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The Role of Digital Marketing and Financial Literacy in the Entrepreneurial Transformation of Students at UIN Sultanah Nahrasiyah Lhokseumawe

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Abstrak: Ketimpangan antara penguasaan strategi pemasaran digital dan efektivitas pengelolaan keuangan masih menjadi kendala utama bagi wirausaha mahasiswa berbasis digital, sebagaimana tercermin dari kesenjangan antara inklusi keuangan nasional (75,02%) dan literasi keuangan nasional (65,43%) di kalangan generasi muda. Penelitian ini bertujuan untuk menganalisis pengaruh pembelajaran kewirausahaan terhadap keberhasilan usaha mahasiswa, baik secara langsung maupun melalui peran mediasi literasi keuangan dan digital marketing. Penelitian ini menggunakan pendekatan kuantitatif dengan desain eksplanatori (explanatory research) untuk menguji hubungan kausalitas antarvariabel secara empiris. Populasi penelitian adalah mahasiswa anggota "Grup Pasar Online UIN Sultanah Nahrasiyah Lhokseumawe" yang telah menyelesaikan pendidikan kewirausahaan secara formal, dengan sampel sebanyak 100 responden ditetapkan melalui teknik purposive sampling dan perhitungan rumus Slovin pada margin galat 5%. Data primer dikumpulkan menggunakan kuesioner berskala Likert lima poin yang didistribusikan secara elektronik, kemudian dianalisis menggunakan Partial Least Squares-Structural Equation Modeling (PLS-SEM) melalui perangkat lunak SmartPLS, mencakup evaluasi model pengukuran (outer model), model struktural (inner model), serta uji efek mediasi melalui prosedur bootstrapping. Sesuai dengan tujuan penelitian, hasil analisis menunjukkan bahwa pembelajaran kewirausahaan berpengaruh positif dan signifikan terhadap literasi keuangan, digital marketing, maupun keberhasilan usaha mahasiswa. Temuan mediasi mengungkapkan bahwa digital marketing bertindak sebagai mediator tunggal yang signifikan dalam menjembatani pengaruh pembelajaran kewirausahaan terhadap keberhasilan usaha, sementara literasi keuangan tidak terbukti memiliki peran mediasi yang signifikan. Hasil studi ini memberikan landasan strategis bagi pengelola institusi pendidikan tinggi Islam untuk merekonstruksi kurikulum kewirausahaan yang lebih berorientasi pada penguatan literasi digital berbasis praktik, guna mengakselerasi potensi ekonomi wirausaha mahasiswa di era transformasi digital.

Kata Kunci: Pembelajaran Kewirausahaan, Literasi Keuangan, Digital Marketing, Keberhasilan Usaha, PLS-SEM

Abstract: *The disparity between the mastery of digital marketing strategies and the effectiveness of financial management remains a primary constraint for digital-based student entrepreneurs, reflected in the gap between national financial inclusion (75.02%) and financial literacy (65.43%) among the younger generation. This study aims to analyze the effect of entrepreneurial learning on student business success, both directly and through the mediating roles of financial literacy and digital marketing. This study employs a quantitative approach with an explanatory research design to empirically test the causal relationships among variables. The population consists of student members of the "UIN Sultanah Nahrasiyah Lhokseumawe Online Market Group" who have completed formal entrepreneurship education, with a sample of 100 respondents determined through purposive sampling and the Slovin formula at a 5% margin of error. Primary data were collected via electronically distributed five-point Likert-scale*

questionnaires and analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) in SmartPLS, covering measurement model (outer model) evaluation, structural model (inner model) evaluation, and mediation testing through bootstrapping. Consistent with the research objective, the results show that entrepreneurial learning has a positive and significant effect on financial literacy, digital marketing, and student business success. The mediation findings reveal that digital marketing acts as a significant sole mediator bridging the effect of entrepreneurial learning on business success, whereas financial literacy was not proven to have a significant mediating role. The results of this study provide a strategic foundation for managers of Islamic higher education institutions to reconstruct entrepreneurship curricula, pivoting toward practice-based digital literacy enhancement to accelerate the economic potential of student entrepreneurs in the era of digital transformation.

Keywords: Entrepreneurial Learning, Financial Literacy, Digital Marketing, Student Business Success, PLS-SEM

INTRODUCTION

The growth of the digital economy is encouraging students to transition from consumers to technology-based entrepreneurs, a transformation that is also taking place within Islamic higher education institutions through the proliferation of student online communities and business groups. This phenomenon is in line with the strengthening of the national digital economy ecosystem, however, this increase in digital entrepreneurial activity has not yet been fully accompanied by the ability to manage finances and implement sound digital marketing strategies, meaning that some students remain vulnerable to stagnant turnover or running out of working capital due to the commingling of personal and business funds. Similar conditions have also been identified at the national level (Hasan, Jannah, et al., 2024a; Winarno & Assa'diyah, 2023). A survey by the OJK and BPS (2024) recorded national financial literacy at 65.43 per cent, lower than the financial inclusion rate of 75.02 per cent. This disparity indicates that access to finance has not been matched by managerial competence, particularly amongst students (aged 18–25), where the rate stands at just 70.19 per cent. This situation underscores the importance of financial literacy and digital skills as the foundation of modern entrepreneurship.

The relationship between entrepreneurship education, financial literacy and digital marketing is a key focus in understanding the success of student businesses. Entrepreneurship education fosters a creative mindset and a willingness to take risks, whilst financial literacy strengthens students' ability to manage capital and risk (Arofah et al., 2018; Xu & Jiang, 2024). Digital marketing serves as a means of innovation and market reach through the utilisation of technology (Chaffey & Ellis-Chadwick, 2019; Maula et al., 2021). These three elements are functionally interconnected; it is believed that the integration of entrepreneurial and financial knowledge, when mediated by digital marketing skills, can enhance students' business performance (Aisyah, L., & Mukhtar, 2020; Wicaksono Ardiansyah et al., 2023).

To understand how students' entrepreneurial behaviour and mindset are formed, this study draws primarily on Social Learning Theory, which explains that the learning of entrepreneurial behaviour occurs through observation and social experience (Silitonga et al., 2025). In other words, students' entrepreneurial mindsets and skills are shaped not solely by course material, but also through the process of imitation and learning from social experiences in their surrounding business environment, including interactions within the online business communities they participate in. Building on this foundation, the theme of student entrepreneurship in this study is enriched by two

supporting theories. Human Capital Theory reinforces the view that financial literacy is a form of knowledge investment that enhances productivity. The Technology Acceptance Model (TAM) explains how perceptions of ease of use and benefits influence the adoption of digital marketing amongst students (Chaffey & Ellis-Chadwick, 2019; Uthaileang & Kiattisin, 2023).

Previous research has shown that the integration of entrepreneurship education and financial literacy can enhance students' entrepreneurial readiness; however, the majority of studies have so far been limited to examining entrepreneurial intentions rather than the performance of digital businesses (Mukhtar et al., 2021; Rapina et al., 2023). Reviews by Ardiansyah et al. (2023) and Maula et al. (2021) demonstrate that digital marketing literacy enhances readiness for online business; however, few studies have examined an integrative model involving all three variables simultaneously. Therefore, this study aims to address this empirical gap through a structured approach relevant to the context of digital students in Indonesia.

Based on the literature review, the provisional argument of this study is that entrepreneurship education fosters an innovative mindset, financial literacy strengthens capital and risk management, and digital marketing acts as a strategic bridge that transforms both into a competitive advantage (Fayolle & Gailly, 2015; Hasan, Jannah, et al., 2024a; Wicaksono Ardiansyah et al., 2023). The integration of these three elements is expected to result in improved business performance among digital students, as reflected in the practices of the 'UIN Sultanah Nahrasiyah Lhokseumawe Online Market Group' community, which exemplifies collaborative entrepreneurship based on financial literacy and technology (Simovic et al., 2023).

To understand how this competitive advantage is formed, a more in-depth examination of the variables of entrepreneurship education is crucial. The need for entrepreneurship is increasing in line with advances in education, which play a vital role in shaping individuals' attitudes, behaviours, mindsets and intentions to become entrepreneurs (Liu et al., 2025). Entrepreneurial learning is defined as a systematic educational intervention aimed at developing students' ability to recognise opportunities, manage risks, and create value through business innovation (Fayolle & Gailly, 2015). Its primary objective is to transform students from passive consumers of knowledge into creative and independent producers of economic value. Through this process, students not only gain conceptual insights but also develop an entrepreneurial mindset characterised by a willingness to take risks, creativity, resilience and an orientation towards opportunities (Cahyani et al., 2022). Previous research confirms that structured entrepreneurship programmes are effective in enhancing entrepreneurial readiness and the intention to start a new business in the future.

The pedagogical approach to entrepreneurship education is experiential and practical, with methods such as case studies, business simulations and business incubators serving as key tools for developing practical skills (Li et al., 2025). This approach acts as a catalyst for building students' self-confidence and ability to cope with business uncertainty. Furthermore, its effectiveness is influenced by the relevance

of the curriculum to the demands of the modern business world, including the integration of technology and business digitalisation (Mukhtar et al., 2021; Wibowo et al., 2023). From a digital entrepreneurship perspective, entrepreneurship education also acts as a driver for the development of digital business literacy, enabling students to understand and utilise technology to create innovations, improve efficiency, and build new technology-based business models (Kraus et al., 2018). With strong digital literacy, students can optimise online platforms, social media, and e-commerce to reach a wide market.

As well as playing a role in the development of digital skills, entrepreneurship education also contributes to improving students' financial literacy. Through business planning exercises and financial simulations, students learn to manage capital, draw up budgets and understand business cash flow (Calcagno et al., 2019; Rapina et al., 2023). The essence of entrepreneurship education extends beyond merely incubating creative ideas (Fikri et al., 2025; Kesuma et al., 2023). More than that, this academic process plays a crucial role in refining economic decision-making and fostering an awareness of financial risk mitigation. It is this framework that establishes entrepreneurship education as the primary theoretical foundation; a determining variable with direct implications for students' entrepreneurial maturity, financial literacy, and digital marketing competencies.

Complementing the discourse on entrepreneurship education, this research also identifies financial literacy as a crucial fundamental pillar. By definition, this competence represents an individual's comprehensive ability to navigate, structure and execute financial strategies with precision, at both a personal and commercial level. Within the student business ecosystem, financial intelligence plays a decisive role in business resilience; given its highly reciprocal interaction with the efficiency of capital management, resource optimisation, and long-term expansion projections (Hasan, Jannah, et al., 2024b). Evidence from the field shows that entrepreneurs with strong financial literacy skills are proven to be more rational in assessing investment instruments, adept at mitigating risks, and capable of curbing impulsive consumption that could potentially undermine operational cash flow. As indicated by the discrepancy in data from the OJK and BPS (2024) mentioned earlier, students remain vulnerable when it comes to business financial management, despite having broad access to digital financing sources (Çera et al., 2021).

Finance literacy plays a role in knowledge-based entrepreneurship as a component of human capital that enhances students' capacity for analytical thinking, the efficiency of fund management, and business competitiveness (Hasan, Tiara Hutamy, et al., 2024; Xu & Jiang, 2024). A study by Shulin Xu & Jiang (2024) confirms that financial literacy is capable of creating added value, as financial knowledge helps entrepreneurs capitalise on investment opportunities and manage business risks effectively. Another study by Rizkiwati et al. (2022) shows that financial literacy education from an early age shapes positive financial behaviour patterns that support business sustainability in the future. Meanwhile, Wibowo et al. (2023) and Wasan & Kiattisin (2023) found that

the ability to manage digital finances also influences entrepreneurs' adaptability in the face of technological change. Therefore, mastery of financial literacy is a crucial prerequisite for building students' entrepreneurial readiness in the digital age, particularly when integrated with entrepreneurship education and digital literacy.

Furthermore, several studies have linked financial literacy to improved performance and business sustainability amongst students. According to Hasan et al. (2024), students with a good understanding of finance demonstrate greater ability in making strategic decisions and maintaining the financial stability of their businesses. A similar finding was reported by Rapina et al. (2023), who noted that financial literacy mediates the relationship between financial behaviour and entrepreneurial motivation, whilst Senduk et al. (2025) emphasised the importance of financial literacy in the management of micro-enterprise capital. The integration of entrepreneurship education and financial literacy has been shown to enhance students' business resilience amidst the challenges of the digital economy (Auliyah et al., 2025).

Digital literacy, as a crucial catalyst for competitiveness, complements the constellation of variables in this study. Within the entrepreneurial ecosystem, this term represents an individual's strategic capability to navigate, orchestrate and exploit digital technology as a decisive business instrument (Chaffey & Ellis-Chadwick, 2019; Maula et al., 2021). This paradigm has subsequently evolved into digital marketing literacy, a cutting-edge skill in synergising information infrastructure, social media networks and the e-commerce ecosystem to boost promotional reach and sales conversion. Amidst the current dynamism of the digital economy, student entrepreneurs are required to go beyond merely mastering conventional marketing theory; they are expected to be adaptable in operating virtual tools relevant to disruptions in consumer behaviour (Elia et al., 2020; Kraus et al., 2018). Furthermore, these skills serve as an essential foundation for stimulating innovation, penetrating a broader market landscape, and accelerating operational efficiency (Ardiansyah et al., 2023; Mutohhari et al., 2025). Through the measured adoption of technology, students are empowered to compete on the global stage and build brand equity through marketing strategies driven by a combination of creative intuition and data-driven precision.

A variety of studies indicate that digital literacy acts as a key mediator in the relationship between entrepreneurship education and entrepreneurial readiness. Technology-based entrepreneurship education has been shown to enhance students' digital skills, both in the context of business communication and online marketing management (Uthaileang & Kiattisin, 2023; Wibowo et al., 2023). Research by Maula et al. (2021) confirmed that digital marketing literacy has a significant effect on students' technopreneurship competencies and business sustainability during the pandemic. Similarly, the study by Wicaksono Ardiansyah et al. (2023) found that digital marketing literacy mediates the relationship between entrepreneurship education and readiness for online business, thereby reinforcing the positive influence of entrepreneurship learning on business performance. The integration of digital literacy and financial literacy is also considered capable of improving students' business

management, as technology enables transparency, efficiency and real-time cash flow control (Hasan, Tiara Hutamy, et al., 2024; Lu et al., 2025).

The global context makes digital marketing literacy key to the success of young entrepreneurs in accessing competitive digital markets. According to Simovic et al. (2023), students' levels of digital competence are influenced by their social background and the support provided by higher education institutions. Meanwhile, research by Kraus et al. (2023) and Elia et al. (2023) highlights the importance of the ability to adapt to technological transformation in order to build the sustainability of digital based businesses. This is in line with the findings of Mutohhari et al. (2025) that mastery of technological skills and digital literacy contributes to the readiness of the younger generation to face the ever-changing labour market and business world. Based on this literature review, digital literacy plays a dual role as both a supporting variable and a mediator of business success.

All of the above factors converge on students' entrepreneurial readiness, which describes the extent to which an individual possesses the skills, knowledge and self-confidence to start and manage a business (Mukhtar et al., 2021). This readiness is determined not only by intention, but also by actual capabilities acquired through education, experience and environmental support. According to Jena (2020), entrepreneurial readiness combines cognitive, affective and conative aspects. In the context of students, entrepreneurial readiness is reflected in the ability to recognise business opportunities, manage risk and implement digital-based innovations (Mukhtar et al., 2021; Winarno & Assa'diyah, 2023). This readiness serves as a key benchmark for the effectiveness of entrepreneurship education, particularly in supporting policies such as 'Wirausaha Merdeka' (Ministry of Education, Research, and Technology (Kemdikbudristek), 2024).

Factors influencing entrepreneurial readiness include entrepreneurship education, financial literacy and digital literacy, which interact to shape modern entrepreneurial competencies. Entrepreneurship education fosters the acquisition of knowledge and courage, whilst financial literacy strengthens the ability to manage business resources (Arofah et al., 2018). Digital literacy, on the other hand, enables students to adapt to technological change (Chaffey & Ellis-Chadwick, 2019; Maula et al., 2021). The integration of these three aspects, according to Hasan et al. (2024), enhances students' readiness to become adaptive entrepreneurs in the digital age. Research by Rapina et al. (2023) and Simovic et al. (2023) also confirms that this readiness is influenced by a balance between academic, financial and digital aspects.

Regarding students in Islamic higher education institutions, entrepreneurial readiness is measured not only by business skills alone, but also by the integration of ethical values and religious devotion (Winarno & Assa'diyah, 2023). This phenomenon is concretely illustrated by the 'UIN Sultanah Nahrasiyah Lhokseumawe Online Marketplace Group' community, which serves as a platform for online business transactions and learning amongst students whilst also acting as a tangible example of the application of these principles, where students collaborate to build a business

ecosystem based on Islamic values and solidarity (UIN Online Marketplace Group Community, 2024). Based on the researcher's preliminary observations, out of the 500 members of this group, the majority faced difficulties in increasing their turnover because they relied solely on standard posts without a measurable digital marketing strategy, and frequently ran out of working capital due to the commingling of personal and business funds. These field conditions reinforce the view that students' entrepreneurial readiness in the digital age must encompass a balance between technical, financial and moral competencies, whilst also serving as the empirical basis for the need to conduct this research.

Based on the theoretical arguments and research gaps outlined above, this study explicitly aims to: (1) analyse the influence of entrepreneurship education on students' financial literacy, digital marketing skills and business success; and (2) examine the mediating roles of financial literacy and digital marketing in bridging the influence of entrepreneurship education on students' business success. Specifically, this study explores how the integration of financial skills and digital marketing strategies can enhance the effectiveness of entrepreneurship education management within students' digital business ecosystems. It is hoped that this research will provide strategic contributions towards the development of an adaptive digital entrepreneurship curriculum model within higher education institutions.

METHOD

The type of research employed was associative quantitative research with an explanatory design, which aimed to empirically test and validate the causal relationships between variables. Data analysis in this study utilised an inferential statistical approach based on Partial Least Squares-Structural Equation Modelling (PLS-SEM) to assess the achievement of the research objectives, namely the significance of the direct effects between variables and the significance of the mediating roles of financial literacy and digital marketing. Methodologically, this study adopted this design to empirically validate the causal relationships between variables (Creswell, 2014). Within the conceptual model's architecture, entrepreneurship education is constructed as an exogenous variable that exerts an influence on students' business performance (the endogenous variable), with financial literacy and digital marketing skills serving as mediating variables. The focus of the observation was on the virtual transaction ecosystem within the "UIN Sultanah Nahrasiyah Lhokseumawe Online Market Group", with the observation and data collection period lasting three months, from March to May 2026. The purposive sampling technique was chosen because this study required respondents with specific characteristics relevant to the constructs being measured, namely students who already had practical experience in digital entrepreneurship and had also received formal entrepreneurship training, thereby enabling them to validly reflect all research variables. Participant recruitment was carried out using a purposive sampling protocol, with the following inclusion criteria: (1) demographic representation of Generation Z (born between 1996 and 2012), (2) confirmed completion of formal

entrepreneurship education, and (3) active membership and a history of transactions within the 'UIN Sultanah Nahrasiyah Lhokseumawe Online Marketplace Group' ecosystem (Sugiyono., 2022).

The target population for this study comprises students who are members of the 'UIN Sultanah Nahrasiyah Lhokseumawe Online Market Group' and who meet the inclusion criteria set out above. Referring to the Slovin formula with a margin of error tolerance of 5 per cent, precision calculations for this population projected an optimal sample size in the range of 80 to 100 respondents; consequently, the 100 respondents successfully recruited were deemed statistically representative. Data collection was carried out via the distribution of a closed-ended questionnaire in the form of an electronic form to boost participation rates. The instrument was quantified using a five-point Likert scale, the items of which were strictly adapted from previous literature (Sari et al., 2019).

Empirical testing was then carried out using the Partial Least Squares-Structural Equation Modelling (PLS-SEM) framework via the SmartPLS software. This algorithm was specifically chosen for its robustness in simultaneously processing complex multivariate data and its ability to accommodate non-normal data distributions (Koning et al., 2025; Weiβwange et al., 2025). Procedurally, the testing framework was classified into two evaluation dimensions. The first phase involved calibrating the outer model to verify the psychometric integrity of the instruments, requiring that factor loadings be > 0.7, the Average Variance Extracted (AVE) be > 0.5, and the Composite Reliability be > 0.7. The second phase involves the validation of the inner model to assess structural predictive capability through the coefficient of determination (R^2) and the effect size (f^2). As a methodological conclusion, the significance of causality between variables is tested through the execution of bootstrapping iterations to precisely extract t-statistic and p-value parameters (Ghozali, 2018).

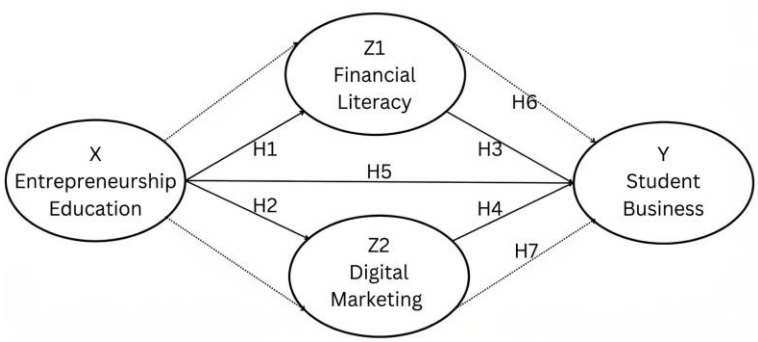


Figure 1. Conceptual Framework

RESULTS AND DISCUSSION

Results

Empirical testing of the conceptual model and hypotheses in this study was conducted entirely using SmartPLS. Procedurally, the testing framework was organised

into two sequential evaluation dimensions, calibration of the outer model (measurement model) and validation of the inner model (structural model).

Evaluation of the Measurement Model (Outer Model)

The outer model assessment phase was specifically conducted to verify the psychometric integrity, in terms of both measurement accuracy (validity) and instrument consistency (reliability), across all constructs comprising the latent variables.

Table 1. Results of the Measurement Model Evaluation (Outer Model)

Variable	Item	Loading	$\alpha(\geq 0.7)$	$CR(\geq 0.7)$	$AVE(\geq 0.7)$
Pembelajaran Kewirausahaan (PK) Entrepreneurship Education	PK2	0.896	0.900	0.927	0.717
	PK4	0.810			
	PK5	0.931			
	PK7	0.765			
	PK8	0.821			
Usaha Mahasiswa (MW)/ Student Enterprises	MW1	0.945	0.917	0.939	0.758
	MW2	0.942			
	MW4	0.727			
	MW5	0.809			
	MW6	0.908			
Literasi Keuangan (LK)/ Financial Literacy	LK1	0.776	0.898	0.922	0.666
	LK2	0.886			
	LK4	0.818			
	LK5	0.925			
	LK7	0.737			
	LK8	0.737			
Digital Marketing (DM)	DM1	0.891	0.908	0.930	0.689
	DM3	0.788			
	DM4	0.813			
	DM5	0.819			
	DM6	0.910			
	DM8	0.748			

Source: Processed primary data, 2026 (SmartPLS output)

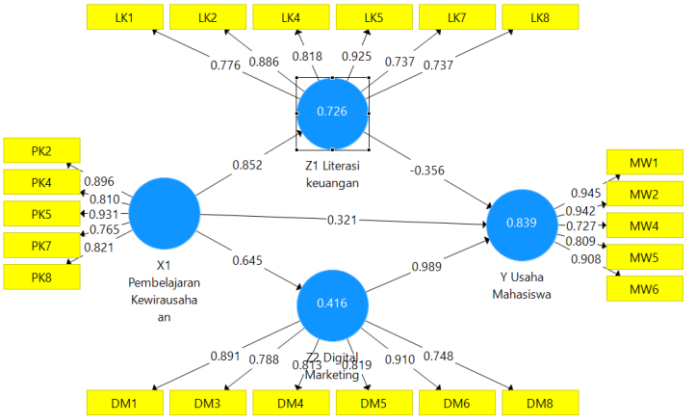


Figure 1. Results of the Measurement Model Test (Outer Model)
Source: Processed primary data, 2026 (SmartPLS output)

The initial stage of this analysis was devoted to calibrating the outer model, in order to verify the psychometric validity including the validity and reliability of each construct. Based on the SmartPLS algorithm's extraction, the range of factor loading coefficients for all indicators was recorded between 0.727 and 0.945. Referring to the

postulate by Koning et al. (2025), these results which absolutely exceed the 0.70 threshold, convincingly validate the robustness of the instrument's convergent validity.

The robustness of these measurement metrics is further reinforced by the Average Variance Extracted (AVE) scores in Table 1, which are consistently distributed above 0.50. This high proportion reflects the latent variables' superior capacity to extract variance from their indicators, which in turn fulfils a fundamental prerequisite for discriminant validity.

With regard to reliability, this study employed a dual approach using Cronbach's alpha and Composite Reliability (CR). The model's internal consistency proved to be very high, with CR values remaining stable between 0.922 and 0.939. In line with this, the Cronbach's alpha scores for the variables PK (0.896), MW (0.917), LK (0.898) and DM (0.908) convincingly exceeded the minimum threshold of 0.70. These empirical findings convincingly validate that the measurement instruments employed possess a superior level of consistency in capturing the dynamics of the observed phenomena (Koning et al., 2025).

Theoretically, this data integrity reinforces the argument that mastery of financial literacy and adaptation to the digital economy are fundamental pillars in accelerating entrepreneurial creativity (Hasan, Jannah, et al., 2024b). Business readiness within the online ecosystem is heavily dependent on the maturity of digital marketing literacy (Wicaksono Ardiansyah et al., 2023), with all these competencies rooted in the effectiveness of entrepreneurship education in building the mental and technical readiness of the younger generation (Hasan, Jannah, et al., 2024b).

Tabel 2. Discriminant Validity.

Variable	PK	MW	Lk	DM
Entrepreneurship Education	0.847			
Student Enterprises	0.655	0.870		
Financial Literacy	0.852	0.736	0.816	
Digital Marketing	0.645	0.901	0.828	0.830

Source: Processed primary data, 2026 (SmartPLS output)

Evaluation of the Structural Model (Inner Model)

R-Square (R^2) Assessment

The evaluation of the structural architecture (inner model) begins by calculating the coefficient of determination (R^2). This predictive parameter is specifically used to quantify the extent to which the variance in the endogenous variable is successfully explained by the exogenous variable. Referring to the SmartPLS computational results, the model's explanatory power is represented by the following R^2 scores:

Table 3. R-Square Results

Endogenous Variables	R Square	R Square Adjusted
Student Enterprise (Y)	0.839	0.833
Financial literacy (Z1)	0.726	0.723
Digital marketing (Z2)	0.416	0.410

Source: Processed primary data, 2026 (SmartPLS output)

Data Interpretation, Student Business Activity (Y): Has an R^2 value of 0.839. This indicates that the variables Entrepreneurship Education (X1), Financial Literacy (Z1) and Digital Marketing (Z2) are collectively capable of explaining 83.9 per cent of the variance in the Student Business Activity variable, whilst the remaining 16.1 per cent is explained by other variables outside the scope of this research model. This value falls within the Strong/Substantial category (above 0.67).

The Financial Literacy variable (Z1): Has an R^2 value of 0.726, meaning that Entrepreneurship Education (X1) explains 72.6 per cent of this variable (Strong category). Digital Marketing variable (Z2), Has an R^2 value of 0.416, indicating that Entrepreneurship Education (X1) accounts for 41.6 per cent of the variation (Moderate category).

F-Square (f^2) Assessment

After assessing the predictive power using R^2, the next step is to evaluate the effect size, or f^2, to determine the relative contribution of each independent variable to the dependent variable. Based on the results of the data analysis, the following f^2 values were obtained:

Table 4. F-Square Results

Variable Relationship	Value (f2)	Categorical Effect	Interpretation
PK (X1) → LK (Z1)	2,650	Large	PK (X1) makes a very strong contribution to explaining the variation in LK (Z1).
PK (X1) → DM (Z2)	0,712	Large	PK (X1) plays a significant role in increasing DM (Z2).
DM (Z2) → MW (Y)	1,823	Large	DM (Z2) is a dominant predictor of MW (Y).
PK (X1) → MW (Y)	0,167	Medium	PK (X1) has a fairly moderate direct effect on MW (Y).
LK (Z1) → MW (Y)	0,111	Small	LK (Z1) influences MW (Y), but its contribution is relatively limited.

Source: Processed primary data, 2026 (SmartPLS output)

The f^2 estimates in Table 4 show that Entrepreneurship Education (PK) makes a significant contribution to Financial Literacy (f^2 = 2.650) and Digital Marketing (f^2 = 0.712). Meanwhile, Digital Marketing was identified as the most dominant factor in driving Entrepreneurial Interest (MW), with an effect size of 1.823 (large category).

On the other hand, the direct contribution of EL to EI is at a moderate level (f2 = 0.167). Conversely, Financial Literacy plays the least significant role, with an f2 value of only 0.111 (small category). Structurally, these findings demonstrate that the effectiveness of this research model is determined more by the variables of Digital Marketing and Entrepreneurship Education than by Financial Literacy.

Hypothesis Testing (Direct Effects)

Hypothesis testing was carried out by evaluating the path coefficients, which were computationally estimated using the bootstrapping technique across a series of 5,000 subsamples. To validate the validity of causality between variables, this study sets a strict significance threshold, a specific path is deemed statistically valid if the T-statistic

exceeds 1.96, accompanied by a probability value (P-value) below the alpha threshold of < 0.05.

Table 5. Hypothesis Test Results (Direct Effects)

Hypothesis	Path Relationship	Original Sample (O)	T-Statistics	P-Values	Notes
H1	PK → MW	0,321	2,493	0,013	Accepted
H2	PK → LK	0,852	20,079	0,000	Accepted
H3	PK → DM	0,645	7,444	0,000	Accepted
H4	DM → MW	0,989	10,256	0,000	Accepted
H5	LK → MW	-0,356	1,678	0,093	Rejected

Source: Processed primary data, 2026 (SmartPLS output)

Analysis of Key Findings:

The Dominance of Digital Marketing: The DM → MW path has the highest coefficient (0.989) and is highly significant. This demonstrates that digital marketing is the most crucial variable in driving the success of student enterprises in the current era. The Phenomenon of Financial Literacy (H5 Rejected): A unique finding emerged regarding the relationship between LK → MW. A P-value of 0.093 (> 0.05) indicates that financial literacy does not have a direct significant effect on student enterprises in this sample. This suggests that financial knowledge alone is not sufficient to drive a business if it is not accompanied by concrete marketing execution. Effectiveness of Learning: Entrepreneurship Education (PK) was found to be highly effective in significantly enhancing students' financial literacy (H2) and digital skills (H3).

Analysis of Mediation Effects (Specific Indirect Effects)

Having tested the direct effects, the next step is to test the role of the mediating variables using the Specific Indirect Effects method via the bootstrapping process. This table shows whether Financial Literacy and Digital Marketing significantly mediate the relationship between Entrepreneurship Education and Student Businesses.

Table 6. Results of the Mediation Effects Test (Specific Indirect Effects)

Path Relationship	Original Sample (O)	T-Statistics	P-Values	Notes
PK → DM → MW	0,638	5,941	0,000	Significant (Mediation)
PK → LK →MW	-0,303	1,630	0,103	Not Significant

Source: Processed primary data, 2026 (SmartPLS output)

Referring to the computational matrix above, it is confirmed that Digital Marketing plays a highly significant mediating role (β = 0.638; p = 0.000). This empirical finding unequivocally deconstructs conventional assumptions; entrepreneurial training is evidently unable to boost business performance instantly and autonomously. To generate real economic traction, the accumulation of such theoretical insights must first be translated into tactical virtual marketing manoeuvres. This finding confirms that, in the digital economy era, technical online marketing skills are the primary bridge that transforms theoretical entrepreneurial knowledge into superior business performance.

Conversely, the results of the mediation test for Financial Literacy revealed a

different finding, with the path being declared insignificant (β = -0.303; p = 0.103). These data indicate that, in the context of current student entrepreneurship, Financial Literacy has not yet been able to fulfil its role as a mediating variable linking entrepreneurial learning to business success. This phenomenon sends a critical signal that the financial knowledge acquired by students may still be largely conceptual and has not yet been fully integrated into strategic decision-making capable of directly driving business growth.

Overall, this research model confirms that strategies for developing student entrepreneurship must prioritise the strengthening of digital literacy. Whilst entrepreneurship education and financial literacy provide an important foundation for personal capacity, it is digital marketing that acts as the determining factor (f-square = 1.823) and the most successful mediating pathway capable of accelerating students' potential into competitive and sustainable business outcomes.

Discussion

The results of this study indicate that entrepreneurship education plays a fundamental role in shaping students' personal capacities; however, its effectiveness in driving business success is highly dependent on mastery of digital technology. From the perspective of adult learning, the finding that entrepreneurship education has a significant impact on students' business ventures underscores the importance of curriculum reform that is not only grounded in Islamic values but also adaptable to the changing times. This aligns with the argument put forward by Hasan et al. (2024), who emphasise that entrepreneurship education for Generation Z must be able to integrate theoretical knowledge with relevant practical skills. At UIN Sultanah Nahrasiyah, educational management that supports the business ecosystem such as the 'Online Market Group' serves as tangible evidence of the implementation of collaborative educational management, where the theory taught in the classroom is transformed into productive creative economic practice.

The role of digital marketing in this model has proven to be the most decisive factor, with important implications for Islamic educational institutions. The significant influence of digital marketing on students' business ventures confirms that the ability to utilise online platforms is a core competency that must be taken seriously in student development programmes (Rasyid et al., 2025). Digital marketing acts as the most successful bridge (mediator) linking educational inputs to the output of business success. This finding is supported by the research of Wicaksono et al. (2023), which states that digital marketing literacy is a key mediator for business readiness, and is consistent with the results of Maula et al. (2021), which confirm that digital marketing literacy has a significant influence on technopreneurship competencies and the sustainability of students' business ventures. If these three findings are synthesised, a consistent pattern emerges across contexts (the Greater Malang area, the pandemic period, and the UIN Sultanah Nahrasiyah community) that digital marketing is not merely a complement, but a prerequisite for the conversion of entrepreneurial

knowledge into tangible business outcomes. For those managing Islamic education, this implies that the management of facilities and infrastructure, as well as student training, must be directed towards strengthening digital literacy to ensure that graduates possess not only moral integrity but also competitiveness in the global labour market.

However, an interesting finding emerged regarding the financial literacy variable, which did not show a significant influence on the success of students' businesses in this sample. This offers a different perspective from the findings of Hasan et al. (2024), who stated that financial literacy is a crucial factor. This lack of significance is thought to be due to the fact that the majority of students' businesses are still micro-scale enterprises characterised by short-term transactional activities; consequently, formal financial management is not yet considered a priority compared to sales strategies. This situation reflects the phenomenon described by Xu and Jiang (2023), whereby in the early stages of entrepreneurship, entrepreneurial behaviour is dominated more by market orientation than by financial management. From an educational management perspective, this presents a challenge for degree programmes to formulate more practical and engaging teaching methods for financial management, so that financial literacy can be integrated into their business decision-making. These findings should also be interpreted with caution, taking into account the results of the indirect effect test in Table 4, where Entrepreneurship Education was still found to contribute significantly to Financial Literacy ($f^2 = 2.650$). This implies that entrepreneurship education successfully shapes students' financial knowledge; however, this knowledge has not yet automatically translated into business management actions that impact business success.

This pattern is consistent with the argument put forward by Rapina et al. (2023) that financial literacy acts more as a mediator in the relationship between financial behaviour and entrepreneurial motivation than as a direct predictor of business performance, and reinforces the findings of Çera et al. (2021) that an increase in financial capability only has a tangible impact when accompanied by consistent changes in financial behaviour. By synthesising these three findings, it can be concluded that the gap between financial knowledge and its implementation amongst novice student entrepreneurs is systemic in nature, rather than merely an individual shortcoming; consequently, curricular interventions need to shift from the enrichment of financial knowledge towards the direct cultivation of business financial management practices.

This study concludes that, from an integrative perspective, to create a sustainable entrepreneurial ecosystem within Islamic educational institutions, institutional management must not limit itself to merely providing motivation. Strengthening digital literacy must be a top priority for curriculum management, as it has been proven to be the sole mediating pathway capable of accelerating students' potential into tangible business outcomes (Kesuma et al., 2023). This is in line with the view of Winarno and Assa'diyah (2023) that entrepreneurship education grounded in the realities of the digital market will be better equipped to produce adaptable entrepreneurs. Consequently, the alignment of Islamic educational values, financial management understanding, and digital technology proficiency is key to bridging the gap between

entrepreneurial intent and genuine business success amongst students.

CONCLUSION

This study concludes by empirically validating that entrepreneurship education interventions have a decisive leverage, not only in boosting financial literacy and enhancing digital marketing skills, but also in driving students' actual business performance. The most significant and somewhat surprising finding is that digital marketing proved to be the sole, highly robust and dominant mediating pathway, whilst financial literacy did not demonstrate a significant mediating effect in driving the success of students' businesses. This provides added conceptual value in that, for student entrepreneurs, mastery of market execution through digital technology is far more decisive for business sustainability than formal, managerial financial governance.

In practical terms, this research offers a new direction for Islamic education management to reconstruct an entrepreneurship curriculum that is more adaptable to the digital ecosystem. Nevertheless, whilst offering robust conclusions, the empirical significance of this research is not without methodological limitations, primarily relating to the restriction of the observation scope to a single institution and the segmentation of the units of analysis, which remains centred on micro-scale business entities (Saputra & Karsiwan, 2024). In response to these gaps, a programme of further research is strongly recommended to expand the demographic scope across multiple universities. Furthermore, the inclusion of new constructs, such as digital self-efficacy and campus ecosystem catalysts, will be essential to enrich the landscape of strategic analysis regarding student entrepreneurship incubation in the future.

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