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Entrepreneurship education and ecosystem influence on students' entrepreneurial intentions

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ABSTRACT

This research examines how entrepreneurship education and the entrepreneurial environment of university students impact their entrepreneurial intentions in Vietnam, particularly regarding their perceived entrepreneurial will. Using a two-tiered research strategy, the study first employed an exploratory approach, followed by a survey involving 1,088 undergraduate students across different academic years from universities and colleges in Ho Chi Minh City and Hanoi. The results provide evidence that entrepreneurship education has both direct and indirect effects on students' entrepreneurial intentions, mediated by two crucial variables: the entrepreneurial ecosystem and perceived entrepreneurial desire. In particular, a robust business environment characterized by supportive policies, adequate infrastructure, and high-quality entrepreneurial services is essential in shaping students' intentions to engage in entrepreneurship. This desire acts as a psychological trigger, transforming general knowledge into specific entrepreneurial intentions. The research demonstrates that perceived entrepreneurial intent is not solely a consequence of education and environment but also a vital element in the process of intention formation. The study offers recommendations for policies aimed at enhancing the quality, practical relevance, and workplace applicability of entrepreneurship education, as well as fostering the entrepreneurial ecosystem. These steps are critical for cultivating an innovative culture, enabling future entrepreneurs, and supporting Vietnam's creative economy in sustainable development.

Contribution/ Originality: This study contributes to the existing literature by clarifying the relationships among entrepreneurship education, the entrepreneurial ecosystem, perceived desirability, and entrepreneurial intention. It is one of the few studies that have investigated these linkages among Vietnamese students. The primary contribution of this paper is highlighting desirability as a key mediating factor.

1. INTRODUCTION

In the 21st century, entrepreneurship has developed into an indispensable force for economic growth, innovation, and employment [1]. In recent years, Vietnam has witnessed a growing interest in entrepreneurship, particularly among the younger generation. This shift has been accompanied by the rise of a vibrant start-up culture and the gradual development of a national entrepreneurial ecosystem. Policies, especially governmental policies, private sector interest, and international cooperation, have created a favorable environment for the development of entrepreneurship, leading to the repositioning of entrepreneurship as a strategic component in Vietnam's socio-economic development.

Vietnam's entrepreneurial ecosystem is relatively young but has made impressive strides. The fact that Vietnam ranks 46th out of 132 countries in the World Intellectual Property Organization's Global Innovation Index 2023 signifies its increasing capacity for innovation and knowledge-driven economic activities [2]. This progress is also evidenced by the country's new innovative startups that are actively operating approximately 3,800 in total. In recent years, investment in Vietnamese startups has seen a steady increase. As a result, Vietnam has emerged as the third most dynamic startup ecosystem in Southeast Asia, following Singapore and Indonesia.

This favorable trend is also reinforced by a number of governmental schemes and policy environments that are aimed at promoting entrepreneurship. The National Innovation Center, the "Start-up Nation" campaign, and various start-up-focused incubators and accelerators have all been instrumental in building infrastructure, improving access to finance, and strengthening entrepreneurial support structures. Moreover, the relationship between universities, industry leaders, and the public sector has opened up opportunities for young people to engage in entrepreneurship from an early age.

Despite the increasing resources and social recognition of entrepreneurship, a persistent challenge remains: the gap between entrepreneurial awareness and actual entrepreneurial intention and behavior. According to GEM [3], although the rate of entrepreneurial awareness among individuals aged 18 to 36 in Vietnam is relatively high, this has not translated into a corresponding level of entrepreneurial action. Many young adults aspire to become entrepreneurs, yet they do not establish their own businesses. This situation raises an important question for both researchers and policymakers: What factors influence the transition from entrepreneurial awareness to genuine entrepreneurial intention and action?

One of the key areas of investigation is the role of entrepreneurship education in shaping students' entrepreneurial mindset. Universities and educational institutions play a critical role in equipping students with the knowledge, skills, and confidence required to pursue entrepreneurial paths. At the same time, the broader entrepreneurial ecosystem including infrastructure, policy environment, mentorship opportunities, and access to capital acts as a contextual factor that can either encourage or hinder entrepreneurial efforts. Entrepreneurs' attitudes toward entrepreneurship are significantly influenced by their surrounding environment [4], and numerous studies have emphasized the critical role of the entrepreneurial ecosystem in stimulating entrepreneurial intention [5, 6]. Individuals tend to evaluate their environment and develop perceptions about its opportunities or risks, and these perceptions either enhance or inhibit their entrepreneurial intentions [6, 7]. While much has been written about the structural and educational drivers of entrepreneurship, the role of personal motivation and perceived desire remains underexplored in the Vietnamese context.

Based on these premises, this research aims to examine the linkage between entrepreneurship education and the entrepreneurial environment, focusing on students' intentions toward entrepreneurship in Vietnam. The study considers the mediating influence of students' perceptions of their desire for entrepreneurship. It seeks to explore how various factors interact dynamically to influence students' decision-making regarding entrepreneurship by analyzing data collected from a large sample of university and college students in Ho Chi Minh City and Hanoi. Ultimately, the findings of this study will enhance academic understanding and provide practical policy recommendations for improving entrepreneurship education and the entrepreneurial environment in Vietnam.

2. LITERATURE REVIEW

2.1. Theoretical Background

2.1.1. The Concept of Entrepreneurship and Entrepreneurial Ecosystems

Entrepreneurship is a complex concept that does not have a single, universally accepted definition. People often interpret it in various ways, such as "entrepreneurial spirit," "start-up," or "business initiation." From an academic perspective, Schumpeter [8] defined entrepreneurship as the creation of new combinations, emphasizing innovation as its core element. Cole [9] described entrepreneurship as a purposeful activity aimed at starting, maintaining, and

developing a business to gain financial or other benefits benefits which, in turn, grant the entrepreneur a sense of autonomy and personal freedom. Krueger Jr and Brazeal [10] further expanded the concept by defining entrepreneurship either as the act of starting a new business (new venture creation) or as the embodiment of entrepreneurial spirit.

Closely related to the concept of entrepreneurship is that of the entrepreneurial ecosystem, which refers to the dynamic interaction among relevant organizations and individuals that support entrepreneurship, innovation, and the growth of start-up enterprises [11]. According to the Organization for Economic Cooperation and Development (OECD), an entrepreneurial ecosystem encompasses both formal and informal linkages among: (i) entrepreneurial actors (both potential and active entrepreneurs); (ii) entrepreneurial support organizations (e.g., firms, venture capitalists, angel investors, banks); (iii) supporting institutions (e.g., universities, government agencies, public investment funds); and (iv) entrepreneurial processes, such as firm formation rates, the number of high-growth enterprises, and the prevalence of entrepreneurial activity all of which directly impact the local entrepreneurial environment [12].

The World Economic Forum [13] further defines the entrepreneurial ecosystem as the set of conditions and environments in which individuals, organizations, businesses, and broader society interact to foster economic prosperity. Key components of a well-functioning ecosystem include: (i) markets; (ii) human resources; (iii) sources of capital and finance; (iv) support systems (e.g., consulting and incubation services); (v) legal and infrastructure frameworks; (vi) education and training; (vii) universities and research institutions; and (viii) national culture.

2.1.2. Entrepreneurial Intention and Theoretical Foundations

From a behavioral psychology perspective particularly through Bandura [14]'s Social Cognitive Theory and Ajzen [15]'s Theory of Planned Behavior (TPB) intentions are recognized as the most immediate and critical precursors to behavior. This is especially true for behaviors that are rare, difficult to observe, or require long-term commitment. In this context, entrepreneurial intention serves as the initial and essential step in the process of identifying, creating, and exploiting opportunities for establishing a new venture [16].

According to the Entrepreneurial Event Model developed by Shapero and Sokol [17], entrepreneurial intention is shaped by three key factors: perceived desirability, the propensity to act, and perceived feasibility. However, the transformation of intention into actual entrepreneurial behavior often requires a triggering event in an individual's personal life. These triggers can be negative or "push" factors such as job dissatisfaction, unemployment, or divorce or positive or "pull" factors, including financial support or the presence of reliable business partners. While such life events may prompt individuals to reconsider their life choices, the decision to pursue entrepreneurship ultimately depends on two core perceptions: the individual's desire to become an entrepreneur and their belief in their own ability to do so [18].

Perceived feasibility refers to an individual's belief in their capacity to successfully start and operate a business. If an entrepreneurial opportunity is not perceived as feasible, it is unlikely to motivate action, regardless of its appeal. This interaction between desirability and feasibility forms the foundation of Krueger Jr and Brazeal [10]'s concept of "entrepreneurial potential." It is important to distinguish between perceived behavioral control in the Theory of Planned Behavior (TPB) and perceived feasibility in the Entrepreneurial Event Model. While both terms relate to self-belief in one's abilities, perceived behavioral control also encompasses a sense of control over actually performing the behavior. This distinction is particularly significant during the opportunity evaluation phase, where individuals assess whether a specific opportunity aligns with their personal skills and interests. This critical decision-making process often determines whether individuals pursue entrepreneurship or not.

Perceived feasibility refers to how much individuals believe they can start their own business and consider becoming entrepreneurs if the conditions are right [17]. There is an interaction between perceived desirability and perceived feasibility: if individuals perceive entrepreneurship as infeasible or of low feasibility, it may not be

sufficiently appealing to motivate entrepreneurial intentions. These two perceptions serve as the foundation for the concept of entrepreneurial potential, which was later introduced by Krueger Jr and Brazeal [10]. However, the concept of perceived behavioral control in the Theory of Planned Behavior (TPB) differs from perceived feasibility in Krueger and Brazeal's model in that it not only reflects a belief in one's ability to perform a behavior but also includes a sense of control over that behavior. This represents the stage of opportunity recognition, where individuals assess whether their capabilities align with the attractiveness of the opportunity an early stage of forming attitudes toward entrepreneurship. At this stage, individuals must engage in careful evaluation, critical thinking, and personal reflection to determine whether a given opportunity genuinely aligns with their own aspirations and competencies. This process marks a key distinction between entrepreneurs and non-entrepreneurs.

Different theoretical foundations have been employed in prior research to explain the relationships between factors that influence entrepreneurial intention. This study synthesizes three primary theoretical approaches to understanding students' entrepreneurial intentions: (i) environmental factors, such as the ecosystem, that influence entrepreneurial intentions; (ii) entrepreneurship education programs; and (iii) individual characteristics, including motivation, personality traits, mindset, attitudes, and gender.

The environmental perspective encompasses elements such as family support, entrepreneurial role models, national culture, social capital, and broader societal factors [19, 20]. Research on environmental influences can be interpreted through institutional theory, cultural theories, and, more recently, social exchange theory. Institutional theory, as proposed by North [21], has been used to explain the relationship between entrepreneurship education programs and environmental conditions.

Cultural and institutional environments shape the social structures within which organizations operate, including through policies [22]. As such, they also influence the formulation of policies related to education, economics, and law. In societies where legal frameworks are well-defined and where material and intellectual resources are adequately provided to support entrepreneurship, individuals and firms are more likely to be motivated to start and grow businesses [23].

Cultural dimensions theory, Hofstede [24], and value theory, Schwartz et al. [25], can explain the impact of national culture on the relationships among factors influencing entrepreneurial intention. At the core of culture are values, which are reflected in individuals' perspectives, beliefs, thoughts, and behaviors [26]. These cultural values can significantly influence students' thinking and intentions regarding entrepreneurship.

Regarding education, Astebro et al. [27] provide evidence from the United States showing that entrepreneurship is not a field reserved solely for business students; it is equally essential for students in science, technology, and even the arts. Rae and Woodier-Harris [28] argue that in order for enterprises to have a strong knowledge base and be successfully managed, universities must offer broad-based entrepreneurship programs that equip students with essential knowledge for starting a business and guide them toward well-defined career paths. Huber et al. [29] studied how effective early entrepreneurship education is for elementary students in the Netherlands. They demonstrated that investing in entrepreneurship education for children aged 11 or 12 significantly enhances their entrepreneurial knowledge and skills.

Since each country possesses unique characteristics in terms of culture, economics, and politics, research into entrepreneurship education tailored to these specific traits makes a meaningful contribution to both theoretical understanding and practical advancements in higher education.

The traits theory, when combined with motivation theory Maslow [30] value theory, and the Theory of Planned Behavior [15], has been applied to explain how personal characteristics influence entrepreneurial intentions. According to this approach, different individual traits influence behavioral intentions. This also affects one's intention to pursue entrepreneurship [31]. Students' attitudes toward entrepreneurship are important in shaping their entrepreneurial intentions.

2.2. Research Hypotheses

2.2.1. The Relationship between Entrepreneurship Education, Entrepreneurial Ecosystem, Perceived Entrepreneurial Desirability, and Entrepreneurial Intention

Entrepreneurship education includes all activities that aim to encourage entrepreneurial intentions of students [32]. It plays an important role in improving students' awareness and skills related to entrepreneurship. It also presents entrepreneurship as a possible career option [33, 34]. Additionally, Viaz and Rivera-Cruz [35] offer different viewpoints on entrepreneurship education. They describe it as a process of teaching and learning that develops business-related attitudes such as independence, creativity, innovation, risk-taking, and the ability to start ventures. Likewise, Wu and Wu [36] highlight that entrepreneurship education can enhance students' management skills to support business activities.

Entrepreneurship education at the university level plays a crucial role in equipping students with the skills necessary for entrepreneurial careers, particularly through specialized courses. Several studies have highlighted the strong link between entrepreneurship education and students' intentions to start a business [37, 38].

Aşkun and Yildirim [39] found that participation in entrepreneurship courses significantly increases students' entrepreneurial intentions, underscoring the impact of formal education in encouraging new venture creation. Similarly, they emphasized that the effectiveness of student entrepreneurship is closely tied to the quality of educational programs, as these programs enhance both entrepreneurial knowledge and skill development. In light of this, universities are encouraged to strengthen their entrepreneurship curricula, support student-led initiatives, engage more actively with the broader community, and provide students with practical opportunities such as internships and real-world entrepreneurial experiences.

Taatila and Down [40] observed that students' academic backgrounds influence their entrepreneurial tendencies, with notable differences in their levels of interest in entrepreneurship. Students who have prior experience in entrepreneurial activities are generally more inclined to pursue entrepreneurship than those without such experience. Additionally, individuals who perceive entrepreneurship as a viable and rewarding career option are more likely to engage in it, while those who associate it with high risk are less likely to do so.

Entrepreneurial mindset refers to the ability to perceive, think, and act in response to opportunities rather than obstacles, as defined by Jabeen et al. [41]. According to Ridley et al. [42], entrepreneurial thinking also involves the capacity to make decisions under uncertainty. Classroom methods and learning activities can strengthen students' cognitive skills, encouraging active engagement in entrepreneurial endeavors [43]. These educational experiences further support students' personal development and help them gain practical insights.

Entrepreneurial education often incorporates practical methods such as ethnographic user research, brainstorming, teamwork, and business simulations, which enable students to develop innovative and critical solutions based on their learning experiences [44]. These practical components are essential for strengthening the entrepreneurial mindset [45].

Based on the above, this study proposes the following hypotheses:

H_1: Entrepreneurship education positively influences the entrepreneurial ecosystem.

H_2: Entrepreneurship education positively influences perceived entrepreneurial desirability.

H_3: Entrepreneurship education positively influences entrepreneurial intention.

2.2.2. The Relationship Between the Entrepreneurial Ecosystem, Perceived Entrepreneurial Desirability, and Entrepreneurial Intention

A supportive environment, comprising institutional, governmental, social, financial, infrastructural, educational, cultural, political, human, and technological elements, is essential for fostering entrepreneurial success [4]. These elements constitute the foundational pillars of the entrepreneurial ecosystem, which is defined as "the interactive components of entrepreneurial systems that facilitate new venture creation within a specific regional context" [46].

Most prior empirical studies have analyzed the impact of the entrepreneurial ecosystem on entrepreneurial intention by focusing on isolated or limited ecological factors [47]. For example, some research has examined the role of entrepreneurship education and training programs in shaping entrepreneurial intentions Fayolle and Liñán [48] and Aboobaker et al. [49]. Ali et al. [4], for instance, investigated the influence of seven ecosystem components on entrepreneurial intention among female university students in Saudi Arabia. They found that certain elements such as government policies and regulations, government support programs, social factors, and entrepreneurial education were significantly associated with entrepreneurial intention, while others were not.

Despite the growing body of research on entrepreneurial ecosystems, there remains a need for further investigation in developing countries, where environmental conditions may influence entrepreneurial intentions differently than in developed contexts [50]. Based on the foregoing discussion, this study proposes the following hypotheses:

H_4: The entrepreneurial ecosystem positively influences perceived entrepreneurial desirability.

H_5: The entrepreneurial ecosystem positively influences entrepreneurial intention.

2.2.3. The Relationship Between Perceived Entrepreneurial Desirability and Entrepreneurial Intention

Building on Ajzen [15], previous studies have developed models to explore the factors influencing students' entrepreneurial intentions. The model proposed by Wu and Wu [36] indicates that both "entrepreneurial attitude" and "perceived control over behavior" positively influence students' "entrepreneurial intention." Preliminary studies have demonstrated that an entrepreneurial mindset, as a robust belief system, significantly drives individuals' behaviors, especially in relation to entrepreneurship culture and outcomes [51, 52]. These scholars note that the entrepreneurial mindset is closely tied to individual thinking patterns. Shepherd et al. [53] support this perspective, affirming that entrepreneurial thinking provides valuable insights into the outcomes essential for entrepreneurship studies.

Furthermore, Winkler [54] and Cui et al. [55] identified environmental factors, curricular elements, and non-academic experiences, such as learning activities or hands-on experiences, as influential in shaping cognitive factors like entrepreneurial mindset, entrepreneurial inspiration, motivation, self-efficacy, and entrepreneurial intention. In conclusion, entrepreneurial education and the entrepreneurial ecosystem lead to shifts in mindset and emotions [56, 57], which ultimately impact students' entrepreneurial intentions. Based on this theoretical framework, the study proposes the following hypothesis:

H_6: Perceived entrepreneurial desirability positively influences entrepreneurial intention.

Figure 1 illustrates the proposed research model, which examines the relationships among entrepreneurship education (EED), the entrepreneurial ecosystem (EEC), perceived entrepreneurial desirability (PED), and entrepreneurial intention (EIN).

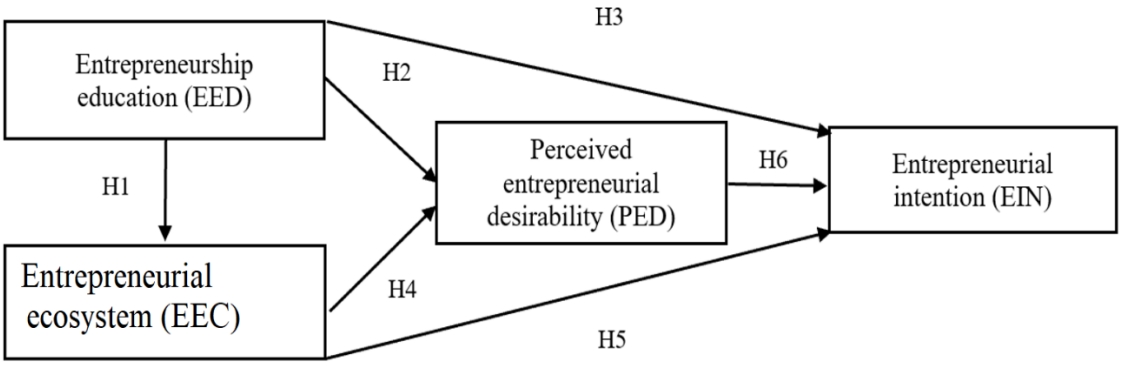

Figure 1. Research model.

3. METHODOLOGY

To achieve the research objectives, the study conducted a survey of undergraduate students from the first to the fourth year at various colleges and universities in Ho Chi Minh City and Hanoi. After filtering out invalid responses, the data were analyzed through the following steps: (i) descriptive statistics; (ii) reliability testing of each measurement scale; (iii) validity assessment, including convergent and discriminant validity; (iv) hypothesis testing using Partial Least Squares Structural Equation Modeling (PLS-SEM); and (v) analysis of mean differences across groups within the study. These methodological procedures are based on the guidelines proposed by Hair et al. [58]. Detailed results are presented in the section titled "Empirical Results and Discussion."

4. EMPIRICAL RESULTS AND DISCUSSION

4.1. Descriptive Statistics

The descriptive statistics indicate that university students comprised the majority of the sample at the time of the survey, accounting for 73.5%, while college students represented 26.5%. Among the respondents, second-year students constituted the largest proportion at 39.4%, followed by first-year students at 23.4%. Third- and fourth-year students had comparable proportions, at 17.5% and 19.6%, respectively. In terms of gender, male students predominated, making up 75.7% of the total sample, while female students accounted for 24.3%. This imbalance may be explained by the fact that most respondents were from institutions specializing in natural sciences, which tend to enroll a higher percentage of male students. The sample also reflected academic diversity, with students majoring in various fields such as Business Administration, Banking and Finance, English Language, and Law representing a wide range of academic interests among students at universities and colleges in Ho Chi Minh City and Hanoi.

4.2. Assessment of Convergent and Discriminant Validity

According to Hair et al. [58], a measurement scale is considered robust if it demonstrates both convergent and discriminant validity. Therefore, Cronbach's alpha and composite reliability (CR) coefficients were used to assess the convergent validity of each construct. The results of the reliability tests, presented in Table 1, show that all items were retained, as Cronbach's alpha values exceeded 0.7, CR values were above 0.7, and the average variance extracted (AVE) for all constructs was greater than 0.5. These findings confirm that the measurement scales used in the proposed research model exhibit strong convergent validity.

To further assess discriminant validity, the Heterotrait-Monotrait (HTMT) ratio was employed. According to Henseler et al. [59], discriminant validity is established when HTMT values between constructs are below 0.85. As shown in Table 2, most HTMT values fall below this threshold, confirming discriminant validity [60]. However, the HTMT value between PED (Perceived Entrepreneurial Desirability) and EIN (Entrepreneurial Intention) exceeds the recommended limit, at 0.931, indicating a high degree of similarity between the two constructs. Further analysis will be conducted to examine and clarify the relationship between these closely related factors.

Table 1. Reliability and validity analysis of the measurement scales.

Construct	Item loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
Entrepreneurship Education (EED)		0.880	0.917	0.735
EED01: My school provides us with knowledge about entrepreneurship (business start-up).	0.867			
EED02: The academic program equips me with the capability to start a business.	0.857			
EED03: My university frequently organizes entrepreneurship-oriented activities, such as workshops and competitions.	0.889			

Construct	Item loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
EED04: My school offers training to develop my entrepreneurial skills and capabilities.	0.813			
Entrepreneurial Ecosystem (EEC)		0.961	0.967	0.743
EEC01: The culture and social norms encourage me to pursue entrepreneurship.	0.829			
EEC02: National infrastructure, including roads, ports, border gates, and other facilities, facilitates business operations and supports entrepreneurship.	0.847			
EEC03: The openness of the domestic market creates favorable conditions for entrepreneurship.	0.870			
EEC04: Government regulations support entrepreneurship, including policies related to taxes, land use, and trade.	0.881			
EEC05: Government policies are conducive to entrepreneurship.	0.877			
EEC06: The commercialization and transfer of research outcomes to businesses foster entrepreneurship.	0.895			
EEC07: Entrepreneurship education at the high school level encouraged me to consider starting a business.	0.831			
EEC08: Accessible business support services promote entrepreneurship.	0.877			
EEC09: I have access to funding, including loans and investments, to support my business ideas.	0.845			
EEC10: I receive support from organizations, networks, or communities that foster entrepreneurship.	0.865			
Perceived Entrepreneurial Desirability (PED)		0.940	0.949	0.650
PED01: I believe entrepreneurship offers more advantages than disadvantages.	0.715			
PED02: Becoming an entrepreneur is appealing to me.	0.785			
PED03: If I had the opportunity and resources, I would start a business.	0.739			
PED04: Being an entrepreneur would bring me great satisfaction.	0.827			
PED05: Among various career options, I prefer to become an entrepreneur.	0.832			
PED06: I trust in the viability and growth potential of my entrepreneurial project.	0.854			
PED07: I possess the qualities necessary to start a business.	0.823			
PED08: My knowledge and experience motivate me to establish a new venture.	0.847			
PED09: My network of relationships supports my entrepreneurial activities.	0.795			
PED10: My start-up idea has high feasibility.	0.830			
Entrepreneurial Intention (EIN)		0.931	0.946	0.747
EIN01: My career goal is to become an entrepreneur.	0.874			
EIN02: I will strive to establish and operate my own business.	0.862			
EIN03: I have decided to start my own business in the future.	0.911			

Construct	Item loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
EIN04: I am seriously considering starting a business.	0.901			
EIN05: I intend to start a business someday.	0.888			
EIN06: I have already developed a business plan.	0.740			

Table 2. Discriminant Validity Analysis (HTMT Matrix)

	1 (EEC)	2 (EED)	3 (EIN)	4 (PED)
EEC				
EED	0.825			
EIN	0.783	0.794		
PED	0.805	0.820	0.931	

4.3. Hypothesis Testing

After confirming that the measurement scales satisfied the conditions of convergent validity and discriminant validity, the proposed research hypotheses were tested.

Table 3. Hypothesis testing results.

Relationship	Hypothesis	β	Conclusion
EED → EEC	H1	0.761*** (0.000)	Supported
EED → PED	H2	0.455*** (0.000)	Supported
EED → EIN	H3	0.052** (0.092)	Supported
EEC → PED	H4	0.433*** (0.000)	Supported
EEC → EIN	H5	0.132*** (0.000)	Supported
PED → EIN	H6	0.731*** (0.000)	Supported

Note: ** and *** indicate statistical significance at the 10% and 1% levels, respectively.

As shown in Table 3, all hypotheses in the research model are supported, although with varying levels of influence. Specifically, Entrepreneurship Education (EED) has the strongest impact on the Entrepreneurial Ecosystem (EEC), with a path coefficient of $\beta = 0.761$ and a p-value < 0.001. This confirms the critical role of education in fostering entrepreneurship-supportive conditions.

EED also exerts a significant positive effect on Perceived Entrepreneurial Desirability (PED) ($\beta = 0.455$, $p < 0.001$). However, its direct influence on Entrepreneurial Intention (EIN) is relatively weak ($\beta = 0.052$, $p = 0.092$), suggesting that education alone may not directly translate into the intention to start a business.

The Entrepreneurial Ecosystem (EEC) positively influences both Entrepreneurial Intentions (EIN) and (PED), with statistical significance ($\beta = 0.433$, $p < 0.001$ for EEC on PED; $\beta = 0.132$, $p < 0.001$ for EEC on EIN). These findings highlight the importance of a supportive environment in motivating entrepreneurial intentions. Notably, PED has the strongest direct effect on EIN ($\beta = 0.731$, $p < 0.001$), emphasizing its key mediating role in the entrepreneurial process.

Overall, the findings indicate that both entrepreneurship education and a supportive entrepreneurial ecosystem play crucial roles in shaping entrepreneurial intention, with PED serving as a critical mediating variable that links these factors to the intention to pursue entrepreneurship. Figure 2 presents the results of the path analysis, revealing the strength and significance of relationships among key constructs.

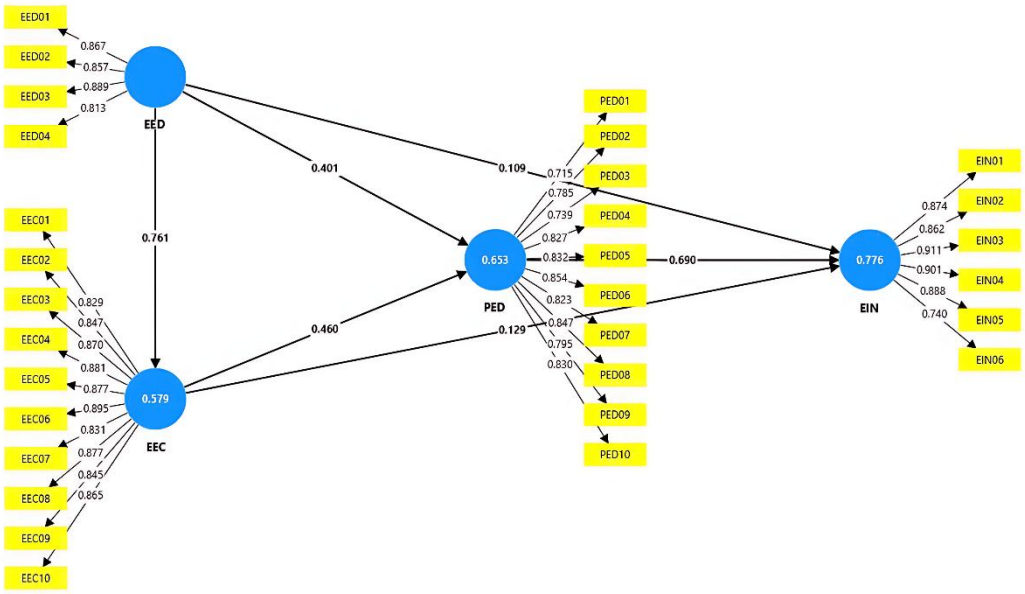

Figure 2. Path analysis results.

Table 4. Differences between college and university students in the entrepreneurial environment.

	Differences between college and university students	P value	University		College	
			β	P value	β	P value
EEC ⇨ EIN	-0.135	0.103	-0.005	0.795	-0.140	0.795
EEC ⇨ PED	-0.059	0.552	0.455	0.000	0.396	0.000
EED ⇨ EEC	0.156	0.001	0.749	0.000	0.905	0.000
EED ⇨ EIN	-0.096	0.497	-0.058	0.003	-0.155	0.003
EED ⇨ PED	0.184	0.050	0.426	0.000	0.610	0.000
PED ⇨ EIN	0.268	0.081	1.000	0.000	1.269	0.000

Based on the results from Table 4, there are significant differences in the impact of Entrepreneurship Education (EED) on the Entrepreneurial Ecosystem (EEC) and on Perceived Entrepreneurial Desirability (PED) between university and college students. These differences are indicated by p-values less than 0.05 for both relationships. The remaining relationships do not show significant differences, as their p-values are greater than 0.05. The standardized coefficient difference for the effect of EED on EEC is 0.156, suggesting a stronger influence among college students compared to university students. Similarly, the standardized coefficient difference for the effect of EED on PED is 0.184, indicating a notable variation in impact between the two student groups.

Table 5. Differences between college and university students across academic years (1–4) in the entrepreneurial environment.

Relationship	β (Year 1)	B (Year 2)	β (Year 3)	β (Year 4)	p-value (Year 1)	p-value (Year 2)	p-value (Year 3)	p-value (Year 4)
EEC → EIN	-0.029	0.022	-0.021	-0.004	0.371	0.525	0.589	0.934
EEC → PED	0.291	0.368	0.679	0.420	0.000	0.000	0.000	0.000
EED → EEC	0.740	0.819	0.732	0.721	0.000	0.000	0.000	0.000
EED → EIN	-0.107	-0.026	-0.052	-0.093	0.013	0.504	0.076	0.047
EED → PED	0.558	0.534	0.249	0.457	0.000	0.000	0.000	0.000
PED → EIN	1.046	0.964	1.024	1.013	0.000	0.000	0.000	0.000

According to Table 5, regarding the impact of EEC on PED, the relationship is strongest among third-year students, followed by second-year and first-year students (0.679 > 0.368 > 0.291), with all standardized coefficients being statistically significant. Concerning the relationship between EED and EEC, the effect is most pronounced

among second-year students (β = 0.819) and least among fourth-year students (β = 0.721), although the difference is not substantial.

4.4. Discussion

The findings provide a clear understanding of the relationships among Entrepreneurship Education (EED), the Entrepreneurial Ecosystem (EEC), Perceived Entrepreneurial Desirability (PED), and Entrepreneurial Intention (EIN). All hypothesized relationships within the model are supported; however, the influence levels of each factor vary. These variations offer significant theoretical insights and practical implications for fostering entrepreneurship and designing effective educational and ecosystem interventions.

First, EED has the strongest impact on EEC, underscoring the crucial role of entrepreneurship education in building a supportive entrepreneurial ecosystem. This highlights that entrepreneurship programs not only provide individuals with necessary knowledge and skills but also contribute to creating a favorable environment for entrepreneurial activities. Additionally, EED positively influences PED (β = 0.455, p < 0.001), indicating that entrepreneurship education enhances both knowledge and personal motivation toward entrepreneurship. However, the effect of EED on EIN is relatively low (β = 0.052, p = 0.092), suggesting that education alone may be insufficient to spur concrete entrepreneurial intentions; other factors are required to transform awareness into action.

The EEC also significantly influences both (PED) (β = 0.433, p < 0.001) and entrepreneurial intention (EIN) (β = 0.132, p < 0.001), underscoring the importance of environmental factors such as policies, infrastructure, and business support services in fostering entrepreneurial motivation and intention. A robust entrepreneurial ecosystem provides the foundation and opportunities for individuals to pursue and realize their business ideas. Notably, (PED) acts as a strong mediating factor linking EED and EEC to entrepreneurial intention (EIN). With β = 0.731 (p < 0.001), PED plays a pivotal role in translating perceptions into specific intentions. This highlights that individuals' beliefs about the attractiveness and feasibility of entrepreneurship are the strongest drivers of entrepreneurial intention.

In summary, the study affirms the integrative role of education, ecosystems, and perceptions of desirability in shaping entrepreneurial intentions. These insights provide a foundation for policy recommendations aimed at enhancing entrepreneurship education, building comprehensive support ecosystems, and increasing individuals' entrepreneurial awareness and confidence.

5. CONCLUSION AND POLICY RECOMMENDATIONS

This study has clarified the relationships among entrepreneurship education, the entrepreneurial ecosystem, entrepreneurial desirability, and entrepreneurial intention among college and university students in Ho Chi Minh City and Hanoi. The findings highlight that entrepreneurship education plays a critical role in enhancing both the entrepreneurial ecosystem and entrepreneurial perception, which in turn foster individuals' entrepreneurial intentions. A strong entrepreneurial ecosystem, supported by effective policies, creates a favorable environment that encourages individuals to develop and pursue business ideas. Based on these verified relationships, the following recommendations are proposed:

First, educational institutions should design entrepreneurship curricula that are more practical and innovative. The focus should go beyond delivering theoretical knowledge and place greater emphasis on developing real-world skills such as project management, opportunity recognition, and network building. Increasing the number of extracurricular activities, such as entrepreneurship workshops and business idea competitions, will give students hands-on experience, helping to strengthen their confidence and entrepreneurial aspirations.

Second, the government and relevant organizations should invest heavily in building a robust entrepreneurial ecosystem. This includes improving infrastructure, simplifying administrative procedures, and providing financial support for startups. At the same time, mechanisms to commercialize scientific research outcomes should be

strengthened to foster collaboration between researchers and businesses. Building a network of entrepreneurial communities and support organizations will further promote collaboration and resource sharing among aspiring entrepreneurs.

Third, given the key mediating role of entrepreneurial desirability revealed in the findings, strategies should be implemented to enhance the attractiveness and perceived feasibility of entrepreneurship. Media campaigns, success stories of entrepreneurs, and mentoring programs can serve as effective tools to inspire and motivate the younger generation. Entrepreneurship development policies require collaboration among key stakeholders, including schools, businesses, and government agencies. Ministries and relevant departments should work toward a coordinated support system focused on improving the business environment, offering preferential loan packages, and encouraging investment in new ventures.

Finally, policymakers should conduct regular evaluations of entrepreneurship education programs and support policies using specific performance indicators. This will allow for the early identification of issues and enable timely adjustments to maximize impact and effectiveness.

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