

From Education to Intention: Self-Efficacy as a Mediator in Entrepreneurship Education within AI Driven Context

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Abstract:

Entrepreneurship education has been widely recognized as a key driver of entrepreneurial intention; However, the mechanisms through which it influences individuals' decision making remain insufficiently understood, particularly within increasingly AI driven learning environments. Drawing on the Theory of Planned Behavior and Social Cognitive Theory, this study examines both the direct and indirect effects of entrepreneurship education on entrepreneurial intention, with self efficacy as a mediating mechanism. The research is situated within a technology oriented academic context in China, where students are increasingly exposed to AI enabled learning tools and digital educational ecosystems.

Using survey data from university students (N = 53), regression based mediation analysis was employed to test the proposed relationships. The results indicate that entrepreneurship education has a significant positive effect on entrepreneurial intention ($\beta = .524$, $p < .001$). Furthermore, education significantly predicts self-efficacy ($\beta = .443$, $p < .001$), which in turn strongly influences entrepreneurial intention ($\beta = .568$, $p < .001$). When self efficacy is included in the model, the direct effect of education on intention decreases but remains significant ($\beta = .272$, $p = .019$), indicating partial mediation. These findings suggest that entrepreneurship education operates through dual pathways: directly shaping students' intentions while simultaneously enhancing their perceived capabilities.

The findings highlight that self efficacy remains a critical factor in translating education into entrepreneurial intention. Practical implications suggest that educational programs should actively foster students' confidence and perceived competence. Limitations and directions for future research are discussed

Keywords: Entrepreneurial intention, self-efficacy, entrepreneurship education, AI in education

1. INTRODUCTION

Entrepreneurship is widely recognized as a fundamental driver of economic growth, innovation, and societal transformation. In technology oriented economies, entrepreneurial activity plays a critical role in fostering competitiveness and generating new value (Shane, 2003). As a result, higher education institutions have increasingly assumed responsibility not only for transmitting knowledge but also for cultivating entrepreneurial mindsets, skills, and intentions among students. In this evolving landscape, entrepreneurship education has emerged as a strategic tool for preparing individuals to navigate complex, uncertain, and opportunity driven environments (Fayolle & Gailly, 2015; Martin et al., 2013).

A central objective of entrepreneurship education is to influence students' entrepreneurial intention, defined as the conscious state of mind that directs attention toward starting a new venture (Liñán & Chen, 2009). Entrepreneurial intention has been consistently identified as one of the most reliable predictors of entrepreneurial behavior, making it a key construct in both theoretical and empirical research (Krueger et al., 2000). Consequently, a substantial body of literature has examined whether and how educational interventions can effectively enhance individuals' intentions to engage in entrepreneurial activities.

Despite this growing body of research, empirical findings regarding the effectiveness of entrepreneurship education remain inconclusive. While some studies report strong positive effects on entrepreneurial intention, others find weak or non-significant relationships (Fayolle & Gailly, 2015). Meta-analytic evidence suggests that although education contributes to the development of entrepreneurial competencies, its direct impact on intention may be limited or context dependent (Martin et al., 2013). These inconsistencies indicate that the relationship between education and entrepreneurial intention is more complex than a simple direct effect and may involve underlying psychological mechanisms.

To better understand this complexity, scholars have increasingly relied on the Theory of Planned Behavior (TPB), which posits that intention is shaped by cognitive factors such as attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Within this framework, self-efficacy, defined as an individual's belief in their capability to perform specific tasks, plays a critical role in shaping behavioral intentions (Bandura, 1997). In the entrepreneurial context, self-efficacy reflects individuals' confidence in their ability to identify opportunities, mobilize resources, and successfully launch and manage a business. Empirical evidence consistently demonstrates that self-efficacy is one of the strongest predictors of entrepreneurial intention (Zhao et al., 2005).

Building on this perspective, recent research has begun to conceptualize entrepreneurship education not merely as a direct predictor of intention, but as a process that shapes internal cognitive and psychological states, which in turn influence behavioral outcomes. In particular, self-efficacy has been identified as a key mediating mechanism through which educational experiences translate into entrepreneurial intention (Zhao et al., 2005). This mediation perspective provides a more nuanced understanding of how education operates, emphasizing the importance of internal belief systems rather than solely external inputs.

At the same time, the rapid advancement of artificial intelligence (AI) is transforming the landscape of higher education. AI-driven tools are increasingly integrated into learning environments, enabling personalized instruction, real-time feedback, and enhanced analytical capabilities (Zawacki-Richter et al., 2019; Holmes et al., 2019). Recent studies further highlight that AI technologies are reshaping how students acquire knowledge, engage with content, and develop problem solving skills in digital learning environments (Bond et al., 2020; Crompton & Burke, 2023). In entrepreneurship education, AI can support activities such as opportunity recognition, market analysis, and business model development, thereby expanding students' access to knowledge and decision making resources. However, while AI can significantly enhance cognitive and technical capabilities, its impact on students' psychological development, particularly their self-efficacy, remains less understood.

This raises a critical question: in AI enhanced learning environments where knowledge is increasingly accessible, what determines whether students develop the intention to engage in entrepreneurship? This study argues that, despite technological advancements, the formation of entrepreneurial intention remains fundamentally rooted in human cognition. Specifically, access to information and tools does not automatically translate into entrepreneurial action unless individuals possess the confidence to apply that knowledge effectively.

The present study examines the relationship between entrepreneurship education and entrepreneurial intention, with a particular focus on the mediating role of self-efficacy. Using survey data from technology oriented university students, this study moves beyond direct-effect models to provide a more comprehensive understanding of the mechanisms underlying entrepreneurial intention. By situating the analysis within an AI driven educational context, the study also contributes to emerging discussions on the intersection between technological advancement and entrepreneurial cognition.

This study makes three primary contributions. First, it provides empirical support for the mediating role of self-efficacy, thereby clarifying the psychological mechanisms through which entrepreneurship education influences intention. Second, it helps reconcile inconsistent findings in the literature by demonstrating that the impact of education may be underestimated when indirect effects are not considered. Third, it introduces an AI oriented perspective, highlighting the interaction between technological resources and human cognitive processes in shaping entrepreneurial outcomes.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Entrepreneurship Education and Entrepreneurial Intention

Entrepreneurship education has become a central pillar of higher education systems, particularly in response to the growing demand for innovation, self-employment, and technology-driven economic development. Universities increasingly aim to equip students not only with technical knowledge but also with the competencies required to identify and exploit entrepreneurial opportunities (Fayolle & Gailly, 2015; Martin et al., 2013). Within this context, entrepreneurial intention serves as a key outcome variable, as it represents the cognitive precursor to entrepreneurial behavior (Liñán & Chen, 2009).

Empirical research on the relationship between entrepreneurship education and entrepreneurial intention has produced mixed findings. While numerous studies report positive effects, suggesting that educational programs enhance students' attitudes, awareness, and readiness to engage in entrepreneurship, others find weak or non-significant relationships (Fayolle & Gailly, 2015). More recent research suggests that the effectiveness of entrepreneurship education depends on pedagogical design, experiential learning components, and contextual factors, particularly in technology driven environments (Nabi et al., 2017; Bae et al., 2014). Meta analytic evidence indicates that although entrepreneurship education contributes to the development of human capital, its direct impact on intention may be moderated by individual and environmental variables (Martin et al., 2013).

From a theoretical perspective, the Theory of Planned Behavior provides a robust framework for understanding this relationship. According to TPB, intention is shaped by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Entrepreneurship education may influence these components by shaping students' beliefs and perceptions about entrepreneurial activity. However, the extent to which these effects translate directly into intention remains uncertain, particularly in complex and technology-rich learning environments. Based on this reasoning, the following hypothesis is proposed:

H1: Entrepreneurship education is positively related to entrepreneurial intention.

2.2 Self-Efficacy and Entrepreneurial Intention

Self-efficacy has been widely recognized as a central determinant of human behavior across multiple domains. Defined as an individual's belief in their capability to perform specific tasks, self-efficacy influences motivation, persistence, and decision-making processes (Bandura, 1997). In the entrepreneurial context, self-efficacy reflects the extent to which individuals perceive themselves as capable of successfully initiating and managing a business venture.

Extensive empirical evidence supports the strong relationship between self-efficacy and entrepreneurial intention. Individuals with higher levels of self-efficacy are more likely to perceive entrepreneurship as feasible and are therefore more inclined to pursue entrepreneurial activities (Zhao et al., 2005). Within the TPB framework, self-efficacy is closely related to perceived behavioral control, which has been consistently identified as one of the strongest predictors of intention (Ajzen, 1991). Accordingly, self-efficacy represents a critical internal driver of entrepreneurial intention.

H2: Self-efficacy is positively related to entrepreneurial intention.

2.3 Entrepreneurship Education and Self-Efficacy

While the direct relationship between entrepreneurship education and entrepreneurial intention remains debated, there is stronger empirical support for the relationship between education and self-efficacy. Educational experiences can significantly influence individuals' beliefs about their capabilities by providing opportunities for skill development, experiential learning, and problem-solving (Bandura, 1997).

Entrepreneurship education programs often incorporate experiential components such as simulations, project-based learning, and real-world case analysis. These activities enable students to apply theoretical knowledge in practical contexts, thereby strengthening their confidence in their ability to perform entrepreneurial tasks. Empirical studies suggest that such experiences play a critical role in enhancing entrepreneurial self-efficacy (Zhao et al., 2005).

In AI enhanced learning environments, students have access to advanced tools that support learning and decision-making processes. However, the effectiveness of these tools depends on how they influence students' perceptions of their own capabilities. While AI can enhance access to information, it does not automatically foster confidence or perceived competence. Therefore, self-efficacy remains a critical outcome of educational experiences, even in technologically advanced contexts.

H3: Entrepreneurship education is positively related to self-efficacy.

2.4 The Mediating Role of Self-Efficacy

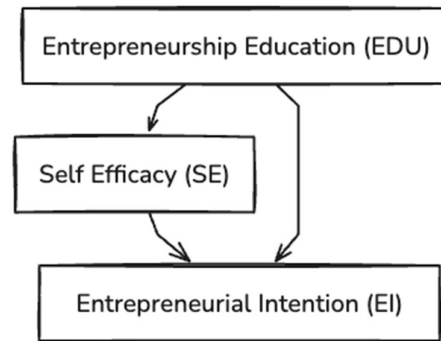
Building on the relationships outlined above, this study proposes that self-efficacy mediates the relationship between entrepreneurship education and entrepreneurial intention. This perspective suggests that education influences intention not only directly, but also indirectly through its impact on individuals' beliefs about their capabilities.

The mediation framework provides a more comprehensive understanding of the mechanisms underlying entrepreneurial intention, emphasizing the role of internal cognitive processes in translating external inputs into behavioral outcomes (Baron & Kenny, 1986). Empirical research supports this perspective, demonstrating that self-efficacy acts as a key mediator in the development of entrepreneurial intention (Zhao et al., 2005).

This mechanism is particularly relevant in AI driven educational environments. While AI technologies enhance access to knowledge and analytical capabilities, they do not inherently generate confidence or perceived ability. As such, self-efficacy becomes a critical link between technological resources and entrepreneurial action.

H4: Self-efficacy mediates the relationship between entrepreneurship education and entrepreneurial intention.

Figure 1. Conceptual model illustrating the mediating role of self-efficacy in the relationship between entrepreneurship education and entrepreneurial intention.



Note: The model illustrates the hypothesized relationships among entrepreneurship education (EDU), self-efficacy (SE), and entrepreneurial intention (EI). Self-efficacy is proposed as a mediator in the relationship between entrepreneurship education and entrepreneurial intention.

3. METHODOLOGY:

3.1 Research Design

This study adopts a quantitative research design to examine the relationships between entrepreneurship education, self-efficacy, and entrepreneurial intention. Specifically, a regression-based mediation approach was employed to test both the direct and indirect effects among the variables. This approach is appropriate for identifying underlying mechanisms through which independent variables influence dependent outcomes, particularly in studies aiming to explore psychological processes within educational contexts.

The study is based on cross-sectional survey data collected from university students enrolled in technology-oriented programs. The choice of this population is particularly relevant given the increasing integration of entrepreneurship education within technical disciplines and the growing importance of innovation-driven careers.

3.2 Sample and Data Collection

The sample consists of 53 undergraduate students enrolled in programs related to technology, engineering, and innovation in China. These students were also exposed to entrepreneurship education as part of their academic curriculum, making them an appropriate group for examining the relationship between educational experiences and entrepreneurial intention.

Data were collected using a structured questionnaire, and respondents were assured of confidentiality and anonymity. The sample reflects a cohort of students operating within a modern educational environment characterized by increasing access to digital tools and AI supported learning resources.

While the sample size is relatively modest, it is consistent with similar exploratory studies in entrepreneurship education and allows for the application of regression-based analytical techniques.

3.3 Measures

All variables were measured using multi-item scales adapted from established literature and assessed using Likert type scales.

- **Entrepreneurial Intention (EI):**

Measured using items adapted from Liñán and Chen (2009), capturing students' intention to start a business. Higher scores indicate stronger entrepreneurial intention.

- **Self-Efficacy (SE):**

Measured based on established self-efficacy frameworks (Bandura, 1997), reflecting students' perceived capability to perform entrepreneurial tasks.

- **Entrepreneurship Education (EDU):**

Assessed through students' perceptions of their exposure to and engagement with entrepreneurship-related learning activities.

All variables were computed as composite mean scores (e.g., *EDU_mean_clean*, *SE_mean_clean*, *EI_mean_clean*), following data cleaning procedures to ensure reliability and consistency.

3.4 Data Analysis

Data analysis was conducted using regression techniques to test the proposed hypotheses and examine the mediating role of self-efficacy.

The analysis followed this approach:

1. **Simple regression analysis** was used to test the total effect of entrepreneurship education on entrepreneurial intention.
2. A second regression examined the relationship between entrepreneurship education and self-efficacy.
3. A third regression assessed the effect of self-efficacy on entrepreneurial intention.
4. Finally, a **multiple regression model** including both entrepreneurship education and self-efficacy was conducted to test the mediation effect.

This approach is consistent with the mediation framework proposed in prior research and allows for the identification of partial mediation when the direct effect remains significant but is reduced in magnitude.

3.5 Analytical Strategy for Mediation

To determine the presence of mediation, the study followed a regression-based approach consistent with the Baron and Kenny approach. According to this framework, mediation is supported when:

1. The independent variable significantly affects the dependent variable
2. The independent variable significantly affects the mediator
3. The mediator significantly affects the dependent variable
4. The effect of the independent variable on the dependent variable decreases when the mediator is included

The results obtained in this study satisfy all four conditions, indicating the presence of partial mediation.

3.6 Contextual Consideration: AI-Enhanced Learning Environment

Although not directly measured, the study is situated within a contemporary educational context characterized by the increasing use of artificial intelligence and digital tools. Students in technology-oriented programs do engage with AI-supported platforms for learning, problem-solving, and idea generation.

This context is relevant for interpreting the findings, as it highlights the distinction between access to knowledge and the development of self-efficacy. While AI tools may enhance cognitive capabilities, the extent to which students translate knowledge into entrepreneurial intention depends on their perceived ability to act. As such, the inclusion of an AI oriented framing provides an important contextual layer for understanding the relationships examined in this study.

4. RESULTS:

4.1 Descriptive Statistics and Correlations

Descriptive statistics and bivariate correlations were examined to assess the relationships among the key variables. Overall, the variables demonstrated moderate to high mean values, indicating generally positive perceptions among respondents. Entrepreneurial intention (EI) reported a mean of 3.35 (SD = 0.71), while self-efficacy (SE) showed a mean of 3.26 (SD = 0.69). Subjective norms (SN) and entrepreneurship education (EDU) presented relatively higher mean values (M = 3.67, SD = 0.63; M = 3.62, SD = 0.70, respectively), suggesting that students perceive strong social support and educational exposure. Risk-taking propensity (RT) reported a mean of 3.42 (SD = 0.61).

Preliminary correlation analysis indicated that entrepreneurship education was positively associated with both self-efficacy and entrepreneurial intention, providing preliminary support for the proposed mediation model. Self-efficacy also demonstrated a strong positive relationship with entrepreneurial intention, consistent with prior research emphasizing its central role in shaping behavioral intentions.

Table 1. Descriptive Statistics of Study Variables (N = 53)

Variable	Mean	SD
Entrepreneurial Intention (EI)	3.35	0.71
Self-Efficacy (SE)	3.26	0.69
Subjective Norms (SN)	3.67	0.63
Risk-Taking Propensity (RT)	3.42	0.61
Entrepreneurship Education (EDU)	3.62	0.70

4.2 Regression Analysis

To examine the relationships among the variables, a series of regression analyses were conducted.

First, a simple regression analysis revealed that entrepreneurship education significantly predicts entrepreneurial intention ($\beta = .524$, $p < .001$), indicating a strong total effect. This suggests that students

who report higher exposure to entrepreneurship education are more likely to express intentions to engage in entrepreneurial activities.

Second, entrepreneurship education was found to significantly predict self-efficacy ($\beta = .443$, $p < .001$), indicating that educational experiences contribute positively to students' perceived capability to start a business.

Third, self-efficacy demonstrated a strong and significant effect on entrepreneurial intention ($\beta = .568$, $p < .001$), confirming its central role as a determinant of entrepreneurial intention.

4.3 Mediation Analysis

To test the mediating role of self-efficacy, a regression-based mediation analysis following the Baron and Kenny approach was conducted.

In Table 2, when both entrepreneurship education and self-efficacy were included in the regression model predicting entrepreneurial intention, the effect of education decreased but remained statistically significant ($\beta = .272$, $p = .019$), while self-efficacy continued to exhibit a strong effect. The reduction in the coefficient of education from $\beta = .524$ to $\beta = .272$ indicates that part of the effect of education on entrepreneurial intention is transmitted through self-efficacy.

These findings provide evidence of **partial mediation**, suggesting that entrepreneurship education influences entrepreneurial intention both directly and indirectly through its impact on self-efficacy.

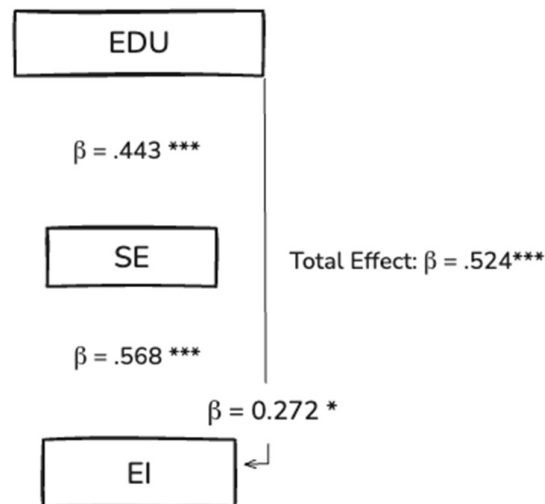
Table 2: Regression Results for Mediation Analysis

Path	β	p-value	Interpretation
EDU $\rightarrow$ EI (Total effect)	.524	< .001	Significant
EDU $\rightarrow$ SE	.443	< .001	Significant
SE $\rightarrow$ EI	.568	< .001	Significant
EDU $\rightarrow$ EI (Direct effect, with SE)	.272	.019	Significant (reduced)

Note: β = standardized coefficients. The reduction in the coefficient of entrepreneurship education after including self-efficacy indicates partial mediation.

These relationships are visually summarized in Figure 2.

Figure 2. Mediation Model Results Showing the Effects of Entrepreneurship Education on Entrepreneurial Intention via Self-Efficacy



Note: Values represent standardized regression coefficients (β). The total effect of entrepreneurship education on entrepreneurial intention is shown above the direct effect. The direct effect represents the relationship after including the mediator (self-efficacy). *** $p < .001$, * $p < .05$.

4.4 Summary of Findings

Overall, the results support a dual-pathway model in which entrepreneurship education contributes to entrepreneurial intention through both direct and indirect mechanisms. While education has a significant direct influence, a substantial portion of its effect operates through enhancing students' self-efficacy. This

highlights the importance of psychological factors in translating educational experiences into entrepreneurial intentions.

5. DISCUSSION:

5.1 Interpreting the Findings

This study set out to examine not only whether entrepreneurship education influences entrepreneurial intention, but more importantly, how this relationship operates within a technology oriented, increasingly AI-driven learning environment. The findings provide clear evidence that entrepreneurship education plays a significant role in shaping students' entrepreneurial intention; however, this influence is not purely direct. Instead, the results demonstrate that self-efficacy acts as a key psychological mechanism through which education translates into intention.

Consistent with prior research grounded in the Theory of Planned Behavior, self-efficacy emerged as a strong predictor of entrepreneurial intention. The significant relationship between self-efficacy and intention ($\beta = .568$, $p < .001$) reinforces the idea that individuals are more likely to engage in entrepreneurial behavior when they believe in their capability to successfully perform the required tasks (Icek Ajzen, 1991). In this context, confidence is not merely an outcome of education but a central driver of action.

At the same time, entrepreneurship education was found to have a strong total effect on entrepreneurial intention ($\beta = .524$, $p < .001$), suggesting that educational experiences do matter. However, when self-efficacy was introduced into the model, the direct effect of education decreased ($\beta = .272$, $p = .019$), indicating that part of its influence operates indirectly. This pattern provides empirical support for the mediating role of self-efficacy and aligns with studies highlighting the importance of psychological mechanisms in entrepreneurship education (Liñán and Chen, 2009).

5.2 The Role of Self-Efficacy as a Mechanism

The results contribute to a more nuanced understanding of entrepreneurship education by demonstrating that its effectiveness lies not only in the transmission of knowledge but in its ability to enhance students' perceived capabilities. In other words, education appears to function through a dual pathway: directly influencing entrepreneurial intention while simultaneously strengthening self-efficacy, which in turn exerts a stronger effect on intention.

This finding is particularly important in light of previous research suggesting that entrepreneurship education does not always lead to increased entrepreneurial intention (Fayolle and Gailly, 2015). The present study helps explain this inconsistency by showing that education may appear weak or insignificant when psychological mediators are not considered. Once self-efficacy is included, the underlying mechanism becomes visible, revealing that education's impact is partially embedded within students' beliefs about their own abilities.

From a practical perspective, this suggests that educational programs that focus solely on knowledge acquisition such as business planning, market analysis, or theoretical frameworks, may be insufficient if they fail to foster confidence. Instead, experiential learning, problem solving activities, and opportunities for real world application may be more effective in strengthening self-efficacy and, consequently, entrepreneurial intention.

5.3 Implications in AI-Driven Learning Environments

An important contribution of this study lies in its relevance to contemporary AI-driven educational contexts. With the rapid integration of artificial intelligence tools into higher education, students now have unprecedented access to information, resources, and automated support systems. While these tools can enhance learning efficiency and knowledge acquisition, the present findings suggest that access to information alone is not sufficient to drive entrepreneurial intention.

In AI rich environments, the distinction between knowledge and confidence becomes even more critical. Students may be able to generate business ideas, analyze markets, or develop strategies using AI tools; however, the decision to act on those ideas still depends on their perceived capability to execute them. In this sense, self-efficacy remains a fundamental determinant of entrepreneurial intention, even when technological support is readily available.

This highlights a potential limitation of AI enhanced education: while it can significantly improve cognitive outcomes, it may not automatically translate into psychological readiness. Therefore, educators and institutions must consider how AI tools can be integrated in ways that not only support learning but also actively contribute to building students' confidence.

5.4 Theoretical Contributions

This study makes several contributions to the literature on entrepreneurship education and entrepreneurial intention. First, it extends existing models by empirically demonstrating the mediating role of self-efficacy in the relationship between education and intention, reinforcing the importance of psychological constructs within the entrepreneurial process.

Second, it provides a clearer explanation for previously inconsistent findings regarding the effectiveness of entrepreneurship education. By distinguishing between direct and indirect effects, the study shows that education is not ineffective, but rather that its impact may be obscured when intermediary mechanisms are not examined.

Third, by situating the analysis within an AI oriented learning context, the study contributes to emerging discussions on the role of technology in entrepreneurship education. It suggests that while AI can transform how students acquire knowledge, the fundamental drivers of entrepreneurial behavior remain rooted in human cognition and perception.

5.5 Practical Implications

The findings offer several practical implications for educators and policymakers. First, entrepreneurship education programs should place greater emphasis on developing self-efficacy, rather than focusing exclusively on knowledge delivery. This may involve incorporating experiential learning methods, simulations, mentorship, and opportunities for students to engage in entrepreneurial activities.

Second, in AI enhanced learning environments, educators should be mindful of the potential gap between knowledge acquisition and confidence development. Simply providing access to advanced tools may not be sufficient to encourage entrepreneurial action. Instead, structured interventions that promote reflection, autonomy, and skill application may be necessary to translate learning into intention.

Finally, institutions should consider designing curricula that integrate both technological and psychological dimensions of learning, ensuring that students are not only equipped with knowledge but also empowered to act upon it.

6. CONCLUSION, IMPLICATIONS AND LIMITATIONS:

6.1 Conclusion

This study set out to examine the relationship between entrepreneurship education and entrepreneurial intention, with a particular focus on the mediating role of self-efficacy within a technology-oriented and increasingly AI driven learning environment. The findings provide robust evidence that entrepreneurship education plays a meaningful role in shaping students' entrepreneurial intention; however, this influence is neither simple nor purely direct. Instead, the results reveal a more nuanced mechanism in which self-efficacy functions as a central psychological pathway through which educational experiences are translated into entrepreneurial intentions.

More specifically, the analysis demonstrates that entrepreneurship education exerts both a direct and an indirect effect on entrepreneurial intention. While the direct relationship remains statistically significant, the observed reduction in its magnitude after the inclusion of self-efficacy indicates that a substantial portion of education's influence operates through enhancing students' perceived capability to engage in entrepreneurial activities. This dual pathway effect provides important empirical support for the argument that entrepreneurship education should not be evaluated solely based on its immediate outcomes, but rather in terms of its ability to foster internal cognitive and psychological transformations.

These findings contribute to a deeper understanding of why prior research has produced mixed results regarding the effectiveness of entrepreneurship education. In many cases, studies that focus exclusively on direct relationships may underestimate the true impact of education by overlooking the mediating role of key psychological constructs. By explicitly modeling self-efficacy as an intermediary variable, this study demonstrates that entrepreneurship education is not ineffective; rather, its influence is partially embedded within students' evolving beliefs about their own abilities. In this sense, education acts less as a direct trigger of entrepreneurial intention and more as a catalyst that enables individuals to internalize the confidence required to act.

The relevance of these findings becomes even more pronounced when considered within the context of AI driven learning environments. The increasing integration of artificial intelligence tools in higher education has transformed the way students access information, develop ideas, and engage with entrepreneurial concepts. However, the results of this study suggest that access to knowledge, even when enhanced by advanced technologies, is not sufficient to generate entrepreneurial intention. While AI can facilitate learning, automate analysis, and expand cognitive capabilities, it does not inherently cultivate the belief that one is capable of executing entrepreneurial actions. As such, the human dimension of learning, particularly the development of self-efficacy, remains a critical determinant of whether knowledge is translated into intention and ultimately, into behavior.

From a broader perspective, this study highlights the importance of distinguishing between **knowledge acquisition and psychological readiness**. In contemporary educational contexts, where information is increasingly abundant and accessible, the differentiating factor may no longer be what students know, but rather what they believe they can do with that knowledge. This insight has important implications not only for entrepreneurship education, but also for the design of learning environments in general, particularly those incorporating AI technologies.

6.2 Limitations and Future Research

Despite its contributions, this study is subject to several limitations that should be acknowledged and addressed in future research.

First, the relatively small sample size ($N = 53$) may limit the generalizability of the findings. Although the results are statistically significant and theoretically consistent, larger and more diverse samples would enhance the robustness and external validity of the conclusions. Future research could replicate the study across different universities, cultural contexts, and academic disciplines to assess the stability of the observed relationships.

Second, while the mediation analysis provides evidence of relationships among variables, it does not capture how these relationships evolve over time. Longitudinal studies would be particularly valuable in examining how entrepreneurship education influences self-efficacy development and entrepreneurial intention across different stages of students' academic and professional trajectories.

Third, although the study incorporates an AI oriented contextual framing, it does not directly measure students' use of or interaction with AI tools. As a result, the role of AI remains conceptually inferred rather than empirically tested. Future research should incorporate specific variables related to AI engagement, such as frequency of use, perceived usefulness, or digital competencies, to better understand how technological environments interact with psychological mechanisms like self-efficacy.

Fourth, the model focuses on self-efficacy as the primary mediator, but other psychological or contextual variables may also play important roles in shaping entrepreneurial intention. Factors such as intrinsic motivation, creativity, resilience, or prior entrepreneurial exposure could further enrich the explanatory power of the model. Additionally, future studies could explore moderating effects, such as whether the impact of education on self-efficacy varies depending on students' backgrounds or learning environments.

Finally, future research could extend the current framework by exploring more complex analytical approaches, such as structural equation modeling or multi-group analysis, to validate and refine the proposed relationships. Such approaches would allow for a more comprehensive examination of the interplay between educational, psychological, and technological factors in shaping entrepreneurial outcomes.

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