Islamic Microfinance and Digital Literacy Driving MSME Growth: Innovation as Mediator and Competition as Moderator in Sharia Economic Context

Yusmedi Nurfaizal
faizal@amikompurwokerto.ac.id
Universitas Amikom Purwokerto

Zaenal Khafidin
zaenal.khafidin@iainkudus.ac.id
Universitas Islam Negeri Kudus

ABSTRACT

This study investigates the impact of Islamic microfinance and digital literacy on the growth of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, grounded in the principles of maqāṣid al-sharīʿah. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) on a sample of 100 MSMEs, the study examines both direct and indirect effects through business innovation, with market competition as a moderating variable. The findings reveal that Islamic microfinance and digital literacy significantly promote MSME growth, while business innovation is a key mediating mechanism. Interestingly, the moderating effect of market competition on innovation is negative, suggesting that excessive rivalry may inhibit innovation outcomes. This result is interpreted through both Islamic principles, such as maslahah, musābaqah, and ijtihād, and conventional theories of competition and innovation. The integration of ethical constructs like akhlāq al-raqāmiyyah and sharia-compliant financing (e.g., muḍārabah, mushārakah) demonstrates how spiritual and strategic dimensions interact in entrepreneurial growth. The study contributes to Islamic entrepreneurship theory by formalizing ethical digital literacy and Islamic competition as empirical constructs. It offers practical insights for Islamic financial institutions and policymakers while supporting the Sustainable Development Goals, particularly Goal 8 on inclusive economic growth.

Keywords: *Islamic Microfinance, Digital Literacy, Business Innovation, Sharia Compliant MSMEs, Market Competition, Islamic Entrepreneurship, Maqāṣid al-Sharīʿah.*

IQTISHADIA
Vol. 18 (1) 2025
PP. 71-100
P-ISSN: 1979 - 0724
E-ISSN: 2502 - 3993
DOI : 10.21043/iqtishadia.v18i1.32541

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of Indonesia's economy, contributing more than 60% of the country's GDP and employing over 97% of the workforce (BPS, 2023). Despite their importance, MSMEs still face barriers in accessing formal financial services and integrating technology into their operations. In predominantly Muslim regions, such challenges are exacerbated by the necessity to ensure that financial instruments and business models comply with Islamic ethical and legal principles (Dusuki & Abdullah, 2020; Iqbal et al., 2023).

Islamic microfinance institutions (IMFIs) have emerged as pivotal alternatives to conventional banking, offering sharia-compliant financial products such as *muḍārabah* (profit-sharing) and *mushārakah* (partnership) to underserved entrepreneurs (Chapra, 2020; Masrizal et al., 2024). However, access to Islamic microfinance alone may not suffice in a digital economy. The rapid shift toward digitalization requires MSME actors to possess adequate digital literacy to enhance their competitiveness, improve innovation, and integrate into global value chains (Hasan et al., 2024; Sarif et al., 2023). While this study focuses on MSMEs in Central Java, its implications are relevant for MSMEs across diverse geographic and industrial contexts, particularly in Muslim-majority countries facing similar challenges in ethical financing, digital inclusion, and innovation adoption.

While studies on Islamic microfinance have demonstrated its effectiveness in promoting financial inclusion (Menne et al., 2023; Raimi et al., 2024), limited research has examined how it interacts with non-financial capabilities such as digital literacy to influence MSME growth. Digital literacy beyond technical skills encompasses ethical and strategic competencies in digital environments, an area aligned with Islamic principles of *akhlāq al-raqāmiyyah* or ethical digital conduct (Rangkuti, 2023).

In addition, the entrepreneurial landscape of MSMEs is increasingly shaped by market competition, affecting how much innovation translates into real business growth (Liu et al., 2024). However, in sharia-compliant entrepreneurship literature, competition is rarely studied as a contextual moderator. This presents a phenomenon gap, as MSMEs in highly competitive environments may require different innovation strategies compared to those operating in monopolistic or less contested markets (Harsanto et al., 2024; Susiang et al., 2024).

Existing research often examines microfinance, digital literacy, innovation, and competition in siloed frameworks, with little integration of sharia-based perspectives or multidimensional modeling. This has led to a research gap in understanding how Islamic ethical financing, digital competency, innovation processes, and market structures interact systematically to promote MSME sustainability and ethical value creation (Iqbal et al., 2023; Latifah et al., 2021).

This study addresses that gap by proposing a conceptual model in which Islamic microfinance and digital literacy serve as key predictors of MSME growth, mediated by business innovation and moderated by market competition. The model is grounded in *maqāṣid al-sharīʿah*, aiming to ensure that business practices not only deliver material success but also fulfill broader social and spiritual objectives (Chapra, 2020; Dusuki & Abdullah, 2020).

This integrative perspective allows for a deeper understanding of how sharia-aligned economic behavior fosters innovation (ijtihād), responsible competitiveness (musābaqah), and economic justice (ʿadālah). It also underscores the role of *barakah* (blessing) and *niyyah* (intention) in framing entrepreneurial outcomes, factors often overlooked in mainstream economic discourse but central to Islamic entrepreneurship models (Raimi et al., 2024; Rangkuti, 2023).

Methodologically, this research employs Partial Least Squares Structural Equation Modeling (PLS-SEM) using a sample of 100 MSME actors in Central Java. The model tests direct, mediating, and moderating effects, providing empirical validation for a sharia-compliant MSME growth framework. Through this approach, the study offers both theoretical innovation and practical implications for Islamic finance practitioners, policymakers, and MSME stakeholders.

In sum, this study contributes to the evolving field of Islamic economics and entrepreneurship by offering a novel, empirically tested model that integrates Islamic microfinance, digital literacy, and business innovation within the framework of maqāṣid al-sharīʿah. Unlike previous studies that address these elements in isolation, this research embeds key Islamic epistemological constructs such as *ijtihād* in innovation, akhlāq al-raqāmiyyah in digital engagement, and *musābaqah* in ethical competition into a unified analytical framework. Therefore, advancing a spiritually grounded and economically robust model of MSME growth addresses an important gap in

contemporary Islamic economic literature, especially within the context of digital transformation.

LITERATURE REVIEW

Islamic Microfinance

Islamic microfinance (IMF), grounded in sharia principles such as muḍārabah and mushārakah, offers an ethical alternative to conventional financing by eliminating *riba, gharar*, and *maysir*, while promoting risk-sharing and financial justice (Chapra, 2020; Iqbal et al., 2023; Masrizal et al., 2024). Empirical studies have linked the IMF to financial inclusion and spiritual and social welfare by fulfilling *maṣlaḥah* (public interest or general welfare of the Islamic community) (Raimi et al., 2024). However, existing literature often treats the IMF in isolation, with limited integration into broader capability frameworks. This study addresses that gap by incorporating the IMF alongside digital literacy and innovation in a multidimensional model of MSME growth. Furthermore, spiritual aspects of Islamic entrepreneurship such as trust (amānah), justice (ʿadālah), and accountability (taqwā) play a vital role in shaping ethical behavior and purpose-driven business, as emphasized in Islamic leadership and spiritual quotient theories (Beekun & Badawi, 2005; Kamil, 2012; Ramadani et al., 2017). By embedding these values into conceptual constructs like akhlāq al-raqāmiyyah and ijtihād, the model advances a maqāṣid-aligned framework that connects ethical finance and spiritual consciousness with sustainable economic development.

Digital Literacy

Digital literacy encompasses the skills and ethical competencies required to navigate the digital landscape (UNESCO, 2021). In MSME contexts, digital literacy enables entrepreneurs to utilize technology for marketing, supply chain management, and innovation (Sarif et al., 2023). More recent Islamic discourse introduces *akhlāq al-raqāmiyyah*, or ethical digital conduct, which integrates honesty, accountability, and justice in digital interactions (Rangkuti, 2023). Studies suggest that MSMEs with higher digital literacy have greater adaptability and competitiveness, especially in the post-pandemic economy (Hasan et al., 2024; Menne et al., 2023).

Digital literacy in secular frameworks is commonly defined through functional, cognitive, and socio-emotional dimensions. UNESCO (2021) outlines digital literacy as the ability to access, manage, evaluate, and create information using digital technologies, while van Deursen et al. (2021) emphasizing operational, formal, information, and strategic skills. These frameworks focus on performance, participation, and digital inclusion. From an Islamic perspective, however, digital literacy also involves akhlāq al-raqāmiyyah, ethical digital behavior guided by ṣidq (truthfulness), *ḥayā'* (modesty), and responsibility. While the technical definitions address capability, the Islamic approach emphasizes character and intention (niyyah). Thus, combining both perspectives offers a more holistic framework, ensuring that digital engagement is effective and morally accountable.

Business Innovation

Digital literacy comprises not only technical capabilities such as accessing, evaluating, and creating information using digital tools (UNESCO, 2021; van Deursen et al., 2021) but also the ethical awareness necessary for responsible online behavior. Through improved marketing, innovation, and operational efficiency, digital literacy enhances competitiveness and adaptability within the MSME context, especially in the post-pandemic landscape (Hasan et al., 2024; Menne et al., 2023; Sarif et al., 2023). From an Islamic standpoint, this concept is expanded through akhlāq al-raqāmiyyah, which emphasizes digital ethics rooted in *ṣidq* (truthfulness), ḥayā (modesty), and niyyah (intention), encouraging morally grounded digital engagement (Rangkuti, 2023). Integrating conventional and Islamic perspectives results in a holistic digital competency framework balancing functional performance with ethical conduct, thus ensuring that digital tools serve both strategic and spiritual purposes in MSME development.

Market Competition

Market competition plays a critical role in shaping MSME strategic behavior and innovation outcomes. In Islamic economics, competition is not merely a mechanism for market efficiency but an ethical endeavor known as musābaqah, emphasizing fairness (ʿadālah) and trust (amānah) in business conduct (Chapra, 2020). This contrasts with conventional

frameworks such as Porter's (1985) model of competitive advantage, cost leadership, differentiation, and focus, and Barney's resource-based view, which prioritizes internal capabilities for sustained performance. While these theories underscore efficiency and profitability, Islamic perspectives stress value creation that benefits producers and society. Empirical findings suggest that intense market competition can moderate the positive relationship between innovation and MSME growth, particularly when resources are limited and firms prioritize survival over creativity (Harsanto et al., 2024; Susiang et al., 2024). However, competition may enhance innovation quality and market relevance when guided by ethical principles, especially in sharia-compliant sectors. Therefore, integrating musābaqah into MSME strategy offers a spiritually conscious approach to competition that supports sustainable growth and aligns with Islamic values.

MSME Growth

MSME growth is a multidimensional construct encompassing increased sales, workforce expansion, market reach, and technological advancement (Chipidza, 2021). Islamic frameworks extend this view by incorporating elements of spiritual growth, justice (*ʿadālah*), and sustainability (*istidāmah*) (Dusuki & Abdullah, 2020). Growth is not only an economic indicator but also a measure of contribution to society and alignment with *maqāṣid al-sharīʿah*. Empirical studies confirm that MSME growth is positively influenced by access to ethical financing and strategic capabilities like innovation and digital competence (Iqbal et al., 2023; Raimi et al., 2024).

Islamic Microfinance on MSME Growth

Islamic microfinance offers a unique financing approach that emphasizes fairness, partnership, and risk-sharing features, making it more inclusive and ethically grounded than conventional lending systems (Chapra, 2020; Masrizal et al., 2024). By offering sharia-compliant contracts such as *muḍārabah* and *mushārakah*, Islamic microfinance empowers micro-entrepreneurs to access capital while maintaining religious integrity and social accountability (Iqbal et al., 2023; Junaidi, 2024). These financing mechanisms provide liquidity and enhance business sustainability through ethical supervision and shared responsibility. In the context of MSMEs, especially in rural or underserved Muslim communities, access to Islamic

financial services has been shown to improve income stability, operational capacity, and ultimately business growth (Raimi et al., 2024; Rofik et al., 2025). Moreover, such access fosters a sense of trust and legitimacy in financial transactions, encouraging long-term partnerships and investment in innovation. Therefore, it is hypothesized that:

H1: Islamic Microfinance positively influences MSME Growth

Digital Literacy on MSME Growth

In the context of Industry 4.0 and digital transformation, digital literacy has emerged as a critical enabler for micro, small, and medium enterprises (MSMEs) to stay competitive and relevant in an increasingly interconnected market (Hasan et al., 2024; UNESCO, 2023). It encompasses not only technical competence but also the ability to strategically use digital tools for business development, customer engagement, and operational efficiency. Kumar et al. (2024) emphasize that digital literacy substantially enhances MSME performance by enabling better use of online platforms, payment gateways, and cloud-based services. Their findings indicate that digitally literate MSME owners are more likely to implement data-driven decisions and agile marketing strategies, which positively affect sales growth and customer retention.

Moreover, Miran et al. (2025) found that digital literacy is a foundational driver in the digital ecosystem of MSMEs located in 3T regions (frontier, outermost, and underdeveloped areas), especially when aligned with financial literacy. Their study highlighted that MSMEs in digital cities and special economic zones that invest in digital upskilling tend to show improved financial performance and innovation capacity. From an Islamic perspective, this capacity must be anchored in akhlāq al-raqāmiyyah, ethical conduct in the digital sphere, ensuring that technological adoption serves economic purposes and spiritual accountability (Rangkuti, 2023). This synergy between skill and ethics helps MSMEs foster consumer trust and long-term sustainability. Therefore, it is hypothesized that:

H2: Digital Literacy positively influences MSME Growth

Business Innovation mediates the relationship between Islamic Microfinance and MSME Growth

Innovation is essential for firms to remain competitive and relevant, particularly in rapidly changing environments. Islamic microfinance provides more than capital; it also encourages innovation through partnership-based financing structures that promote mutual input, strategic flexibility, and experimentation (Hamur et al., 2025; Haruna et al., 2024; Menne et al., 2023). Financial support from IMFIs allows MSMEs to invest in product development, customer experience, and operational improvement (Latifah et al., 2021). From a sharia perspective, innovation (*ijtihād fi al-muʿāmalah*) is encouraged as long as it adheres to ethical boundaries and serves societal good. It enables businesses to fulfill economic objectives and spiritual and communal obligations. Thus, Islamic microfinance can indirectly drive MSME growth through enhanced innovation. Therefore, it is hypothesized that:

H3: Business Innovation mediates the relationship between Islamic Microfinance and MSME Growth

Business Innovation mediates the relationship between Digital Literacy and MSME Growth.

Digital literacy provides MSME owners with the knowledge and tools necessary to initiate and manage innovations, such as adopting e-commerce platforms, automating internal processes, or utilizing big data for strategic decisions (Liu et al., 2024; Nuri, 2025). Empirically, Rakib et al. (2024) demonstrated that digital literacy significantly stimulates innovation activities, which then enhance competitive advantage and business sustainability. Similarly, Varona et al. (2021) highlight that digital competencies foster organizational innovation, enabling MSMEs to adapt strategically in dynamic environments. With increased digital capability, MSMEs are more likely to engage in knowledge sharing, collaborative creativity, and market-driven innovation. From an Islamic viewpoint, technology-driven innovation should be grounded in *niyyah* (right intention) and guided by *maqā□id al-sharīʿah* to ensure that technological change serves the greater good. Digital literacy, when ethically applied, enables MSMEs to develop new ideas that are beneficial both economically and socially. Therefore, it is hypothesized that:

H4: Business Innovation mediates the relationship between Digital Literacy and MSME Growth

Market Competition moderates the relationship between Business Innovation and MSME Growth

Market competition significantly influences how innovation efforts contribute to MSME growth, particularly in rapidly evolving environments. In competitive markets, firms are required to consistently develop new products, processes, or business models to sustain differentiation and meet shifting consumer expectations. The literature suggests that innovation yields greater performance gains when embedded within a dynamic and competitive context, where strategic agility and responsiveness become essential (Keelson et al., 2024; Susiang et al., 2024). Such settings offer fertile ground for translating innovation into tangible business growth. In contrast, monopolistic or static markets tend to dilute the performance impact of innovation due to limited consumer choice and market rigidity. Therefore, the effectiveness of business innovation in driving MSME growth is not universal but conditional upon the level of competitive pressure present in the environment.

From the lens of Islamic economics, competition when conducted ethically is viewed as musābaqah, a positive force that motivates improvement and innovation while upholding justice (‘adālah) and fairness (Chapra, 2020). Ethical competition in this context serves not to destroy rivals but to better serve the ummah through excellence, integrity, and mutual benefit. Innovation becomes a commercial and moral imperative, where technological advancement and value creation are aligned with spiritual accountability. Yusfiarto et al. (2022) further emphasized that the influence of innovation on performance is magnified in ethically competitive environments. Thus, under intense but fair market competition, innovation efforts are more likely to foster MSME growth that is both economically viable and spiritually responsible. Therefore, it is hypothesized that:

H5: Market Competition positively moderates the relationship between Business Innovation and MSME Growth.

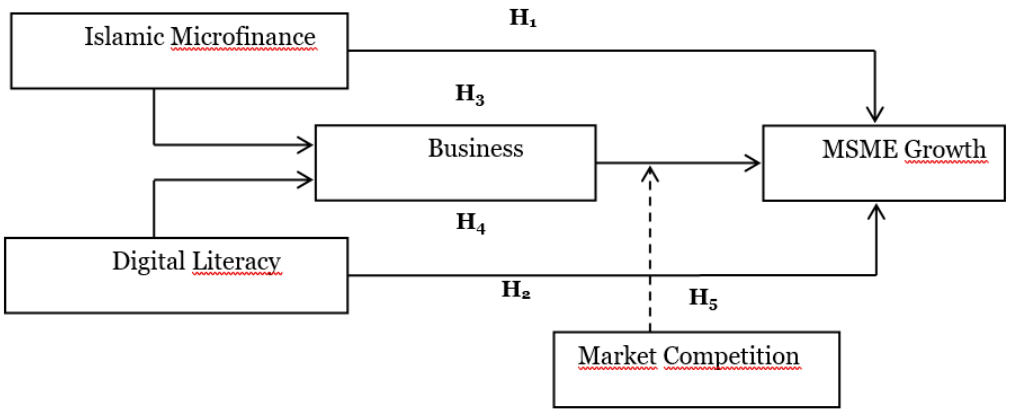


Figure 1 Research Hypothetical Concept

RESEARCH METHOD

This study employed a quantitative design using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the relationships among Islamic microfinance, digital literacy, business innovation, market competition, and MSME growth. The model comprises two independent variables (Islamic Microfinance and Digital Literacy), one mediating variable (Business Innovation), one moderating variable (Market Competition), and one dependent variable (MSME Growth). Primary data were collected via a structured questionnaire administered to 100 MSME owners in Central Java, Indonesia, selected through purposive sampling. Criteria included receiving Islamic microfinance and exhibiting basic digital engagement (e.g., e-commerce or digital payments). A power analysis was conducted by Hair et al. (2021)to validate sample adequacy, indicating that a minimum of 76 observations was needed to detect effects at 5% significance and 0.80 power level, considering the most complex construct. The sample size of 100 thus ensures sufficient statistical power. Data analysis was performed using SmartPLS 4, with bootstrapping and path analysis to assess model reliability and significance.

Measurement Instruments

All variables in this study were measured using five-point Likert scales (1 = Strongly Disagree, 5 = Strongly Agree) and adapted from previously

validated instruments. The indicators were contextualized to fit MSMEs operating in Indonesia's Islamic and digital economic environment.

Table 1 Measurement Instruments

No	Variable	Item	Questionaire
1	Islamic Microfinance (AIM) Masrizal et al. (2024) and Raimi et al. (2024)	AIM1	Our business obtains financing from Islamic microfinance institutions that follow sharia principles.
		AIM2	The financing we receive avoids riba and promotes fairness in transactions.
		AIM3	Islamic microfinance institutions provide us with both funding and business guidance.
		AIM4	We trust Islamic microfinance because it aligns with our religious and ethical values.
2	Digital Literacy (DL) UNESCO (2021) and Rangkuti (2023)	DL1	I can use digital tools (e.g., smartphones, apps) to support business activities
		DL2	I understand how to search, evaluate, and use online information for business decisions
		DL3	I can use social media and online platforms t promote my business
		DL4	I continually strive to improve my digital skills

3	Business Innovation (BI) Nuri (2025) and Latifah et al. (2021)	BI1	We have recently developed new or improved products/services
		BI2	We use new technologies or digital systems in business operations
		BI3	We make creative changes in our business model to meet market needs
		BI4	Innovation is part of our daily decision-making
4	Market Competition (MC) Liu et al. (2024) and Susiang et al. (2024)	MC1	We operate in a highly competitive market
		MC2	Competitors regularly introduce innovations that challenge our position
		MC3	We need to differentiate ourselves continuously to survive in the market
5	MSME Growth (MG) Iqbal et al. (2023)	MG1	Our business revenue has increased over the past year
		MG2	The number of our customers continues to grow
		MG3	We have expanded our production or service capacity
		MG4	We have entered new markets in recent years

While Islamic values are not directly operationalized as an independent construct, each variable in this model has been contextually embedded with sharia-based ethical principles. For instance, Islamic microfinance indicators incorporate sharia-compliant contracts and avoidance of riba, digital literacy reflects akhlāq al-raqāmiyyah (ethical digital conduct), and business innovation is framed through the lens of ijtihād, encouraging creativity within Islamic ethical boundaries. These adaptations reflect a behavioral Islamic research paradigm where ethical dimensions are internalized through the structure of each variable.

Furthermore, the study is philosophically grounded in Islamic epistemology rather than a mere Islamization of conventional constructs. It adopts the integrative knowledge framework (ta'dīb al-'ilm), which unites ethics, spiritual purpose, and empirical inquiry under the Islamic worldview. Concepts such as ijtihād, niyyah, and maqāṣid are not external moral overlays but foundational elements in generating and applying knowledge. This ensures epistemic coherence between theoretical principles and methodological execution.

Data Analysis

Data were analyzed using SmartPLS 4. The analytical process included two major stages: (1) measurement model evaluation, covering reliability, convergent validity, and discriminant validity, and (2) structural model evaluation, testing direct, mediating, and moderating effects using bootstrapping with 5,000 resamples. Moderation analysis was conducted using an interaction term approach, while mediation was tested through the indirect effect path analysis.

RESULTS

Respondent Profile

A total of 100 MSME owners participated in this study, selected from five regencies in Central Java, Indonesia. The distribution of respondents by regency was as follows: Banyumas (28%), Cilacap (22%), Purbalingga (18%), Banjarnegara (17%), and Kebumen (15%). This distribution ensures adequate representation across the Banjarnegara-Purbalingga-Banyumas-Cilacap-Kebumen (Barlingmascakeb) region, which is known for its diversity in SME activity and policy exposure. In terms of gender, the majority of participants were female (58%), while male respondents accounted for 42%. Most respondents (67%) were aged between 30 and 45 years, indicating a demographic segment in its peak entrepreneurial phase. Concerning educational attainment, 65% of MSME owners had completed high school, and 25% held a bachelor's degree, suggesting a moderate level of formal education relevant to business management. The majority of businesses (54%) operated in the culinary and retail sectors, followed by fashion (18%), services (16%), and agribusiness (12%).

Regarding financial inclusion, participants had received funding or business support from Islamic microfinance institutions, highlighting the relevance of sharia-compliant financial mechanisms in this region. Additionally, respondents reported using at least one form of digital platform, such as e-commerce or digital payment systems, in their daily operations, suggesting a relatively high level of digital engagement among MSMEs in the study area. The diversity of business sectors captured in this study, from culinary and retail to fashion and agribusiness, reflects the model's potential generalizability across various MSME subsectors. Each sector presents different innovation needs and digital maturity levels, indicating that the proposed framework can be adapted to multiple industrial realities, including service-based, product-oriented, and informal businesses.

Measurement Model Evaluation

Convergent Validity (Outer Loadings and AVE)

Table 2 *Outer Loadings of Measurement Items*

Indicator	Islamic Microfinance	Business Innovation	Digital Literacy	Market Competition	MSME Growth	MC x BI
AIM1	0.717					
AIM2	0.826					
AIM3	0.726					
AIM4	0.779					
BI1		0.886				
BI2		0.863				
BI3		0.896				
BI4		0.904				
DL1			0.817			
DL2			0.833			
DL3			0.812			
DL4			0.785			
MC1				0.959		
MC2				0.973		
MC3				0.940		
MG1					0.935	
MG2					0.957	
MG3					0.940	
MG4					0.946	
MC x BI						1.00

Source: Processed Data, 2025

Table 1 presents the outer loading values for all measurement items associated with their respective constructs. Consistent with the acceptable threshold of 0.70 for reflective indicators (Hair et al., 2021), all items in this study demonstrated strong indicator reliability. Islamic Microfinance items (AIM1–AIM4) showed loadings ranging from 0.717 to 0.826, indicating good reliability. Business Innovation indicators (BI1–BI4) exceeded 0.86, confirming robust measurement properties. Digital Literacy items (DL1–DL4) also met the reliability standard, with values from 0.785 to 0.833. Market Competition and MSME Growth constructs both exhibited loadings above 0.94, reflecting excellent reliability. The interaction term Market Competition × Business Innovation demonstrated a perfect loading of 1.00, indicating proper specification for moderated analysis. These results confirm that the measurement model achieves satisfactory convergent validity.

All item loadings were above the 0.7 threshold, and Average Variance Extracted (AVE) values exceeded 0.50 for each construct, confirming convergent validity (Hair et al., 2021).

Table 3 *Convergent Validity*

Construct	AVE
Business Innovation	0,788
Digital Literacy	0,659
Islamic Microfinance	0,582
MSME Growth	0,892
Market Competition	0,916

Source: Processed Data, 2025

The results of the convergent validity assessment are presented in Table 2, which displays the Average Variance Extracted (AVE) values for each construct within the measurement model. Convergent validity refers to the extent to which indicators of a specific construct converge or share a high proportion of variance. According to the widely accepted criterion by Fornell and Larcker (1981), an AVE value greater than 0.50 indicates that the construct explains more than half of the variance in its observed indicators, thereby demonstrating adequate convergent validity. As shown in Table 2, all constructs meet this threshold. Business Innovation records an AVE of 0.788, Digital Literacy yields an AVE of 0.659, Islamic Microfinance achieves

0.582, MSME Growth has 0.892, and Market Competition reaches 0.916. These values provide strong empirical support for the convergent validity of the constructs, confirming that each latent variable is well-represented by its associated indicators. Notably, the constructs of MSME Growth and Market Competition exhibit exceptionally high AVE scores, further reinforcing the reliability and internal consistency of the measurement model.

Internal Consistency Reliability

Composite Reliability (CR) and Cronbach's Alpha values were above 0.7, indicating strong internal consistency.

Table 4 *Reliability*

Construct	CR	Cronbach's Alpha
Business Innovation	0,937	0,910
Digital Literacy	0,886	0,828
Islamic Microfinance	0,847	0,759
MSME Growth	0,971	0,960
Market Competition	0,970	0,954

Source: Processed Data, 2025

The reliability of the measurement model was assessed using two key indicators: Composite Reliability (CR) and Cronbach's Alpha. Both measures evaluate the internal consistency of the items forming each latent construct. While Cronbach's Alpha is traditionally used to assess reliability, Composite Reliability is often preferred in structural equation modeling (SEM) due to its ability to account for indicator loadings. According to Hair et al. (2021), values above 0.70 for both CR and Cronbach's Alpha indicate satisfactory internal consistency. As shown in Table 3, all constructs exceed this threshold. Business Innovation demonstrates high reliability with a CR of 0.937 and Cronbach's Alpha of 0.910. Digital Literacy reports CR and Alpha values of 0.886 and 0.828, respectively. Islamic Microfinance, though slightly lower, still meets the acceptable standard with a CR of 0.847 and an Alpha of 0.759. The constructs of MSME Growth (CR = 0.971, Alpha = 0.960) and Market Competition (CR = 0.970, Alpha = 0.954) show exceptional reliability, indicating highly consistent measurement across their respective

items. These results confirm that the constructs are measured reliably, and the indicators within each latent variable exhibit strong internal consistency.

Structural Model Evaluation

Coefficient of Determination (R^2)

Table 5 *Coefficient of Determination (R^2)*

Endogenous Variable	R^2
Business Innovation	0,562
MSME Growth	0,681

Source: Processed Data, 2025

In this study, the R^2 value for Business Innovation is 0.562, suggesting that approximately 56.2% of the variance in Business Innovation is explained by its predictors, most likely Digital Literacy and Islamic Microfinance. This value falls within the moderate-to-substantial range, indicating a robust level of explanatory relevance. Meanwhile, the R^2 for MSME Growth stands at 0.681, indicating that 68.1% of its variance is accounted for by variables such as Business Innovation, Digital Literacy, Islamic Microfinance, Market Competition, and the interaction term between Market Competition and Business Innovation. This high R^2 reflects a substantial predictive capacity of the model in explaining the growth of micro, small, and medium-sized enterprises (MSME). Collectively, these findings underscore the model's capability to capture a meaningful amount of variance in the core constructs, thereby supporting the overall strength of the structural model.

Predictive Relevance (Q^2)

Using the blindfolding procedure, Q^2 values were found to be above 0, confirming predictive relevance.

Table 6 *Predictive Relevance (Q^2)*

Construct	Q^2
MSME Growth	0,598
Business Innovation	0,434

Source: Processed Data, 2025

As presented in Table 5, the Q^2 value for MSME Growth is 0.598, which signifies a high level of predictive relevance for this endogenous construct. This indicates that the exogenous variables, including Business Innovation, Digital Literacy, Islamic Microfinance, and Market Competition, collectively possess strong predictive power in explaining the future values of MSME Growth. Likewise, the Q^2 value for Business Innovation is 0.434, demonstrating substantial predictive capability in capturing the constructs variation based on its antecedents.

Direct Effect Test Results

The results show that all direct paths are significant ($p < 0.05$), validating the hypothesized relationships.

Table 7 *Direct Effect Test Results*

Path	β	T-value	p-value
Business Innovation -> MSME Growth	0,384	5,096	0,000
Digital Literacy -> Business Innovation	0,372	4,183	0,000
Digital Literacy -> MSME Growth	0,228	2,647	0,008
Islamic Microfinance -> Business Innovation	0,427	5,326	0,000
Islamic Microfinance -> MSME Growth	0,089	0,918	0,359
Market Competition x Business Innovation -> MSME Growth	-0,240	3,307	0,001

Source: Processed Data, 2025

Table 6 presents the results of the direct effect analysis using structural equation modeling. The standardized path coefficients (β), T-values, and p-values provide statistical insights into the relationships between constructs in the model. Most paths exhibit significant and positive effects, affirming the hypothesized relationships, except for one non-significant path. The analysis shows that Business Innovation significantly impacts MSME Growth ($\beta = 0.384$, $T = 5.096$, $p < 0.001$), supporting innovation as a catalyst for competitive advantage and enterprise development. Additionally, Digital Literacy positively influences both Business Innovation ($\beta = 0.372$, $T = 4.183$, $p < 0.001$) and MSME Growth ($\beta = 0.228$, $T = 2.647$, $p = 0.008$),

highlighting the role of digital competence in enhancing operational agility and knowledge-driven performance. These findings are in line with recent empirical studies indicating that digital capability enables MSMEs to adapt more effectively to dynamic environments (Soesetio et al., 2024).

Moreover, Islamic Microfinance strongly influences Business Innovation (β = 0.427, T = 5.326, p < 0.001), validating the notion that financial services embedded with Islamic values can support entrepreneurial transformation. However, its direct influence on MSME Growth is not statistically significant (β = 0.089, T = 0.918, p = 0.359). This suggests that while Islamic microfinance empowers innovation, its growth impact may be indirectly mediated through capability enhancement rather than direct output expansion. This is consistent with the Islamic economic principle of *tadarruj* (gradual progression), emphasizing sustainable rather than instant economic upliftment. Interestingly, the interaction between Market Competition and Business Innovation has a significant but negative effect on MSME Growth (β = -0.240, T = 3.307, p = 0.001). In high-competition environments, innovation may fail to yield optimal growth due to resource fragmentation or short-termism. From a sharia perspective, this indicates the need for market ethics (akhlaq tijariyah) and fair competition principles. Islam encourages *ta'awun* (mutual support) over destructive rivalry (tanaafus dharari), and these results reinforce the importance of integrating moral filters within economic policies to ensure that innovation leads to *barakah* and equitable progress.

Indirect Effect Test Results (Mediation)

Table 8 *Indirect Effect Test Results*

Path	β	T-value	p-value
Digital Literacy -> Business Innovation -> MSME Growth	0,143	3,207	0,001
Islamic Microfinance -> Business Innovation -> MSME Growth	0,164	3,602	0,000

Source: Processed Data, 2025

Table 7 reports the mediation analysis results, where Business Innovation serves as a mediating variable in the relationship between Digital Literacy and MSME Growth, as well as between Islamic Microfinance

and MSME Growth. Both indirect effects are statistically significant, with p-values well below the 0.05 threshold, indicating robust mediating roles. The first pathway, Digital Literacy, Business Innovation, MSME Growth, yields a coefficient of β = 0.143 (T = 3.207, p = 0.001), indicating that digital literacy contributes to MSME growth primarily through its enhancement of innovation capacity. This supports the view that digital skills alone may not directly elevate firm performance. However, their integration into innovative practices enables businesses to adapt, create value, and compete effectively in modern markets (Sasmita et al., 2024). The second indirect path, Islamic Microfinance, Business Innovation, MSME Growth, is also significant (β = 0.164, T = 3.602, p < 0.001), confirming that access to sharia-compliant financing facilitates innovation, which in turn drives business growth. This pathway aligns with the objectives of maqasid al-sharia, especially hifz al-mal (protection of wealth) and *tanmiyah al-mal* (growth of wealth), by demonstrating that financial empowerment through Islamic microfinance is most impactful when it fosters entrepreneurial creativity and structured innovation. These findings are in line with Islamic ethical finance literature, which posits that growth should be achieved not only through capital injection but also through knowledge transfer and innovation that serves the broader good (maslahah) (Dusuki & Abdullah, 2020). Overall, the mediating role of Business Innovation in both pathways reflects the interdependence of knowledge, financing, and creativity, emphasizing that sustainable MSME growth requires not only resources but also purposeful transformation aligned with both market and moral imperatives.

Figure 2 shows the existence of a structural model related to values that are in accordance with the assumptions.

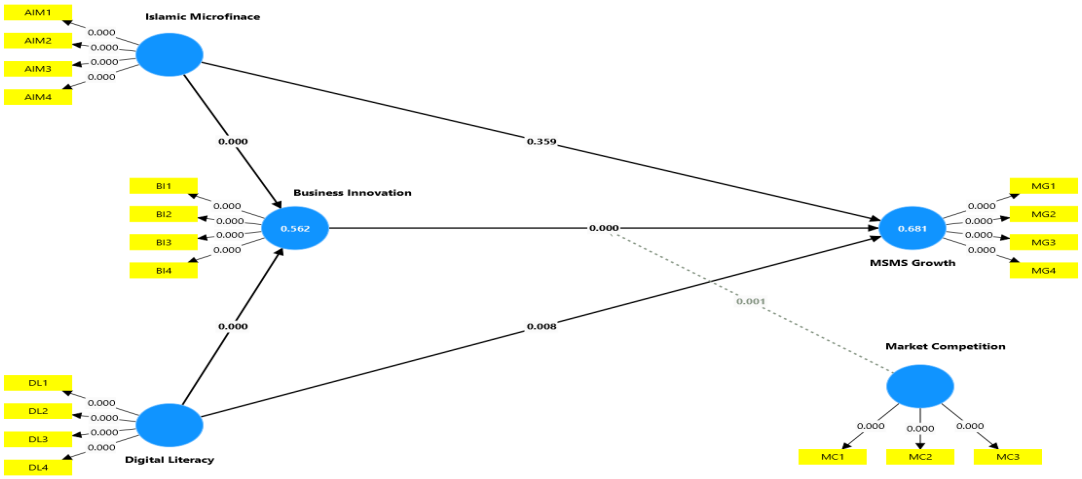


Figure 2 *Structural Model*

This study proposes an alternative structural configuration for future research to enrich the theoretical discourse and broaden the analytical lens. While the current model conceptualizes business innovation as a mediating variable, an alternative proposition positions it as a moderating variable. This reconceptualization suggests that innovation does not merely result from Islamic microfinance and digital literacy but may actively shape the strength and direction of their influence on MSME growth. As a moderator, innovation could amplify or diminish the impact of these inputs depending on contextual factors such as market readiness, institutional support, and ethical alignment. This alternative lens offers complementary insight into the strategic role of innovation within Islamic entrepreneurial ecosystems and invites further empirical validation across diverse operational settings.

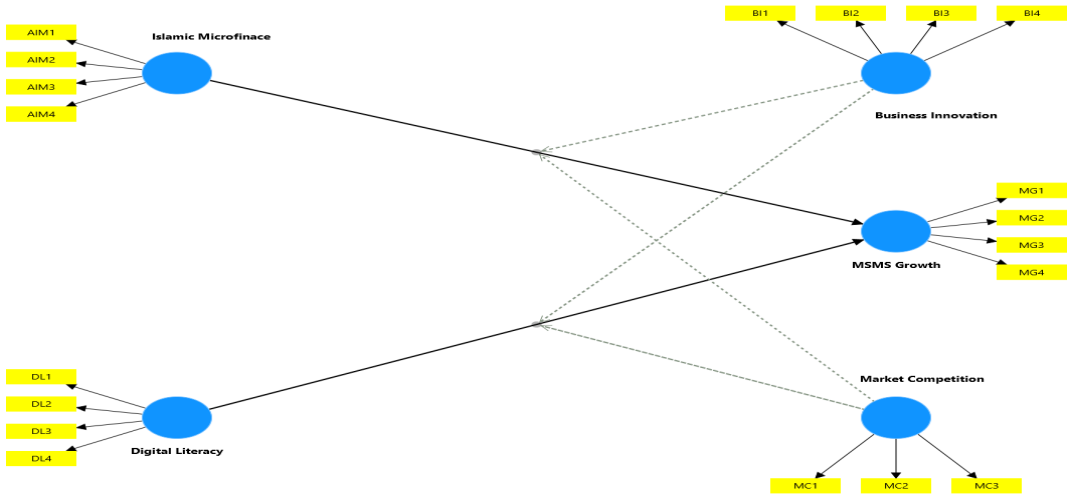


Figure 3 *Alternative Structural Proposition for Future Research*

DISCUSSION

This study offers a novel empirical translation of Islamic economic principles into a behavioral model of MSME growth, demonstrating how constructs such as ijtihād (creative adaptation), akhlāq al-raqāmiyyah (digital ethics), and musābaqah (constructive competition) are operationalized within a structurally testable framework. This integrative model aligns with a growing stream of Islamic economics that seeks to reconcile spiritual accountability with empirical rigor and market-based performance, particularly in digitally evolving entrepreneurial ecosystems.

The significant effect of Islamic microfinance on MSME growth reflects the foundational role of sharia-compliant financing in promoting not only access to capital but also ethical economic empowerment. Financing instruments such as muḍārabah and mushārakah institutionalize ʿadālah (justice), taʿāwun (mutual cooperation), and ṣidq (transparency), contributing to equitable partnerships and responsible financial behavior (Chapra, 2020; Iqbal et al., 2023). In addition to material benefits, these mechanisms provide spiritual upliftment by avoiding riba and fostering *ḥalāl* economic engagement (masʾūliyyah ukhrawiyyah), thus fulfilling the broader objectives of maqāṣid al-sharīʿah such as *ḥifẓ al-māl* (protection of wealth) and *taqwīm al-māl* (circulation of wealth) (Alkhan & Hassan, 2021).

This study also confirms that digital literacy enhances MSME growth by improving strategic adaptability, operational efficiency, and customer engagement (Hasan et al., 2024; Kumar et al., 2024). However, the novelty lies in the integration of akhlāq al-raqāmiyyah, an Islamic digital ethic that ensures truthfulness (ṣidq), trust (amānah), and moderation (wasāṭiyyah) in digital behavior (Rangkuti, 2023). This dual perspective, technical and ethical, embodies the Islamic epistemological principle that *ʿilm* (knowledge) must be guided by *ḥikmah* (wisdom), creating a pathway to profitability and spiritually accountable innovation.

Beyond their individual contributions, Islamic microfinance and digital literacy converge as key innovation enablers when grounded in Islamic ethics. Muḍārabah encourages co-creative experimentation and de-risks innovation under interest-free arrangements (Masrizal et al., 2024), while digital tools amplify reach and productivity. Innovation, reframed as ijtihād (ethical reasoning), thus becomes a spiritually guided process aligned with maṣlaḥah (public good), iḥsān (excellence), and istiqāmah (consistency) (Nuri, 2025).

The study also identifies a significant negative moderating effect of market competition on the innovation growth relationship. Strategically, heightened competition shifts managerial focus from innovation to short-term survival (Manalu et al., 2023; Soesetio et al., 2024). For MSMEs with limited resources, innovation becomes less feasible under intense competitive pressure (Lestari et al., 2024; Mubeen et al., 2022). From an Islamic lens, this finding signals the erosion of musābaqah when competition is no longer guided by *akhlāq tijāriyyah* (commercial ethics) and instead devolves into *tanaafus al-mudharr* (harmful rivalry) or *ikhtikār* (hoarding). Therefore, the findings urge policymakers to strengthen ethical market governance and

cooperative innovation platforms (ta'āwun), ensuring innovation remains aligned with maqāṣid-oriented development (Dusuki & Abdullah, 2020; Khan, 2019).

Although Islamic ethics and spirituality are not directly modeled as independent constructs, they are conceptually embedded within the measurement design. Islamic microfinance encapsulates justice and cooperation; digital literacy reflects akhlāq al-raqāmiyyah; and innovation is defined through ijtihād. This reflects an epistemological stance where values are internalized through niyyah (intention) and ethical practice, not abstractly separated into observable indicators. The result is a model that maintains theoretical fidelity to Islamic law while achieving empirical parsimony and robustness.

Furthermore, while the current model positions innovation as a mediator, alternative structural pathways could be explored. Future research might examine innovation as a moderator to assess how it influences the relationship between digital and financial capacities and business outcomes. Incorporating constructs such as ethical orientation or internalized religiosity could enhance the explanatory power of spiritually grounded entrepreneurship models and promote theory refinement.

The findings offer important practical and policy implications. On a practical level, Islamic Microfinance Institutions (IMFIs) are encouraged to incorporate ethical digital training into financing packages, promoting digital competence alongside ḥalāl financing. Collaborative platforms between MSMEs and Islamic fintech providers based on mushārakah and ijtihādiyyah may foster sharia-compliant, innovation-driven ecosystems. At the policy level, this research aligns with Sustainable Development Goal 8 (decent work and economic growth). Regulators such as Financial Services Authority (*Otoritas Jasa Keuangan*, OJK) and the National Committee for Islamic Economics and Finance (*Komite Nasional Ekonomi dan Keuangan Syariah*, KNEKS) can leverage these insights to design the "MSME Ethical Innovation Index," a benchmarking tool that integrates ethical standards, financial access, and digital readiness.

Finally, through interpretive triangulation, this study bridges Islamic and conventional theories. Islamic microfinance aligns with the resource-based view 1991), innovation reflects both ijtihād and Schumpeter's creative destruction; and competition resonates with both Porter's strategic rivalry and the Islamic concept of musābaqah. Thus, this model does not merely

replicate Western constructs in Islamic terms; it offers a coherent synthesis that advances a spiritually embedded and contextually grounded theory of MSME development.

CONCLUSION

This study confirms the strategic role of business innovation in mediating the effects of digital literacy and Islamic microfinance on MSME growth, while uncovering a negative moderating effect of market competition. These findings highlight that digital competence and sharia-compliant financing are essential for ethically grounded innovation, driving sustainable MSME performance. However, excessive competition may undermine this potential, particularly in resource-constrained settings. This underscores the importance of embedding moral-economic principles such as ʿadālah (justice), taʿāwun (cooperation), and maṣlaḥah (public welfare) within regulatory frameworks, ensuring innovation serves both market function and Islamic ethical objectives.

Although Islamic values are not modeled as standalone constructs, they are embedded within each variable of digital literacy through akhlāq al-raqāmiyyah, financing via muḍārabah and mushārakah, and innovation through ijtihād, reflecting an integrated Islamic epistemology where ethics and intent (niyyah) shape entrepreneurial behavior. Contextually rooted in Central Java, the framework offers broader applicability for Muslim-majority economies seeking to align financial inclusion and digital transformation with maqāṣid al-sharīʿah. It advances Islamic economic theory by demonstrating that its values can be empirically operationalized, offering a coherent, spiritually grounded model for values-driven MSME development.

LIMITATION

While this study offers valuable insights into the dynamics between digital literacy, Islamic microfinance, business innovation, and MSME growth, several limitations must be acknowledged. First, the research design is cross-sectional, restricting the ability to capture longitudinal causal relationships or temporal changes in innovation behavior and competitive responses. Future studies should adopt longitudinal or panel-based approaches to more robustly assess how innovation and competition interact over time within MSME ecosystems. Second, the study focuses on a specific regional and cultural context, which may limit the generalizability of findings across

different Muslim-majority markets or non-Islamic economies. Although the incorporation of Islamic finance elements enriches the socio-religious perspective of MSME development, contextual heterogeneity, including legal structures, financial literacy, and market sophistication, may influence how innovation and competition affect growth differently elsewhere. Finally, the model does not explicitly account for the spiritual or ethical orientations of entrepreneurs, which, in Islamic economics, play a crucial role in shaping business motivation and decision-making. Variables such as niyyah (intention), amanah (trust), and ihsan (excellence) may moderate or mediate the relationships observed. Including such dimensions in future empirical frameworks can provide a more holistic understanding of MSME development in alignment with maqasid al-sharia and faith-based business ethics.

REFERENCES

Alkhan, A. M., & Hassan, M. K. (2021). Does Islamic microfinance serve maqāsid al-shari'a? *Borsa Istanbul Review*, *21*(1), 57–68. https://doi.org/10.1016/j.bir.2020.07.002

Barney. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Beekun, R. I., & Badawi, J. A. (2005). Balancing ethical responsibility among multiple organizational stakeholders: The Islamic perspective. *Journal of Business Ethics*, *60*(2), 131–145. https://doi.org/10.1007/s10551-004-8204-5

Chapra, U. (2020). The future of economics: An Islamic perspective. In *Review of Islamic Economics* (Vol. 2, Issue 1). Kube Publishing.

Chipidza, W. (2021). The effect of toxicity on COVID-19 news network formation in political subcommunities on Reddit: An affiliation network approach. *International Journal of Information Management*, *61*(October 2020), 102397. https://doi.org/10.1016/j.ijinfomgt.2021.102397

Dusuki, A. W., & Abdullah, N. I. (2020). Maqasid al-shari`ah, maslahah, and corporate social responsibility. *American Journal of Islam and Society*, *24*(1), 25–45. https://doi.org/10.35632/ajis.v24i1.415

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Marko Sarstedt. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). SAGE Publications, Inc.

Hamur, A., Smajić, H., & Knezović, E. (2025). Green entrepreneurial orientation and SMEs' performance: The mediating role of innovation types. *Journal of the International Council for Small Business*, *00*(00), 1–18. https://doi.org/10.1080/26437015.2025.2461037

Harsanto, B., Pradana, M., Firmansyah, E. A., Apriliadi, A., & Ifghaniyafi Farras, J. (2024). Sustainable halal value chain performance for MSMEs: The roles of digital technology, R&D, financing, and regulation as antecedents. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2397071

Haruna, A., Oumbé, H. T., Kountchou, A. M., & Pilag Kakeu, C. B. (2024). Can Islamic finance enhance the innovation capacity of Cameroonian SMEs? Empirical evidence based on a multivariate probit approach. *Borsa Istanbul Review*, *24*(1), 187–200. https://doi.org/10.1016/j.bir.2023.11.006

Hasan, M., Jannah, M., Supatminingsih, T., Ahmad, M. I. S., Sangkala, M., Najib, M., & Elpisah. (2024). Understanding the role of financial literacy, entrepreneurial literacy, and digital economic literacy on entrepreneurial creativity and MSMEs' success: a knowledge-based view perspective. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2433708

Iqbal, I., Maulana, H., Md Zabri, M. Z., & Suminto, A. (2023). Determinants of participation in the utilization of Islamic microfinance products: Empirical studies using the theory of planned behavior (TPB) approach in Indonesia. *Ihtifaz: Journal of Islamic Economics, Finance, and Banking, 6*(2). https://doi.org/10.12928/ijiefb.v6i2.9129

Junaidi, J. (2024). Islamic banks' contribution to Indonesia districts' economic growth and poverty alleviation. *Journal of Economics,*

Finance and Administrative Science, *29*(58), 294–308. https://doi.org/10.1108/JEFAS-06-2021-0097

Kamil, N. M. (2012). Islamic perspective on the relationship between spiritual quotient (SQ) and entrepreneurial competencies (EC). *International Journal of Business and Social Science*, *3*(10), 275–281.

Keelson, S. A., Cúg, J., Amoah, J., Petráková, Z., Addo, J. O., & Jibril, A. B. (2024). The influence of market competition on SMEs' performance in emerging economies: Does process innovation moderate the relationship? *Economies*, *12*(11). https://doi.org/10.3390/economies12110282

Khan, T. (2019). Reforming Islamic finance for achieving sustainable development goals. *Journal of King Abdulaziz University, Islamic Economics*, *32*(1), 3–21. https://doi.org/10.4197/Islec.32-1.1

Kumar, P., Chandra, A., Shivani, S., & Pillai, V. (2024). Evaluating the impact of digital and financial literacy on MSME performance. *Journal of the International Council for Small Business*, *6*(2), 284–296. https://doi.org/10.1080/26437015.2024.2405548

Latifah, L., Setiawan, D., Aryani, Y. A., & Rahmawati, R. (2021). Business strategy – MSMEs' performance relationship: Innovation and accounting information system as mediators. *Journal of Small Business and Enterprise Development*, *28*(1), 1–21. https://doi.org/10.1108/JSBED-04-2019-0116

Lestari, N. S., Rosman, D., & Triana, I. (2024). Analyzing the effect of innovation and strategic planning on MSME performance, utilizing technology adoption as a moderator. *Procedia Computer Science*, *245*(C), 500–507. https://doi.org/10.1016/j.procs.2024.10.276

Liu, L., Cui, L., Han, Q., & Zhang, C. (2024). The impact of digital capabilities and dynamic capabilities on business model innovation: The moderating effect of organizational inertia. *Humanities and Social Sciences Communications*, *11*(1). https://doi.org/10.1057/s41599-024-02910-z

Manalu, V. G., Nurhayati, S., & Setyanto, R. P. (2023). The moderating effect of competitive intensity on foresight capability and product innovation

of SMEs in Indonesia. *Problems and Perspectives in Management*, *21*(1), 219–229. https://doi.org/10.21511/ppm.21(1).2023.19

Masrizal, Sukmana, R., & Trianto, B. (2024). The effect of Islamic financial literacy on business performance with emphasis on the role of Islamic financial inclusion: Case study in Indonesia. *Journal of Islamic Marketing*, 166–192. https://doi.org/10.1108/JIMA-07-2022-0197

Menne, F., Mardjuni, S., Yusuf, M., Ruslan, M., Arifuddin, A., & Iskandar, I. (2023). sharia economy, Islamic financial performance, and factors that influence it—Evidence from Indonesia. *Economies*, *11*(4). https://doi.org/10.3390/economies11040111

Miran, M., Evinita, L., & Pesak, P. J. (2025). Financial literacy as mediating factors affecting the financial performance of MSMEs in digital cities and special economic zones in 3T regions. *Edelweiss Applied Science and Technology*, *9*(3), 801–816. https://doi.org/10.55214/25768484.v9i3.5320

Mubeen, R., Han, D., Abbas, J., Raza, S., & Bodian, W. (2022). Examining the relationship between product market competition and Chinese firms' performance: The mediating impact of capital structure and moderating influence of firm size. *Frontiers in Psychology*, *12*(May), 1–13. https://doi.org/10.3389/fpsyg.2021.709678

Nuri, R. (2025). Transformation of Islamic finance in the digital era: Developments and challenges of halal fintech. *Journal of Halal Review*, *1*(1), 1–14.

Porter, M. E. (1985). (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.

Raimi, L., Abdur-Rauf, I. A., & Ashafa, S. A. (2024). Does Islamic sustainable finance support sustainable development goals to avert financial risk in the management of Islamic finance products? A critical literature review. *Journal of Risk and Financial Management*, *17*(6). https://doi.org/10.3390/jrfm17060236

Rakib, M., Azis, M., Najib, M., & Isma, A. (2024). Impact of digital literacy, business innovation, competitive advantage on the existence of SMEs:

A quantitative study in Makassar City, Indonesia. *Quality - Access to Success*, *25*(198), 277–283. https://doi.org/10.47750/QAS/25.198.30

Ramadani, V., Dana, Gërguri-Rashiti, S., & Ratten. (2017). Entrepreneurship and religion. In Entrepreneurship and Management in an Islamic Context. In *Springer*. Springer. https://doi.org/10.1108/EBR-11-2023-0342

Rangkuti, M. Y. (2023). Toward a holistic framework of Islamic business ethics: Insights from leadership, halal practices, and finance in a digital age. *Sinergi International Journal of Islamic Studies*, *3*, 114–127.

Rofik, M., Boulanouar, Z., Yuli, S. B. C., & Wardani, D. T. K. (2025). Revisiting the impact of Islamic finance on economic growth: a decomposition analysis using Indonesia as a testing ground. *International Journal of Islamic and Middle Eastern Finance and Management*, *18*(4), 765–786. https://doi.org/10.1108/IMEFM-06-2024-0288

Sarif, R., Susanto, R. M., Retnasih, N. R., & Segaf, S. (2023). Revolutionizing resilience: MSMEs' journey with digital strategies in post-pandemic recovery. *JMK (Jurnal Manajemen dan Kewirausahaan)*, *8*(3), 203. https://doi.org/10.32503/jmk.v8i3.4145

Sasmita, H. A., Sudarnice, & Phradiansah. (2024). The role of information technology through moderating competition intensity in improving the innovation performance of MSME actors. *Procuratio: Jurnal Manajemen dan Bisnis*, *03*(2), 51–61.

Soesetio, Y., Soetjipto, B. E., Handayati, P., Winarno, A., Rudiningtyas, D. A., Mawardi, M. C., & Realita, T. N. (2024). Innovation and firm competitiveness as intervening variables in improving financial performance of MSMEs. *Jurnal Aplikasi Manajemen*, *22*(2), 524–546. https://doi.org/10.21776/ub.jam.2024.022.02.16

Susiang, M. I. N., Siswanti, I., Permana, D., & Wibowo, M. W. (2024). Effects of competitive intelligence and halal integrity on Halalan Tayyiban implementation strategy in Indonesian MSMEs: The mediating role of halal orientation strategy. *Journal of Islamic Marketing*. https://doi.org/10.1108/JIMA-10-2023-0344

UNESCO. (2021). Digital literacy for lifelong learning. In *Literacy* (Issue March, p. 30). United Nations Educational. https://unesdoc.unesco.org

UNESCO. (2023). A global framework of reference on digital literacy skills for indicator 4.4.2. In *UNESCO Institute* (51st ed., pp. 1–146). UNESCO Institute. https://doi.org/10.1145/3577014

van Deursen, A. J. A. M., van der Zeeuw, A., de Boer, P., Jansen, G., & van Rompay, T. (2021). Digital inequalities in the internet of things: Differences in attitudes, material access, skills, and usage. *Information Communication and Society*, *24*(2), 258–276. https://doi.org/10.1080/1369118X.2019.1646777

Varona, J. M. G., Paredes, A. L., Poza, D., & Acebes, F. (2024). Building and development of an organizational competence for digital transformation in SMEs. *Journal of Industrial Engineering and Management*, *14*(1), 15–24. https://doi.org/10.3926/jiem.3279

Yusfiarto, R., Pambekti, G. T., Setiawan, A., Khoirunnisa, A. N., & Nugraha, S. S. (2022). Does Islamic social capital enhance SMEs sustainable performance? *Journal of Islamic Monetary Economics and Finance*, *8*(1), 113–132. https://doi.org/10.21098/jimf.v8i1.1398