



Building the Next Generation of Digital Entrepreneurs Through the Role of Education and Passion in Nascent Entrepreneurial Behaviour

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Abstract. Despite the rapid growth of Indonesia's digital economy and increasing investment in digital entrepreneurship education, many university students remain insufficiently engaged in nascent entrepreneurial behaviour (NEB). This suggests that educational experiences alone may not be sufficient to stimulate entrepreneurial action. This study examines the mediating role of entrepreneurial passion (EP) in the relationship between digital entrepreneurial education (DEE) and NEB among university students.

A quantitative survey was conducted among 400 students enrolled in Entrepreneurship Study Programs at higher education institutions under LLDIKTI Region IV, Indonesia. Data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

The results indicate that DEE positively influences EP ($\beta = 0.577$, $p < 0.001$) and NEB ($\beta = 0.121$, $p = 0.008$), while EP positively influences NEB ($\beta = 0.679$, $p < 0.001$). Furthermore, EP significantly mediates the relationship between DEE and NEB ($\beta = 0.392$, $p < 0.001$), with the indirect effect substantially stronger than the direct effect. These findings suggest that entrepreneurial passion functions as the dominant mechanism through which digital entrepreneurial education is translated into entrepreneurial action.

This study contributes to the entrepreneurship education literature by demonstrating that the effectiveness of DEE depends not only on competency development but also on the cultivation of entrepreneurial passion. The findings highlight the importance of integrating affective engagement into entrepreneurship education to encourage students' participation in early-stage entrepreneurial activities.

Keywords: digital entrepreneurial education, entrepreneurial passion, nascent entrepreneurial behaviour, digital entrepreneurship, university students

1 Introduction

A striking paradox characterises Indonesia's higher education landscape today. Despite substantial investment in Digital Entrepreneurial Education (DEE) and the rapid growth of one of Southeast Asia's largest digital economies, student engagement in Nascent Entrepreneurial Behaviour (NEB), defined as the concrete early-stage activities undertaken before a venture becomes fully operational, remains relatively low. Indonesia's digital market is projected to reach a Gross Merchandise Value (GMV) of USD 360 billion by 2030, yet the national entrepreneurship ratio remains at only 3.47%, below the government's target of 3.95% [11, 16]. Data from [4] indicate that university graduates account for only a small proportion of entrepreneurs nationwide, suggesting that highly educated individuals, including university students, remain insufficiently engaged in entrepreneurial activities [15]. This gap implies that the challenge of fostering entrepreneurial action may not primarily stem from limited access to technology or entrepreneurial knowledge, but rather from a deeper psychological divide between learning experiences and entrepreneurial behaviour [8, 21].

Prior research has consistently shown that entrepreneurship education rarely influences entrepreneurial behaviour directly; instead, its effects tend to operate through psychological mechanisms that translate learning experiences into entrepreneurial action [3, 23]. Evidence from the [22] further highlights a persistent gap between entrepreneurial intention and actual entrepreneurial activity across countries, indicating that many individuals who aspire to become entrepreneurs never progress to the action stage. Most existing studies have focused on cognitive mechanisms such as entrepreneurial self-efficacy and entrepreneurial intention, which primarily explain whether individuals believe they can perform entrepreneurial tasks or intend to do so. However, NEB requires more than cognitive readiness.

The uncertainty, ambiguity, and risk associated with venture creation demand sustained emotional engagement that motivates individuals to persist beyond intention and transform aspirations into action. Entrepreneurial Passion (EP), defined as intense positive feelings and a strong identity connection with entrepreneurial activities [6], may therefore represent a particularly important mechanism because it provides the motivational energy required to sustain entrepreneurial action. Nevertheless, empirical evidence regarding its role within digital entrepreneurship contexts remains limited, particularly in developing countries undergoing rapid digital transformation such as Indonesia [1, 14].

Drawing on this gap, the present study examines the mediating role of EP in the relationship between DEE and NEB among Indonesian university students. By focusing on the affective pathway linking educational experiences and entrepreneurial action, this study seeks to explain how DEE is translated into students' engagement in early-stage entrepreneurial activities through the development of EP.

This study contributes to the entrepreneurship education literature by demonstrating that the effectiveness of digital entrepreneurial education depends not only on competency development but also on the cultivation of entrepreneurial passion. In

doing so, the study highlights the importance of affective mechanisms in translating educational experiences into entrepreneurial action.

2 Hypothesis Development

2.1 Digital Entrepreneurial Education (DEE) and Entrepreneurial Passion (EP)

Entrepreneurial Passion Theory suggests that EP develops through repeated engagement in activities perceived as meaningful and relevant to one's self-identity [6, 7]. DEE provides students with opportunities to explore business opportunities, experiment with digital technologies, and engage in entrepreneurial problem-solving activities. Consequently, students are more likely to perceive entrepreneurial activities as personally meaningful and relevant to their emerging entrepreneurial identity. Previous studies indicate that meaningful entrepreneurial experiences strengthen entrepreneurial identity and foster EP [5, 12]. Therefore:

H₁: Digital entrepreneurial education has a positive effect on entrepreneurial passion.

2.2 Entrepreneurial Passion (EP) and Nascent Entrepreneurial Behaviour (NEB)

EP represents intense positive feelings and a strong identity connection with entrepreneurial activities [7]. As an affective resource, passion provides the motivational energy needed to sustain entrepreneurial engagement despite uncertainty and risk. Consequently, individuals with higher EP are more likely to engage in opportunity exploration, idea validation, networking, and other early-stage entrepreneurial activities. Prior studies consistently show that EP promotes entrepreneurial engagement and behavioural involvement [5, 9, 17]. Therefore:

H₂: Entrepreneurial passion has a positive effect on nascent entrepreneurial behaviour.

2.3 Digital Entrepreneurial Education (DEE) and Nascent Entrepreneurial Behaviour (NEB)

Human Capital Theory argues that education enhances individuals' capabilities through the acquisition of knowledge and skills [2]. In the context of entrepreneurship, DEE equips students with competencies related to opportunity recognition, digital technologies, and venture creation processes. Consequently, students become more prepared to engage in entrepreneurial activities. Previous studies suggest that entrepreneurship education contributes to entrepreneurial engagement by strengthening entrepreneurial competencies and action readiness [3, 10]. Therefore:

H₃: Digital entrepreneurial education has a positive effect on nascent entrepreneurial behaviour.

2.4 The Mediating Role of Entrepreneurial Passion (EP)

Although DEE is expected to enhance entrepreneurial competencies, educational experiences do not always translate directly into entrepreneurial behaviour [18, 19]. As proposed in H₁, DEE is expected to foster EP, while H₂ suggests that EP promotes NEB. Therefore, EP may function as an affective mechanism through which DEE is translated into entrepreneurial action. Accordingly:

H₄: Entrepreneurial passion mediates the relationship between digital entrepreneurial education and nascent entrepreneurial behaviour.

3 Research Method

3.1 Research Design and Sample

This study employed a quantitative explanatory approach using a cross-sectional survey design. The target population comprised students enrolled in Entrepreneurship Study Programs at higher education institutions under the coordination of the Higher Education Service Institution Region IV (LLDIKTIV IV), covering West Java and Banten, Indonesia. This region was selected because it represents one of Indonesia's most dynamic digital economic areas, characterised by a large concentration of higher education institutions and increasing digital entrepreneurial activity.

A total of 400 valid responses were collected from students across participating institutions using proportionate stratified sampling based on institutional representation. The sample size exceeded the minimum threshold recommended for Partial Least Squares Structural Equation Modeling (PLS-SEM) and was considered adequate for estimating the proposed structural model [13].

3.2 Measurement of Constructs

All constructs were measured using a seven-point semantic differential scale. Respondents were asked to evaluate each statement using bipolar adjective anchors, with higher scores indicating more favorable perceptions of the construct being measured. Measurement items were adapted from established studies to ensure content validity and contextual relevance.

Digital Entrepreneurial Education (DEE) was measured using seven indicators adapted from [10, 19, 20], capturing students' perceptions of digital entrepreneurship learning experiences. Entrepreneurial Passion (EP) was measured using eight indicators adapted from [7] and [12], reflecting students' emotional attachment to entrepreneurial activities. Nascent Entrepreneurial Behaviour (NEB) was measured using ten indicators adapted from [8] and [23], representing students' engagement in early-stage entrepreneurial activities such as opportunity exploration, idea validation, networking, and resource mobilization.

3.3 Data Analysis

Data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. All constructs were specified as reflective first-order constructs. Following [13], the measurement model was assessed through indicator reliability, convergent validity, discriminant validity, and construct reliability. Indicator reliability was evaluated using outer loadings (> 0.70). Convergent validity was assessed using Average Variance Extracted ($AVE \geq 0.50$), while discriminant validity was evaluated using the Heterotrait–Monotrait Ratio ($HTMT < 0.90$). Construct reliability was assessed using Composite Reliability ($CR \geq 0.70$).

Common method bias was examined using the full collinearity variance inflation factor (VIF) approach. Following Kock (2015), VIF values below 5.0 indicate that common method bias is unlikely to pose a serious concern.

The structural model was evaluated using path coefficients, coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). Hypothesis testing was conducted using a bootstrapping procedure with 5,000 resamples. Hypotheses were considered supported when the t-value exceeded 1.96 and the p-value was below 0.05. The mediating effect of entrepreneurial passion was assessed through the significance of indirect effects following established PLS-SEM procedures [13].

4 Results

4.1 Measurement Model Evaluation

The measurement model was evaluated through indicator reliability, construct reliability, convergent validity, and discriminant validity. All indicators demonstrated adequate outer loadings, ranging from 0.691 to 0.888. Although one indicator (DEE1) exhibited an outer loading of 0.691, it was retained because the loading remained close to the recommended threshold and did not adversely affect construct reliability or convergent validity.

Table 1. Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	CR	AVE
Digital Entrepreneurial Education (DEE)	0.916	0.933	0.667
Entrepreneurial Passion (EP)	0.948	0.956	0.732
Nascent Entrepreneurial Behaviour (NEB)	0.956	0.962	0.715

Source: SmartPLS Output (2026)

As shown in Table 1, all constructs achieved Cronbach's Alpha and Composite Reliability values above 0.70, satisfying the construct reliability criteria. All AVE values exceeded 0.50, confirming that convergent validity was established for all constructs. Discriminant validity was subsequently assessed using the Heterotrait–Monotrait Ratio (HTMT) approach.

Table 2. Discriminant Validity (HTMT)

Construct	DEE	EP	NEB
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Digital Entrepreneurial Education (DEE)	-		
Entrepreneurial Passion (EP)	0.610	-	
Nascent Entrepreneurial Behaviour (NEB)	0.539	0.779	-

Source: SmartPLS Output (2026)

All HTMT values were below the 0.90 threshold, indicating that each construct possesses adequate discriminant validity and represents empirically distinct concepts.

4.2 Structural Model Evaluation

Prior to hypothesis testing, multicollinearity was examined using the Variance Inflation Factor (VIF). All inner VIF values ranged from 1.000 to 1.499, well below the recommended threshold of 5.0, indicating that multicollinearity was not a concern in the structural model.

The structural model demonstrated satisfactory explanatory and predictive capability. DEE explained 33.3% of the variance in EP ($R^2 = 0.333$), while DEE and EP jointly explained 57.1% of the variance in NEB ($R^2 = 0.571$). These results indicate moderate explanatory power for EP and substantial explanatory power for NEB.

The Stone–Geisser Q^2 values for EP (0.241) and NEB (0.399) exceeded zero, confirming the predictive relevance of the proposed model.

Effect size analysis further revealed that DEE exerted a large effect on EP ($f^2 = 0.499$), whereas EP demonstrated a large effect on NEB ($f^2 = 0.716$). In contrast, the direct effect of DEE on NEB was relatively small ($f^2 = 0.023$). These findings suggest that EP plays a substantially more influential role in explaining NEB than the direct effect of DEE.

4.3 Hypothesis Testing

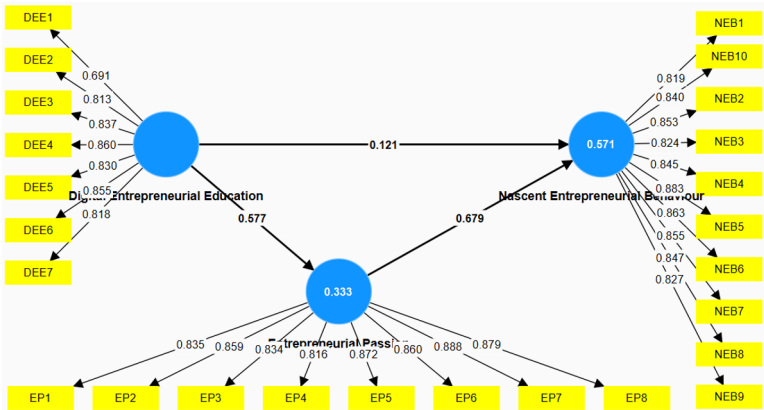


Fig 1. Structural Model Results
Source: SmartPLS Output (2026)

Hypothesis testing was conducted using a bootstrapping procedure with 5,000 resamples. Results are presented in Table 3.

Table 3. Hypothesis Testing Results

Hypothesis	Path	β	t-statistic	p-value	Decision
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H ₁	DEE → EP	0.577	12.960	0.000	Supported
H ₂	EP → NEB	0.679	15.837	0.000	Supported
H ₃	DEE → NEB	0.121	2.674	0.008	Supported

Source: SmartPLS Output (2026)

DEE exerted a significant positive effect on EP ($\beta = 0.577$, $t = 12.960$, $p < 0.001$), supporting H₁. This finding indicates that higher quality DEE is associated with stronger EP among students.

EP demonstrated a significant positive effect on NEB ($\beta = 0.679$, $t = 15.837$, $p < 0.001$), supporting H₂. This result confirms that students' emotional attachment to entrepreneurial activities drives their engagement in early-stage entrepreneurial action.

DEE also exerted a significant direct effect on NEB ($\beta = 0.121$, $t = 2.674$, $p = 0.008$), supporting H₃. Although statistically significant, the magnitude of this direct effect was considerably smaller than the effect of EP on NEB.

4.4 Mediation Analysis

The mediating role of entrepreneurial passion was tested through indirect effect analysis using bootstrapping procedures.

Table 4. Indirect Effect Results

Hypothesis	Mediation Path	β	t-statistic	p-value	Decision
H ₄	DEE → EP → NEB	0.392	10.348	0.000	Supported

Source: SmartPLS Output (2026)

The indirect effect of DEE on NEB through EP was significant ($\beta = 0.392$, $t = 10.348$, $p < 0.001$), supporting H₄. Furthermore, the indirect effect ($\beta = 0.392$) was more than three times larger than the direct effect ($\beta = 0.121$), highlighting the dominant role of EP in translating educational experiences into entrepreneurial action.

Since both the direct effect of DEE on NEB ($\beta = 0.121$, $p = 0.008$) and the indirect effect through EP ($\beta = 0.392$, $p < 0.001$) were significant, EP functions as a complementary partial mediator. This finding indicates that DEE influences NEB both directly and through the strengthening of EP, with the affective pathway constituting the dominant mechanism.

5 Discussion

The central finding of this study is that Entrepreneurial Passion (EP) appears to play a more influential role in shaping Nascent Entrepreneurial Behaviour (NEB) than Digital Entrepreneurial Education (DEE) itself. Although DEE was found to contribute positively to entrepreneurial behaviour, its strongest influence occurred indirectly through EP. This finding suggests that educational experiences alone may not be sufficient to stimulate entrepreneurial action unless they also foster students' emotional attachment to entrepreneurial activities. The result is consistent with previous studies emphasizing the importance of EP in driving entrepreneurial

engagement and behavioural involvement [5, 17], while extending this argument to the context of DEE.

A possible explanation lies in the distinction between learning and acting. DEE equips students with entrepreneurial knowledge, digital competencies, and opportunity-recognition skills, thereby increasing their readiness to engage in entrepreneurial activities. However, readiness does not automatically translate into action. Early-stage entrepreneurial activities require individuals to commit time, effort, and resources despite uncertainty and the absence of guaranteed outcomes. The findings suggest that EP functions as the motivational force that bridges this gap, helping students transform entrepreneurial readiness into actual entrepreneurial behaviour. This interpretation aligns with Entrepreneurial Passion Theory, which argues that meaningful entrepreneurial experiences can generate identity-based emotional attachment that motivates entrepreneurial action [6, 7].

At the same time, the significant direct effect of DEE indicates that entrepreneurial behaviour is not driven solely by affective factors. The presence of complementary partial mediation suggests that DEE influences NEB through multiple pathways. One pathway operates through the development of entrepreneurial competencies and action readiness, consistent with Human Capital Theory [2], while another operates through the cultivation of EP. The findings indicate that the affective pathway is more influential, but both pathways contribute to explaining students' engagement in early-stage entrepreneurial activities.

This study contributes to the entrepreneurship education literature by demonstrating that the effectiveness of DEE depends not only on competency development but also on the cultivation of EP, which serves as a key mechanism linking educational experiences to entrepreneurial action. For higher education institutions, the findings imply that entrepreneurship programs should move beyond knowledge transmission and provide learning experiences that strengthen students' emotional engagement with entrepreneurial activities. By fostering EP alongside entrepreneurial competencies, universities may be better positioned to transform entrepreneurial readiness into entrepreneurial action.

6 Conclusion

This study demonstrates that Digital Entrepreneurial Education (DEE) contributes to students' engagement in Nascent Entrepreneurial Behaviour (NEB) both directly and indirectly through Entrepreneurial Passion (EP). The findings reveal that while DEE enhances students' entrepreneurial readiness, EP serves as the key mechanism that translates educational experiences into entrepreneurial action. These results suggest that entrepreneurial action is influenced not only by what students learn but also by how strongly they identify with entrepreneurial activities.

The findings underscore the importance of designing entrepreneurship education that combines competency development with meaningful entrepreneurial experiences. Such an approach may help cultivate future digital entrepreneurs who are not only capable of identifying opportunities but also motivated to act upon them.

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