



Sharia MSME Strategy Through the Synergy of Literacy Capital Access and Technology

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ABSTRACT

The growth of industrial activity has intensified waste generation, posing challenges to environmental sustainability and resource efficiency. This study examines the application of process integration in sustainable industrial waste treatment systems and evaluates its contribution to energy efficiency, resource utilization, and environmental impact reduction. Using conceptual analysis and case studies of waste treatment technologies—including heat recovery, material recycling, and integrated reaction-separation processes—the study applies pinch analysis and mass-energy balance evaluation to identify optimal integration opportunities. The results demonstrate that process integration significantly reduces energy consumption, minimizes residual waste, and increases the reuse of valuable materials, while also lowering emissions and operational costs. These findings confirm that process integration is an effective and practical strategy for designing sustainable industrial waste treatment systems and provides valuable insights for advancing environmentally friendly and competitive chemical engineering solutions.

INTRODUCTION

The strategic development of Indonesia's new capital, Nusantara, in East Kalimantan represents a transformative economic shift with far-reaching implications for Micro, Small, and Medium Enterprises (MSMEs), particularly Sharia-compliant MSMEs. This transformation occurs at a critical juncture where Islamic finance expansion, digital transformation, and regional economic restructuring intersect simultaneously. Rahim et al. (2024) highlight that the convergence of Islamic finance and digital technology has reshaped MSME development paradigms in emerging economies, yet most empirical models fail to integrate these dimensions comprehensively. Although Indonesia's Sharia economy has shown sustained growth, as reflected in the Islamic Finance Development Indicator, this progress has not been evenly translated into tangible benefits for MSMEs in emerging regions such as East Kalimantan (Herwin et al., 2022). This condition underscores the urgency of examining MSME sustainability within rapidly transforming regional contexts.

Despite favorable macroeconomic indicators, Sharia MSMEs in East Kalimantan continue to face structural vulnerabilities that threaten inclusive economic growth. Limited Sharia financial literacy, restricted access to formal Islamic financing, and a widening digital divide persist as dominant constraints (Seppänen et al. 2025). Abbas et al. (2023) demonstrate that regional development dynamics significantly influence how MSMEs access and utilize financial services, particularly in non-core economic regions. Dewi and Ferdian (2021) further provide empirical evidence that MSMEs with higher Islamic financial literacy exhibited 34% higher survival rates during economic downturns. However, these findings also indicate that literacy alone cannot ensure sustainability without parallel improvements in access and digital readiness.

Recent empirical studies emphasize the inadequacy of fragmented interventions in addressing MSME challenges. Mujiatun et al. (2023) show that specialized Islamic financial literacy programs improve financial management practices, yet their impact remains limited when MSMEs lack access to suitable Sharia financial products and digital infrastructure. Anami (2024) corroborates this by identifying persistent structural barriers within Islamic financial systems that hinder MSMEs from fully leveraging acquired knowledge. Hartanto et al. (2023) further argue that low Sharia financial literacy weakens MSME competitiveness in the digital economy. These findings collectively reveal a research gap concerning the integrated effects of literacy, access, and digital adaptation on MSME sustainability.

The access dimension presents a persistent paradox within Islamic finance development. While Islamic banking assets continue to expand, the proportion of financing allocated to Sharia MSMEs remains stagnant at approximately 28–35% (Anami et al. 2024). Iqbal and Subhan (2022) identify stringent collateral requirements, procedural complexity, and limited institutional outreach as key barriers that disproportionately disadvantage MSMEs. Simultaneously, the digital divide has emerged as a critical post-pandemic constraint, as only 42% of MSMEs in developing regions have integrated digital tools into core operations (Herwin et al., 2022). D'Apollito et al. (2024) further note that Islamic financial

services are increasingly delivered through digital platforms, intensifying exclusion risks for digitally unprepared MSMEs.

These interconnected challenges form a reinforcing cycle that undermines MSME sustainability. Widiyanti et al. (2025) argue that low financial literacy constrains digital adaptation, while limited digital capability further restricts access to modern Islamic financial services. Abbas et al. (2023) demonstrate that financial literacy programs without improved financing access produce limited long-term outcomes, while digitalization initiatives without financial education fail to deliver sustainable impacts. Utama et al. (2024) warn that rapid urbanization and economic transformation in East Kalimantan risk widening disparities between modernizing sectors and traditional MSMEs. These insights highlight a critical gap in existing literature, which largely addresses these challenges in isolation rather than as an integrated system.

Against this backdrop, the timing of this research is particularly significant given East Kalimantan's designation as Indonesia's new administrative capital. Hartanto et al. (2023) caution that regions undergoing accelerated development often experience economic polarization without deliberate inclusive interventions. Majid and Nugraha (2022) emphasize that MSME support strategies must move beyond financing provision to encompass strategic capacity-building for innovation and market expansion. Tubastuvi and Rusydiana (2024) further stress that Islamic financial literacy interventions must be context-specific, as standardized approaches frequently fail to address localized business practices and cultural norms. Accordingly, this study explicitly aims to examine the synergistic relationships between Sharia financial literacy, access to Islamic finance, and digital adaptation within East Kalimantan's unique developmental context.

The novelty of this study lies in its integrative conceptualization, contextual focus, and methodological approach. Building on Abbas et al. (2023), Priyandono, Gunawan, and Muslimawati (2024), and Seppänen et al. (2025), the research positions digital adaptation as both an independent and mediating variable alongside Sharia financial literacy and access to capital. Drawing from Arroyabe et al. (2024) and Dewi and Ferdian (2021), Sharia financial literacy is framed as a behavioral capability embedded within a digital Islamic business ecosystem. Methodologically, the mixed-methods design combining PLS-SEM with qualitative analysis addresses limitations identified by Hartanto et al. (2023). Theoretically, this study advances Islamic MSME sustainability models, while practically it provides evidence-based guidance for policymakers and practitioners seeking to foster inclusive, maqāṣid al-sharī'ah-oriented economic transformation in East Kalimantan.

THEORETICAL REVIEW

Theoretical Foundations of Sharia Financial Literacy

The conceptualization of Sharia financial literacy in this study is grounded in the Islamic moral economy paradigm, which emphasizes that financial activities must be aligned with ethical values and social objectives as articulated in maqāṣid al-sharī'ah (Hassan & Lewis, 2007). Within this paradigm, economic

behavior is not merely profit-oriented but is expected to promote justice, social welfare, and ethical responsibility. Consequently, Sharia financial literacy extends beyond the conventional understanding of financial knowledge by incorporating religious compliance, moral accountability, and social consciousness.

Syamsuri et al. (2024) argue that Sharia financial literacy encompasses not only technical familiarity with Islamic financial products and contracts but also a deep understanding of their philosophical foundations. These foundations include the prohibition of *riba* (usury), *gharar* (excessive uncertainty), and *maysir* (gambling), which collectively shape ethical financial decision-making among Muslim entrepreneurs. In this sense, Sharia financial literacy functions as both a cognitive and normative framework guiding financial behavior within Islamic economic systems.

Empirical evidence consistently demonstrates the critical role of Sharia financial literacy in the development and resilience of MSMEs. Dewi and Ferdian (2021), in a study across five Indonesian provinces, found that MSMEs with higher levels of Islamic financial literacy exhibited survival rates that were 34% higher during economic downturns and were 28% more likely to access formal Islamic financing. Similarly, Mujiatun et al. (2023) reported that targeted literacy programs emphasizing the practical application of Islamic financial principles significantly improved financial management practices among participating MSMEs. These findings underscore the importance of Sharia financial literacy as a foundational determinant of MSME sustainability.

Access to Islamic Finance: Progress and Persistent Challenges

The literature on access to Islamic finance reflects a dual narrative of substantial progress alongside persistent structural challenges. Indonesia has experienced significant growth in its Islamic financial sector, with Islamic banking assets increasing from approximately IDR 150 trillion in 2015 to more than IDR 700 trillion in 2023 (OJK, 2024). This expansion has been accompanied by the rapid development of Islamic financial technology (fintech), which has facilitated smaller-scale financing and simplified application procedures for MSMEs (Majid, 2024).

Despite these advancements, access to Islamic finance remains uneven and constrained by several barriers. Ali Keya Anami (2024) and Iqbal and Subhan (2022) identify key challenges, including limited customization of financial products for MSME-specific needs, inadequate credit assessment mechanisms for enterprises lacking conventional collateral, and the concentration of Islamic financial services in urban centers. Additionally, Bastomi and Sudaryanti (2024) highlight a perception gap between Islamic financial institutions and MSME owners, noting that financial providers often underestimate the administrative and procedural burdens faced by small businesses.

These structural and perceptual barriers suggest that improved access to Islamic finance requires not only institutional expansion but also alignment with the operational realities and capacities of MSMEs, particularly those operating in peripheral or rapidly transforming regions.

Digital Adaptation in the Sharia MSME Context

Recent literature on digital transformation increasingly recognizes the distinct opportunities and constraints faced by Sharia-compliant MSMEs. Faiz et al. (2024) demonstrate that digital adaptation significantly enhances market reach and operational efficiency, with MSMEs adopting e-commerce platforms achieving revenue growth rates 42% higher than non-adopters. However, digital transformation within the Sharia context entails additional considerations, including compliance with Islamic business ethics and the limited availability of halal-certified digital payment systems.

Rohmandika (2024) introduces the concept of Islamic digital literacy, which integrates conventional digital competencies with knowledge of Sharia-compliant online business practices. Empirical findings indicate that MSMEs possessing both technical digital skills and an understanding of Islamic ethical principles outperform their counterparts in both conventional and halal market segments. Supporting this perspective, Susanto et al. (2023) emphasize the importance of aligning digital transformation strategies with Islamic values, particularly in fostering trust, transparency, and ethical accountability in online transactions.

These studies suggest that digital adaptation, when framed within Islamic ethical norms, serves not only as a technological enabler but also as a strategic mechanism for sustaining competitive advantage among Sharia MSMEs.

Integrated Approaches to MSME Sustainability

The discourse on MSME sustainability has progressively shifted from examining isolated determinants toward recognizing the interdependent nature of multiple influencing factors. Abbas et al. (2023) provide strong empirical evidence of a synergistic relationship between financial literacy, financial inclusion, and business performance. Their longitudinal study reveals that integrated interventions combining financial education with improved access to financing result in sustainability rates that are 56% higher than those achieved through single-focus programs.

Similarly, Tubastuvi and Rusydiana (2024) advocate for ecosystem-based approaches that emphasize the interaction between internal firm capabilities and external institutional support. Their framework identifies Sharia financial literacy, digital adaptation, and access to Islamic finance as three interrelated pillars that must be developed in a coordinated manner. This perspective is particularly salient in regions undergoing structural transformation, where MSME sustainability depends on the alignment of individual competencies with evolving institutional and technological environments.

Contextual Factors in East Kalimantan

East Kalimantan's designation as the future national capital introduces unique contextual dynamics that significantly shape the operating environment for MSMEs. Budi Utama et al. (2024) document rapid changes in infrastructure development, population growth, and market expansion, creating both new opportunities and heightened competitive pressures for local enterprises. Their

findings indicate that while MSMEs can benefit from emerging markets, they also face challenges related to scale, innovation, and adaptability. Complementing this analysis, the East Kalimantan Development Planning Agency (2023) identifies distinctive characteristics of local Sharia MSMEs, including strong community embeddedness, reliance on traditional business practices, and diverse educational backgrounds among business owners. These socio-cultural and structural factors necessitate context-sensitive approaches to enhancing financial literacy, improving access to Islamic finance, and supporting digital adaptation.

Research Objectives and Contributions

Drawing on the identified gaps in the literature and the specific contextual characteristics of East Kalimantan, this study aims to develop and empirically test an integrated model of Sharia MSME sustainability. The specific research objectives are as follows:

1. To examine the direct effects of Sharia financial literacy, access to Islamic finance, and digital adaptation on MSME sustainability.
2. To investigate the mediating role of digital adaptation in the relationship between Sharia financial literacy and MSME sustainability.
3. To analyze the interrelationships among the three key determinants and their collective impact on MSME performance outcomes.
4. To provide evidence-based recommendations for policymakers, Islamic financial institutions, and MSME development agencies in East Kalimantan.

This study is expected to contribute theoretically, methodologically, and practically. From a theoretical perspective, it advances the Islamic finance literature by positioning digital adaptation as a core construct within the Sharia MSME ecosystem and by offering an integrated framework that captures the dynamic interaction between knowledge, access, and technology. Methodologically, the study demonstrates the value of a mixed-methods approach in elucidating both statistical relationships and contextual mechanisms in Islamic business research.

Practically, the findings are anticipated to inform the design of more effective MSME development policies and support programs in East Kalimantan and comparable regions undergoing rapid transformation. By identifying the mechanisms through which Sharia financial literacy, access to Islamic finance, and digital adaptation influence sustainability, this research provides actionable insights to enhance the resilience and competitiveness of Sharia MSMEs. The timing of the study further ensures its relevance to the development of the Nusantara capital city, offering guidance for promoting inclusive growth and meaningful MSME participation in regional economic transformation.

METHODOLOGY

Research Design

This study employed an explanatory sequential mixed-methods design to comprehensively examine the determinants of sustainability among Sharia-based micro, small, and medium enterprises (MSMEs). This design was selected

to allow for an initial quantitative examination of hypothesized relationships, followed by a qualitative inquiry aimed at deepening the interpretation of the statistical results. The research was conducted in two sequential phases. The first phase involved a quantitative approach to empirically test the proposed conceptual model and assess the structural relationships among variables. The second phase adopted a qualitative approach to provide contextual explanations and insights into the mechanisms underlying the quantitative findings, thereby enhancing the robustness and interpretability of the results.

Research Framework

The conceptual framework illustrates the relationships between Sharia Financial Literacy, Access to Islamic Finance, Digital Adaptation, and MSME Sustainability. In this framework, Sharia financial literacy and access to Islamic finance are hypothesized to directly influence MSME sustainability, while digital adaptation is expected to function both as an independent predictor and as a mediating variable.

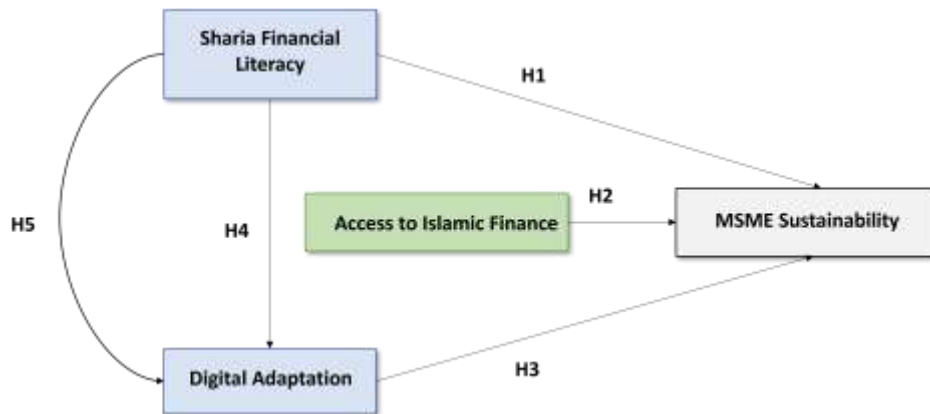


Figure 1. Conceptual Framework of the Study

Variables and Measurement

This study examined three independent variables and one dependent variable. All constructs were operationalized using multiple indicators measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The operational definitions and measurement indicators of each variable are summarized below.

Table 1. Research Variables and Measurement

Variable	Definition	Indicator	Measurement Scale
Sharia Financial Literacy	Knowledge of Sharia-compliant products and ethical principles	Understanding of Islamic contracts, prohibition of riba, financial product knowledge	5-point Likert scale

Variable	Definition	Indicator	Measurement Scale
Access to Islamic Finance	Ease of obtaining Sharia-compliant financing	Affordability, administrative requirements, perceived usefulness	5-point Likert scale
Digital Adaptation	Integration of digital tools in business operations	E-commerce usage, digital payments, social media marketing	5-point Likert scale
MSME Sustainability	Business stability and growth capability	Business stability, growth achievement, adaptive capacity	5-point Likert scale

Sharia Financial Literacy was measured through indicators capturing respondents' understanding of Islamic financial contracts, awareness of the prohibition of *riba*, and knowledge of Sharia-compliant financial products. Access to Islamic Finance reflected the perceived ease of obtaining Sharia-compliant financing, including affordability, administrative requirements, and perceived usefulness. Digital Adaptation assessed the extent to which MSMEs integrate digital tools into their business operations, such as e-commerce platforms, digital payment systems, and social media marketing. MSME Sustainability represented the dependent variable and encompassed indicators related to business stability, growth performance, and adaptive capacity.

Population and Sampling

The research population consisted of all active Sharia-compliant MSMEs operating in East Kalimantan, particularly within the trade, services, and creative industries sectors. A purposive sampling technique was employed during the quantitative phase to ensure that respondents met the criteria of Sharia compliance and active business operation. A total of 300 MSME owners or managers participated in the survey. This sample size was considered adequate, as it exceeded the minimum recommended threshold for Partial Least Squares Structural Equation Modeling (PLS-SEM), ensuring sufficient statistical power for hypothesis testing.

Data Collection Procedures

Data collection followed a sequential process aligned with the explanatory mixed-methods design.

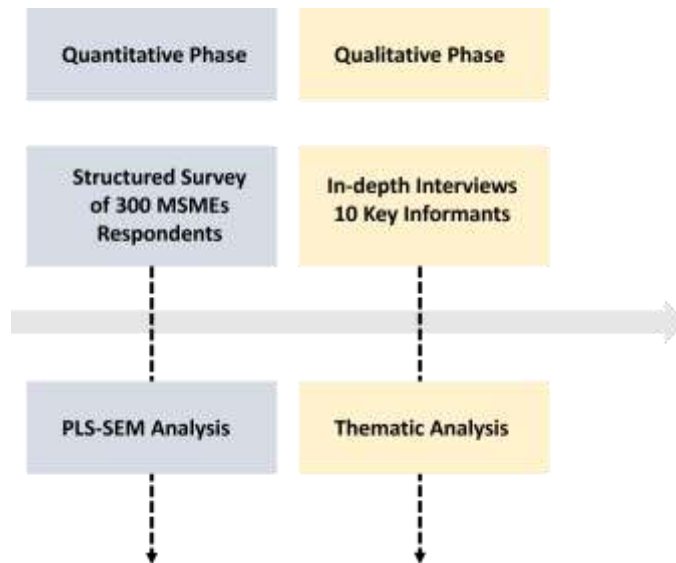


Figure 2. Data Collection Timeline

Quantitative data were collected using a structured questionnaire administered directly to MSME owners or managers. The instruments measuring Sharia Financial Literacy and Access to Islamic Finance were adapted from previously validated scales, while the Digital Adaptation instrument was developed based on recent empirical and conceptual literature.

Following the quantitative analysis, qualitative data were collected through in-depth interviews with ten purposively selected key informants. These informants included Sharia MSME owners, Islamic banking practitioners, and local government regulators. The qualitative phase aimed to clarify, contextualize, and elaborate upon the patterns observed in the quantitative results.

Data Analysis Techniques

Quantitative data were analyzed using SmartPLS version 4.0, following a two-stage analytical procedure. The first stage involved evaluating the measurement model to assess internal consistency reliability and construct validity. Reliability was examined using Composite Reliability, while convergent validity was assessed through Average Variance Extracted (AVE). Discriminant validity was evaluated to ensure the distinctiveness of each construct. The second stage focused on evaluating the structural model to test the hypothesized relationships among variables. Hypothesis testing was conducted using a bootstrapping procedure with 5,000 resamples to obtain path coefficients, t-statistics, and p-values. Qualitative data were analyzed using thematic analysis, which involved systematic coding, theme development, and interpretative analysis. The qualitative findings were used to triangulate and enrich the quantitative results, thereby strengthening the overall conclusions of the study.

Table 2. Hypothesis Testing Criteria

Statistical Test	Threshold Value	Decision Rule
Composite Reliability	> 0.70	Construct is reliable
Average Variance Extracted	> 0.50	Convergent validity achieved
Path Coefficient	p-value < 0.05	Hypothesis supported
t-Statistic	> 1.96	Significant relationship

RESERACH RESULTS

Descriptive Statistics and Respondent Profile

This study collected data from 300 Sharia-compliant MSMEs operating across East Kalimantan. The respondent profile reflects a diverse distribution of business sectors, with 42% engaged in trade, 35% in services, and 23% in creative industries, indicating the heterogeneous nature of Sharia MSME activities in the region. The business experience of respondents ranged from 1 to 15 years, with an average operational period of 5.8 years, suggesting that most enterprises were relatively young yet sufficiently established. Furthermore, the digital maturity assessment revealed that 65% of respondents were in the early stages of digital adoption, relying primarily on social media platforms for marketing purposes. In contrast, only 28% had comprehensively integrated digital payment systems and e-commerce platforms into their business operations, highlighting a substantial gap in advanced digital utilization.

Measurement Model Assessment

The evaluation of the measurement model confirmed the robustness and adequacy of the research instruments. After refinement, all constructs met the required reliability and validity thresholds. The factor loadings of all retained indicators exceeded 0.70, indicating strong indicator reliability.

Overall construct reliability was supported by Cronbach's alpha values ranging from 0.752 to 0.889 and Composite Reliability values between 0.843 and 0.926, all exceeding the recommended minimum level of 0.70. Convergent validity was also established, as the Average Variance Extracted (AVE) values ranged from 0.576 to 0.716, surpassing the threshold of 0.50. Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio, with all values falling below 0.90, confirming that the constructs are empirically distinct. In addition, the variance inflation factor (VIF) values ranged from 1.82 to 2.45, well below the threshold of 5, indicating the absence of multicollinearity issues among the constructs.

Structural Model and Hypotheses Testing

The evaluation of the structural model demonstrated substantial explanatory power, with the model explaining 68% of the variance in MSME sustainability ($R^2 = 0.68$). The effect size (f^2) analysis indicated that Access to

Islamic Finance had the strongest influence on sustainability ($f^2 = 0.28$), followed by Digital Adaptation ($f^2 = 0.19$) and Sharia Financial Literacy ($f^2 = 0.12$).

Table 3. Hypothesis Testing Results

Hypothesis	Path	Path Coefficient	t-value	p-value	Support
H1	Financial Literacy → Sustainability	0.25	3.89	<0.001	Supported
H2	Access to Finance → Sustainability	0.38	5.92	<0.001	Supported
H3	Digital Adaptation → Sustainability	0.31	4.85	<0.001	Supported
H4	Financial Literacy → Digital Adaptation	0.45	7.12	<0.001	Supported
H5	Literacy → Digital Adaptation → Sustainability	0.14	3.45	<0.001	Supported

The results of the hypothesis testing show that all proposed relationships were statistically supported. Sharia Financial Literacy, Access to Islamic Finance, and Digital Adaptation each exhibited positive and significant direct effects on MSME sustainability. Moreover, Sharia Financial Literacy was found to have a significant positive effect on Digital Adaptation. The mediation analysis further confirmed a significant indirect effect of Sharia Financial Literacy on MSME Sustainability through Digital Adaptation, indicating that digital adaptation partially mediates this relationship. The final research model with standardized path coefficients is presented below.

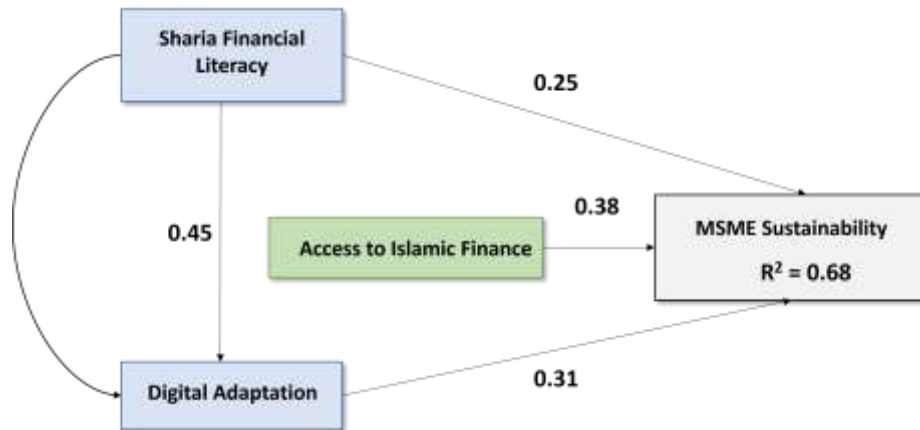


Figure 3. The Final Research Model

DISCUSSION

The results of this study empirically validate an integrated model of MSME sustainability within the Islamic finance ecosystem in East Kalimantan. The structural model demonstrates strong explanatory power, accounting for 68% of the variance in MSME sustainability, which exceeds the threshold commonly considered substantial in social science research (Hair et al., 2022). This indicates that sustainability outcomes among Sharia-compliant MSMEs are not driven by a single dominant factor but rather by the interaction of financial literacy, access to Islamic finance, and digital adaptation. These findings reinforce contemporary sustainability frameworks that emphasize capability integration and systemic alignment rather than fragmented interventions (Bansal et al., 2021).

The significant effect of Sharia Financial Literacy on MSME Sustainability ($\beta = 0.25$, $p < 0.001$) highlights the instrumental role of Islamic financial knowledge in shaping sustainable business practices. Financial capability theory suggests that literacy enhances decision-making quality, risk awareness, and long-term planning, which are essential for enterprise continuity (Atkinson & Messy, 2022). In the Islamic economic context, literacy also embeds normative guidance that aligns financial behavior with ethical accountability and social responsibility, reinforcing sustainability beyond profit maximization (Kamla & Rammal, 2023). The relatively moderate effect size ($f^2 = 0.12$) indicates that while literacy is essential, its impact is maximized when complemented by enabling mechanisms such as technology and financial access.

Digital Adaptation was found to have both a direct and mediating effect on MSME sustainability, with a strong path coefficient ($\beta = 0.31$, $p < 0.001$) and a medium-to-large effect size ($f^2 = 0.19$). This finding is particularly relevant given that descriptive statistics revealed most respondents were still in the early stages of digital adoption, primarily relying on social media rather than fully integrated e-commerce systems. According to dynamic capability theory, digital tools enhance organizational agility, allowing firms to sense and seize emerging opportunities more effectively (Teece, 2023). The results suggest that even incremental digital integration can substantially improve sustainability outcomes, especially when aligned with Islamic financial practices.

The mediation analysis further confirms that Digital Adaptation significantly transmits the effect of Sharia Financial Literacy to Sustainability ($\beta = 0.14$, $p < 0.001$). This indicates that financial knowledge alone is insufficient unless MSMEs possess the technological capacity to operationalize that knowledge in digital financial environments. Recent studies show that Islamic fintech platforms increasingly require a baseline level of digital competence, making digital adaptation a critical conduit for transforming literacy into tangible outcomes (Arner et al., 2024). Thus, digital adaptation functions as a strategic amplifier, strengthening the practical relevance of financial literacy in contemporary MSME ecosystems.

Among all predictors, Access to Islamic Finance exhibited the strongest direct influence on sustainability ($\beta = 0.38$, $p < 0.001$; $f^2 = 0.28$), underscoring the centrality of capital availability in sustaining MSME operations. Resource-based theory posits that access to valuable and rare financial resources is fundamental to maintaining competitive advantage and operational resilience (Barney, 2021). Despite advances in Islamic financial inclusion, the findings indicate that capital constraints remain a dominant structural challenge, particularly for smaller enterprises with limited collateral and formal documentation. This aligns with global evidence that financial access remains a bottleneck for MSME growth in emerging Islamic finance markets (Elmassah & El-Gohary, 2022).

The integration of financial literacy, digital adaptation, and access to Islamic finance offers a holistic sustainability pathway that is particularly relevant to East Kalimantan's transitional economic context. As the region undergoes rapid transformation due to its designation as Indonesia's new capital, MSMEs face heightened competition, regulatory complexity, and market expansion pressures. Enterprises that successfully align ethical financial knowledge with digital capability and financial access are better positioned to integrate into emerging value chains and formal economic networks (Ndlovu & Tichaawa, 2024). This finding extends ecosystem-based entrepreneurship theory by demonstrating how Islamic finance principles interact with technological and institutional dynamics in a transforming regional economy.

From a policy and practical standpoint, the results indicate that fragmented interventions are unlikely to produce optimal sustainability outcomes. Programs that focus solely on literacy training without improving digital infrastructure or easing access to Islamic finance may fail to generate lasting impact. Integrated policy frameworks that combine Sharia financial education, MSME-oriented digital transformation initiatives, and inclusive Islamic financing schemes are more likely to produce synergistic effects. Such coordinated strategies align with recent sustainable development policy models that emphasize cross-sectoral integration to support inclusive and ethical economic growth (Organisation for Economic Co-operation and Development, 2023).

CONCLUSION AND RECOMMENDATION

This study concludes that the sustainability of Sharia-compliant MSMEs in East Kalimantan is best explained through a synergistic framework that

integrates Sharia financial literacy, access to Islamic finance, and digital adaptation as mutually reinforcing capabilities. The empirical findings confirm that these three factors exert significant direct effects on MSME sustainability, while digital adaptation plays a pivotal mediating role by translating financial knowledge into effective business practices within an increasingly digital Islamic finance ecosystem. Sharia financial literacy emerges as a foundational competency that guides ethical and strategic decision-making, whereas access to Islamic finance remains a critical structural determinant despite improvements in literacy and digital readiness. In the context of East Kalimantan's transformation as Indonesia's new capital region, the results highlight that MSMEs equipped with aligned financial knowledge, technological capability, and inclusive financing are better positioned to achieve long-term resilience and competitiveness. Overall, the study affirms that a holistic and coordinated strategy is essential for advancing sustainable Sharia MSMEs and for supporting inclusive economic development in emerging Islamic economies.

FURTHER STUDY

Future research is recommended to explore the dynamic interactions among Sharia financial literacy, Islamic financial access, and digital adaptation using longitudinal or panel data to capture sustainability trajectories of Sharia-compliant MSMEs over time. Further studies may also examine the role of institutional support, such as government policies, Islamic fintech innovation, and sharia advisory services, in strengthening the effectiveness of these capabilities within different regional and sectoral contexts. In addition, comparative studies between regions undergoing rapid economic transformation and more stable regions would provide deeper insights into how structural change influences the sustainability of Sharia MSMEs. Expanding the analytical framework to include behavioral, cultural, and governance factors would further enrich the understanding of sustainable development pathways in emerging Islamic economies.

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