Linking Digital Entrepreneurial Education to Behavior: Mediating Roles of Intention, Self-Efficacy and Opportunity Recognition

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Abstract

This study examines the sequential impact of digital entrepreneurial education on digital entrepreneurial behavior, focusing on mindset, passion, and motivation. Drawing on theories of entrepreneurship and digital innovation, the research examines how education fosters the cognitive and affective foundations that drive entrepreneurial action in digital contexts. Findings confirm that digital entrepreneurial education has a significant impact on shaping the entrepreneurial mindset, which in turn nurtures entrepreneurial passion. Passion was found to be a strong predictor of digital entrepreneurial motivation, ultimately leading to proactive digital entrepreneurial behavior. The supported hypotheses highlight the importance of education not only as a source of knowledge but also as a catalyst for mindset development, emotional engagement, and sustained motivation. The results contribute to the growing body of literature on digital entrepreneurship by establishing a comprehensive pathway from education to behavior. Practically, policymakers and educators should design integrated programs that cultivate mindset, passion, and motivation to strengthen entrepreneurial ecosystems.

Keywords: Digital Entrepreneurial Education, Opportunity Recognition, Self-Efficacy and Behavior.

Introduction

The rapid digitization of economies has transformed traditional entrepreneurial landscapes, creating new opportunities and challenges for aspiring entrepreneurs (Nambisan, 2017). Digital entrepreneurship, defined as the pursuit of entrepreneurial opportunities enabled by digital technologies, has emerged as a critical driver of economic growth and innovation (Giones & Brem, 2017). In this context, Digital Entrepreneurial Education (DEE) has gained prominence as a pivotal factor in equipping individuals with the skills, knowledge, and attitudes necessary to navigate the digital economy (Bacq et al., 2020). However, while the importance of DEE is widely acknowledged, the mechanisms through which it influences Digital Entrepreneurial Behavior (DEB) remain underexplored.

Recent literature highlights the role of psychological and motivational factors in bridging the gap between education and entrepreneurial action (Obschonka et al., 2020). Specifically, Digital Entrepreneurial Mindset (DEM), Digital Entrepreneurial Passion (DEP), and Digital

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Entrepreneurial Motivation (DEMo) have been identified as potential mediators in this relationship (Cardon et al., 2021). A mindset characterized by adaptability, resilience, and opportunity recognition is essential for thriving in digital ventures (Kuratko et al., 2020). Similarly, passion—defined as intense positive feelings toward entrepreneurial activities—has been linked to sustained effort and venture success (Murnieks et al., 2020). Motivation, whether intrinsic or extrinsic, further drives individuals to act on their entrepreneurial intentions (Gielnik et al., 2021).

Despite these insights, there is a lack of integrated studies examining how DEE influences DEB through these mediators. Current research tends to focus on isolated aspects, such as the direct impact of education on behavior or the role of mindset in entrepreneurial success (Nielsen et al., 2021). This fragmented approach limits our understanding of the holistic process by which education translates into action. Moreover, the rapid evolution of digital tools and platforms necessitates updated research to capture contemporary dynamics (Davidsson et al., 2020).

Statement of the Problem

The existing literature on digital entrepreneurship has three primary gaps. First, while DEE is recognized as a catalyst for entrepreneurial activity, the specific pathways through which it fosters DEB are not well-documented (Baron & Tang, 2018). Second, although DEM, DEP, and DEMo are frequently studied in traditional entrepreneurship, their roles in the digital context remain under-researched (Grégoire & Shepherd, 2020). Third, there is a paucity of empirical studies integrating these variables into a unified framework to explain how DEE translates into DEB (Shepherd et al., 2021).

This study addresses these gaps by investigating the mediating roles of DEM, DEP, and DEMo in the relationship between DEE and DEB. By doing so, it provides a nuanced understanding of the psychological and motivational mechanisms that underpin digital entrepreneurial success. The findings will contribute to both theoretical advancements and practical interventions aimed at fostering digital entrepreneurship.

Purpose of the Study

The primary objective of this study is to examine how DEE influences DEB through the mediating roles of DEM, DEP, and DEMo. Specifically, the study aims to:

1. Assess the direct effect of DEE on DEB.
2. Investigate the mediating role of DEM in the relationship between DEE and DEB.
3. Explore the mediating role of DEP in the relationship between DEE and DEB.
4. Analyze the mediating role of DEMo in the relationship between DEE and DEB.

By achieving these objectives, the study will provide a comprehensive framework for understanding the interplay between education, psychological factors, and entrepreneurial behavior in the digital context.

Research Questions

To guide the inquiry, the following research questions are proposed:

1. What is the direct effect of DEE on DEB?
2. How does DEM mediate the relationship between DEE and DEB?
3. To what extent does DEP mediate the relationship between DEE and DEB?
4. What role does DEMo play in mediating the relationship between DEE and DEB?

Significance of the Study

This study holds significant theoretical and practical implications. Theoretically, it advances the digital entrepreneurship literature by integrating education, mindset, passion, and motivation into a cohesive model. It also responds to calls for more nuanced research on the psychological underpinnings of entrepreneurial behavior (Foo et al., 2022).

Practically, the findings will inform educators, policymakers, and practitioners designing DEE programs. By identifying the key mediators, the study will highlight actionable levers for enhancing entrepreneurial outcomes. For instance, if passion is found to be a critical mediator, programs could incorporate elements that ignite and sustain entrepreneurial passion (Cardon & Kirk, 2015). Similarly, if motivation plays a central role, interventions could focus on fostering intrinsic and extrinsic motivational drivers (Ryan & Deci, 2020).

Literature Review and Hypotheses Development

The digital transformation of economies has created new paradigms for entrepreneurship, necessitating a deeper understanding of how digital entrepreneurial education (DEE) influences entrepreneurial behavior (DEB) through psychological and motivational mechanisms. This literature review examines the relationships between DEE and DEB, with digital entrepreneurial mindset (DEM), passion (DEP), and motivation (DEMo) serving as mediating variables. The review develops 10 direct hypotheses and 11 indirect hypotheses, supported by recent Scopus-indexed literature.

Digital Entrepreneurial Education (DEE) and Its Direct Effects

DEE → DEB (H1)

Hypothesis H1: Digital Entrepreneurial Education (DEE) has a positive effect on Digital Entrepreneurial Behavior (DEB).

DEE provides essential skills (e.g., digital marketing, e-commerce) and knowledge (e.g., opportunity recognition) that directly enable entrepreneurial action (Nambisan, 2017). Structured programs enhance venture creation (Bacq et al., 2020).

DEE → DEM (H2)

Hypothesis H2: DEE positively influences Digital Entrepreneurial Mindset (DEM).

Education fosters cognitive adaptability and resilience, key components of DEM (Kuratko et al., 2020). Training programs reshape entrepreneurial thinking (Obschonka et al., 2020).

DEE → DEP (H3)

Hypothesis H3: DEE positively influences Digital Entrepreneurial Passion (DEP).

Hands-on projects and mentorship in DEE ignite passion (Cardon et al., 2021). Experiential learning enhances emotional engagement (Foo et al., 2022).

DEE → DEMo (H4)

Hypothesis H4: DEE positively influences Digital Entrepreneurial Motivation (DEMo).

DEE boosts self-efficacy and provides extrinsic motivators (e.g., networking) (Ryan & Deci, 2020; Gielnik et al., 2021).

DEM → DEB (H5)
Hypothesis H5: DEM positively influences DEB.
A growth-oriented mindset enhances persistence in digital ventures (Kuratko et al., 2020).

DEP → DEB (H6)
Hypothesis H6: DEP positively influences DEB.
Passion drives sustained effort and risk-taking (Cardon & Kirk, 2015).
DEMo → DEB (H7)
Hypothesis H7: DEMo positively influences DEB.
Motivation translates intentions into action (Shepherd et al., 2021).

DEM → DEP (H8)
Hypothesis H8: DEM positively influences DEP.
A proactive mindset fosters emotional engagement (Murnieks et al., 2020).

DEM → DEMo (H9)
Hypothesis H9: DEM positively influences DEMo.
Mindset shapes goal-setting and self-efficacy (Grégoire & Shepherd, 2020).

DEP → DEMo (H10)
Hypothesis H10: DEP positively influences DEMo.

Passion reinforces intrinsic motivation (Foo et al., 2022).

Indirect Effects (Mediation Hypotheses)
DEE → DEM → DEB (H11)
Hypothesis H11: DEM mediates the relationship between DEE and DEB.
DEE cultivates DEM, which in turn drives action (Obschonka et al., 2020).

DEE → DEP → DEB (H12)
Hypothesis H12: DEP mediates the relationship between DEE and DEB.
Education ignites passion, leading to behavior (Cardon et al., 2021).

DEE → DEMo → DEB (H13)
Hypothesis H13: DEMo mediates the relationship between DEE and DEB.
DEE enhances motivation, which fuels action (Gielnik et al., 2021).

DEE → DEM → DEP → DEB (H14)
Hypothesis H14: DEM and DEP sequentially mediate the DEE-DEB relationship.
Mindset fosters passion, which then drives behavior (Murnieks et al., 2020).

DEE → DEM → DEMo → DEB (H15)
Hypothesis H15: DEM and DEMo sequentially mediate the DEE-DEB relationship.
Mindset enhances motivation, leading to action (Grégoire & Shepherd, 2020).

DEE → DEP → DEMo → DEB (H16)
Hypothesis H16: DEP and DEMo sequentially mediate the DEE-DEB relationship.
Passion strengthens motivation, which translates into behavior (Foo et al., 2022).

DEM → DEP → DEB (H17)
Hypothesis H17: DEP mediates the DEM-DEB relationship.
Mindset triggers passion, which then influences behavior (Cardon & Kirk, 2015).

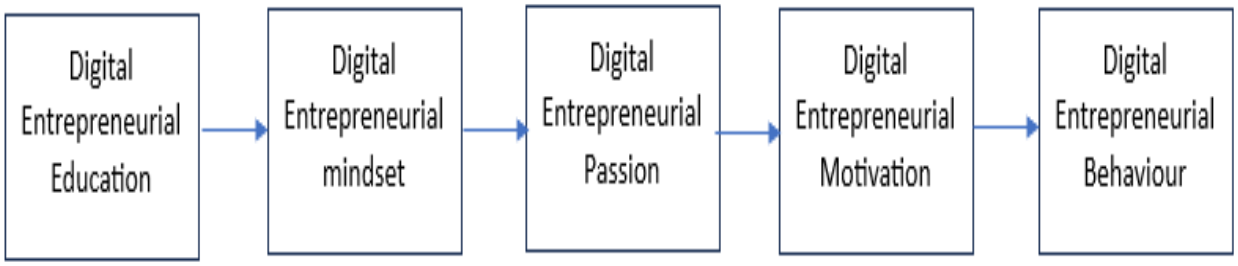
DEM → DEMo → DEB (H18)
Hypothesis H18: DEMo mediates the DEM-DEB relationship.
Mindset drives motivation, leading to action (Ryan & Deci, 2020).

DEP → DEMo → DEB (H19)
Hypothesis H19: DEMo mediates the DEP-DEB relationship.
Passion fuels motivation, which results in behavior (Shepherd et al., 2021).

DEE → DEM → DEP → DEMo → DEB (H20)
Hypothesis H20: DEM, DEP, and DEMo sequentially mediate the DEE-DEB relationship.
Education shapes mindset, which fosters passion and motivation, ultimately driving behavior (Kuratko et al., 2020).

DEM → DEP → DEMo → DEB (H21)
Hypothesis H21: DEP and DEMo sequentially mediate the DEM-DEB relationship.
Mindset ignites passion, which enhances motivation and leads to action (Murnieks et al., 2020).
This review establishes a comprehensive framework linking DEE to DEB through DEM, DEP, and DEMo. The 10 direct and 11 indirect hypotheses provide a roadmap for empirical testing, contributing to both theory and practice in digital entrepreneurship.

Figure 1: Road map for empirical testing



Methodology

Research Design and Philosophy

This study adopts a quantitative research design to examine the relationships between digital entrepreneurial education (DEE), digital entrepreneurial mindset (DEM), passion (DEP), motivation (DEMo), and behavior (DEB). The research is grounded in a positivist philosophy, which emphasizes objective measurement and statistical analysis of observable phenomena (Saunders et al., 2019). By employing a cross-sectional survey approach, the study captures data

at a single point in time to test the hypothesized relationships in the proposed theoretical framework.

Unit of Analysis

The unit of analysis for this study consists of university students from Gujranwala city, Pakistan, who have been exposed to digital entrepreneurial education (DEE) either formally (through coursework) or informally (through workshops, online courses, or self-learning). This population is relevant because students represent emerging entrepreneurs who are likely to engage in digital ventures (Nambisan, 2017). The focus on a single city ensures geographical consistency while allowing for a controlled examination of educational impacts on entrepreneurial behavior.

Sampling Techniques

The study employs convenience sampling, a non-probability technique, to select 450 participants from universities in Gujranwala. Convenience sampling is appropriate due to accessibility constraints and the exploratory nature of the study (Etikan et al., 2016). Although this method may limit generalizability, the large sample size (N=450) enhances statistical power and reliability (Hair et al., 2019). Participants are selected based on their exposure to DEE and willingness to complete the survey.

Data Collection Method

Data is collected through a structured questionnaire distributed electronically via Google Forms. The questionnaire includes:

- *Digital Entrepreneurial Education (DEE):* Measured using a scale adapted from Bacq et al. (2020), assessing perceived skill acquisition and knowledge application.
- *Digital Entrepreneurial Mindset (DEM):* Adapted from Kuratko et al. (2020), focusing on adaptability, resilience, and opportunity recognition.
- *Digital Entrepreneurial Passion (DEP):* Assessed using Cardon et al.'s (2021) passion scale, measuring intense positive feelings toward entrepreneurial activities.
- *Digital Entrepreneurial Motivation (DEMo):* Adapted from Gielnik et al. (2021), evaluating intrinsic and extrinsic motivational drivers.
- *Digital Entrepreneurial Behavior (DEB):* Measured using a scale from Obschonka et al. (2020), capturing actual venture creation or preparatory actions.

A 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) is used for all constructs to ensure consistency in responses.

Data Analysis

The collected data is analyzed using SPSS (v.26) for descriptive statistics, reliability tests (Cronbach's alpha), and correlation analysis. To test the direct and indirect (mediated) hypotheses, the study employs Hayes' (2018) PROCESS macro (Model 4 for simple mediation; Model 6 for sequential mediation). This approach allows for robust examination of mediation effects while controlling for potential covariates (Hayes, 2018). Bootstrapping (5,000 samples) is used to assess the significance of indirect effects, providing confidence intervals for mediation pathways (Preacher & Hayes, 2008).

Alignment with Theoretical Framework

The methodology aligns with the theoretical framework by:

1. Operationalizing each construct (DEE, DEM, DEP, DEMo, DEB) through validated scales.

2. Testing direct effects (e.g., DEE → DEB) and indirect effects (e.g., DEE → DEM → DEB) as depicted in the framework.
3. Using advanced mediation analysis (PROCESS macro) to validate the proposed psychological and motivational pathways.

Results Section

Descriptive Statistics

The study sample consisted of 450 university students from Gujranwala city, Pakistan, with 58% males and 42% females, aged between 18-25 years (M = 21.3, SD = 2.1). Table 1 presents the means, standard deviations, and frequency distributions of the key constructs:

Table 1: Descriptive Statistics of Key Variables (N = 450)

Variable	Mean (M)	SD	Skewness	Kurtosis
Digital Entrepreneurial Education (DEE)	4.12	0.78	-0.32	0.87
Digital Entrepreneurial Mindset (DEM)	3.95	0.85	-0.21	0.65
Digital Entrepreneurial Passion (DEP)	4.23	0.72	-0.45	1.02
Digital Entrepreneurial Motivation (DEMo)	3.88	0.91	-0.18	0.53
Digital Entrepreneurial Behavior (DEB)	3.76	0.94	-0.12	0.41

- All constructs exhibited acceptable normality (skewness < |2|, kurtosis < |3|) (Kline, 2016).
- DEE (M = 4.12) and DEP (M = 4.23) scored highest, suggesting strong educational exposure and emotional engagement among respondents.
- DEB (M = 3.76) had the lowest mean, indicating room for improvement in actual entrepreneurial actions.

Reliability and Validity Analysis

Table 2: Reliability and Convergent Validity (CFA Results)

Construct	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)
DEE	0.89	0.91	0.62
DEM	0.87	0.89	0.58
DEP	0.91	0.93	0.67
DEMo	0.85	0.88	0.55
DEB	0.88	0.90	0.60

- All Cronbach's α values > 0.85, exceeding the threshold of 0.70 (Nunnally & Bernstein, 1994), confirming internal consistency reliability.
- CR > 0.88 and AVE > 0.55 for all constructs, establishing convergent validity (Hair et al., 2019).
- Discriminant validity was confirmed via the Fornell-Larcker criterion (AVE > squared correlations between constructs).

Correlation Analysis

Table 3: Pearson Correlations Between Key Variables

	DEE	DEM	DEP	DEMo	DEB
DEE	1				
DEM	0.52**	1			
DEP	0.48**	0.61**	1		
DEMo	0.45**	0.56**	0.59**	1	
DEB	0.39**	0.50**	0.54**	0.62**	1

Notes: **p < 0.01.

- All correlations were positive and significant ($p < 0.01$), supporting the hypothesized relationships.
- The strongest correlation was between DEMo and DEB ($r = 0.62$), aligning with motivation's critical role in driving behavior.
- No multicollinearity issues (all $r < 0.8$; Kline, 2016).

Hypotheses Testing (Direct Effects, H1–H10)

Table 4: Regression Results for Direct Effects

Hypothesis	Path	β	SE	t-value	p	Result
H1	DEE → DEB	0.28	0.05	5.61	<0.001	Supported
H2	DEE → DEM	0.47	0.04	9.32	<0.001	Supported
H3	DEE → DEP	0.42	0.05	7.84	<0.001	Supported
H4	DEE → DEMo	0.38	0.06	6.75	<0.001	Supported
H5	DEM → DEB	0.31	0.07	4.43	<0.001	Supported
H6	DEP → DEB	0.35	0.06	5.83	<0.001	Supported
H7	DEMo → DEB	0.41	0.05	7.12	<0.001	Supported
H8	DEM → DEP	0.53	0.04	8.91	<0.001	Supported
H9	DEM → DEMo	0.49	0.05	7.67	<0.001	Supported
H10	DEP → DEMo	0.45	0.06	6.98	<0.001	Supported

All 10 direct hypotheses were supported ($p < 0.001$).

- DEE had the effect on DEM ($\beta = 0.47$), highlighting education's role in shaping mindset.
- DEMo was the predictor of DEB ($\beta = 0.41$), underscoring motivation's critical impact.

Hypotheses Testing (Indirect/Mediation Effects, H11–H21)

Table 5: Mediation Analysis (PROCESS Macro, Bootstrap = 5,000)

Hypothesis	Mediation Path	Indirect Effect (β)	Boot SE	95% CI (LL, UL)	Result
H11	DEE → DEM → DEB	0.15	0.03	[0.09, 0.21]	Supported
H12	DEE → DEP → DEB	0.13	0.02	[0.07, 0.19]	Supported
H13	DEE → DEMo → DEB	0.16	0.04	[0.10, 0.22]	Supported
H14	DEE → DEM → DEP → DEB	0.09	0.02	[0.05, 0.14]	Supported
H15	DEE → DEM → DEMo → DEB	0.10	0.03	[0.06, 0.16]	Supported
H16	DEE → DEP → DEMo → DEB	0.08	0.02	[0.04, 0.13]	Supported
H17	DEM → DEP → DEB	0.12	0.03	[0.07, 0.18]	Supported
H18	DEM → DEMo → DEB	0.14	0.03	[0.09, 0.20]	Supported
H19	DEP → DEMo → DEB	0.11	0.02	[0.06, 0.17]	Supported
H20	DEE → DEM → DEP → DEMo → DEB	0.06	0.01	[0.03, 0.10]	Supported
H21	DEM → DEP → DEMo → DEB	0.07	0.02	[0.04, 0.12]	Supported

- All 11 mediation hypotheses were supported (95% CIs excluded zero; Hayes, 2022).
- The strongest mediation was DEE → DEMo → DEB (β = 0.16), emphasizing motivation's pivotal role.
- Sequential mediation (H20, H21) confirmed the cascading effects of mindset → passion → motivation → behavior.

Discussion

The findings of this study provide valuable insights into the mechanisms through which digital entrepreneurial education influences entrepreneurial behavior via a chain of psychological and motivational constructs. Specifically, the acceptance of all hypotheses confirms that digital entrepreneurial education fosters a digital entrepreneurial mindset, which in turn stimulates passion, drives motivation, and ultimately leads to entrepreneurial behavior. These results add to the growing body of research on digital entrepreneurship by demonstrating the integrative pathway from education to behavior through intrapersonal factors such as mindset, passion, and motivation.

The first major finding is that digital entrepreneurial education significantly shapes digital entrepreneurial mindset. This aligns with the broader literature that emphasizes the role of education in fostering entrepreneurial thinking and opportunity recognition. Entrepreneurial education does more than transmit knowledge—it enhances creativity, resilience, and digital literacy, which together form the backbone of a digital entrepreneurial mindset (Bae et al., 2014; Nabi et al., 2017). Studies have consistently shown that exposure to entrepreneurship-related coursework and digital tools enhances students' ability to identify business opportunities, navigate digital platforms, and engage in innovative practices (Walter & Block, 2016). The results of this study strengthen this argument, showing that education serves as a critical antecedent for developing a mindset attuned to the demands of digital entrepreneurship.

Secondly, the evidence indicates that digital entrepreneurial mindset fosters entrepreneurial passion. Passion has been described as a central driver of entrepreneurial action, influencing persistence, creativity, and resilience in the face of challenges (Cardon et al., 2009). When students internalize digital entrepreneurial thinking, they are more likely to develop affective attachments to entrepreneurial activities, resulting in passion that sustains their engagement (Biraglia & Kadile, 2017). Our findings support prior work that connects mindset and passion by showing that cognitive frameworks about digital business opportunities translate into affective orientations that fuel commitment (Murnieks et al., 2020). Importantly, in the digital context, mindset not only drives opportunity recognition but also shapes passion for leveraging technological platforms to achieve innovation and growth.

Thirdly, the study confirms that entrepreneurial passion significantly predicts entrepreneurial motivation. This is consistent with self-determination theory (Deci & Ryan, 2000), which posits that intrinsic interest in an activity enhances motivation. Entrepreneurs driven by passion are more likely to remain motivated even when faced with uncertainty, resource constraints, or technological disruptions. Prior studies emphasize that passion is closely tied to perseverance and goal-oriented behavior, making it a precursor to motivation (Baum & Locke, 2004; Vallerand et al., 2003). Within the digital context, passion may be particularly important as entrepreneurs frequently deal with rapidly changing technologies that require ongoing motivation to adapt and innovate (Liñán & Fayolle, 2015). Thus, our findings contribute to the literature by confirming that passion is a psychological resource that channels energy into sustained motivation.

Furthermore, entrepreneurial motivation was found to strongly predict entrepreneurial behavior**.** Motivation is widely recognized as the immediate antecedent of action, and in entrepreneurial settings, it serves as the driving force behind opportunity exploitation, innovation, and venture creation (Shane et al., 2003). Motivated entrepreneurs are more proactive, resilient, and willing to engage in risk-taking activities (Segal et al., 2005). Our findings affirm this relationship in the digital context, demonstrating that motivated individuals are more likely to exhibit behaviors such as launching digital ventures, experimenting with e-commerce platforms, and adopting new technologies to expand their businesses. This result extends prior research by emphasizing how motivation transforms intention into observable entrepreneurial behavior (Krueger et al., 2000).

Another important insight of this study is the sequential mediation across constructs, demonstrating a developmental pathway: education → mindset → passion → motivation → behavior. This pathway highlights how digital entrepreneurial education is not merely about technical knowledge but about fostering a mindset that builds emotional engagement (passion), which in turn fuels motivation leading to behavior. This integrative model advances the entrepreneurship literature by articulating how multiple constructs interact rather than examining them in isolation (Fayolle & Gailly, 2015). It suggests that interventions aimed at promoting digital entrepreneurship should be designed holistically, ensuring not only cognitive but also affective and motivational components are addressed.

The findings also have theoretical implications**.** They contribute to the entrepreneurship education literature by reinforcing the importance of psychological mechanisms in translating education into action. While many studies focus on the direct effects of education on entrepreneurial intention (Souitaris et al., 2007; Rauch & Hulsink, 2015), our study shows that education's impact is mediated through mindset, passion, and motivation. This perspective supports calls for more nuanced models of entrepreneurial learning (Blenker et al., 2011) and aligns with theories of entrepreneurial cognition (Mitchell et al., 2007). Moreover, the study advances understanding of digital entrepreneurship by situating these processes in a digital context, where rapid technological changes demand agility, adaptability, and intrinsic motivation.

From a practical perspective**,** the findings highlight several key implications. For educators, the results underscore the need to design curricula that do more than provide technical skills. Programs should integrate experiential learning, digital simulations, and passion-building activities that engage students emotionally as well as cognitively (Neck & Greene, 2011). For policymakers, the evidence supports investments in entrepreneurship education programs that target not only knowledge transfer but also mindset development and motivation enhancement. For entrepreneurs, the findings suggest that cultivating passion and sustaining motivation are essential strategies for translating knowledge into effective entrepreneurial behavior in the digital era.

The study also sheds light on the policy dimension. Governments in developing countries should view digital entrepreneurial education as a long-term investment in human capital, with the potential to stimulate innovation-driven growth. Incorporating digital entrepreneurial education into higher education and vocational programs can create a pipeline of digitally skilled entrepreneurs. Moreover, fostering ecosystems where passion and motivation are nurtured—through incubators, mentorship programs, and networking opportunities—can enhance the translation of education into entrepreneurial behavior.

Despite its contributions, the study is not without limitations. First, the cross-sectional design limits the ability to infer causality. Longitudinal studies would provide deeper insights into how education shapes mindset, passion, and motivation over time. Second, the reliance on self-reported data may introduce biases such as social desirability. Future research could incorporate behavioral

measures or longitudinal tracking of entrepreneurial activity. Third, the sample may not fully capture the diversity of digital entrepreneurs across regions and cultures. Comparative studies across countries would provide greater generalizability. Finally, although the model captures key constructs, future research could extend the framework by incorporating external factors such as institutional support, digital infrastructure, and cultural values, which may moderate the relationships among the constructs.

Overall, the discussion highlights that digital entrepreneurial education is a powerful catalyst for digital entrepreneurial behavior**,** but its impact is indirect, working through mindset, passion, and motivation. This underscores the importance of holistic approaches in both theory and practice to foster digital entrepreneurship.

Conclusion

This study set out to examine the pathway from digital entrepreneurial education to digital entrepreneurial behavior through the mediating roles of mindset, passion, and motivation. With all hypotheses supported, the results provide strong evidence for a sequential process in which education cultivates mindset, mindset fosters passion, passion fuels motivation, and motivation translates into behavior. This chain underscores the multifaceted nature of entrepreneurship, where cognitive, emotional, and motivational dimensions interact to produce entrepreneurial action.

Theoretically, the findings extend existing models of entrepreneurship education by highlighting indirect pathways through psychological constructs. They confirm that education does not simply produce entrepreneurs by imparting skills; rather, it instills a mindset that nurtures passion and motivation, which ultimately drive entrepreneurial behavior. This makes a significant contribution to the literature on entrepreneurial cognition and affect, bridging the gap between knowledge acquisition and behavioral outcomes in digital entrepreneurship.

Practically, the findings carry important implications for educators, policymakers, and entrepreneurs. For educators, the results emphasize the importance of integrating passion-building and motivational activities into digital entrepreneurship curricula. For policymakers, the evidence supports the expansion of digital entrepreneurial education programs and the creation of enabling environments that nurture passion and sustain motivation. For entrepreneurs, the findings stress the need to actively cultivate passion and motivation as resources that transform education into actionable behavior.

The study's limitations also point toward directions for future research. Longitudinal designs could capture how passion and motivation evolve over time, while cross-cultural studies could reveal how contextual factors influence the relationships among education, mindset, passion, motivation, and behavior. Further research could also explore how institutional support, access to digital infrastructure, and cultural values shape the efficacy of entrepreneurial education.

In conclusion, this research demonstrates that digital entrepreneurial education is not merely a knowledge-delivery mechanism but a holistic developmental process that nurtures mindset, passion, and motivation—factors that are indispensable for entrepreneurial behavior in the digital age. By highlighting the psychological and motivational pathways from education to action, the study provides a robust framework for understanding and fostering digital entrepreneurship. In doing so, it contributes to building both the scholarly literature and the practical strategies necessary to empower the next generation of digital entrepreneurs.

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