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RESEARCH ARTICLE

Digital Financial Readiness and Sustainable Economic Resilience of MSMEs: The Mediating Role of Islamic Sustainable Business Practices (ISBP) in Medan City

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Abstract
Digital financial capability has become increasingly vital for the sustainability of micro, small, and medium enterprises (MSMEs). However, the contribution of this capability to resilience may depend on the governance and utilization of digital resources. This study investigates the impact of Digital Financial Readiness (DFR) on Sustainable Economic Resilience (SER), both directly and indirectly through Islamic Sustainable Business Practices (ISBP), among MSMEs in Medan City. A quantitative survey was conducted involving 320 MSME owners and managers selected through purposive sampling. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with 5,000 bootstrap subsamples. The results indicate that DFR positively influences ISBP ($\beta = 0.612$, $p < 0.001$) and SER ($\beta = 0.287$, $p < 0.001$), while ISBP also has a positive effect on SER ($\beta = 0.498$, $p < 0.001$). Furthermore, ISBP significantly mediates the relationship between DFR and SER (indirect effect $\beta = 0.305$, $p < 0.001$), suggesting partial mediation. The model accounts for 59.6% of the variance in SER and demonstrates predictive relevance. These findings suggest that digital financial readiness enhances MSME resilience not only through improved financial and operational capabilities but also through Sharia-compliant, ethical, socially responsible, and environmentally sustainable business practices. The study offers context-specific implications for local government, financial institutions, and MSME development agencies in Medan City to integrate digital financial capacity building with Islamic sustainability-oriented business support.

Keywords
Digital Financial Readiness; Islamic Sustainable Business Practices; Sustainable Economic Resilience; MSMEs; Medan City.

1 | INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) serve as the backbone of economic development in many emerging economies due to their significant contributions to employment creation, income distribution, and inclusive economic growth (Menne *et al.,* 2024; Qothrunnada *et al.,* 2023; Yuli & Rofik, 2023). In Indonesia, MSMEs are the primary drivers of domestic economic activity and have demonstrated considerable resilience in responding to various economic crises. Within the context of sustainable development, MSMEs play a strategic role in achieving the Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure), which emphasize economic empowerment, innovation, and inclusive development (Qothrunnada *et al.,* 2023; Rif'ah, 2024).

The rapid advancement of digital technology has significantly transformed global economic and financial systems. The digitalization of financial services through mobile banking, e-wallets, fintech lending, QRIS, and various electronic payment platforms has created new opportunities for MSMEs to improve transaction efficiency, expand access to financing, strengthen financial recordkeeping, and enhance business competitiveness (Adipurno, 2025; Aravik *et al.,* 2023; Nasir & Rahayu, 2024). Previous studies have shown that the adoption of digital finance contributes positively to financial inclusion, business productivity, and organizational resilience by facilitating easier access to financial resources and market information (Usman, 2022; Haykal Ramadhan & Imanullah, 2024; Abdulquadri *et al.,* 2021).

Despite these opportunities, digital transformation among MSMEs has not progressed uniformly. Numerous studies have identified low digital literacy, inadequate technological infrastructure, limited trust in digital financial services, and weak organizational adaptability as major barriers to the effective implementation of digital finance among MSMEs (Arner *et al.,* 2020; Cao *et al.,* 2023; Ozili, 2018; Zhu, 2023). These challenges hinder many business owners from fully leveraging financial technologies to support long-term business sustainability. Consequently, the economic benefits expected from digitalization have not been fully realized, particularly among micro and small enterprises with limited resources and capabilities.

This phenomenon is also evident among MSMEs in Medan City, one of the largest economic centers in Sumatra. Medan possesses an economic structure largely driven by trade, services, and micro-enterprises, significantly contributing to employment generation and local economic activities. Socioeconomic indicators of Medan City during the 2022–2024 period demonstrate relatively positive development trends, including increasing labor force participation rates, declining unemployment rates, decreasing poverty levels, and improving Human Development Index (HDI) scores. Furthermore, the Gross Regional Domestic Product (GRDP) of Medan City has shown consistent growth accompanied by relatively stable inflation rates (Badan Pusat Statistik Kota Medan, 2025). Nevertheless, these favorable macroeconomic indicators do not necessarily reflect the actual readiness and resilience of MSMEs in responding to an increasingly digitalized business environment.

Simultaneously, the sustainable development paradigm requires MSMEs to move beyond a sole focus on economic profitability and incorporate social responsibility, environmental stewardship, and responsible governance into their business activities (Dong *et al.,* 2025; Huang *et al.,* 2025; Omri *et al.,* 2025; Wang & Cui, 2025). Within the framework of Islamic economics, these objectives align closely with the concept of Islamic Sustainable Business Practices (ISBP), which emphasizes the integration of profitability, Sharia compliance, justice, trustworthiness (amanah), social responsibility, and environmental sustainability into business operations (OJK, 2024; Statistics Indonesia of North Sumatra Province, 2025). Implementing these principles is believed to enhance business reputation, strengthen stakeholder trust, expand access to financing opportunities, and improve long-term business sustainability (Sitorus *et al.,* 2024; Sitorus *et al.,* 2025).

However, the implementation of sustainability-oriented business practices based on Islamic values remains limited among MSMEs. Existing studies on sustainability and Environmental, Social, and Governance (ESG) practices predominantly focus on large corporations, while research specifically examining the integration of digital finance, Islamic sustainable business practices, and MSME economic resilience remains relatively scarce (Nguyen, 2024; Jamil *et al.,* 2024; Telukdarie & Mungar, 2022; Suhrab *et al.,* 2024). Furthermore, previous studies have generally treated digital finance and business sustainability as separate constructs without adequately explaining how Digital Financial Readiness can facilitate the implementation of Islamic Sustainable Business Practices and subsequently enhance MSME resilience (Min & Rao, 2023; Amponsah *et al.,* 2023; Neaime & Gaysset, 2018).

Sustainable Economic Resilience has become an increasingly important issue in an era characterized by economic uncertainty, technological disruption, and rapidly changing market behavior. Economic resilience refers not only to the ability of firms to withstand external shocks but also to their capacity to adapt, innovate, and maintain long-term sustainability (Altaf *et al.,* 2025; Jawadi *et al.,* 2025; Liao *et al.,* 2024). In this context, Digital Financial Readiness is viewed as a strategic capability that enables MSMEs to effectively utilize financial technologies, while Islamic Sustainable Business Practices function as a governance mechanism that ensures technological utilization remains aligned with sustainability objectives and Islamic values (Bai *et al.,* 2024; Zhu *et al.,* 2025).

Based on the foregoing discussion, several significant research gaps remain. First, research on digital finance has primarily focused on financial inclusion and technology adoption while largely overlooking sustainability dimensions rooted in Islamic values. Second, studies on Islamic Sustainable Business Practices generally emphasize ethical and sustainability aspects without incorporating Digital Financial Readiness as a critical antecedent factor. Third, empirical research integrating Digital Financial Readiness, Islamic Sustainable Business Practices, and Sustainable Economic Resilience into a single comprehensive framework remains very limited, particularly in the context of MSMEs in Medan City.

Accordingly, this study examines the direct effect of Digital Financial Readiness on the Sustainable Economic Resilience of MSMEs in Medan City and the indirect effect transmitted through Islamic Sustainable Business Practices (ISBP). The study contributes by integrating DFR, ISBP, and SER into a single firm-level framework and by explaining ISBP as a governance mechanism that converts digital financial capability into resilient and sustainable business outcomes. The analysis is limited to MSME owners and managers in Medan City; therefore, its practical implications are directed primarily toward local MSME development, financial inclusion, and sustainability programs.

2 | BACKGROUND THEORY

2.1 Conceptual Foundation

Digital Financial Readiness (DFR) refers to the extent to which individuals or organizations are prepared to understand, access, adopt, and effectively utilize digital financial services to support economic and business activities. In the context of Micro, Small, and Medium Enterprises (MSMEs), digital financial readiness extends beyond the ability to use digital financial applica-tions. It encompasses digital financial literacy, access to digital infrastructure, transaction security, and the capability to inte-grate digital financial services into daily business operations. This readiness has become increasingly important because suc-cessful digital transformation is determined not only by the availability of technology but also by the ability of business actors to leverage technology to create sustainable economic value. Previous studies have demonstrated that digital financial readiness plays a critical role in enhancing financial inclusion, opera-tional efficiency, access to financing, and the adaptability of MSMEs in increasingly digitalized business environments. MSMEs with higher levels of digital readiness are more capable of utilizing digital banking services, electronic payment systems, financial technology (FinTech), and digital economic platforms that support business growth and competitiveness. In this study, Digital Financial Readiness is conceptualized through four primary dimensions: digital financial literacy, access to digital financial services, digital transaction security, and ease of use of digital financial technologies. These dimensions collec-tively reflect the preparedness of MSMEs to utilize financial technologies as strategic resources for improving business perfor-mance and long-term sustainability.

Islamic Sustainable Business Practices (ISBP) refer to sustainability-oriented business practices that integrate sustainability principles with Islamic economic values. This concept emphasizes that business activities should not solely pursue economic profitability but should also incorporate ethical conduct, social responsibility, environmental sustainability, and compliance with Sharia principles. From an Islamic perspective, business success is not measured exclusively by financial performance but also by the extent to which business activities generate benefits (maslahah) for society and the environment. Consequently, ISBP reflects the implementation of Islamic principles such as trustworthiness (amanah), justice (adl), transparency, social re-sponsibility, and sustainability as integral components of business governance. Within the MSME context, ISBP can be manifested through Sharia-compliant business transactions, ethical and fair business practices, social responsibility initiatives toward local communities, and efforts to preserve environmental sustainability in busi-ness operations. The implementation of ISBP is expected to enhance business reputation, strengthen stakeholder trust, and es-tablish a more sustainable foundation for long-term business success.

Sustainable Economic Resilience refers to the ability of MSMEs to maintain business continuity, adapt to changes in the busi-ness environment, withstand economic shocks, and achieve sustainable growth over the long term. Economic resilience is not limited to survival during periods of crisis but also includes the ability to innovate, maintain financial stability, improve opera-tional efficiency, and strengthen business competitiveness continuously. In an era characterized by rapid digital transformation and global economic uncertainty, economic resilience has become a critical determinant of MSME sustainability. Businesses with higher levels of resilience are generally better equipped to manage risks, seize emerging market opportunities, and maintain business continuity under changing economic conditions. Therefore, strengthening MSME economic resilience requires both digital capabilities and sustainability-oriented business practices.

2.2 Theoretical Linkages and Conceptual Framework

This study is grounded in three major theoretical perspectives: Resource-Based View (RBV), Dynamic Capability Theory, and Sustainable Development Theory. The Resource-Based View argues that sustainable competitive advantage is derived from the possession and effective utilization of valuable, rare, inimitable, and nonsubstitutable resources. Within the context of this study, Digital Financial Readiness is considered a strategic resource that enables MSMEs to improve information accessibility, expand financial access, and enhance business efficiency and competitiveness. Dynamic Capability Theory suggests that or-ganizations must continuously develop, integrate, and reconfigure internal and external resources to adapt to changing business environments. Digital Financial Readiness enables MSMEs to develop dynamic capabilities that facilitate the effective utiliza-tion of financial technologies to support innovation, sustainability, and long-term competitiveness. Meanwhile, Sustainable Development Theory emphasizes the importance of balancing economic, social, and environmental objectives in development processes. From this perspective, Islamic Sustainable Business Practices serve as a governance mechanism that integrates eco-nomic objectives with sustainability values and Sharia principles, thereby strengthening the long-term economic resilience of MSMEs. Based on the integration of these theoretical perspectives, this study positions Digital Financial Readiness as a strate-gic capability that promotes the implementation of Islamic Sustainable Business Practices and ultimately enhances the Sus-tainable Economic Resilience of MSMEs.

2.3 Empirical Evidence from Previous Studies

Recent studies have demonstrated that digital readiness and digital financial literacy positively influence MSME performance, competitiveness, and sustainability. Pingali et al. (2023) found that digital readiness is a multidimensional construct that plays a critical role in enhancing MSME adaptability to digital transformation. Similarly, Faiz et al. (2024) reported that technological, organizational, and environmental factors significantly influence digital technology adoption among SMEs. In the sustainabil-ity domain, numerous studies have shown that sustainability-oriented business practices contribute to improved business repu-tation, operational efficiency, access to financing, and long-term business resilience. Hasan et al. (2024) demonstrated that financial technology contributes to sustainable development by enhancing productivity, financial inclusion, and business inno-vation. Likewise, Appiah-Kubi et al. (2024) found that digitalization supports the implementation of sustainability practices among small and medium enterprises. Despite these contributions, previous research has largely examined digital readiness, business sustainability, and economic resilience as separate constructs. Empirical studies integrating Digital Financial Readiness, Islamic Sustainable Business Practices, and Sustainable Economic Resilience within a single conceptual framework remain scarce, particularly in the Indonesian MSME context. This research gap provides the foundation for the development of the present study.

2.4 Hypothesis Development

The Effect of Digital Financial Readiness on Islamic Sustainable Business Practices

Digital Financial Readiness enables MSMEs to gain broader access to information, financial services, and transaction systems that support transparency, accountability, and operational efficiency. These capabilities facilitate the implementation of sus-tainability principles and business governance practices aligned with Islamic values. Therefore, higher levels of Digital Financial Readiness are expected to promote stronger implementation of Islamic Sustainable Business Practices. H1: Digital Financial Readiness has a positive and significant effect on Islamic Sustainable Business Practices (ISBP).

Digital Financial Readiness enhances MSMEs' ability to access financial resources, manage transactions efficiently, utilize market information, and improve operational performance. These capabilities contribute to stronger business resilience in re-sponding to economic risks and environmental changes. H2: Digital Financial Readiness has a positive and significant effect on Sustainable Economic Resilience.

The implementation of ISBP promotes more ethical, responsible, and long-term-oriented business governance. Such practices strengthen stakeholder trust, enhance business reputation, and support sustainable business continuity. H3: Islamic Sustainable Business Practices have a positive and significant effect on Sustainable Economic Resilience.

Digital Financial Readiness not only directly affects the economic resilience of MSMEs but also strengthens the implementation of sustainability-oriented business practices grounded in Islamic values. Through the implementation of ISBP, the benefits of Digital Financial Readiness can be translated into stronger business sustainability and resilience. H4: Islamic Sustainable Business Practices mediate the effect of Digital Financial Readiness on Sustainable Economic Resili-ence.

3 | METHOD

This study employs a quantitative research approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the effect of Digital Financial Readiness on the Sustainable Economic Resilience of MSMEs through the mediating role of Islamic Sustainable Business Practices (ISBP) in Medan City. A quantitative approach was selected because the study aims to test causal relationships among variables derived from estab-lished theories and previous empirical findings. Furthermore, the study seeks to validate an empirical model that integrates Digi-tal Financial Readiness, Islamic Sustainable Business Practices, and Sustainable Economic Resilience within the MSME con-text. The unit of analysis consists of MSME owners and managers who are directly involved in business decision-making, financial management, and the utilization of digital financial services. PLS-SEM was chosen because of its capability to analyze complex research models involving multidimensional latent con-structs, prediction-oriented relationships, and non-normal data distributions. Moreover, this method is particularly suitable for MSME research, where respondents often exhibit heterogeneous characteristics in terms of business size, sector, experience, and digital capability.

This study utilizes both primary and secondary data to achieve its objectives. Primary data were collected through structured questionnaires administered directly to MSME owners and managers in Medan City, measuring respondents' perceptions regarding Digital Financial Readiness, Islamic Sustainable Business Practices (ISBP), and Sustainable Economic Resilience. Secondary data were employed to support the contextual analysis of the study and were obtained from various sources, including Statistics Indonesia (BPS), Bank Indonesia (BI), the Financial Services Authority (OJK), the Department of Cooperatives and MSMEs, as well as relevant journal articles, books, conference proceedings, and research reports. The population of this study consists of MSMEs operating in Medan City, with respondent criteria including active business operation, familiarity with digital financial services, participation in financial and operational decision-making, and at least one year of business operation. A purposive sampling technique was employed to ensure respondents possess sufficient experience and understanding of digital financial activities. The minimum sample requirement was determined using PLS-SEM guidance based on the complexity of the structural model, resulting in a total of 320 valid responses from MSME owners and managers, which exceeded the minimum requirement and provided adequate statistical power for estimating the direct and mediating effects in the proposed model.

Data were collected using a structured questionnaire developed based on the indicators of each research variable, consisting of two main sections. The first section gathered information regarding respondent and business characteristics, including gender, age, educational background, business sector, business age, number of employees, business turnover, and experience in using digital financial services. The second section contained statements designed to measure the latent constructs of the study, with all measurement items utilizing a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Prior to the main survey, the questionnaire was reviewed and pilot-tested with MSME actors who met the respondent criteria to evaluate item clarity, contextual relevance, and preliminary reliability. Feedback from this pilot stage was used to refine the wording of the measurement items before full-scale data collection, which was conducted through both online and offline survey methods to maximize respondent participation.

Table 1. Operational definitions of variables

Variable	Code	Operational Definition	Indicators
Digital Financial Readiness	DFR	The degree to which MSMEs are prepared to understand, access, and utilize digital financial services to support business activities.	Digital financial literacy; access to digital financial services; digital transaction security; ease of use of digital financial technologies
Islamic Sustainable Business Practices	ISBP	Sustainability-oriented business practices integrating Sharia principles, Islamic business ethics, social responsibility, and environmental sustainability into business operations.	Sharia compliance; business ethics; social responsibility; environmental sustainability
Sustainable Economic Resilience	SER	The ability of MSMEs to maintain business continuity, adapt to changes in the business environment, and achieve sustainable growth over time.	Financial stability; business adaptability; operational efficiency; business continuity

Data analysis was conducted in several stages, including descriptive statistical analysis, measurement model (outer model) evaluation, structural model (inner model) evaluation, hypothesis testing, and mediation effect testing using bootstrapping procedures. The structural equations employed in this study are as follows: Model 1, where $ISBP = \beta_0 + \beta_1 DFR + \varepsilon_1$, and Model 2, where $SER = \alpha_0 + \alpha_1 DFR + \alpha_2 ISBP + \varepsilon_2$, with DFR representing Digital Financial Readiness, ISBP representing Islamic Sustainable Business Practices, SER representing Sustainable Economic Resilience, and ε as the error term. The hypotheses were evaluated using path coefficients, t-statistics, and p-values, with a hypothesis considered supported when the p-value was below 0.05 and the relationship direction aligned with the proposed hypothesis. The explanatory power of the model was assessed using the coefficient of determination (R^2), while predictive relevance was evaluated using Q^2 values. The magnitude of each relationship was assessed through effect size (f^2), and overall model fit was evaluated using the Standardized Root Mean Square Residual (SRMR). Through this analytical framework, the study provides a comprehensive examination of how Digital Financial Readiness contributes to Sustainable Economic Resilience directly and indirectly through the implementation of Islamic Sustainable Business Practices among MSMEs in Medan City.

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4 | RESULTS AND DISCUSSION

4.1 Results

4.1.1 Model Specification

The research model investigates the interrelationships among Digital Financial Readiness (DFR), Islamic Sustainable Business Practices (ISBP), and Sustainable Economic Resilience (SER) within Micro, Small, and Medium Enterprises (MSMEs) in Medan City. In this framework, Digital Financial Readiness serves as the exogenous construct, while ISBP functions as the mediating construct, and Sustainable Economic Resilience is designated as the endogenous construct. The model was estimated utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM), which is particularly suitable for analyzing multidimensional latent variables and models oriented towards prediction.

Table 2. Model Specification

Latent Construct	Code	Role in Model	Measurement Type	Indicators
Digital Financial Readiness	DFR	Exogenous	Reflective	4
Islamic Sustainable Business Practices	ISBP	Mediating	Reflective	4
Sustainable Economic Resilience	SER	Endogenous	Reflective	4

4.1.2 Model Identification

Each latent construct was assessed using four indicators, culminating in a total of 12 observed indicators. The structural model encompasses three direct relationships (DFR → ISBP, DFR → SER, and ISBP → SER) and one indirect relationship that examines the mediating role of ISBP.

4.1.3 Model Estimation

The model was estimated using PLS-SEM based on data collected from 320 MSME owners and managers in Medan City. Bootstrapping with 5,000 subsamples was conducted to evaluate the significance of the structural relationships.

Table 3. Descriptive Statistics

Construct	Mean	SD	Interpretation
Digital Financial Readiness	3.87	0.61	High
Islamic Sustainable Business Practices	3.79	0.65	High
Sustainable Economic Resilience	3.83	0.63	High

The findings indicate that MSMEs in Medan City exhibit relatively high levels of digital financial readiness, implementation of Islamic sustainable business practices, and sustainable economic resilience.

4.1.4 Measurement Model Evaluation

Reliability and convergent validity were assessed using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE).

Table 4. Reliability and Convergent Validity

Construct	Cronbach's Alpha	CR	AVE	Result
DFR	0.889	0.920	0.741	Reliable and Valid
ISBP	0.876	0.915	0.728	Reliable and Valid
SER	0.891	0.924	0.752	Reliable and Valid

All constructs surpassed the recommended thresholds, indicating satisfactory reliability and convergent validity.

4.1.5 Discriminant Validity

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT).

Table 5. HTMT Results

Construct	DFR	ISBP	SER
DFR	—		
ISBP	0.712	—	

SER	0.756	0.781	—

All HTMT values were below 0.90, confirming adequate discriminant validity.

4.1.6 Structural Model Evaluation

Multicollinearity was assessed using the Variance Inflation Factor (VIF).

Table 6. Collinearity Assessment

Predictor	Endogenous Variable	VIF
DFR	ISBP	1.000
DFR	SER	2.184
ISBP	SER	2.184

All VIF values were below 5.00, indicating the absence of multicollinearity issues.

Table 7. Hypothesis Testing Results

Hypothesis	Structural Path	Path Coefficient	t-value	p-value	Decision
H1	DFR → ISBP	0.612	11.274	<0.001	Supported
H2	DFR → SER	0.287	4.863	<0.001	Supported
H3	ISBP → SER	0.498	8.527	<0.001	Supported
H4	DFR → ISBP → SER	0.305	6.214	<0.001	Supported

All four hypotheses received support. Digital Financial Readiness positively influences Islamic Sustainable Business Practices and Sustainable Economic Resilience, while ISBP positively affects Sustainable Economic Resilience. The significant direct path (DFR → SER) and the indirect path (DFR → ISBP → SER) suggest that ISBP provides complementary partial mediation rather than substituting the direct contribution of digital financial readiness.

4.1.7 Coefficient of Determination and Predictive Relevance

Table 8. R^2 and Q^2 Values

Endogenous Variable	R^2	Adjusted R^2	Q^2	Interpretation
ISBP	0.374	0.372	0.267	Moderate
SER	0.596	0.592	0.411	Strong

Digital Financial Readiness accounts for 37.4% of the variance in ISBP, signifying meaningful explanatory power for a construct influenced by various organizational and contextual factors. Together, DFR and ISBP explain 59.6% of the variance in SER, indicating that the model captures a substantial portion of the variability in MSME resilience. The Q^2 values for ISBP (0.267) and SER (0.411) exceed zero, confirming out-of-sample predictive relevance, with stronger predictive performance for SER.

Table 9. Effect Size (f^2)

Relationship	f^2	Interpretation
DFR → ISBP	0.598	Large
DFR → SER	0.132	Small to Moderate
ISBP → SER	0.341	Moderate to Large

The effect size analysis reveals that Digital Financial Readiness has a significant impact on Islamic Sustainable Business Practices, while ISBP strongly contributes to enhancing Sustainable Economic Resilience among MSMEs in Medan City.

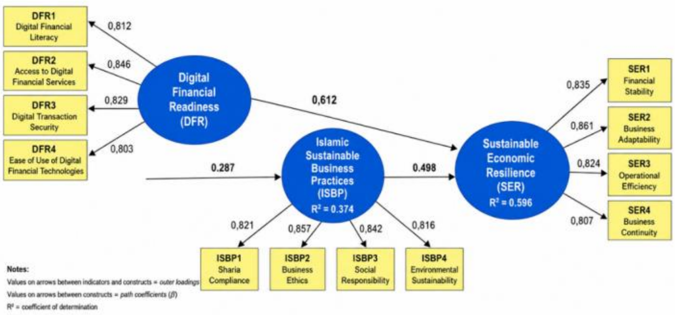

Figure 1. Structural Model

Relationship	f^2	Interpretation
DFR → ISBP	0.598	Large
DFR → SER	0.132	Small to Moderate
ISBP → SER	0.341	Moderate to Large

Source: Data Processing Results (2026)

4.1.8 Model Modification

Model modification was undertaken following the evaluation of both the measurement model and structural model, which included assessments of outer loadings, reliability, convergent validity, discriminant validity, collinearity, and significance of structural paths. The evaluation results indicated that all indicators associated with Digital Financial Readiness (DFR), Islamic Sustainable Business Practices (ISBP), and Sustainable Economic Resilience (SER) achieved outer loading values exceeding the recommended threshold of 0.70. Consequently, no indicators were removed from the model.

Regarding the structural model, all hypothesized relationships were statistically significant and aligned with the theoretical framework underpinning the study. Therefore, no additional structural paths were introduced, and no existing paths were removed. The final model maintained the original theoretical structure comprising three direct effects and one indirect effect: (1) Digital Financial Readiness → Islamic Sustainable Business Practices, (2) Digital Financial Readiness → Sustainable Economic Resilience, (3) Islamic Sustainable Business Practices → Sustainable Economic Resilience, and (4) the mediating role of Islamic Sustainable Business Practices in the relationship between Digital Financial Readiness and Sustainable Economic Resilience.

These refinements enhanced the conceptual robustness of the model without altering its structural configuration. The final model demonstrated satisfactory levels of reliability, validity, explanatory power, and predictive relevance. Thus, the model is deemed appropriate for elucidating the relationships among Digital Financial Readiness, Islamic Sustainable Business Practices, and Sustainable Economic Resilience within MSMEs in Medan City. This decision aligns with PLS-SEM best practices, which emphasize that model modification should not solely be driven by statistical improvement but must also be supported by robust theoretical justification and conceptual consistency (Hair *et al.,* 2022).

4.2 Discussion

The first finding indicates that Digital Financial Readiness has a positive and significant effect on Islamic Sustainable Business Practices among MSMEs in Medan City ($\beta = 0.612$, $p < 0.001$). This relatively strong relationship suggests that digital readiness extends beyond the mere ability to operate financial applications. Factors such as digital financial literacy, access to resources, transaction security awareness, and ease of technology use enhance record transparency, payment traceability, accountability, and access to information. These capabilities facilitate the application of Sharia compliance, fair business conduct, social responsibility, and environmentally responsible operational choices. In the context of Medan, where many MSMEs are engaged in trade and services and are increasingly utilizing digital payments, the quality of digital financial use is as critical as access itself. This interpretation aligns with studies demonstrating that digital finance and financial inclusion enhance organizational capability, adaptability, and sustainable development outcomes (Cao *et al.,* 2023; Nguyen, 2024; Zhu, 2023).

The second major finding reveals that Digital Financial Readiness has a positive and significant direct effect on Sustainable Economic Resilience. The path coefficient of 0.287 indicates that MSMEs with stronger digital financial capabilities are better positioned to maintain business continuity, adapt to economic uncertainties, and sustain long-term growth. This finding underscores the role of digital financial readiness as a strategic organizational resource that empowers MSMEs to enhance financial management, increase operational efficiency, expand access to financing opportunities, and respond more effectively to external disruptions. Similar results have been reported in studies indicating that digital financial inclusion and technology adoption bolster business resilience by improving access to financial resources, information, and market opportunities (Nguyen, 2024; Suhrab *et al.,* 2024; Xi & Wang, 2023).

The third major finding indicates that Islamic Sustainable Business Practices positively and significantly affect Sustainable Economic Resilience. The path coefficient of 0.498 demonstrates that sustainability-oriented business practices grounded in Islamic values contribute substantially to long-term organizational resilience. This result emphasizes the importance of integrating Sharia compliance, ethical governance, social responsibility, and environmental sustainability into business operations. Previous studies have similarly reported that organizations implementing sustainability-oriented governance tend to exhibit stronger stakeholder trust, improved legitimacy, and greater resilience in dynamic business environments (Appiah-Kubi *et al.,* 2024; Sitorus *et al.,* 2024; Sitorus *et al.,* 2025).

The fourth finding demonstrates that Islamic Sustainable Business Practices significantly mediate the relationship between Digital Financial Readiness and Sustainable Economic Resilience. The indirect effect coefficient of 0.305 confirms that part of the contribution of digital financial readiness to economic resilience occurs through the implementation of sustainability-oriented Islamic business practices. This finding suggests that digital capability alone may not be sufficient to maximize resilience unless accompanied by responsible and sustainable business behavior. Similar arguments have been proposed in recent sustainability and digital transformation studies, emphasizing that technological capabilities generate long-term value when combined with sustainability-oriented governance and responsible business practices (Liao *et al.,* 2024; Omri *et al.,* 2025; Wang *et al.,* 2025).

The findings of this study are broadly consistent with recent research on digital financial inclusion and digital transformation among SMEs. Previous studies have demonstrated that Digital Financial Readiness is a critical determinant of business competitiveness, as resource-constrained firms require internal capabilities to effectively utilize emerging financial technologies (Cao *et al.,* 2023; Xi & Wang, 2023; Zhu, 2023). The present study confirms this argument by illustrating that Digital Financial Readiness significantly influences the implementation of Islamic Sustainable Business Practices and Sustainable Economic Resilience among MSMEs in Medan City.

The results also support studies emphasizing that technological, organizational, and environmental factors influence digital financial adoption and sustainable business performance (Bai *et al.,* 2024; Suhrab *et al.,* 2024; Telukdarie & Mungar, 2022). This study contributes to the literature by demonstrating that Digital Financial Readiness serves not only as a technological capability but also as a strategic resource that facilitates sustainability-oriented business practices grounded in Islamic values. Furthermore, the findings align with studies arguing that digital financial inclusion contributes to sustainable development but remains contingent upon organizational capability, infrastructure readiness, and responsible utilization of technology (Arner *et al.,* 2020; Ozili, 2018; Suhrab *et al.,* 2024). This study reinforces this perspective by showing that access to digital financial services alone is insufficient; MSMEs must possess the knowledge, skills, security awareness, and organizational readiness necessary to effectively utilize digital financial technologies.

The significant relationship between Islamic Sustainable Business Practices and Sustainable Economic Resilience is also consistent with previous studies on ESG, green finance, and sustainability-oriented business management (Appiah-Kubi *et al.,* 2024; Sitorus *et al.,* 2024; Sitorus *et al.,* 2025). The current study extends this literature by demonstrating that Islamic sustainability values function as an important governance mechanism through which digital financial capabilities can be transformed into long-term economic resilience. Moreover, the mediating role of Islamic Sustainable Business Practices supports recent findings highlighting the complementary relationship between digital finance, sustainability, and innovation (Omri *et al.,* 2025; Yao, 2025; Zhu *et al.,* 2025). This study provides additional evidence from the MSME context, suggesting that sustainable business practices are essential for translating digital financial readiness into sustainable economic outcomes. Consequently, the findings enrich the growing literature on digital finance, Islamic business sustainability, and MSME resilience in emerging economies.

Theoretically, this study contributes to the expanding literature on digital finance, Islamic business sustainability, and MSME resilience by positioning Digital Financial Readiness as a strategic antecedent of Sustainable Economic Resilience through the mediating role of Islamic Sustainable Business Practices (ISBP). Previous studies have predominantly examined digital finance from the perspectives of financial inclusion, poverty reduction, and macroeconomic development (Ozili, 2018; Suhrab *et al.,* 2024). This study extends this literature by shifting the analytical focus to the firm level and demonstrating how MSMEs' digital financial capabilities influence sustainability-oriented business practices and long-term resilience. The findings also support the Resource-Based View and Dynamic Capability perspectives, suggesting that digital financial readiness represents a strategic organizational capability that enables firms to transform technological resources into sustainable economic outcomes. Furthermore, the significant mediating role of ISBP enriches the literature on Islamic business sustainability by demonstrating that Sharia compliance, ethical governance, social responsibility, and environmental sustainability function as important mechanisms through which digital capabilities contribute to business resilience (Sitorus *et al.,* 2024; Sitorus *et al.,* 2025).

Methodologically, this study demonstrates the suitability of PLS-SEM for examining multidimensional latent constructs in digital finance and sustainability research. Digital Financial Readiness, Islamic Sustainable Business Practices, and Sustainable Economic Resilience cannot be observed directly and therefore require measurement through multiple indicators. The satisfactory levels of reliability, convergent validity, discriminant validity, explanatory power, and predictive relevance confirm the robustness of the proposed model. These findings further support the application of SEM-based approaches in examining complex relationships among digital capability, sustainability practices, and organizational outcomes in MSME contexts.

From a practical perspective, the findings imply that MSME development programs should not focus solely on increasing access to digital financial services. Instead, policymakers, financial institutions, and MSME development agencies should simultaneously strengthen digital financial literacy, secure digital transaction capabilities, and sustainability-oriented business management practices. Previous studies have shown that digital financial inclusion contributes to economic participation and business performance only when supported by adequate capability, infrastructure, and institutional readiness (Cao *et al.,* 2023; Nguyen, 2024; Suhrab *et al.,* 2024). The findings also suggest that the implementation of Islamic Sustainable Business Practices should become an integral component of MSME empowerment programs. Training initiatives should incorporate Sharia-compliant business management, ethical entrepreneurship, social responsibility, and environmental sustainability alongside digital financial capability development. Such an integrated approach may help MSMEs achieve greater resilience, competitiveness, and long-term sustainability.

From a policy perspective, the findings highlight the importance of integrating digital financial transformation and sustainability agendas within MSME development strategies. Government agencies and financial regulators should design policies that not only expand access to digital financial services but also encourage sustainability-oriented business practices among MSMEs. This recommendation aligns with recent studies emphasizing the complementary roles of digital finance, green finance, and sustainable development in achieving long-term economic resilience (Dong *et al.,* 2025; Omri *et al.,* 2025; Wang *et al.,* 2025). Given the strategic role of MSMEs in Medan City, strengthening Digital Financial Readiness and Islamic Sustainable Business Practices may significantly contribute to inclusive economic growth, financial resilience, and sustainable regional development. Policymakers should therefore develop segmented intervention programs. MSMEs with low levels of digital readiness require foundational digital financial literacy and security training, while more advanced MSMEs may benefit from programs focusing on sustainable innovation, digital business ecosystems, and sustainability-oriented growth strategies. Overall, the findings indicate that Digital Financial Readiness serves as a strategic capability that strengthens Sustainable Economic Resilience both directly and indirectly through Islamic Sustainable Business Practices. This study provides empirical evidence that long-term MSME resilience depends not only on technological readiness but also on the integration of sustainability-oriented Islamic values into everyday business operations.

5 | CONCLUSIONS AND FUTURE WORK

This study confirms that Digital Financial Readiness is a crucial antecedent of Sustainable Economic Resilience among MSMEs in Medan City. DFR positively influences ISBP and SER, while ISBP positively affects SER. The significant direct and indirect effects demonstrate complementary partial mediation: digitally prepared MSMEs exhibit resilience in their own right, but the benefits of resilience are amplified when digital financial capabilities are translated into Sharia-compliant, ethical, socially responsible, and environmentally sustainable business practices. The findings offer specific practical implications. The Medan City Government and MSME development agencies should integrate digital financial literacy, cybersecurity awareness, digital recordkeeping, and access-to-finance programs with guidance on Islamic business ethics and sustainability. Financial institutions should complement the provision of digital products with capacity-building initiatives and transaction-security support. MSME owners and managers should utilize digital financial tools not only to expedite transactions but also to enhance transparency, financial discipline, stakeholder trust, and long-term business continuity.

This study has several limitations. The analysis relies on cross-sectional and self-reported perceptual data, which necessitates cautious interpretation regarding causality and changes over time. The respondents were limited to MSME owners and managers in Medan City who had used or were familiar with digital financial services, potentially restricting the generalizability of the findings to other regions, sectors, and less digitally exposed enterprises. Additionally, the model focuses on three latent constructs and does not encompass all institutional, market, or firm-level factors that may influence resilience. Future research should employ longitudinal or mixed-method designs, incorporate objective financial and operational indicators, and compare MSMEs across different regions, sectors, and levels of digital maturity. Additional constructs such as financial resilience, green innovation capability, sustainable entrepreneurial orientation, ESG readiness, institutional support, and digital ecosystem readiness may further elucidate how digital finance contributes to sustainable business outcomes.

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