*Journal of Applied Engineering and Technological Science*
Vol 7(2) 2026: 880-895

# *ISLAMIC FINANCIAL TECHNOLOGY ADOPTION AND MSME PERFORMANCE: INTEGRATING LITERACY, COMPLIANCE, ACCESSIBILITY, AND LEADERSHIP*

**Zulfadli Hamzah[1], Astri Ayu Purwati[2*], Rosyidi Hamzah[3]**
Sharia Banking Study Program, Faculty of Islamic Studies, Universitas Islam Riau, Pekanbaru-Riau, Indonesia[1]
Management Study Program, Faculty of Business, Institut Bisnis dan Teknologi Pelita Indonesia, Pekanbaru-Riau, Indonesia[2]
Law Study Program, Faculty of Law, Universitas Islam Riau, Pekanbaru-Riau, Indonesia[3]
astri.ayu@lecturer.pelitaindonesia.ac.id[*]

Received: 20 November 2025, Revised: 29 May 2026, Accepted: 31 May 2026
**Corresponding Author*

***ABSTRACT***
*This study examines the effects of Sharia financial literacy, Sharia compliance, technological accessibility, and Islamic leadership on the business performance of Micro, Small, and Medium Enterprises (MSMEs) in Riau, Indonesia, with the mediating role of Sharia Financial Technology (FinTech) adoption and the moderating role of government regulation. The novelty of this study lies in integrating these behavioural, technological, and Islamic value-based factors into a single framework to explain MSME performance through mediation and moderation mechanisms. A quantitative survey was conducted involving 400 MSMEs, and the data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS 4. The findings indicate that Sharia financial literacy, technological accessibility, and Islamic leadership significantly enhance Sharia FinTech adoption and MSME performance, while Sharia FinTech adoption significantly mediates these relationships. In contrast, Sharia compliance and government regulation show no significant effects. This study extends the literature on Islamic digital finance by providing an integrated model of Sharia FinTech adoption and offers practical insights for policymakers, Islamic financial institutions, and FinTech providers to strengthen digital transformation and sustainable MSME development in emerging economies.*
***Keywords:*** *Islamic Financial Literacy, Sharia Compliance, Technological Accessibility, Islamic Financial Technology Adoption, Islamic Leadership*

## 1. Introduction

The digital transformation has brought various innovations to the financial sector, including Sharia-based financial technology, also known as Islamic Financial Technology (i-FinTech). Islamic FinTech integrates digital technology with the principles of the Islamic financial system, emphasizing fairness, transparency, and adherence to the prohibitions of interest, gambling, and excessive uncertainty (Rosalin et al., 2025). As a result, i-FinTech provides Micro, Small, and Medium Enterprises (MSMEs) with faster, more efficient, and Sharia-compliant financial services while supporting business development in line with Islamic ethical values (Haris, 2020; Nandang et al., 2025).

MSMEs play a fundamental role in Indonesia's economy, accounting for more than 99% of business units and employing over 97% of the national workforce (Cahyawati et al., 2023). Despite the rapid growth of Islamic FinTech, its contribution to MSME performance remains inconclusive. Previous studies have generally examined determinants of Islamic FinTech adoption or MSME performance separately, resulting in fragmented evidence and limited understanding of how organisational, technological, and Sharia-based factors jointly influence business outcomes. Consequently, existing models remain insufficient to explain the mechanisms through which Islamic FinTech creates value for MSMEs. At the same time, the rapid growth of Sharia FinTech adoption and investment in Muslim-majority countries highlights its considerable potential to promote inclusive and sustainable MSME development (Pratama et al., 2023; Ritonga et al., 2025; Purwati et al., 2025).

Nevertheless, increasing Islamic FinTech adoption alone does not automatically improve MSME performance. One important prerequisite is Sharia financial literacy, namely MSME

owners' understanding of Islamic financial principles and Sharia-compliant financial instruments. Previous studies have demonstrated that Sharia financial literacy enhances financial decision-making and business performance (Basrowi et al., 2020; Irman et al., 2021; Pratama et al., 2023). However, empirical findings remain inconsistent, with several studies reporting that its impact depends on financing access, entrepreneurial motivation, and market conditions (Rapina et al., 2023; Wahyono & Hutahayan, 2021; Priyantoro et al., 2025). These inconsistencies indicate that financial literacy alone may not fully explain variations in MSME performance.

Beyond financial literacy, compliance with Sharia principles forms an important foundation for Islamic business operations. Sharia compliance reflects adherence to Islamic business ethics and financial principles rather than merely regulatory compliance (Alnori & Alqahtani, 2019). Previous studies suggest that businesses implementing Sharia principles tend to gain stronger customer trust and reputation (Basov & Bhatti, 2014; Usman et al., 2021). However, other studies have reported insignificant effects, particularly where MSMEs have limited access to broader Sharia financial markets (Hendratmoko et al., 2024; Ichsan et al., 2024).

Technological accessibility also plays a crucial role in enabling MSMEs to utilise Sharia-compliant financing, manage business operations efficiently, and expand market opportunities (Susilawati et al., 2021). Although previous studies generally report positive effects of digital financial services on MSME performance (Susilawati et al., 2021; Wardani et al., 2026), their effectiveness often depends on digital literacy, technological readiness, and infrastructure availability. Limited digital inclusion and inadequate technological infrastructure continue to restrict many MSMEs from fully benefiting from Islamic FinTech services (Hakim & Ningsih, 2020; Purnamasari et al., 2020; Cahyawati et al., 2023).

Another important factor is Islamic leadership. Leadership grounded in Islamic values such as justice, trustworthiness, consultation, and excellence promotes ethical decision-making, innovation, and organisational adaptability (Faris & Parry, 2011). Leaders who internalise these values are more likely to encourage technology adoption and improve sustainable business performance among MSMEs (Febriani & Sa'diyah, 2021; Javid et al., 2024).

Although previous studies have examined the relationships between financial literacy, Sharia compliance, technological accessibility, and Islamic leadership with MSME performance, the evidence remains fragmented because these factors have generally been investigated separately rather than within an integrated framework. Furthermore, limited research has simultaneously examined the mediating role of Sharia Financial Technology adoption and the moderating role of government regulation in explaining MSME performance. Consequently, limited evidence is available regarding how behavioural, technological, organisational, and institutional factors collectively influence sustainable MSME performance.

Therefore, this study seeks to address this gap by positioning Sharia Financial Technology adoption as a mediating variable linking Sharia financial literacy, Sharia compliance, technological accessibility, and Islamic leadership with MSME performance. Sharia Financial Technology adoption refers to the process through which business actors accept and utilise financial technology based on Islamic principles to support financial and business activities (Zakaria, 2025). In this context, adoption is influenced not only by technical aspects, such as ease of use and transaction efficiency, but also by value-based factors, including compliance with DSN-MUI fatwas, trust, and alignment with Islamic business ethics.

Government regulation is incorporated as a moderating variable that may strengthen the relationship between Sharia FinTech adoption and MSME performance. Supportive regulations, digital infrastructure, tax incentives, and Sharia financial literacy programmes are expected to create a more conducive ecosystem for Islamic FinTech development and wider MSME adoption (Graafland, 2020; Xiang et al., 2022).

The novelty of this research lies in proposing an integrated model that simultaneously examines the effects of Sharia financial literacy, Sharia compliance, technological accessibility, and Islamic leadership on MSME performance through the mediating role of Sharia Financial Technology adoption and the moderating role of government regulation. This integrated framework provides a more comprehensive explanation of Islamic FinTech adoption and its

contribution to sustainable MSME performance while offering both theoretical and practical insights for developing a more inclusive and sustainable Islamic financial ecosystem.

## 2. Methodology

a. Research Model

The approach and problem-solving strategy in this study involved an in-depth literature review on the concept of Sharia financial technology adoption and MSME business performance, as well as the factors influencing it, as illustrated in the following conceptual framework:

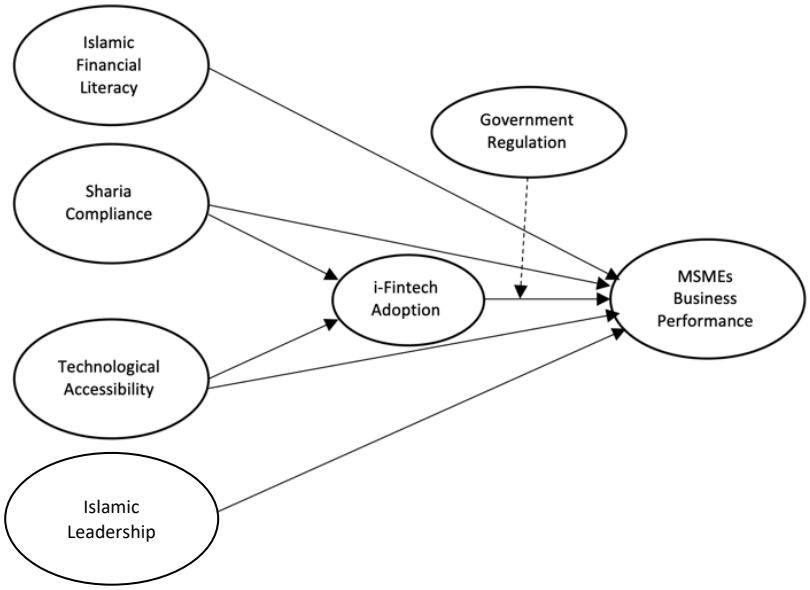



Fig. 1. Research Model Conceptual

Based on the following research model, the research hypotheses were formulated as follows:

H1. Sharia financial literacy has a significant positive effect on MSME performance.
H2. Sharia compliance has a significant positive effect on MSME performance.
H3. Technological accessibility has a significant positive effect on MSME performance.
H4. Islamic leadership has a significant positive effect on MSME performance.
H5. Sharia financial literacy has a significant positive effect on Sharia FinTech Adoption.
H6. Sharia compliance has a significant positive effect on Sharia FinTech Adoption.
H7. Technological accessibility has a significant positive effect on Sharia FinTech Adoption.
H8. Islamic leadership has a significant positive effect on Sharia FinTech Adoption.
H9. Sharia financial literacy has a significant positive effect on MSME performance through Sharia FinTech Adoption.
H10. Sharia compliance has a significant positive effect on MSME performance through Sharia FinTech Adoption.
H11. Technological accessibility has a significant positive effect on MSME performance through Sharia FinTech Adoption.
H12. Islamic leadership has a significant positive effect on MSME performance through Sharia FinTech Adoption.
H13. Sharia Financial Technology Adoption has a significant positive effect on business performance, moderated by government regulation.

b. Research Population and Sample

The population of this study consisted of all Micro, Small, and Medium Enterprises (MSMEs) in Riau Province that use services provided by Sharia financial institutions. Based on projections for the number of MSMEs in Riau Province in 2025, there are approximately 520,000 to 600,000 business units spread across various sectors. Considering research effectiveness and

efficiency, the sample size was determined using Cochran's formula, which is commonly applied in large-scale quantitative studies. Based on the calculation results, a sample size of 400 MSMEs was obtained. This figure was selected as the maximum estimate to enhance the generalizability of the research findings.

The sampling technique employed was purposive sampling, a method of selecting respondents based on specific criteria relevant to the research objectives. In this context, the inclusion criteria comprised two main requirements:

1. MSMEs must have demonstrably used services from Sharia financial institutions such as Islamic banks, Sharia cooperatives, or Sharia FinTech platforms; and
2. MSMEs must have been operating for at least one year.

These requirements aimed to ensure that respondents possessed sufficient operational experience and active engagement with the Sharia financial system.

c. Data Collection Procedures and Research Instruments

Prior to the main survey, the questionnaire was reviewed by three experts specialising in Islamic finance, digital business, and research methodology to assess its content validity and clarity. A pilot test involving 30 MSME owners was subsequently conducted to evaluate item readability and questionnaire reliability. Minor revisions were made based on the feedback received before the questionnaire was distributed to the final respondents. Since the questionnaire was administered in Bahasa Indonesia, the original measurement scales adapted from English-language literature were translated into Bahasa Indonesia and subsequently reviewed by the expert panel to ensure linguistic accuracy and conceptual equivalence with the original measurement constructs.

The data were obtained by distributing structured questionnaires employing a 5-point Likert scale, in which respondents indicated their level of agreement with statements based on the indicators of each research variable. The research instrument was developed by adapting validated measurement scales from previous studies, with several additional indicators incorporated to reflect the novelty and context of the present research.

The Sharia financial literacy variable comprised seven indicators (Pratama et al., 2023; Priyantoro et al., 2025), such as understanding 1). Sharia principles, 2). Sharia financial products, 3). risk, 4). accounting, 5). zakat and infaq, 6). the ability to apply Sharia principles, and 7). knowledge of Sharia FinTech. The Sharia compliance variable consisted of five indicators (Hendratmoko et al., 2024), including 1). compliance with the prohibition of riba, 2). profit-sharing transparency, 3). prohibition of maysir and gharar, 4). Islamic business ethics, and 5). Sharia legal and environmental aspects. The technological accessibility variable comprised seven indicators (Siahaan, 2022; Purwati & Hamzah, 2022), such as 1). internet access, 2). digital devices, 3). business applications, 4). e-commerce, 5). digital payment systems, 6). information security, and 7). technological skills. The Islamic leadership variable was measured using five indicators (Febriani & Sa'diyah, 2021), including 1). justice, 2). transparency, 3). ethical commitment, 4). employee empowerment, 5). Islamic vision and mission. The Sharia financial technology adoption variable consisted of eight indicators (Basrowi et al., 2020; Purnamasari et al., 2020), including: 1). Use of Sharia-compliant financial applications, 2). Implementation of cashless transactions, 3). Utilization of Sharia FinTech-based financing services, 4). Participation in Sharia-compliant investment instruments, 5). Application of digital data security systems, 6). Utilization of digital marketing strategies, 7). Use of mobile payment systems, and 8). Integration of Sharia FinTech services with business operations. Meanwhile, MSME business performance was measured through five indicators reflecting financial and operational performance (Febriani & Sa'diyah, 2021), such as 1). Perceived growth in business revenue, 2). Perceived increase in business profit, 3). Perceived improvement in sales volume and market reach, 4). Perceived efficiency in business operations, and 5). Perceived adequacy of available business funds. Government regulation in this study is reflected through the clarity of regulations (Graafland, 2020), related to 1). business operations, 2). the ease of complying with the applicable rules, 3).

the extent to which regulations support business growth, and 4). the consistency as well as stability in their implementation.

d. Data Analysis Technique

The data in this research were processed using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method, facilitated by the SmartPLS application. This approach was selected due to its suitability for analyzing complex relationships among multiple latent variables, handling reflective measurement models, and accommodating relatively small to medium sample sizes without requiring strict normality assumptions. The analysis procedure included several stages (Hair et al., 2019) : (1) Assessment of the measurement model by conducting convergent validity, discriminant validity, and reliability tests to verify that each construct and its indicators satisfied the necessary statistical requirements; (2) Examination of the structural model to determine the strength and significance of the relationships among variables, using path coefficients, t-statistics, and p-values derived from the bootstrapping process; and (3) Evaluation of the model's predictive capability by analyzing the coefficient of determination ($R^2$) for endogenous variables.The criteria for statistical significance were set at a p-value below 0.05 and a t-statistic greater than 1.96. This analytical framework enabled the testing of both direct and indirect effects, as well as moderation analysis, to comprehensively understand the relationships between the variables under study.

Since all variables were collected using self-reported questionnaires, a common method bias (CMB) assessment was conducted using Harman's single-factor test. The first unrotated factor explained less than 50% of the total variance, indicating that common method bias was not a serious concern in this study. Therefore, the collected data were considered appropriate for subsequent PLS-SEM analysis.

## 3. Results

a. Respondent Demographics

This study involved 400 Micro, Small, and Medium Enterprises (MSMEs) in Riau Province that utilize facilities provided by Islamic financial institutions. Respondents' demographic data were collected to provide a general overview of the characteristics of the business actors included in the research sample. This demographic information is essential for understanding the contextual background of respondents and its relevance to the adoption of Islamic financial products, business sustainability, and technological readiness.

Table 1 - Respondent Demographics

| Category | Frequency | Percentage (%) |
|---|---|---|
| **Gender** | | |
| Male | 191 | 47.8 |
| Female | 209 | 52.2 |
| **Total** | **400** | **100.0** |
| **Age** | | |
| < 25 years | 19 | 4.8 |
| 25–35 years | 147 | 36.8 |
| 36–45 years | 182 | 45.5 |
| > 45 years | 52 | 13.0 |
| **Total** | **400** | **100.0** |
| **Type of Business** | | |
| Processed Food & Beverages | 142 | 35.5 |
| Groceries | 43 | 10.8 |
| Fashion & Accessories | 43 | 10.8 |
| Small Shops & Daily Stores | 29 | 7.2 |
| Printing, Stationery, and Others | 143 | 35.7 |
| **Total** | **400** | **100.0** |
| **Years in Operation** | | |
| < 1 year | 22 | 5.5 |
| 1–3 years | 196 | 49.0 |

| Category | Frequency | Percentage (%) |
|---|---|---|
| 4–7 years | 163 | 40.8 |
| > 7 years | 19 | 4.7 |
| **Total** | **400** | **100.0** |
| **Annual Business Revenue** | | |
| < IDR 300 million | 266 | 66.5 |
| ≥ IDR 300 million | 134 | 33.5 |
| **Total** | **400** | **100.0** |
| **Eco-Friendly Certification** | | |
| Yes | 171 | 42.8 |
| No | 229 | 57.2 |
| **Total** | **400** | **100.0** |
| **Green Innovation Training** | | |
| Yes | 178 | 44.5 |
| No | 222 | 55.5 |
| **Total** | **400** | **100.0** |
| **Main Sales Channel** | | |
| Online | 39 | 9.8 |
| Offline | 197 | 49.2 |
| Combination of Online & Offline | 164 | 41.0 |
| **Total** | **400** | **100.0** |
| **Technology Use in Operations** | | |
| Low | 123 | 30.8 |
| Medium | 211 | 52.8 |
| High | 66 | 16.5 |
| **Total** | **400** | **100.0** |
| **Use of Islamic Finance** | | |
| Yes | 218 | 54.5 |
| No | 182 | 45.5 |
| **Total** | **400** | **100.0** |
| **Islamic Finance/FinTech Training** | | |
| Yes | 178 | 44.5 |
| No | 222 | 55.5 |
| **Total** | **400** | **100.0** |

Based on a survey of 400 MSME actors in Riau Province, the majority of respondents were female (52.2%), while males accounted for 47.8%. In terms of age, most individuals were in the 36–45 age group (45.5%) and the 25–35 age group (36.8%), indicating a predominance of individuals in their productive years who are engaged in entrepreneurial activities. The types of businesses operated were diverse, with processed food and beverage enterprises being the most dominant (35.5%), followed by groceries (10.8%), fashion and accessories (10.8%), and small shops or daily stores (7.2%). Most respondents had been running their businesses for 1–3 years (49%) and 4–7 years (40.8%), suggesting that the majority of MSMEs are in a growth phase. In terms of revenue, 66.5% reported annual earnings below IDR 300 million, reflecting a relatively small business scale. Regarding sustainability, only 42.8% had eco-friendly certification, and 44.5% had participated in green innovation training, indicating the need to enhance awareness of sustainable business practices. Sales channels were divided between offline (49.2%), a combination of offline and online (41%), and fully online (9.8%), while technology use in operations was predominantly at a medium level (52.8%). From an Islamic finance perspective, 54.5% utilized Sharia-compliant financial products, and 44.5% had attended related training, highlighting a significant potential for expanding literacy and the utilization of Islamic finance among MSME actors. Overall, this data provides a comprehensive overview of respondent characteristics, serving as a crucial basis for analyzing business sustainability, technology adoption, and Islamic financial inclusion in the MSME sector.

b. Validity Test

Convergent Validity

Convergent validity is a form of construct validity that indicates the extent to which indicators within a single construct are highly correlated. The convergent validity test in this model employed two main measures: the outer loading value and the Average Variance Extracted (AVE). An acceptable outer loading value should preferably be above 0.7; however, values between 0.5 and 0.7 may still be considered acceptable in exploratory research (Hair et al., 2017). Meanwhile, an AVE value of at least 0.5 is deemed to meet the convergent validity requirement, as it indicates that more than 50% of the variance of the indicators is explained by the construct (Hair et al., 2017). The following presents the results of convergent validity measurements for each research construct:

Table 2 - Outer Loading and AVE

| Construct | Indicator | Outer Loading | AVE |
|---|---|---|---|
| **Business Performance** | BP1 | 0.712 | 0.538 |
| | BP2 | 0.744 | |
| | BP3 | 0.814 | |
| | BP4 | 0.552 | |
| | BP5 | 0.814 | |
| **Sharia FinTech Adoption** | SFTA1 | 0.801 | 0.585 |
| | SFTA2 | 0.671 | |
| | SFTA3 | 0.694 | |
| | SFTA4 | 0.813 | |
| | SFTA5 | 0.786 | |
| | SFTA6 | 0.757 | |
| | SFTA7 | 0.783 | |
| | SFTA8 | 0.802 | |
| **Sharia Financial Literacy** | SFL1 | 0.718 | 0.532 |
| | SFL2 | 0.682 | |
| | SFL3 | 0.762 | |
| | SFL4 | 0.639 | |
| | SFL5 | 0.796 | |
| | SFL6 | 0.723 | |
| | SFL7 | 0.773 | |
| **Sharia Compliance** | SC1 | 0.763 | 0.616 |
| | SC2 | 0.892 | |
| | SC3 | 0.576 | |
| | SC4 | 0.761 | |
| | SC5 | 0.891 | |
| **Technological Accessibility** | TA1 | 0.713 | 0.532 |
| | TA2 | 0.780 | |
| | TA3 | 0.676 | |
| | TA4 | 0.764 | |
| | TA5 | 0.748 | |
| | TA6 | 0.697 | |
| | TA7 | 0.721 | |
| **Islamic Leadership** | IL1 | 0.774 | 0.513 |
| | IL2 | 0.699 | |
| | IL3 | 0.694 | |
| | IL4 | 0.702 | |
| | IL5 | 0.708 | |
| **Government Regulation** | GR1 | 0.797 | 0.676 |
| | GR2 | 0.794 | |
| | GR3 | 0.835 | |
| | GR4 | 0.859 | |
| **GR × SFTA (Interaction Term)** | – | 1.000 | – |

Based on the results in the table above, all constructs in this study demonstrate adequate convergent validity. All AVE values exceed the minimum threshold of 0.5, indicating that the latent variables consistently explain more than 50% of the variance of their respective indicators. The construct with the highest AVE value is Government Regulation (0.676), reflecting a very strong measurement quality. All indicators have loading values above 0.5, with most exceeding 0.7, which further strengthens the validity of the indicators as representations of their respective constructs. Therefore, this measurement model meets the requirements for further analysis, such as testing relationships among variables or conducting structural model assessments.

Discriminant Validity Test Results Using the Heterotrait-Monotrait Ratio (HTMT)

Discriminant validity is an essential requirement to ensure that the constructs used in the study truly measure distinct concepts. One modern and more sensitive approach compared to the Fornell-Larcker criterion is the Heterotrait-Monotrait Ratio (HTMT) method. Discriminant validity is considered established when the HTMT value between two constructs falls below 0.85 for a conservative criterion or below 0.90 for a more lenient criterion (Hair et al., 2019). An HTMT value exceeding this threshold indicates that the two constructs may not be discriminantly distinct or that there is an overlap between them.

Table 3 - HTMT Between Construct

| Construct | BP | GR | SFTA | SFL | IL | SC |
|---|---|---|---|---|---|---|
| Business Performance | – | | | | | |
| Government Regulation | 0.683 | – | | | | |
| Sharia FinTech Adoption | 0.705 | 0.762 | – | | | |
| Sharia Financial Literacy | 0.655 | 0.728 | 0.751 | – | | |
| Islamic Leadership | 0.642 | 0.713 | 0.684 | 0.677 | – | |
| Sharia Compliance | 0.711 | 0.745 | 0.773 | 0.688 | 0.729 | – |
| Technology Accessibility | 0.684 | 0.709 | 0.765 | 0.703 | 0.698 | 0.741 |

Based on the HTMT table above, all inter-construct ratio values are below the maximum threshold of 0.90, with most even falling below 0.75. The highest values are observed between Sharia FinTech Adoption and Sharia Compliance (0.773) and between Government Regulation and Sharia FinTech Adoption (0.762), both of which remain within acceptable limits. Therefore, it can be concluded that each construct in this model possesses good discriminant validity, with no overlap in measurement between constructs. This strengthens the reliability of the structural model used in the study, allowing for a further valid analysis of the relationships among latent variables.

c. Reliability Test

The reliability test aimed to evaluate how consistently and stably the indicators within each construct could measure the intended concept. In this study, the reliability of each construct was assessed through two primary metrics: Cronbach's Alpha and Composite Reliability (CR). Cronbach's Alpha assesses the degree of internal consistency between items in a construct, where a threshold value of 0.70 or higher is generally considered indicative of satisfactory reliability (Hair et al., 2019). Meanwhile, Composite Reliability also measures the level of construct reliability but provides a more accurate assessment as it takes into account the contribution of each indicator. A good CR value is also indicated by a score above 0.70 (Hair et al., 2017).

Table 4 - Cronbach's Alpha and Composite Reliability

| Construct | Cronbach's Alpha | Composite Reliability |
|---|---|---|
| Business Performance | 0.782 | 0.798 |
| Sharia FinTech Adoption | 0.766 | 0.775 |
| Sharia Financial Literacy | 0.838 | 0.855 |
| Sharia Compliance | 0.898 | 0.902 |
| Islamic Leadership | 0.853 | 0.861 |
| Technology Accessibility | 0.853 | 0.856 |

| | | |
|---|---|---|
| Government Regulation | 0.839 | 0.842 |

Table 4 shows that every construct achieves Cronbach's Alpha and Composite Reliability scores exceeding 0.70. This result demonstrates that the indicators for each construct exhibit strong internal consistency and dependable measurement quality. Consequently, the constructs in this study are deemed reliable and appropriate for subsequent procedures, including validity assessment and structural modeling.

d. Coefficient of Determination (R Square)

The coefficient of determination (R Square / $R^2$) serves to measure how much of the variation in the dependent variable can be accounted for by the independent variables within a structural model. A higher $R^2$ value indicates that a greater portion of the dependent variable's variance is explained by the independent variables (Hair et al., 2017). In this study, the tested model produced the following R Square values:

Table 5 - R Square

| Dependent Variable | R Square |
|---|---|
| Sharia FinTech Adoption | 0.712 |
| MSME Business Performance | 0.693 |

From table 5, $R^2$ value of 0.712 for the Sharia FinTech Adoption variable indicates that the combination of Sharia Financial Literacy, Sharia Compliance, Technological Accessibility, and Islamic Leadership collectively explains 71.2% of the variance in Sharia FinTech adoption. Meanwhile, an $R^2$ value of 0.693 for the MSME Business Performance indicates that Sharia Financial Literacy, Sharia Compliance, Technological Accessibility, and Islamic Leadership, as well as Sharia FinTech adoption, explain 69.3% of the variation in MSME business performance.

**Hypothesis Test Results**

Hypothesis testing was performed to assess the direct and indirect effects among variables through the PLS-SEM method. Statistical significance is determined when the t-statistic is greater than 1.96 and the p-value is less than 0.05 (Hair et al., 2019). The results for each proposed hypothesis are presented as follows:

Table 6 - Hypothesis Test

| No | Hypothesis | O | T Statistics | P Value | Decision |
|---|---|---|---|---|---|
| H1 | Sharia Financial Literacy → MSME Business Performance | 0.152 | 2.138 | 0.033 | Accepted (Significant) |
| H2 | Sharia Compliance → MSME Business Performance | 0.014 | 0.227 | 0.820 | Rejected (Not Significant) |
| H3 | Technological Accessibility → MSME Business Performance | 0.283 | 3.550 | 0.000 | Accepted (Significant) |
| H4 | Islamic Leadership → MSME Business Performance | 0.056 | 2.294 | 0.022 | Accepted (Significant) |
| H5 | Sharia Financial Literacy → Sharia FinTech Adoption | 0.234 | 4.740 | 0.000 | Accepted (Significant) |
| H6 | Sharia Compliance → Sharia FinTech Adoption | 0.005 | 0.135 | 0.892 | Rejected (Not Significant) |
| H7 | Technological Accessibility → Sharia FinTech Adoption | 0.607 | 13.171 | 0.000 | Accepted (Significant) |
| H8 | Islamic Leadership → Sharia FinTech Adoption | 0.119 | 2.861 | 0.004 | Accepted (Significant) |

| | | | | | |
|---|---|---|---|---|---|
| H9 | Sharia Financial Literacy → Sharia FinTech Adoption → MSME Business Performance | 0.109 | 2.761 | 0.006 | Accepted (Significant) |
| H10 | Sharia Compliance → Sharia FinTech Adoption → MSME Business Performance | 0.002 | 0.132 | 0.895 | Rejected (Not Significant) |
| H11 | Technological Accessibility → Sharia FinTech Adoption → MSME Business Performance | 0.283 | 3.550 | 0.000 | Accepted (Significant) |
| H12 | Islamic Leadership → Sharia FinTech Adoption → MSME Business Performance | 0.056 | 2.294 | 0.022 | Accepted (Significant) |
| H13 | Sharia FinTech Adoption → MSME Business Performance moderated by Government Regulation | 0.045 | 0.994 | 0.320 | Rejected (Not Significant) |

Based on the direct hypothesis testing results, Sharia financial literacy (H1), technological accessibility (H3), and Islamic leadership (H4) have a positive and significant effect on MSME business performance. Additionally, Sharia financial literacy (H5), technological accessibility (H7), and Islamic leadership (H8) also show a significant positive effect on Sharia FinTech adoption. In contrast, Sharia compliance has no significant effect on either Sharia FinTech adoption (H6) or MSME business performance (H2). Furthermore, the moderating effect of government regulation on the relationship between Sharia FinTech adoption and MSME business performance (H13) is not significant, indicating that government regulation does not strengthen this relationship.

Regarding the indirect effects of Sharia FinTech adoption through the mediation of Sharia financial literacy (H9), technological accessibility (H11), and Islamic leadership (H12), these factors significantly influence MSME business performance via Sharia FinTech adoption. This indicates that these three variables can enhance MSME performance primarily by encouraging the adoption of Sharia FinTech. On the other hand, the indirect effect of Sharia compliance on MSME performance through Sharia FinTech adoption (H10) is not significant, mainly because Sharia compliance does not directly affect Sharia FinTech adoption.

## 4. Discussion

The results of this study demonstrate that Sharia financial literacy plays a crucial role in enhancing both Sharia FinTech adoption and the performance of MSMEs, with effects observed both directly and indirectly. This form of literacy equips MSME actors with the ability to understand, manage, and utilize financial services in accordance with Islamic principles such as justice, transparency, and the prohibition of riba. By possessing adequate knowledge and comprehension, MSME owners are better equipped to make informed financial decisions and avoid practices that are both morally and financially detrimental (Rahmansyah et al., 2023; Supriadi et al., 2023). These findings reinforce prior research which states that higher levels of Sharia financial literacy increase user trust in Sharia financial products and strengthen investment decision-making (Priyantoro et al., 2025). Similarly, other studies have shown that MSME owners with strong financial literacy are better prepared to navigate financial challenges and are more likely to achieve sustainable growth (Amailiya et al., 2025; Theodany et al., 2025). Financial literacy also plays a role in reducing the perceived complexity of i-FinTech, which is often considered challenging by micro-entrepreneurs, thereby increasing accessibility and usage (Silalahi et al., 2023; Vania et al., 2024). Beyond confirming previous empirical findings, this result extends the literature on Islamic technology adoption by demonstrating that Sharia financial literacy functions not only as a financial capability but also as a behavioural driver that strengthens trust and confidence in Sharia-compliant digital financial services. This finding also supports the Technology Acceptance Model (TAM), suggesting that greater financial knowledge reduces perceived complexity and encourages the adoption of Islamic FinTech.

Another key finding is the significant influence of technological accessibility on both Sharia FinTech adoption and MSME performance. Technological accessibility in this context refers not only to the availability of digital networks and affordability of devices but also to the

ease of use of FinTech applications and the availability of technical assistance for users (Siahaan, 2022; Lita et al., 2023). The easier it is for MSME owners to access and operate technology, the greater their likelihood of adopting digital solutions for business processes such as financing, financial recordkeeping, and Sharia-compliant marketing platforms (Putri et al., 2023; Lumintang et al., 2024; Umam et al., 2025). This improved accessibility directly supports the acceleration of Sharia-compliant digital financial inclusion in the MSME sector (Song et al., 2025; Thalia et al., 2025). The findings also indicate that technological readiness is a stronger practical driver of digital transformation than normative considerations alone. This emphasises that improving digital infrastructure, user-friendly applications, and technical support remains essential for increasing the effectiveness of Islamic FinTech adoption among MSMEs. This result is also consistent with UTAUT, which emphasises the importance of facilitating conditions in encouraging technology adoption.

The study also finds that Islamic leadership has a significant effect on both Sharia FinTech adoption and MSME performance. Leaders who embody Islamic values such as *amanah* (trustworthiness), *ihsan* (excellence), *shura* (consultation), and honesty create an organizational culture that fosters innovation, adaptability to technology, and ethical decision-making (Rahim et al., 2019). Such leadership not only strengthens team loyalty and integrity but also encourages openness to change—an essential factor in the digital transformation of MSMEs (Rangkuti, 2023). Leaders who integrate spiritual values into business operations are more likely to successfully guide their organizations through technological adoption and long-term performance improvements. In this way, financial literacy, technological accessibility, and Islamic collectivism together provide a strong foundation to effectively adopt Sharia-compliant financials. These findings further suggest that leadership contributes to technology adoption not merely through organisational control but by creating a culture that supports innovation, ethical behaviour, and continuous learning, all of which are critical for sustainable digital transformation. This finding highlights the role of value-based leadership in strengthening organisational readiness for digital transformation.

In contrast, the findings suggest that Sharia compliance has no significant impact on either Sharia FinTech adoption or MSME performance, whether directly or indirectly. This suggests that mere awareness or acknowledgment of Sharia principles, without the support of strong financial literacy and practical application, is insufficient to drive meaningful behavioral changes in financial practices. Previous studies have shown that while many MSME owners express a desire to operate in line with Sharia principles, they often lack comprehensive knowledge of how to implement these principles in financial transactions (Irman et al., 2021; Purwati et al., 2023). Consequently, compliance tends to remain at a symbolic level, with limited impact on operational efficiency or profitability. This finding is consistent with studies conducted in Malaysia, Pakistan, and Saudi Arabia, where service quality, accessibility, and technological readiness were found to have a stronger influence on Islamic FinTech adoption than religious compliance alone. Therefore, Sharia compliance appears to function as a fundamental requirement rather than as a primary behavioural driver influencing MSME decisions to adopt Islamic FinTech.

The study further reveals that government regulation does not significantly moderate the relationship between Sharia FinTech adoption and MSME performance, despite the introduction of various policies and legal frameworks intended to support Sharia FinTech. These measures appear to have limited practical influence on strengthening or weakening the impact of adoption on business outcomes. This may be due to factors such as limited dissemination, suboptimal implementation, and regulations that do not fully address the specific technical needs of MSME owners (Graafland, 2020; Susilawati et al., 2021). These findings suggest that regulatory measures alone are insufficient to achieve the desired transformation in the MSME sector. Similar findings have also been reported in Malaysia and Pakistan, where regulations provide institutional support but have limited impact on technology utilisation without adequate infrastructure and capacity-building programmes**.** Accordingly, government regulation should be viewed as an enabling environment rather than an immediate determinant of business performance.

From a theoretical perspective, this study extends existing technology adoption and Islamic financial behaviour literature by proposing an integrated framework that combines behavioural

capability (Sharia financial literacy), technological capability (technological accessibility), organisational capability (Islamic leadership), and institutional support (government regulation). The findings complement TAM and UTAUT by demonstrating that Islamic FinTech adoption is influenced not only by technological factors but also by Sharia-based values and organisational readiness**.** Unlike previous studies that examined these factors independently, the present findings demonstrate that Islamic FinTech adoption is primarily driven by the internal readiness of MSMEs rather than solely by normative compliance or regulatory intervention. This integrated perspective provides a more comprehensive explanation of how Islamic digital transformation contributes to sustainable MSME performance.

Taken together, the results imply that Sharia-based digital transformation in the MSME sector cannot rely solely on top-down policy interventions or normative appeals. Instead, strengthening Sharia financial literacy, improving technological accessibility, and fostering Islamic leadership are more critical for encouraging Islamic FinTech adoption and improving MSME performance. A participatory and responsive regulatory approach that provides practical incentives, strengthens digital infrastructure, and enhances both technological and Sharia financial literacy (Purwati & Hamzah, 2022) is therefore essential for developing an inclusive, ethical, and sustainable Islamic financial ecosystem.

## 5. Conclusion

This study reveals that Sharia financial literacy, technological accessibility, and Islamic leadership have a significant influence on Sharia Financial Technology (i-FinTech) adoption, which in turn positively impacts MSME performance. Sharia FinTech adoption also serves as an important mediator, bridging the indirect effects of these three variables on business performance improvement. In contrast, Sharia compliance shows no significant effect, either directly or through mediation, on MSME performance. Furthermore, government regulation fails to moderate the relationship between Sharia FinTech adoption and MSME performance, indicating the need for policies that are more responsive to the needs of micro and small business actors. Overall, these findings highlight the importance of an approach that integrates financial literacy, Islamic values, and the utilization of digital technology in driving Sharia financial transformation within Indonesia's MSME sector. Theoretically, this study extends the Islamic FinTech adoption literature by demonstrating that MSME performance is shaped by the integrated roles of behavioural, technological, organisational, and institutional factors, with Sharia FinTech adoption acting as a key mediating mechanism. The findings may also provide insights for other Muslim-majority countries promoting Sharia-based digital financial inclusion.

The results of this research carry several practical implications. For MSME actors, improving Sharia financial literacy and digital skills is a strategic step toward maximizing the benefits of Sharia-based FinTech services (Purwati & Hamzah, 2022; Awang & Deli, 2025). For i-FinTech platform developers, simplifying features and providing continuous education are necessary to make these services more accessible to small business owners. On the other hand, the government needs to formulate more participatory policies, including mentoring programs and incentives for MSMEs that adopt digital Sharia financial services. Additionally, Sharia financial institutions and Islamic educational organizations are expected to actively contribute to strengthening Islamic leadership within the MSME environment, thereby fostering an ethical, productive, and long-term-oriented business ecosystem.

This study also has several limitations that open opportunities for further research. The findings are limited by the cross-sectional design, the focus on MSMEs in Riau Province, and the exclusive use of quantitative data. Future studies are therefore encouraged to employ longitudinal or mixed-method approaches and validate the proposed model in other regions or Muslim-majority countries to improve its generalisability.

**Acknowledgements**

This research was funded by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia through the Directorate of Research and Community Service under Regular Fundamental Research Scheme for Contract Number: 138/C3/DT.05.00/PL/2025.

**References**

Alnori, F., & Alqahtani, F. (2019). Capital structure and speed of adjustment in non-financial firms: Does sharia compliance matter? Evidence from Saudi Arabia. *Emerging Markets Review, 39*, 50–67. https://doi.org/10.1016/j.ememar.2019.03.008

Amailiya, L., Syarief, M. E., & Nugraha, M. A. (2025). The relations of sharia financial literacy, financial inclusion, and business sustainability. *Indonesian Journal of Economics and Management, 5*(3), 298–305.

Awang, H., & Deli, M. M. (2025). Transformation of management information systems in the digital era: Integration of big data, artificial intelligence, and strategic decision-making. *International Journal of Information System and Innovation Management (IJISIM), 3*(1), 43–51. https://doi.org/10.55583/ijisim.v3i1.2055

Bagis, F., Ikhsani, M. M., Muammar, M., & Darmawan, A. (2022). The antecedents of MSME performance: From characteristics of Islamic entrepreneurs perception. *International Journal of Economics, Business and Accounting Research (IJEBAR), 6*(2), 642–652. https://doi.org/10.29040/ijebar.v6i2.5780

Basov, S., & Bhatti, M. I. (2014). On Sharia'a-compliance, positive assortative matching, and return to investment banking. *Journal of International Financial Markets, Institutions and Money, 30*, 191–195. https://doi.org/10.1016/j.intfin.2013.12.010

Basrowi, B., Suryanto, T., Anggraeni, E., & Nasor, M. (2020). The effect of Islamic financial literacy and financial technology on Islamic financial inclusion. *AL-FALAH: Journal of Islamic Economics, 5*(2), 231–250. https://doi.org/10.29240/alfalah.v5i2.1669

Cahyawati, N. E., Nantungga, K. H., & Tumewang, Y. K. (2023). The influence of financial technology and literacy on MSMEs sustainability with financial inclusion as a mediating variable. *Journal of Contemporary Accounting, 5*(2), 71–82. https://doi.org/10.20885/jca.vol5.iss2.art2

Faris, N., & Parry, K. (2011). Islamic organizational leadership within a Western society: The problematic role of external context. *The Leadership Quarterly, 22*(1), 132–151. https://doi.org/10.1016/j.leaqua.2010.12.012

Febriani, R., & Sa'diyah, C. (2021). Exploring Islamic leadership on SME performance: Mediated by innovative work behavior and financial technology. *Jurnal Aplikasi Manajemen, 19*(3), 495–506. https://doi.org/10.21776/ub.jam.2021.019.03.04

Graafland, J. (2020). Government regulation, business leaders' motivations and environmental performance of SMEs. *Journal of Environmental Planning and Management, 63*(8), 1335–1355. https://doi.org/10.1080/09640568.2019.1663159

Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis, 1*(2), 107–123. https://doi.org/10.1504/IJMDA.2017.087624

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hakim, M. L., & Ningsih, M. R. (2020). Financial accessibility of small and medium enterprises (SMEs) in Surakarta City. *JIFA (Journal of Islamic Finance and Accounting), 3*(1). https://doi.org/10.22515/jifa.v3i1.2342

Haris, M. (2020). Synergy bank syariah and financial technology in development of micro, small and medium businesses in Indonesia. *Jurnal Reviu Akuntansi dan Keuangan, 10*(1), 115–126. https://doi.org/10.22219/jrak.v10i1.11258

Hendratmoko, H., Nadratuzzaman Hosen, M., & Muafi, M. (2024). Influence of sharia compliance on MSMEs' intention to use Islamic crowdfunding in Indonesia. *Jurnal*

*Ekonomi & Keuangan Islam, 10*(2), 277–295. https://doi.org/10.20885/jeki.vol10.iss2.art10

Ichsan, A. N., Despileny, I., Jannah, N. Z., & Albahi, M. (2024). Sharia FinTech: The collaboration of information technology and morality as a financing instrument for the future. *International Journal of Information System and Innovation Management (IJISIM), 2*(1), 1–8. https://doi.org/10.55583/ijisim.v2i1.946

Irman, M., Budiyanto, B., & Suwitho, S. (2021). Increasing financial inclusion through financial literacy and financial technology on MSMEs. *International Journal of Economics Development Research, 2*(2), 126–141. https://doi.org/10.37385/ijedr.v2i2.273

Javid, F., Gul, A., Naz, I., & Ali, M. (2024). Do Islamic work ethics matter? Impact of aversive leadership on employees' emotional and psychological health through the lens of conservation of resource theory. *Sustainable Futures, 8*, 100309. https://doi.org/10.1016/j.sftr.2024.100309

Judijanto, L., Mokodenseho, S., Semmawi, R., & Yusuf, S. (2023). The impact of Islamic ethics-based leadership on microenterprise performance in Indonesia: An analysis of financial inclusion, business ethics, and innovation. *West Science Journal Economic and Entrepreneurship, 1*(7), 155–163. https://doi.org/10.58812/wsjee.v1i07.457

Kurniawan, K., Maulana, A., & Iskandar, Y. (2023). The effect of technology adaptation and government financial support on sustainable performance of MSMEs during the COVID-19 pandemic. *Cogent Business & Management, 10*(1). https://doi.org/10.1080/23311975.2023.2177400

Lestari, M., Basri, Y. M., Gusnardi, G., & Wahyuni, N. (2023). Gender, information technology, financial literacy, financial accessibility, and performance of MSMEs in Rokan Hilir Regency, Indonesia. *International Journal of Commerce and Finance, 9*(2), 31–54.

Lita, R. P., Putri, N. T., Meuthia, & Rahmi, D. Y. (2023). The readiness of Minang weaving towards halal fashion adoption: A clustering analysis of TOE framework. *Journal of Applied Engineering and Technological Science, 5*(1), 361–386. https://doi.org/10.37385/jaets.v5i1.3242

Lumintang, J., Zuhroh, I., & Anindyntha, F. A. (2024). The impact of financial inclusion and financial technology on economic growth in Indonesia. *International Journal of Economics Development Research, 5*(1), 645–660. https://doi.org/10.37385/ijedr.v5i3.4615

Monalisa, M., Purwati, A. A., Rusilawati, E., Firmansyah, M., & Flejterski, S. (2025). Brand trust, audience engagement, and interactivity as determinants of purchase decisions in TikTok live commerce. *International Journal of Information System and Innovation Management (IJISIM), 3*(2), 95–105. https://doi.org/10.55583/ijisim.v3i2.2061

Nandang, N., Jamaludin, A., Wanta, W., & Pranata, R. M. (2025). Leadership, entrepreneurial characteristics, and MSME performance: The mediating role of interpersonal communication. *International Journal of Information System and Innovation Management (IJISIM), 3*(2), 73–85. https://doi.org/10.55583/ijisim.v3i2.2024

Pranisya, R., Sari, P. P., & Maulida, A. (2024). The effect of financial literacy, technology financial literacy and financial inclusion on MSME performance. *Jurnal Ekonomi dan Bisnis, 25*(2), 244–255. https://doi.org/10.30659/ekobis.25.2.244-255

Pratama, D., Samri, Y., & Nasution, J. (2023). The effect of understanding financial literacy and ease of digital payment on the continuity of MSMEs in the digitalization era. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE), 6*(2), 2621–2636.

Priyantoro, P., Ratnawati, K., & Aisjah, S. (2025). The effect of financial literacy on business performance through mediation of financial access and financial risk attitude. *International Journal of Research in Business and Social Science, 12*(9), 275–287. https://doi.org/10.20525/ijrbs.v12i9.3024

Purnamasari, P., Pramono, I. P., Haryatiningsih, R., Ismail, S. A., & Shafie, R. (2020). Technology acceptance model of financial technology in micro, small, and medium enterprises (MSMEs) in Indonesia. *Journal of Asian Finance, Economics and Business, 7*(10), 981–988. https://doi.org/10.13106/jafeb.2020.vol7.no10.981

Purwaningtyas, P., & Sari, D. E. (2025). Financial literacy and digital payment adoption as economic drivers of consumer shopping behavior and self-control. *International Journal of Economics Development Research, 6*(2), 724–735. https://doi.org/10.37385/ijedr.v6i2.7329

Purwati, A. A., Hamzah, Z., Hamzah, M. L., & Deli, M. M. (2023). Digital and entrepreneurial literacy in increasing students' entrepreneurial interest in the technological era. *Business Management and Accounting (ICOBIMA), 2*(1), 34–43. https://doi.org/10.35145/icobima.v2i1.3498

Purwati, A. A., & Hamzah, M. L. (2022). Instrument readiness analysis of technology-based businesses. *Journal of Applied Engineering and Technological Science, 4*(1), 611–617. https://doi.org/10.37385/jaets.v4i1.1434

Purwati, A. A., Abdullah, S. I. N. W., & Deli, M. M. (2025). A qualitative synthesis of artificial intelligence adoption in MSMEs: Insights into opportunities and challenges. *Jurnal Testing dan Implementasi Sistem Informasi, 3*(2), 84–93. https://doi.org/10.55583/jtisi.v3i2.2328

Putri, R. T., Isyanto, P., & Sumarni, N. (2023). The role of financial technology (FinTech) in developing MSMEs. *International Journal of Economics Development Research, 4*(1), 294–304. https://doi.org/10.37385/ijedr.v4i2.2193

Rahim, M. A., Nawi, N. M. M., Bakar, N. A., & Daud, W. N. W. (2019). The implementation of Islamic leadership attributes in Malaysian shariah-compliant investment organizations: A case study. *International Journal of Innovation, Creativity and Change, 7*(10), 76–101.

Rahmansyah, D., Saputri, D. V., Utami, Z. R., & Wang, Y. (2023). The role of sharia financial innovation and literacy for MSME actors in increasing profitability. *Sharia Oikonomia Law Journal, 1*(2), 126–135. https://doi.org/10.55849/solj.v1i2.176

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, 1*(3), 114–127. https://doi.org/10.61194/ijis.v1i3.593

Rapina, R., Meythi, M., Rahmatika, D. N., & Mardiana, M. (2023). The impact of financial literacy and financial behavior in entrepreneurial motivation: Evidence from Indonesia. *Cogent Education, 10*(2), Article 2282827. https://doi.org/10.1080/2331186X.2023.2282827

Ritonga, M., Nasution, A. P., & Muti'ah, R. (2025). Determinants of MSME sustainability: A regression-based study in Labuhanbatu. *Advance Sustainable Science, Engineering and Technology (ASSET), 7*(4), Article 02504018. https://doi.org/10.26877/asset.v7i4.2180

Rosalin, S., Raharjo, K., Utami, H. N., & Prasetya, A. (2025). Mapping the intellectual core of technology adoption in digital startups: A bibliometric analysis via bibliographic coupling and co-word networks. *International Journal of Environment, Engineering and Education, 7*(3), 168–181. https://doi.org/10.55151/ijeedu.v7i3.355

Siahaan, A. M. (2022). Viewing the influence of accessibility and information technology on competitive action in small-medium micro-businesses. *JPPI (Jurnal Penelitian Pendidikan Indonesia), 8*(2), 374–381. https://doi.org/10.29210/020221451

Silalahi, H. K., Khairani, R., Tandean, C., Tanady, T., Andrian, A., & Nasib, N. (2023). The impact of financial literacy, financial technology, and financial inclusion on the financial performance of micro, small, and medium enterprises (MSMEs) in the culinary sector in Medan. *International Journal of Economics Development Research, 4*(4), 2237–2249. https://doi.org/10.37385/ijedr.v5i2.5269

Song, X., Qin, X., Wang, W., & Li, R. Y. M. (2025). Financial inclusion, technologies, and worldwide economic development: A spatial Durbin model approach. *Journal of Finance and Data Science, 11*, Article 100155. https://doi.org/10.1016/j.jfds.2025.100155

Srisusilawati, P., Malik, Z. A., Silviany, I. Y., & Eprianti, N. (2022). The roles of self-efficacy and sharia financial literacy on SMEs performance: Business model as an intermediate variable. *F1000Research, 10*, 1–14. https://doi.org/10.12688/f1000research.76001.2

Supriadi, I., Maghfiroh, R. U., Abadi, R., & Yudowati, D. M. (2023). The role of sharia financial innovation and literacy in improving the performance of MSME actors. *Journal of Islamic Economic and Business Research, 3*(2), 214–229. https://doi.org/10.18196/jiebr.v3i2.193

Susilawati, C., Sulaiman, A. A., Abduh, M., Prasetyo, Y., & Athoillah, M. A. (2021). Comparative study on the regulation of sharia financial technology in Indonesia and Malaysia. *Jurisdictie, 12*(1), 1–19. https://doi.org/10.18860/j.v12i1.12213

Thalia, S. V., Purwati, A. A., Rusilawati, E., & Hamzah, Z. (2025). Digital readiness and social capital in shaping entrepreneurial intentions: The mediating role of risk tolerance among university students. *International Journal of Information System and Innovation Management (IJISIM), 3*(1), 32–42. https://doi.org/10.55583/ijisim.v3i1.2052

Theodany, F., Purwati, A. A., & Sarbaeni, S. (2025). Service quality, brand image, and electronic word of mouth as key drivers of consumer loyalty in e-commerce: A study of Shopee users in Indonesia. *International Journal of Information System and Innovation Management (IJISIM), 3*(1), 10–21. https://doi.org/10.55583/ijisim.v3i1.2049

Umam, M. I. H., Kurniawan, M. I., Lubis, F. S., & Rizki, M. (2025). The influence of marketing mix on consumer purchase patterns using the Apriori data mining algorithm. *Jurnal Testing dan Implementasi Sistem Informasi, 3*(2), 108–124. https://doi.org/10.55583/jtisi.v3i2.2357

Usman, H., Projo, N. W. K., Chairy, C., & Haque, M. G. (2021). The exploration role of sharia compliance in technology acceptance model for e-banking (Case: Islamic bank in Indonesia). *Journal of Islamic Marketing, 13*(5), 1089–1110. https://doi.org/10.1108/JIMA-08-2020-0230

Vania, V., Wahyudi, W., & Kurniasih, D. (2024). Analysis of financial literacy and cashless society on financial satisfaction through financial behavior in Gen Z. *International Journal of Economics Development Research, 5*(1), 2474–2485. https://doi.org/10.37385/ijedr.v5i2.4476

Wahyono, W., & Hutahayan, B. (2021). The relationships between market orientation, learning orientation, financial literacy, knowledge competence, innovation, and performance of small and medium textile industries in Java and Bali. *Asia Pacific Management Review, 26*(1), 39–46. https://doi.org/10.1016/j.apmrv.2020.07.001

Wardani, R. T. I., Astuti, E. S., Sunarti, S., & Iqbal, M. (2026). Explaining post-adoption mobile banking usage in Indonesia using an integrated technology acceptance model and IS success model: Evidence from PLS-SEM. *International Journal of Environment, Engineering and Education, 8*(1), 138–155. https://doi.org/10.55151/ijeedu.v8i1.372

Wijaya, I. D., Salam, R., Ghozi, S., Mubarok, B. U., & Subkhan, M. F. (2026). Perceived security and trust as mechanisms of P2P adoption technology: Evidence from pre-adopters using PLS-SEM approach. *International Journal of Environment, Engineering and Education, 8*(1), 19–34. https://doi.org/10.55151/ijeedu.v8i1.373

Xiang, D., Zhao, T., & Zhang, N. (2022). How can government environmental policy affect the performance of SMEs? Chinese evidence. *Journal of Cleaner Production, 336*, Article 130308. https://doi.org/10.1016/j.jclepro.2021.130308

Zakaria, A. (2025). The role of sharia financial technology (FinTech) in increasing MSMEs' financial access. *INVEST: Jurnal Inovasi Bisnis dan Akuntansi, 6*(1), 94–100. https://doi.org/10.55583/invest.v6i1.1223