

Digital Entrepreneurship Education and Digital Entrepreneurial Intention: Insights from Social Cognitive Career Theory

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Abstract

This study examines the multidimensional relationship between digital entrepreneurship education (DEE) and digital entrepreneurial intention (DEI) among engineering students in Da Nang, Vietnam, using Social Cognitive Career Theory (SCCT) as the theoretical framework. A mixed-methods approach was adopted, combining qualitative interviews to refine measurement constructs with a quantitative survey of 390 students. Partial least squares structural equation modeling (PLS-SEM) was employed to analyze the relationships among educational, psychological, and cognitive factors. The analytical outcomes reveal that four principal factors influence students' DEI: entrepreneurial personality traits (PER), entrepreneurial capacity (CAP), perceived behavioral control (PBC), and attitudes toward behavior (AT). Consistent with the tenets of SCCT, these factors encapsulate the amalgamation of individual characteristics, self-assessment of abilities, and contextual elements that shape career trajectories. Furthermore, among the educational variables, the digital entrepreneurship curriculum (TEC) assumes a crucial role in molding DEI through both direct and indirect pathways, whereas the digital entrepreneurship teaching method (TEM) predominantly enhances capacity and PBC but does not exert a substantial influence on AT or PER. These findings illustrate that DEE profoundly affects students' AT, CAP, and PER, thereby nurturing digital entrepreneurial cognition, which aligns with SCCT's framework for the development of career intentions. The study advocates for the modernization of digital curricula, the implementation of proactive digital pedagogies, and the establishment of digital entrepreneurship ecosystems within universities to augment the efficacy of digital entrepreneurship education.

Keywords: digital entrepreneurial intentions, digital entrepreneurship education, social cognitive career theory (SCCT)

1. Introduction

The entrepreneurial spirit has long been acknowledged as a pivotal catalyst for economic advancement, innovation, employment generation, and enhancements in quality of life (Wennekers et al., 2005). In Vietnam, entrepreneurial endeavors have experienced remarkable growth, as illustrated by the nation's enduring status among the foremost countries in global entrepreneurship rankings. AGER (2023) reported that as many as 88% of Vietnamese students regard business ownership as a highly attractive professional pursuit. In light of this phenomenon, Da Nang city has instituted a myriad of programs and initiatives aimed at bolstering student entrepreneurship through 2025, with the objective of heightening awareness, equipping learners with requisite knowledge and competencies, and cultivating a supportive environment that fosters entrepreneurial thought and action among youth.

In this framework, the swift evolution of digital technologies has instigated profound changes in business operations and entrepreneurial ecosystems. Digital transformation redefines business models, operational methodologies, and value-creation mechanisms while concurrently presenting novel opportunities for innovation and market proliferation (Festa et al., 2022; Nguyen & Nguyen, 2024). Modern entrepreneurs increasingly depend on digital technologies to establish and expand their enterprises, leveraging the agility, speed, and global connectivity afforded by these advancements (Beliaeva et al., 2019; Nambisan & Baron, 2021). This progression has culminated in the emergence of digital entrepreneurship (DE), a contemporary form of entrepreneurship in which digital technologies assume a central role throughout the phases of venture inception, operation, and growth (Nambisan, 2017).

The significant differences between digital entrepreneurial ventures and traditional entrepreneurship emphasize the need for an investigation into DEI. Although traditional entrepreneurial intention has been extensively explored in the

literature (Duong et al., 2024), DEI continues to represent a nascent domain of academic exploration (Elnadi & Gheith, 2023; Mir et al., 2022). DEI signifies an individual's preparedness to partake in entrepreneurial endeavors within a digital context, an arena that necessitates not only foundational business acumen and expertise but also digital proficiency, technological adaptability, and the capacity to engage effectively with virtual platforms (Elnadi & Gheith, 2023; Mir et al., 2022).

In this framework, education pertaining to digital entrepreneurship has been acknowledged as a fundamental catalyst for the entrepreneurial aspirations of students (Aloulou et al., 2023). The domain of DEE has surfaced as a pivotal yet inadequately scrutinized element. While a plethora of investigations have substantiated the effects of conventional entrepreneurship education on entrepreneurial intention (Pham & Le, 2023a), the ramifications of DEE on digital entrepreneurial intention (DEI), especially within a milieu where technology assumes a central position, continue to be underexplored (Wibowo et al., 2023). Engaging in digital entrepreneurship necessitates that individuals not only possess overarching entrepreneurial mindsets and competencies but also demonstrate proficiency in the utilization, application, and integration of digital technologies within innovation frameworks (Wibowo et al., 2023). This prompts a significant inquiry: by which mechanisms does digital entrepreneurial education influence digital entrepreneurial intention?

However, two significant research deficiencies have become apparent. First, although DEE encompasses various elements, a limited number of studies distinctly delineate the contributions of teaching methods and teaching curricula in influencing DEI. These two aspects may have divergent impacts on students' perceptions, competencies, and attitudes, subsequently resulting in discrepancies in DEI; however, empirical validation remains scarce. Second, the current literature infrequently investigates the following four mediating mechanisms: PER, CAP, AT, and PBC within a unified, cohesive framework, notwithstanding their interrelated characteristics and combined influence on the development of DEI. Such disjointed approaches obstruct a thorough comprehension of how the DEI exerts its influence.

To address this theoretical gap, this study employs SCCT (Lent et al., 1994), which asserts that career-related behaviors are shaped by the interplay among personal factors, self-efficacy beliefs, outcome expectations, and environmental contexts. SCCT has been increasingly utilized in entrepreneurship research, given that entrepreneurship can be viewed as a pivotal career decision (Alnemer, H. A., 2021). Informed by SCCT, this study aims to clarify the mechanisms through which EE, which is defined through its two components, TM and TC, impacts students' DEI. The proposed model hypothesizes that TM and TC have direct influences on the four psychological–cognitive variables (PT, CAP, AT, and PBC), which subsequently act as mediating conduits leading to DEI. This methodology facilitates a more comprehensive elucidation of how DEIs indirectly shape DEIs, aligning with previous theoretical propositions while being expanded through a more integrated and systematic lens.

In sum, the present investigation aims to clarify the indirect influences of DEE on the intention to engage in digital entrepreneurial activities, which are mediated by essential psychological and cognitive determinants. The projected results are anticipated to make a substantial contribution to the theoretical development of the field of digital entrepreneurship while simultaneously providing pragmatic implications for academic institutions and policymakers in the formulation of training programs that are congruent with the dynamic requirements of the digital economy.

2. Literature Review

2.1 Social Cognitive Career Theory (SCCT)

SCCT, which analyses the manner in which DEE affects DEI, is exceptionally appropriate for this investigation. Originating from Bandura's (1991) social cognitive theory, SCCT offers a thorough framework for elucidating the development of career-related beliefs, motivations, and choices through the intricate interplay among individual characteristics, environmental contexts, and experiential learning (Lent et al., 1994; Lent & Brown, 2019a). This theoretical perspective is particularly pertinent to the realm of digital entrepreneurship, where learners are required to perpetually develop technological skills, adapt to swift innovations, and cultivate self-assurance in seizing business prospects within digital landscapes.

In this study, DEI is conceptualized as the degree of an individual's preparedness, ambition, and dedication to engage in entrepreneurial endeavors that are driven by technology, encompassing the execution of business concepts via digital platforms, the application of technology to generate novel value, and the exploration of online commercial prospects. This formulation is congruent with previous academic literature that posits DEI as a manifestation of an individual's behavioral inclination to participate in entrepreneurial undertakings within a digitally transformed context, dependent upon one's technological proficiency, self-assurance, and innovative capacity (Nambisan, 2017). The DEI encapsulates an individual's proactive ambition to convert digital literacy, technical expertise, and inventive thought processes into entrepreneurial initiatives within the digital domain. This viewpoint aligns with previous investigations that delineate DEI as a unique variant of behavioral intention, intrinsically linked to an individual's preparedness to utilize digital technologies for the establishment and advancement of ventures (Wibowo et al., 2023). In accordance with SCCT,

self-efficacy, outcome anticipations, and interests/attitudes constitute the fundamental psychological factors that influence career-oriented intentions and behaviors (Lent et al., 2010). Digital entrepreneurial education (DEE) provides students with enriched pedagogical experiences spanning technological applications and business simulations to innovative project-based initiatives that collectively augment their digital entrepreneurial self-efficacy. Prior empirical studies have consistently demonstrated that self-efficacy serves as the most robust predictor of entrepreneurial intention, encompassing DEI (Maheshwari & Kha, 2022; Tsai et al., 2016).

SCCT also emphasizes the significant influence of contextual factors on the development of career intentions. In the current research framework, digital pedagogical approaches and the digital teaching curriculum are delineated as pivotal contextual elements that affect students' personality characteristics, entrepreneurial capabilities, attitudes toward entrepreneurial actions, and *PBC*. These psychological and cognitive constructs subsequently serve as fundamental precursors in the establishment of DEI, which aligns with the theoretical assertions posited by SCCT.

In conclusion, by integrating the effects of digital entrepreneurship education (DEE), individual cognitive and psychological factors (PER, CAP, AT, and PBC), and behavioral outcomes namely digital entrepreneurial intention (DEI) social cognitive career theory (SCCT) provides a comprehensive and theoretically robust framework for the present investigation. This framework enables a clear understanding of how students develop beliefs, motivations, and entrepreneurial choices in an increasingly digital context, thereby clarifying the pathways through which DEE is translated into entrepreneurial actions on digital platforms.

2.2 Digital Entrepreneurship Education and Psychological–Cognitive Factors

2.2.1 Digital Entrepreneurship Education and Entrepreneurial Personality Traits

Entrepreneurship is considered a dynamic process that requires individuals to possess specific PER, such as proactivity, innovation, risk-taking ability, and perseverance (Bird, B., 1988). Research indicates that entrepreneurial education environments can shape and enhance these traits by providing students with opportunities to engage in real-world scenarios, experiment with ideas, and confront business challenges (Fayolle, A., & Gailly, A., 2015).

DEE broadens the scope of traditional entrepreneurship education by integrating digital technologies, online platforms, and digital tools into the learning process (Nguyen & Nguyen, 2024). Through digital teaching methods (e.g., online simulations, project-based learning, virtual incubators) and a digitally oriented curriculum (including e-commerce, data analytics, digital business models), students are exposed to a highly exploratory and innovative learning environment. These experiences help strengthen traits such as creativity, experimentation, adaptability, and risk acceptance in the digital context (Ratten & Usmanij, 2021). Thus, DEE is expected to contribute to the development of students' entrepreneurial personality traits.

H_{1a} – H_{2a}: Digital entrepreneurship education (teaching methods and curriculum) positively influences entrepreneurial personality traits.

2.2.2 Digital Entrepreneurship Education and Entrepreneurial Capacity

Entrepreneurial capacity (CAP) encompasses individuals' abilities to identify opportunities, formulate business strategies, mobilize essential resources, and effectively manage business operations (Collins et al, 2006). Drawing on human capital theory, education is viewed as a critical mechanism through which individuals acquire the knowledge and skills necessary to enhance entrepreneurial effectiveness (Becker, 1964). In digital contexts, entrepreneurial capacity extends beyond traditional business competencies to include digital skills such as managing online platforms, leveraging big data analytics, implementing digital marketing strategies, and optimizing technology-driven business models. Digital entrepreneurship education (DEE) enhances students' CAP by integrating foundational entrepreneurial knowledge such as opportunity recognition, business planning, and risk management with advanced digital competencies milieu (Nowiński et al., 2019; Secundo et al., 2021). Moreover, experiential pedagogical approaches, including digital incubators, online mentoring, and project-based learning, enable students to develop and consolidate entrepreneurial capacities through practical engagement in digital business activities (Wibowo et al., 2023). Prior empirical evidence suggests that such educational experiences significantly strengthen entrepreneurial capacity and overall business competence. Accordingly, DEE is expected to exert a positive influence on students' entrepreneurial capacity.

H_{1b} – H_{2b}: Digital entrepreneurship education (instructional methodologies and curriculum) has a positive effect on entrepreneurial capacity.

2.2.3 Digital Entrepreneurship Education and Attitudes Toward Entrepreneurial Behavior

Attitude toward behavior is a central determinant of entrepreneurial intention, as articulated by the theory of planned behavior (TPB) Ajzen (1991). A favorable entrepreneurial attitude emerges when individuals perceive entrepreneurship

as appealing, worthwhile, and congruent with their personal goals (Krueger Jr. et al., 2000). Prior research suggests that educational environments can play a critical role in shaping such attitudes by providing high-quality learning experiences and fostering an entrepreneurial mindset among students (Fayolle, A., & Gailly, A., 2015; Liñán & Chen, 2009). In digital contexts, digital entrepreneurship education (DEE) contributes to the formation of positive entrepreneurial attitudes by highlighting the attractiveness and feasibility of technology-driven business models. Digitally oriented curricula expose students to practical examples, including successful digital ventures, contemporary e-commerce practices, and evolving career opportunities in the digital economy (Ben Youssef et al., 2021). In parallel, interactive pedagogical approaches—such as online business competitions and digital simulations—immerse students in the creative and innovative potential of digital entrepreneurship, thereby strengthening their positive attitudes and readiness to engage in entrepreneurial activities (Ratten & Usmanij, 2021).

H_{1c}–H_{2c}: Digital entrepreneurship education (teaching methods and curriculum) exerts a positive influence on attitudes towards entrepreneurship.

2.2.4 Digital Entrepreneurship Education and Perceived Behavioral Control

Within the framework of the theory of planned behavior, perceived behavioral control (PBC) reflects an individual's belief in their capability to perform entrepreneurial activities and is regarded as a critical determinant of entrepreneurial intention (Ajzen, 1991). Prior empirical research indicates that entrepreneurship education enhances PBC by equipping individuals with relevant knowledge, skills, and experiential learning opportunities (Bae et al., 2014). In digital contexts, digital entrepreneurship education (DEE) strengthens PBC by reducing technological barriers and enabling students to effectively utilize digital tools and platforms. Pedagogical approaches such as digital simulations, virtual business model evaluation, and online mentoring provide students with opportunities to practice entrepreneurial tasks in a supportive and low-risk environment, thereby enhancing their confidence in performing digital entrepreneurial activities (Jena, 2020; Kickul et al., 2002a). Moreover, digitally oriented curricula help students develop a deeper understanding of the operational mechanisms of digital ventures, which further reinforces their perceived control over entrepreneurial processes in technology-driven settings (Bischoff et al., 2018; Ho et al., 2018). Accordingly, DEE is expected to play a significant role in strengthening students' perceived behavioral control in relation to digital entrepreneurship.

H_{1d}–H_{2d}: Digital entrepreneurship education (teaching methods and curriculum) positively influences perceived behavioral control.

2.3 Psychological and Cognitive Factors (PT, CAP, AT, and PBC)

2.3.1 Personality Traits and Digital Entrepreneurial Intention

Personality characteristics such as proactivity, openness, extraversion, perseverance, and a willingness to take risks are widely recognized as important antecedents of entrepreneurial intention (Karabulut, 2016; Kickul & Gundry, 2002). In the context of digital entrepreneurship, the relevance of these traits is further amplified, as entrepreneurs must continuously adapt to rapid technological change, environmental uncertainty, and sustained innovation demands (Satalkina & Steiner, 2020). Accordingly, individuals who exhibit strong entrepreneurial personality traits are more likely to perceive digital business opportunities as valuable and to develop stronger digital entrepreneurial intention (DEI). Digital entrepreneurship education (DEE) contributes to this process not only by providing essential knowledge but also by shaping students' cognitive orientations, reinforcing traits such as perseverance, proactivity, and risk-taking propensity in digital contexts (Wibowo et al., 2023). Thus, entrepreneurial personality traits serve as a critical psychological mechanism through which DEE influences the formation of digital entrepreneurial intention.

H₃: Personality traits significantly impact digital entrepreneurial intention.

H_{3a} - H_{3b}: Personality traits mediate the relationship between digital entrepreneurship education and digital entrepreneurial intention.

2.3.2 Entrepreneurial Capacity and Digital Entrepreneurial Intention

In the context of digital entrepreneurship, CAP extends beyond traditional business competencies to include technological skills, the ability to operate digital platforms, big data analytics capabilities, and technology-driven innovation skills (von Briel et al., 2021; Xie et al., 2018). Drawing on entrepreneurial self-efficacy theory, higher levels of capacity enhance individuals' opportunity recognition, confidence in goal attainment, and tolerance for uncertainty and failure (Chen et al., 1998). Individuals equipped with strong digital entrepreneurial capacity are therefore more likely to develop robust digital entrepreneurial intention (DEI) (Richter et al., 2017; Shane & Nicolaou, 2013). Digital entrepreneurship education (DEE) plays a critical role in strengthening such capacity through experiential learning approaches, including digital simulations, platform-based projects, and exposure to advanced digital technologies (Ho et al., 2018; Jena, 2020). As students' entrepreneurial capacity increases, they become more confident and more capable of

translating entrepreneurial perceptions into concrete entrepreneurial actions (Nguyen et al., 2023).

H₄: Entrepreneurial capacity significantly impacts digital entrepreneurial intention.

H_{4a}–H_{4b}: Entrepreneurial capacity mediates the relationship between digital entrepreneurship education and digital entrepreneurial intention.

2.3.3 Attitude Toward Behavior and Digital Entrepreneurial Intention

Entrepreneurial attitudes are shaped by perceptions of creativity, flexibility, innovation opportunities, and the high-profit potential offered by digital business models (Francisco Liñán, F., 2015; Liñán & Chen, 2009). When students perceive digital entrepreneurship as feasible, attractive, and aligned with their technology-oriented working styles, they are more likely to develop stronger entrepreneurial intentions. Prior research consistently demonstrates that a positive attitude is one of the most influential predictors of both traditional entrepreneurial intention and DEI (Lühje & Franke, 2003; Maheshwari, 2022). DEE contributes to the formation of such positive attitudes by enabling students to better evaluate technology-driven opportunities, understand associated risks, and appreciate the economic and social value of digital entrepreneurship (Ahmed et al., 2020). Within the proposed research framework, attitude toward entrepreneurship therefore serves as a critical mediating mechanism through which DEE influences digital entrepreneurial intention.

H₅: Attitude toward entrepreneurship mediates the relationship between digital entrepreneurship education and digital entrepreneurial intention.

H_{5a}–H_{5b}: Attitude toward entrepreneurship mediates the relationship between digital entrepreneurship education and digital entrepreneurial intention.

2.3.4 Perceived Behavioral Control and Digital Entrepreneurial Intention

Perceived behavioral control (PBC) assumes heightened importance, as entrepreneurs face substantial demands related to technological competence, digital platform complexity, and rapidly evolving market conditions. Within the framework of the theory of planned behavior, PBC reflects individuals' confidence in their ability to perform entrepreneurial tasks and has been consistently identified as a key predictor of entrepreneurial intention (Armitage & Conner, 2001). In digital settings, individuals who believe they can effectively navigate digital technologies, manage online platforms, and utilize data-driven tools are more likely to form strong intentions to engage in digital entrepreneurship. Digital entrepreneurship education (DEE) plays a critical role in strengthening PBC by enhancing technological skills, providing simulation-based learning, and offering experiential opportunities through digital platforms {Citation} (Kickul et al., 2018; Ratten & Usmanij, 2021). As learners' confidence in managing and implementing digital initiatives increases, their intention to pursue digital entrepreneurial activities is correspondingly reinforced.

H₆: Perceived behavioral control exerts a positive influence on digital entrepreneurial intention.

H_{6a}–H_{6b}: Perceived behavioral control serves as a mediating factor in the relationship between digital entrepreneurship education and digital entrepreneurial intention.

The conceptual model investigated in this study is presented in Figure 1.

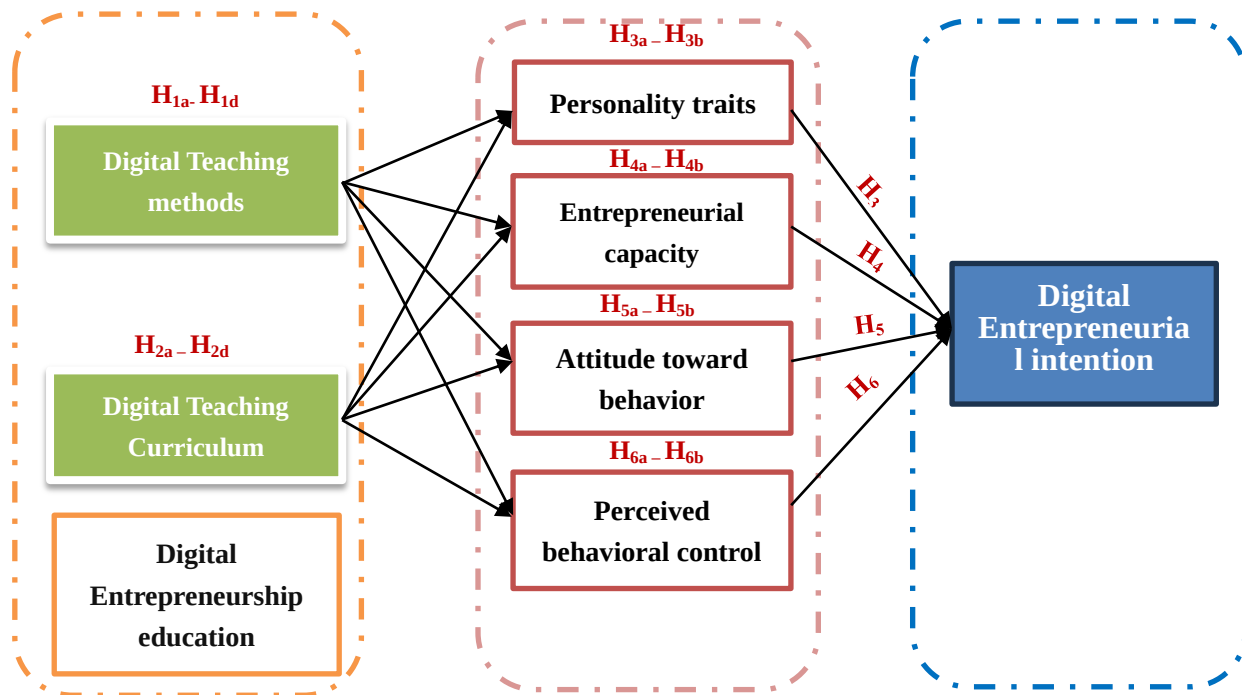


Figure 1. Research model

3. Research Methodology

This study focuses on engineering students who have participated in entrepreneurship education/training programs. Engineering students are those capable of assimilating the scientific and technological knowledge required to initiate creative business models. Furthermore, they tend to have a greater propensity for entrepreneurship than do students in other fields do, especially when they are equipped with knowledge related to the process of starting a business (Lühje & Franke, 2003). The selection of engineering students as the study population aligns with the focus on digital entrepreneurship and DEI. Their specialized knowledge, proficiency with digital tools, entrepreneurial potential, representation of the digital generation, and alignment with the research objectives make this group a valuable source of information for the study.

Specifically, data were collected from three leading engineering training universities in Da Nang, Vietnam. These include the University of Danang - University of Science and Technology, the University of Danang - University of Science and Technology Education, and the University of Information and Communication Technology Vietnam - Korea (VKU). The data collection process was conducted through a survey via questionnaires, which targeted students currently enrolled at these universities. To ensure representativeness, three classes were randomly selected from each university. After consent and collaboration from the lecturers, the questionnaires were distributed to the students at the beginning of class, with full voluntary participation. Each student was allocated 25 minutes to complete the survey carefully. As a token of appreciation, each participant received a small gift upon completion of the survey. This procedure was designed to create a conducive and cooperative environment for effective data collection.

The data collection process took place from September 11 to October 2, 2025, with a total of 460 engineering students participating. Among the distributed questionnaires, 405 were returned, corresponding to a response rate of 88%. However, 15 questionnaires were excluded from the analysis because of incomplete information. Therefore, the final dataset consisted of 390 valid responses, ensuring completeness and reliability with no missing data.

The questionnaires included six items for assessing entrepreneurial personality traits, six items for entrepreneurial capacity, four items for attitudes toward behavior, five items for perceived behavioral control, four items for teaching methods, five items for the teaching curriculum, and five items for entrepreneurship. The following are some references for the dimensions and indicators of all the variables tested in this study (Appendix A):

Table 1. Operationalization of variables

Factor	Dimension	Previous Research
Personal factors	Personality traits (PER)	Kickul et al., 2018; Ratten & Usmanij, 2021).
	Entrepreneurial capacity (CAP)	Hindle (2007); Mitchelmore & Rowley (2010). (Li ñán et al., 2005).
	Perceived Behavioral Control (PBC)	Kolvereid, (1996) and Autio et al., (2001)
	Attitude toward the behavior (AT)	Li ñán et al., 2005, Ajzen, (1991)
Digital Entrepreneurship education	Teaching methods (TEM)	(Wibowo et al., 2023)
	Teaching Curriculum (TEC)	(Wibowo et al., 2023)
Digital Entrepreneurial intention (DEI)		(Aloulou et al., 2023)

Finally, the study employed a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to represent the respondent's answers. Furthermore, the collected data were further tested at various stages, including the measurement model, structural model, and hypothesis testing, via partial least squares structural equation modelling (PLS-SEM) bootstrapping at 5000, following the procedures of Hair Jr. et al., (2021).

4. Results

4.1 Statistical Analysis Description

Table 2 summarizes the demographic data of the respondents who participated in this study. Frequencies and percentages were used to examine the distribution of the respondents by gender, university, and age.

Table 2. Demographic data of the respondents

Statistical indicators: N = 390		Frequency	Percentage
Gender	Male	230	58.97%
	Female	160	41.03%
Universities	University of Science and Technology – The University of Danang (DUT)	150	38.46%
	University of Technology and Education – The University of Danang (UTE)	125	32.05%
	Vietnam – Korea University of Information and Communication Technology (VKU)	115	29.49%
Age	18–20 years old	90	23.08%
	20–22 years old	148	37.95%
	Over 22 years old	152	38.97%

According to the data presented in Table 2, 230 respondents (58.97%) identified as male, whereas 160 respondents (41.03%) identified as female. The prevailing demographic age among the participants was more than 22 years (38.97%), whereas 23.08% of the participants were between 18 and 20 years old, and 37.95% were between 20 and 22 years old.

4.2 Reliability and Validity of the Measurement Scale

Table 3. Results of the Measurement Model

Construct	Item	Outer Loading	Cronbach's Alpha	Consistent Reliability Levels Internally (CR)	Average Variance Value (AVE)
Attitude toward entrepreneurship	AT1	--	0.700	0.823	0.608
	AT2	0.76			
	AT3	0.77			
	AT4	0.80			
Entrepreneurial capacity	CAP1	--	0.778	0.847	0.526
	CAP2	0.72			
	CAP3	0.73			
	CAP4	0.73			
Personality traits (PER)	CAP5	0.73	0.712	0.837	0.632
	CAP6	0.70			
	PER 1	--			
	PER 2	--			
Perceived Behavioral Control (PBC)	PER 3	7.77	0.746	0.855	0.663
	PER 4	7.9			
	PER 5	0.81			
	PBC1	--			
Digital entrepreneurial education	PBC2	--	0.794	0.851	0.588
	PBC3	0.78			
	PBC4:	0.83			
	PBC5	0.82			
	TEM1	0.81	0.794	0.851	0.588
	TEM2	0.74			

	TEM3	0.75			
	TEM4	0.74			
	TEC1	0.70			
	TEC2	0.73			
	TEC3	0.78	0.804	0.854	0.540
	TEC4	0.70			
	TEC5	0.74			
	EI1	0.79			
	EI2	0.72			
Digital entrepreneurial intention	EI3	0.73	0.812	0.869	0.571
	EI4:	0.71			
	EI5:	0.79			

In the initial data analysis phase, various statistical tests, as illustrated in Table 2, were employed to evaluate the reliability and validity of the constructs. Cronbach's alpha, CR, AVE, and factor loadings were utilized to assess the reliability and validity of the measurement items associated with the five variables. The internal consistency and reliability of each variable were assessed by calculating Cronbach's alpha, whereas the CR was used to measure the internal consistency, taking into account the item factor loadings (Hair Jr. et al., 2021). Likewise, the AVE was used to assess convergent validity, and the factor loadings signify the degree and relevance of the item's connection with the variable (Fornell & Larcker, 1981). The statistical results revealed that all the variables had Cronbach's alpha values greater than 0.7 and CR values greater than 0.9. Thus, the scale's internal consistency reliability is adequate for conducting such an analysis (Fornell & Larcker, 1981; Hair Jr. et al., 2021). In addition, the AVE values of all the variables surpass the threshold of 0.50, thus confirming convergent validity (Hair Jr. et al., 2021). On the basis of the analysis results, several variables, namely, PER (0.36), PBC1 (0.50), PBC (0.58), CAP (0.59), AT1 (0.609), and PER2 (0.611), had loadings below the 0.7 threshold and were therefore excluded from the model. The remaining observed variables satisfied the required reliability criteria, with outer loading values ranging from 0.70 (TEC4) to 0.83 (PBC4). As shown in Table 3, the Cronbach's alpha (CA) values for construct reliability range from 0.70--0.81, all of which exceed the widely accepted threshold of 0.70, as recommended by Nunnally, (1994). Additionally, the composite reliability (CR) values fall within the range of 0.83--0.86, surpassing the minimum acceptable level of 0.70 suggested by (Kline, 2016). This confirms the internal consistency of the constructs. Convergent validity was assessed via both average variance extracted (AVE) and factor loadings, in accordance with the guidelines established by Hair Jr. et al., (2021). All factor loadings exceeded the recommended threshold of 0.70, indicating strong indicator reliability. Furthermore, the AVE values for all the constructs ranged from 0.52--0.66, surpassing the minimum criterion of 0.50. On the basis of these results, both the factor loadings and the AVE values provide compelling evidence confirming the convergent validity of all the constructs.

Table 4. results of discriminant validity (HTMT)

HTMT	AT	CAP	EI	PBC	PER	TEC	TEM
AT							
CAP	0.335						
EI	0.575	0.521					
PBC	0.170	0.114	0.333				
PER	0.860	0.443	0.598	0.172			
TEC	0.191	0.297	0.246	0.086	0.226		
TEM	0.078	0.189	0.226	0.180	0.140	0.290	

Note: HTMT < 0.85

After confirming the reliability and validity of the measurements, the discriminant validity of the variables was also analysed. Discriminant validity was evaluated via the heterotrait-monotrait ratio (HTMT), as recommended by Hair Jr. et al., (2021) and Henseler et al., (2015). As shown in Table 4, all the constructs reported HTMT values below 0.85, which is well within the acceptable threshold. Although values between 0.85 and 0.90 are still considered acceptable, this study adopted a more conservative threshold of 0.85. The results, which were based on two bootstrapping runs, indicated that no construct pairs had HTMT confidence intervals containing values of 1 at the 2.5% and 97.5% percentiles. These findings confirm that discriminant validity is satisfactorily established. Overall, the assessment of the measurement model indicated no issues concerning either validity or reliability.

4.3 Structural Model Results (PLS-SEM)

Tables 5 and 6 show the results of the structural model estimation of PLS-SEM with the help of the SMART PLS application. The structural model can be evaluated by assessing the value of the coefficient of determination (R^2), effect

size (f^2), predictive relevance (Q^2), and path coefficient of each research hypothesis (Hair Jr. et al., 2021).

Table 5. Q^2 , R^2 and R^2 adjusted indices

Factors	Q^2	R^2	R^2 Adjusted
DEI	0.5	0.363	0.356

As shown in Table 5, the analysis revealed the model's robustness, as indicated by a variance percentage (R^2) of 36.3% for DEI. In addition, the results of the analysis also revealed a Q^2 value of 0.5 (EI), which indicates moderate predictive relevance. Furthermore, as shown in Table 5, most of the f^2 values are in a large category according to the standards (Hair Jr. et al., 2021).

Table 6. Results of partial least square path analysis

Hypothesis	Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P value	VIF	f^2	Decisions
H _{1a}	TEM -> PER	0.088	0.096	0.056	1.588	0.112	1.049	0.008	rejected
H _{1b}	TEM -> CAP	0.142	0.147	0.059	2.38	0.017	1.049	0.021	accepted
H _{1c}	TEM -> AT	0.017	0.023	0.055	0.308	0.758	1.049	0	rejected
H _{1d}	TEM -> PBC	0.132	0.138	0.054	2.454	0.014	1.049	0.017	accepted
H _{2a}	TEC -> PER	0.181	0.186	0.052	3.517	0.00	1.049	0.033	accepted
H _{2b}	TEC -> CAP	0.247	0.253	0.052	4.771	0.00	1.049	0.064	accepted
H _{2c}	TEC -> AT	0.162	0.167	0.053	3.075	0.002	1.049	0.026	accepted
H _{2d}	TEC -> PBC	0.016	0.016	0.063	0.249	0.803	1.049	0	rejected
H ₃	PER -> DEI	0.211	0.211	0.06	3.527	0.00	1.691	0.041	accepted
H ₄	CAP -> DEI	0.288	0.291	0.047	6.114	0.00	1.152	0.113	accepted
H ₅	AT -> DEI	0.214	0.215	0.063	3.405	0.001	1.567	0.046	accepted
H ₆	PBC -> DEI	0.181	0.183	0.041	4.389	0.00	1.022	0.05	accepted

Note: Interaction terms were created via the two-stage approach with mean-centered latent scores; all interaction VIF values were < 3.

The hypothesized structural relationships were examined via partial least squares structural equation modelling (PLS-SEM). Before the structural paths were estimated, multicollinearity diagnostics were conducted. Following the criteria suggested by Chatterjee & Simonoff, (2013) and (Hair Jr. et al., 2021), a variance inflation factor (VIF) value above 5 indicates a potential multicollinearity problem. As reported in Table 6, all the VIF values in the present model fall well below this threshold, confirming the absence of multicollinearity and ensuring the stability of the parameter estimations.

The results of the path analysis provide substantive evidence supporting several key relationships. Four psychological and cognitive antecedents, namely, AT, CAP, PBC, and PER, were found to positively and significantly predict DEI. The standardized path coefficients (β) reflect the magnitude of the relationships, whereas the t values and p values indicate statistical significance. Specifically, AT ($\beta = 0.214$, $t = 3.405$, $p < 0.05$), CAP ($\beta = 0.288$, $t = 6.114$, $p < 0.01$), PBC ($\beta = 0.181$, $t = 4.389$, $p < 0.05$), and PER ($\beta = 0.211$, $t = 3.527$, $p < 0.05$) each exert meaningful positive influences on students' DEI.

With respect to the antecedent role of digital entrepreneurship education, the findings reveal that teaching content significantly enhances AT ($\beta = 0.162$, $t = 3.075$, $p < 0.05$), CAP ($\beta = 0.247$, $t = 4.771$, $p < 0.01$), and PER ($\beta = 0.181$, $t = 3.517$, $p < 0.05$). These findings indicate that well-designed curricular content contributes to the formation of AT, the development of key capacities, and the strengthening of personality characteristics conducive to digital entrepreneurship. Moreover, TEM have significant positive effects on CAP ($\beta = 0.142$, $t = 2.380$, $p < 0.05$) and PBC ($\beta = 0.132$, $t = 2.454$, $p < 0.01$), suggesting that experiential and interactive instructional approaches enhance students' confidence and perceived ability to perform entrepreneurial tasks.

These results support hypotheses H_{1b}, H_{1d}, H_{2a}, H_{2b}, H_{2c}, H₃, H₄, H₅, and H₆. However, the effects of TEC on PBC and the effects of TEM on PER and AT were not statistically significant ($p > 0.05$), leading to the rejection of hypotheses H_{1a}, H_{1c}, and H_{2d}. These nonsignificant pathways imply that improvements in teaching content and methods may not directly translate into changes in PBC or PER unless they are supported by additional contextual or experiential factors.

Overall, the empirical results confirm the central role of psychological determinants and educational components in shaping students' DEI. The findings highlight that while DEE contributes significantly to several cognitive and attitudinal outcomes, its influence is not uniform across all the constructs, underscoring the need for more targeted pedagogical strategies to strengthen the transformation of entrepreneurial competencies in engineering students.

Table 7. Mediation effects through specific indirect effects

Hypothesis	Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P value	Decisions
H _{3a}	TEM -> PER -> EI	0.019	0.02	0.013	1.38	0.168	rejected
H _{4a}	TEM -> CAP -> EI	0.041	0.043	0.019	2.186	0.029	accepted
H _{5a}	TEM -> AT -> EI	0.004	0.005	0.013	0.291	0.771	rejected
H _{6a}	TEM -> PBC -> EI	0.024	0.025	0.012	2.007	0.045	accepted
H _{3b}	TEC -> PER -> EI	0.038	0.04	0.017	2.305	0.021	accepted
H _{4b}	TEC -> CAP -> EI	0.071	0.074	0.02	3.549	0	accepted
H _{5b}	TEC -> AT -> EI	0.035	0.036	0.016	2.187	0.029	accepted
H _{6b}	TEC -> PBC -> EI	0.003	0.003	0.012	0.242	0.809	rejected

Note: All the VIF values are < 5. Interaction terms were created via the two-stage approach with mean-centered latent scores; all interaction VIF values were < 3.

On the basis of the results reported in Table 7, the moderation analysis demonstrates that several psychological constructs significantly strengthen the influence of DEE on DEI. Specifically, PER, CAP, and AT significantly moderate the relationship between teaching content and EN, with corresponding coefficients of $\beta = 0.038$, $t = 2.305$, $p < 0.01$; $\beta = 0.071$, $t = 3.549$, $p < 0.01$; and $\beta = 0.035$, $t = 2.187$, $p < 0.01$. These findings indicate that when students exhibit stronger PER, greater CAP, or more positive attitudes toward entrepreneurship, the effect of teaching content on their entrepreneurial intention becomes stronger.

Similarly, the results reveal that CAP and PBC significantly moderate the relationship between TEM and DEI, with coefficients of $\beta = 0.041$, $t = 2.186$, $p < 0.01$ and $\beta = 0.024$, $t = 2.007$, $p < 0.01$, respectively. This suggests that interactive or practice-oriented teaching methods have a greater impact on entrepreneurial intention when students possess stronger entrepreneurial capabilities or higher levels of confidence in their ability to perform entrepreneurial tasks. Collectively, these results confirm the significance of psychological moderators in shaping the effectiveness of digital entrepreneurship education. Therefore, hypotheses H_{4a}, H_{3b}, H_{6a}, H_{4b}, and H_{5b} are supported. However, the indirect effects of TEM ($\beta = 0.019$, $t = 0.013$) on DEI through AT and PER and TEC ($\beta = 0.003$, $t = 0.012$) on DEI through AT were not significant. Thus, H_{3a}, H_{5a}, and H_{6b} were not supported.

5. Discussion

This study explored the influence of DEE on students' DEI, guided by SCCT. The research highlighted various psychological and cognitive factors that mediate the relationship between DEE and DEI, such as PER, CAP, AT, and PBC. The findings, analysed via partial least squares structural equation modelling (PLS-SEM), provide several important insights into the mechanisms through which DEE influences students' entrepreneurial intentions in the context of digital business (Figure 2).

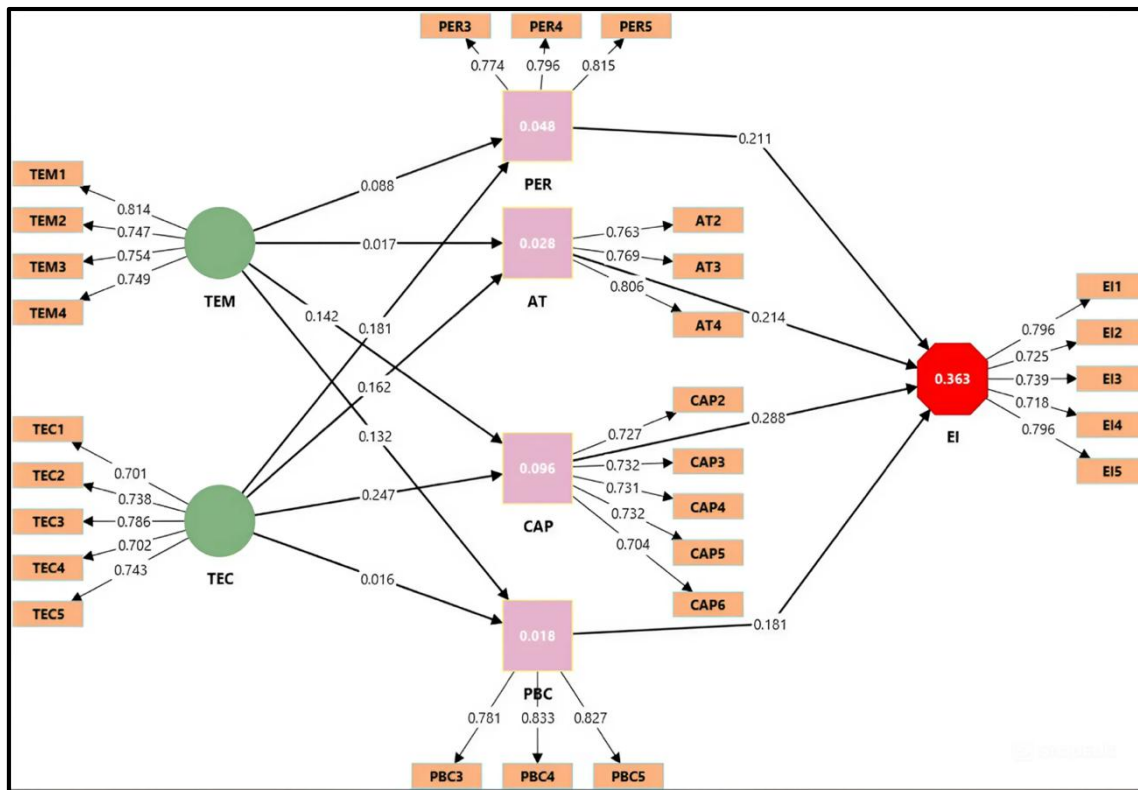


Figure 2. Results of the partial least squares structural equation modelling (PLS-SEM)

The results of this study demonstrate that teaching methods have a favourable influence on CAP and PBC, as evidenced by substantial path coefficients. This observation is consistent with the extant literature that underscores the significance of experiential and interactive pedagogical approaches, such as virtual business competitions and digital mentorship, in augmenting students' technical competencies and enhancing their self-efficacy in undertaking entrepreneurial endeavors within the digital milieu (Kickul et al., 2018; Ratten & Usmanij, 2021). Such methodologies promote a pragmatic comprehension of digital entrepreneurship and cultivate essential skill sets, which are imperative for manoeuvring through the rapidly evolving and competitive digital marketplace (Fayolle, A., & Gailly, A., 2015). Nevertheless, the findings suggest that TEM does not exert a statistically significant effect on PER (H1a) or AT (H1c). This finding can be explained by the relatively stable and deep-rooted nature of PER and AT, which are typically shaped through long-term socialization processes rather than short-term pedagogical interventions (Roberts et al., 2006). In the Vietnamese context, engineering and technology students are often educated within a highly structured, performance-oriented system that emphasizes technical accuracy, standardized evaluation, and risk minimization (Pham & Le, 2023b). While such an environment effectively strengthens technical competencies and PBC, it may not sufficiently foster the cognitive flexibility, risk tolerance, and proactive orientation required to shift intrinsic PER or AT (Fayolle, A., & Gailly, A., 2015). Moreover, prevailing social and familial norms in many emerging economies, including Vietnam, tend to prioritize stable and secure employment, which can constrain the development of positive attitudes toward entrepreneurship regardless of classroom methods (Autio et al., 2013). Therefore, although teaching methods enhance students' skills and confidence, they may be insufficient to transform deeper psychological constructs unless they are complemented by long-term experiential learning, mentorship, exposure to entrepreneurial ecosystems, and reflective practices (Neck & Greene, 2011; Ratten & Usmanij, 2021). Future research should further investigate this issue using longitudinal and qualitative approaches to better understand how, when, and under what conditions teaching methods may influence deeper psychological traits and entrepreneurial attitudes (Lent & Brown, 2019b).

The findings of the investigation reveal that the digital entrepreneurship curriculum (TEC) has a substantial and positive influence on PER, CAP, and AT. These findings corroborate the assertion that a meticulously structured curriculum is fundamental in cultivating students' entrepreneurial mindset, competencies, and attitudes (Pounder, 2016). This curriculum, which amalgamates digital business frameworks, technological applications, and entrepreneurial case analyses, enables students to comprehend and value the significance of digital entrepreneurship, thereby impacting their AT and overall CAP (Nguyen & Nguyen, 2024). These results are consistent with previous scholarship, which has demonstrated that entrepreneurship education initiatives are pivotal in fostering essential entrepreneurial characteristics, such as creative thinking, problem-solving capabilities, and risk management proficiencies (Fayolle, A., & Gailly, A.,

2015). Nevertheless, a noteworthy discovery from this research indicates that TEC did not significantly affect PBC ($H2d$: $p = 0.803$), implying that while the curriculum equips students with knowledge and resources, it may not be sufficient to augment their confidence in executing digital business initiatives. This suggests that supplementary experiences or methodologies, including hands-on practice and mentorship, may be required to enhance students' self-efficacy and PBC (Bae et al., 2014; Kautonen et al., 2015). This inquiry underscores the imperative to integrate experiential pedagogical strategies and practical assistance to amplify the efficacy of entrepreneurship education, particularly in a digitalized context where students must cultivate both technical competencies and assurance in their endeavors (Jena, 2020; Kickul et al., 2018). A clearer distinction between teaching content and teaching methods helps explain their different effects on students' entrepreneurial intentions. Teaching content shapes what students learn, influencing their understanding of digital business opportunities and thus affecting their cognitive evaluations and attitudes. Teaching methods shape how students learn, primarily strengthening CAP and PBC through experiential and interactive activities. The findings suggest that content is more influential for shaping perceptions and attitudes, while methods are more effective for building skills and confidence, indicating that effective DEE requires an integrated combination of both.

The empirical investigation further substantiated that PER, CAP, AT, and PBC each exerted a significant influence on DEI, thereby corroborating Hypotheses H3, H4, H5, and H6. In particular, CAP had the most pronounced effect on DEI, followed by AT, PER, and PBC. These outcomes imply that individuals endowed with formidable entrepreneurial competencies, affirmative attitudes, and self-efficacy are more inclined to cultivate a vigorous intention to engage in digital entrepreneurship. These results are consistent with antecedent research that underscores the significance of psychological and cognitive determinants in nurturing entrepreneurial intentions (Kickul & Gundry, 2002; Maheshwari, 2022). Previous scholarly studies have similarly emphasized that entrepreneurial personality characteristics, capacity, and attitudes toward entrepreneurship are pivotal elements that shape the emergence of entrepreneurial intentions, especially within the digital context. Maheshwari & Kha, (2022) illustrated that confidence and favourable attitudes toward entrepreneurship are instrumental in determining the success trajectory of entrepreneurs.

The mediation analysis further revealed that factors such as CAP and PBC played significant mediating roles in the relationship between teaching methods and DEI. These results suggest that enhancing students' CAP and self-confidence through interactive and practice-oriented learning experiences significantly strengthens their DEI. Similarly, PER, CAP, and AT mediated the relationship between teaching content and DEI, emphasizing the importance of content-focused education in nurturing these psychological factors and reinforcing entrepreneurial intentions. These findings are consistent with those of prior studies, such as (Kickul & Gundry, 2002), who emphasized the role of PER in fostering entrepreneurial intention, and (Maheshwari, 2022), who noted that self-confidence and positive attitudes significantly influence the decision to pursue entrepreneurship.

However, the analysis also indicated that the indirect effects of teaching methods on PER and AT were not supported ($H3a$ and $H5a$). This suggests that while TEM may enhance skills and PBC, it does not directly shape intrinsic PER or AT. This aligns with the viewpoint of Liñán & Chen, (2009), who argued that while educational interventions can enhance entrepreneurial behaviors and self-efficacy, more comprehensive and long-term approaches are necessary to alter students' intrinsic PER and AT. Consequently, future educational programs should integrate holistic, long-term strategies that address both practical skills and the development of AT and PER.

Additionally, the mediation analysis revealed that the indirect effects of teaching content on PBC ($H6b$: $p = 0.809$) were not statistically significant. This suggests that while TEC may provide students with knowledge and tools, it may not be sufficient to increase their confidence in executing digital entrepreneurial projects. This finding indicates that supplementary experiences, such as hands-on practice, online business simulations, and mentorship, might be essential factors in boosting students' PBC in the digital environment.

Compared with traditional entrepreneurship education, which mainly influences AT and motivation through foundational business knowledge and inspirational content (Fayolle, A., & Gailly, A., 2015; Liñán et al., 2005). DEE in this study primarily enhances students' CAP and PBC through technology-oriented skills and experiential learning, while its impact on deeper psychological constructs such as AT and PER remains limited. This suggests that DEE should be viewed as a complementary rather than a substitutive model, and future research should directly compare these approaches to clarify their relative contributions.

5.1 Theoretical Implications

This research presents multiple theoretical contributions to the domain of digital entrepreneurship education. First, it amalgamates SCCT with digital entrepreneurship, accentuating the significance of psychological and cognitive determinants in influencing students' entrepreneurial aspirations. The results substantiate SCCT's proposition that

personal attributes, perceived self-efficacy, and contextual environments interactively affect career pathways. Second, the research provides empirical evidence regarding the distinct yet synergistic functions of teaching methods and the teaching curriculum in shaping DEI. This research enriches the comprehension of how DEE can be systematically structured to augment various cognitive and psychological factors pertinent to entrepreneurship.

5.2 Practical Implications

From a pragmatic perspective, the research indicates that higher education institutions should prioritize the formulation of digital entrepreneurship curricula that not only impart fundamental knowledge but also augment students' entrepreneurial competencies, dispositions, and personality characteristics. The incorporation of interactive and experiential learning modalities, such as digital business simulations, online competitions, and mentorship initiatives, is imperative for cultivating students' PBC and entrepreneurial potential. Furthermore, tailored pedagogical approaches that explicitly target personality characteristics and attitudes are needed, given that these elements significantly influence the formation of DEI.

5.3 Limitations and Further Directions

Despite its valuable contributions, this investigation is subject to several constraints. Initially, the research was confined to engineering students enrolled at three universities located in Da Nang, which may restrict the applicability of the findings to broader populations. Subsequent investigations should consider an expanded cohort that encompasses students from diverse academic fields and geographical locations to augment the external validity of the outcomes. Furthermore, although the study emphasizes the effects of digital entrepreneurship education, it would be advantageous to examine the role of external variables, such as familial background, cultural factors, and the availability of entrepreneurial resources, as well as the influence of digital entrepreneurship ecosystems (e.g., digital platforms, online entrepreneurial communities, and mentorship networks), in shaping students' entrepreneurial intentions. In addition, future studies should control for potentially confounding factors, including prior entrepreneurial experience and prior exposure to entrepreneurship education, in order to better isolate the specific effects of digital entrepreneurship education. Moreover, comparative cross-cultural studies would be valuable for understanding how cultural differences shape students' entrepreneurial attitudes and intentions across different national and institutional contexts. Finally, longitudinal research could yield a deeper understanding of the influence of DEE on students' enduring entrepreneurial behaviors and outcomes.

6. Conclusion

In conclusion, this research elucidates critical perspectives regarding the nexus between DEE and the proclivity for digital entrepreneurial endeavors. It underscores the importance of both pedagogical methodologies and curricular design in influencing students' psychological attributes, entrepreneurial proficiency, and dispositions, all of which are integral to their digital entrepreneurial aspirations. The results indicate that educational institutions should implement more holistic and participatory instructional strategies to effectively cultivate the enhancement of digital entrepreneurial competencies among students, thereby equipping them with success within the digital economy.

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Authors' contributions

Dang Thien Tam: Writing original draft, formal analysis, conceptualization of project administration

Luong Dinh Vung: Methodology, conceptualization.

Dang Thanh Dung: Formal analysis, Data curation, Resources

Le Hoang Thien Tan: Methodology, Investigation.

To Thi Bao Thoa: Writing – review & editing.

Artificial Intelligence (AI) Disclosure

ChatGPT (OpenAI, 2025) was used solely to assist with language-related tasks, including paraphrasing, grammar checking, wording refinement, and clarity improvement during the manuscript revision process. The AI did not contribute to the research design, data analysis, interpretation of results, or formulation of conclusions. All content was carefully reviewed and finalized by the author(s), who take full responsibility for the manuscript.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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Appendix A: Measurement Constructs**Attitude toward Digital Entrepreneurship (AT)**

AT1: Becoming a digital entrepreneur is a highly attractive career option for me.

AT2: I believe I would feel very satisfied if I pursued a digital business.

AT3: Among various career options, I prefer choosing digital entrepreneurship.

AT4: I think that the advantages of digital entrepreneurship outweigh its disadvantages.

Digital Entrepreneurial Capacity (CAP)

CAP1: I believe that recognizing business opportunities in the digital environment is an essential entrepreneurial competency.

CAP2: I believe that creativity forms the foundation of innovation in digital business contexts.

CAP3: I believe that problem-solving skills enable individuals to effectively address challenges in digital environments.

CAP4: I believe that leadership and communication skills are fundamental for developing digital business projects.

CAP5: I believe that the ability to develop digital products or services is central to business innovation.

CAP 6: I believe that networking and building online professional relationships are key to accessing resources and opportunities in digital entrepreneurship.

Personality Traits in Digital Context (PER)

PER1: I tend to choose careers that require creativity and exploration in digital environments.

PER2: I am willing to confront and overcome difficulties when working on digital business projects.

PER3: I believe that success or failure in digital entrepreneurship depends primarily on my own efforts rather than external circumstances.

PER4: The risks associated with digital entrepreneurship concern me, but they do not discourage me from pursuing my goals.

PER5: I am driven to achieve success in activities related to technology and digital business.

Perceived Behavioral Control toward Digital Entrepreneurship (PBC)

PBC1: I am confident that I would succeed if I started a digital business.

PBC2: Starting a digital business would be relatively easy for me.

PBC3: Engaging in digital entrepreneurship is probably the best way for me to leverage my education and skills.

PBC4: I have the capabilities required to succeed as a digital entrepreneur.

PBC5: I possess the necessary skills to operate and grow a digital business.

Digital Teaching Methods (TEM)

TEM1: Digital entrepreneurship competitions provide practical experiences and inspire my interest in digital business.

TEM2: The teaching methods used by my university help me generate creative digital business ideas.

TEM3: My university focuses on developing students' digital business skills.

TEM 4: My university organizes various activities related to digital entrepreneurship, such as workshops, conferences, and competitions.

Digital Teaching Curriculum (TEC)

TEC1: Digital entrepreneurship activities and competitions help me develop a digital entrepreneurial mindset.

TEC2: I am encouraged to undertake digital entrepreneurship projects at my university.

TEC3: Digital entrepreneurship activities should be available to all students, not only business majors.

TEC4: My university provides ideas and learning opportunities that help me initiate digital business projects.

TEC5: My university education helps me develop creative ideas related to digital entrepreneurship.

Digital Entrepreneurial Intention (DEI)

DEI1: I am willing to do whatever it takes to become a digital entrepreneur.

DEI2: My professional goal is to become a digital entrepreneur.

DEI3: I will make every effort to start and run a digital business.

DEI4: I am determined to create a digital business in the future.

DEI5: I have seriously considered starting a digital business.