5. Effect Of EI On Perceived Economic Variables

## Discussion and Policy Implications

This section investigates the key findings of the empirical study on entrepreneurial intention among Tunisian engineering students. It explores the factors that influence the entrepreneurial mindset and the potential economic outcomes of fostering such intentions. Based on these findings, the implications for policy and educational strategies are discussed in order to suggest recommendations to enhance the entrepreneurial ecosystem in Tunisia. By addressing both individual-level drivers of entrepreneurship and broader structural support, this section highlights the potential contribution of entrepreneurship to economic growth, job creation, and innovation.

### Discussion of Main Findings

This study aims to examine the determinants of EI among final-year engineering students in Tunisia and to evaluate the perceived impact of EI on economic development: growth, employment, and innovation. The findings generally support the TPB (Ajzen, 1991), which suggests that entrepreneurial intention is shaped by the attitude toward the behavior, the subjective norms, and the perceived behavioral control. Each of the six tested hypotheses in this study yields important insights.

#### **Hypothesis 1: Attitude toward entrepreneurship positively influences entrepreneurial intention.**

This hypothesis was sustained by the obtained results. The regression analysis revealed a strong and statistically significant and positive relationship between students' attitudes and their entrepreneurial intentions. This suggests that students, who consider entrepreneurship as a desirable career path, are more likely to express the intention to become entrepreneurs. This aligns with the findings of Liñán and Chen (2009) and Fayolle and Liñán (2014a), who argued that favorable evaluations of entrepreneurship, such as the perception leading to independence, income reward, or social status are main drivers of intention. In the Tunisian context, where salaried employment is increasingly uncertain particularly for fresh graduated, positive attitudes may reflect a pragmatic shift toward self-employment as a viable alternative.

#### **Hypothesis 2: Subjective norms positively influence entrepreneurial intention.**

Contrary to expectations, this hypothesis was not confirmed. The statistical analysis revealed no significant effect of subjective norms on students' entrepreneurial intentions. This finding contrasts with earlier TPB-based studies (Kautonen et al., 2015) where social approval had a notable impact. However, it is in accordance with research developed by Krueger et al. (2000) and Autio et al. (2014), which suggested that subjective norms may have limited influence when individuals have strong personal agency or when cultural standards favor individual autonomy. For the case of Tunisia, economic instability and youth unemployment may direct students to prioritize personal conviction and perceived control against social endorsement, highlighting a context-specific shift in motivational dynamics.

**Hypothesis 3: Perceived behavioral control positively influences entrepreneurial intention.**

This hypothesis was statistically approved. Perceived behavioral control is considered as a significant predictor of EI, underlining the importance of self-efficiency and confidence in one's ability to carry out entrepreneurial activities. This statement is in line with Ajzen's theoretical model (Ajzen, 1991) and several empirical studies (Liñán and Chen, 2009; Zhao et al., 2005). These studies affirmed that the more individuals esteem possessing skills, resources, and knowledge to start business, the more likely able to develop entrepreneurial intentions. In the case of Tunisian engineering students, this could reflect increasing access to entrepreneurship education, training programs, and incubation opportunities that build competence and agency.

**Hypothesis 4: Entrepreneurial intention is positively associated with perceived contribution to economic growth.**

The results validate hypothesis 4, indicating a positive association between EI and the perception that entrepreneurial activities contribute to national economic growth. Respondents who expressed a strong entrepreneurial intention were also likely to perceive entrepreneurship as a means of stimulating GDP growth and creating wealth. This finding is in agreement with theoretical and empirical research work developed by Audretsch and Keilbach (2004) and Acs and Szerb (2007) who highlighted the role of entrepreneurship in fostering innovation-driven growth, especially in transition economies. The results suggest that students not only appreciate entrepreneurship personally but also recognize its macroeconomic potential.

**Hypothesis 5: Entrepreneurial intention is positively associated with perceived contribution to employment creation.**

The results also support this hypothesis. Students with higher entrepreneurial intention degree believe that entrepreneurship is able to generate employment, both for themselves and for others. This is consistent with the role of startups and SMEs in absorbing labor market entrances and reducing unemployment, as emphasized by Van Praag and Versloot (2007). Given Tunisia's high youth unemployment rate, this perceived impact may strengthen the attractiveness of entrepreneurship as a career choice and a tool for social and economic transformation.

**Hypothesis 6: Entrepreneurial intention is positively associated with perceived contribution to innovation.**

This hypothesis is similarly maintained, indicating that students who are involved in entrepreneurship consider it as an innovation driven. They assume that entrepreneurial activity is a pathway to introduce new products, services, and technologies. This perception may be associated with Schumpeterian perspectives (Schumpeter, 1934) and empirical studies (Wennekers and Thurik, 1999) connecting entrepreneurship to creative destruction and

technological advancement. In Tunisia, fostering the innovation-oriented entrepreneurship could be critical to reduce the dependence on traditional industries and allow the transition to a knowledge-based economy.

These findings confirm that attitude and perceived behavioral control are the most influencing determinants of entrepreneurial intention among Tunisian engineering students. The rejection of H2 indicates a cultural and contextual evolution where individual level and perceived competence outweigh social influences. Furthermore, the positive alliances between EI and perceived economic impact on growth, employment, and innovation reveal a high level of entrepreneurial awareness amid students, as well as an alignment with individual aspirations and collective national development objectives. These results suggest that refining entrepreneurial intention is not only beneficial at the individual level but may also be a strategic lever for economic reform in Tunisia.

### **Recommendations on Policy and Education**

The current study results may serve as guidance for policymakers' decisions and enhance educational programs content in Tunisia.

#### **Enhancing Entrepreneurial Education**

Given the significant role of attitude and perceived behavioral control in shaping EI, entrepreneurial education should focus on developing self-efficiency and fostering positive perceptions of entrepreneurship as a viable and rewarding career path. This approach is coherent with the recommendations of Nabi et al. (2017), who support the transformative entrepreneurship education that builds competencies as well as encourages a mindset orientation toward entrepreneurship.

#### **Addressing the Limited Role of Subjective Norms**

The weak influence of subjective norms suggests that efforts to promote entrepreneurship through only social encouragement may be insufficient. Therefore, strategies should focus on structural and institutional support, such as mentorship programs, access to funding, and incubator initiatives allowing students to perform their entrepreneurial intentions. Public campaigns and media advertising of successful local entrepreneurs may gradually shift cultural discourse and increase the entrepreneurship social desirability.

#### **Policy Recommendations for Economic Growth**

The study underscores the need to integrate entrepreneurship into national development strategies. Government policies aiming to support start-up ecosystems, reduce bureaucratic barriers, and enhance the capital access are critical for maximizing the economic contributions of entrepreneurial initiatives. This is especially crucial in Tunisia, where high youth unemployment and a stagnant formal labor market make entrepreneurship a viable option for driving inclusive growth and innovation (World Bank, 2020b).

#### **Dual-Track Strategy for Youth Mobilization**

Promoting entrepreneurial intention through targeted program education and catalyzing its fulfilment through policy can serve as a dual-track strategy to mobilize youth potential and contribute to Tunisian economic prosperity. By considering entrepreneurship as a career path and providing the necessary resources and infrastructure, Tunisia can benefit from the entrepreneurship to address economic challenges.

## Conclusion

This study explored the role of entrepreneurial intention in driving economic development, particularly in Tunisia. By analyzing the entrepreneurial intentions of 200 final-year engineering students. The significant factors influencing these intentions and the potential impact on the country economic growth have been highlighted. The results of the statistical analysis, including descriptive statistics, correlation, and regression, revealed that key entrepreneurship determinants such as attitude, perceived behavioral control, and subjective norms strongly influence entrepreneurial intentions among students. This empirical finding aligns with the broader theories of entrepreneurial intention, including the TPB. The effect of entrepreneurship on Tunisian economy was identified by the presence of positive association between entrepreneurial intention and innovation perceptions, job creation, and economic growth. The results of the studied models, investigating the effect of entrepreneurial intention on economic outcomes, shows that entrepreneurial intention may have significant role in achieving Tunisian economic objectives. Findings suggest that fostering positive entrepreneurial attitudes, enhancing access to resources and improving the overall entrepreneurial ecosystem are essential for boosting economic development in Tunisia. Policymakers and educational institutions are asked to focus on these areas to create a sustainable and innovative entrepreneurial landscape that can address the country economic challenges.

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## Author Contribution

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