LAN TABUR Jurnal Ekonomi Syariah

LAN TABUR: Jurnal Ekonomi Syariah
Journal homepage: https://lan-tabur.unikhams.ac.id/index.php/LT

# Sharia Financing Access and Sharia Financial Literacy on MSME Performance: The Mediating Role of Sharia Financial Inclusion among MSME Actors in Aceh Province

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**ARTICLE HISTORY**

**Received:**
17 July 2026
**Revised**
03 August 2026
**Accepted:**
04 September 2026
**Online available:**
08 September 2026

**Keywords:**
Sharia Financing Access, Sharia Financial Literacy, Sharia Financial Inclusion, MSME Performance, PLS-SEM.

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**ABSTRACT**

Aceh Province has implemented a fully sharia-based financial system since the enactment of Aceh Qanun Number 11 of 2018, making sharia financing access and sharia financial literacy critical factors for the performance of micro, small, and medium enterprises (MSMEs). This study aims to examine the effect of Sharia financing access and Sharia financial literacy on MSME performance, both directly and through the mediation of Sharia financial inclusion. The study employed a quantitative confirmatory approach with a cross-sectional survey of 378 MSME actors in Aceh Province, analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) via SmartPLS 4. Bootstrapping results (5,000 resamples) show that Sharia Financing Access and Sharia Financial Literacy have a positive and significant effect on both Sharia Financial Inclusion and MSME Performance, and that Sharia Financial Inclusion also has a positive and significant effect on MSME Performance while partially mediating the effect of both exogenous predictors. All model quality criteria (reliability, discriminant validity, and model fit) were well satisfied. These findings confirm the central role of sharia financial inclusion as a strategic bridge toward improved MSME performance, while offering practical implications for sharia financial institutions and Aceh's local government in designing policies to strengthen sharia financial access, literacy, and inclusion among MSME actors. Future research is recommended to extend the model with additional variables and adopt a longitudinal design to strengthen the generalizability of these findings.

## 1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy, contributing more than 60% of national Gross Domestic Product (GDP) and absorbing a dominant share of the workforce. Aceh Province presents a unique institutional context within the financial system: since the enactment of Aceh Qanun Number 11 of 2018 concerning Sharia Financial Institutions, all financial institutions operating in Aceh have been required to conduct their business activities based on Sharia principles. This provision makes Aceh's MSME actors entirely dependent on sharia financing access, with no alternative conventional financing scheme, making this context

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

relevant and strategic for examining the role of sharia financing access, sharia financial literacy, and sharia financial inclusion in MSME performance.

Research on financial literacy and inclusion in relation to MSME performance has grown rapidly in recent years. Septiani and Wuryani (2020) found that financial literacy and financial inclusion affect MSME performance in Sidoarjo, and a similar pattern was confirmed in a broader context, where financial inclusion and literacy contribute to business sustainability as mediated by small business performance (Nceong et al., 2023). In the specific context of Islamic finance, Siswanti and Widigdo (2022) affirmed sharia financial literacy as a strategic solution for MSMEs in obtaining business capital, while Hasyim et al. (2025), in a recent literature study, concluded that sharia financial literacy and access are closely interrelated in driving MSME participation in the sharia financial system. Rumasukun and Maharani (2024) reinforced this pattern by finding that sharia financial inclusion and literacy significantly affect MSME productivity in Probolinggo. On the financing access side, Multamuddin et al. (2023) identified ease of access as the main determinant of MSMEs' decisions to use sharia financing in North Sumatra, and sharia financing has also been shown to significantly contribute to national MSME growth (Judijanto et al., 2024). Meanwhile, the role of financial inclusion as a predictor of MSME performance was also confirmed by Azro'i et al. (2023) among MSMEs in Medan City and Timuneno et al. (2023) among MSMEs in Kupang City.

Although the literature above consistently shows a positive effect of (sharia) financial literacy, access, and inclusion on MSME performance, most of these studies examine each construct partially or only two constructs at a time, without simultaneously integrating sharia financing access and sharia financial literacy with sharia financial inclusion as a mediator in one coherent structural model. Furthermore, research in regions that implement a fully sharia-based financial system as regulated under Aceh Qanun Number 11 of 2018 remains very limited, even though this context presents a unique institutional situation in which MSME actors have no alternative but sharia financial services. This gap constitutes the novelty of the present study the simultaneous testing of the effects of sharia financing access and sharia financial literacy on MSME performance, both directly and through the mediation of sharia financial inclusion, in the context of a region with a fully sharia-based financial system.

Based on the foregoing, this study aims to (1) examine the effect of Sharia financing access on Sharia financial inclusion and MSME performance; (2) examine the effect of Sharia financial literacy on Sharia financial inclusion and MSME performance; (3) examine the effect of Sharia financial inclusion on MSME performance; and (4) examine the mediating role of Sharia financial inclusion in bridging the effects of Sharia financing access and Sharia financial literacy on MSME performance among MSME actors in Aceh Province. This study addresses this gap by integrating Sharia Financing Access (X1), Sharia Financial Literacy (X2), Sharia Financial Inclusion (M), and MSME Performance (Y) into a single structural model tested using Partial Least Squares Structural Equation Modeling (PLS-SEM).

## 2. Literature Review

### Sharia Financing Access and Sharia Financial Inclusion

Sharia financing access refers to the extent to which MSME actors can obtain and utilize financing services provided by sharia financial institutions. In the context of this study, access is reflected through the ease of obtaining information, financing requirements, cost or margin, processing speed, suitability of contracts, financing amount, financing tenor, and accessibility of sharia financial institutions. These dimensions indicate that financing access is not limited to the physical availability of financial institutions but also concerns the affordability, convenience, suitability, and usability of financing services by MSME actors.

Access to appropriate financial services constitutes an important foundation for financial inclusion because financial inclusion requires individuals and business actors not only to have financial services available but also to be able to access and use those services. Previous research supports this relationship. Multamuddin et al. (2023) found that ease of access was an important determinant of MSME actors' decisions to use sharia financing in North Sumatra. Similarly, Azro'i et al., (2023). emphasized that adequate access to financial services constitutes an important foundation for achieving financial inclusion based on sharia principles. These findings suggest that better access to sharia financing can expand the opportunity for MSME actors to participate in and utilize the formal sharia financial system.

However, previous studies have generally examined financing access as a determinant of financing decisions or financial inclusion separately. The present study extends this discussion by examining financing access within an institutional setting in which financial activities are required to comply with sharia principles. Therefore, improved access to sharia financing is expected to increase the extent to which MSME actors can access, use, and benefit from sharia financial services.inancing access encompasses ease of obtaining information, requirements, cost/margin, process speed, contract suitability, financing amount, tenor, and the accessibility of sharia financial institutions for MSME actors. Malamudian et al. (2023) found that ease of access is the main determinant of MSME actors' decisions to use sharia financing.

**H1: Sharia financing access has a positive effect on Sharia financial inclusion.**

**Sharia Financing Access and MSME Performance**

Adequate sharia financing availability enables MSME actors to expand production capacity, add workers, and increase business turnover. Sharia financing has been documented to contribute significantly to the growth of micro, small, and medium enterprises in Indonesia. Access to financing is an important resource for MSMEs because business development frequently requires additional capital to support production, working capital, business expansion, and operational activities. For MSMEs, appropriate financing access can provide greater capacity to increase production, expand market activities, employ additional workers, and improve business turnover. In the context of sharia finance, financing is expected to provide these economic benefits while operating through financing mechanisms that comply with sharia principles.

Empirical studies indicate that financing has an important relationship with MSME development. Judijanto & Mu'min, (2024) found that Islamic financing contributes significantly to the growth of MSMEs in Indonesia. Multamuddin et al. (2023) also demonstrated that ease of access is an important factor influencing MSME actors' decisions to use sharia financing. These findings indicate that the availability and accessibility of appropriate financing can support business actors in obtaining the financial resources necessary for business development. Nevertheless, financing access does not necessarily produce the same performance outcome for all MSMEs. Its contribution may depend on whether MSME actors can access financing that is appropriate to their business needs and subsequently use it productively. This consideration becomes particularly relevant in Aceh, where the financial system operates within a sharia-based institutional framework. Therefore, the present study examines whether greater access to sharia financing is associated with improved MSME performance.

**H2: Sharia financing access has a positive effect on MSME performance.**

**Sharia Financial Literacy and Sharia Financial Inclusion**

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

Sharia financial literacy refers to the ability of individuals to understand and make appropriate financial decisions based on sharia principles. In the present study, sharia financial literacy encompasses knowledge of financial products, understanding of sharia contracts, financial planning, cost calculation, appropriate product selection, separation of business and personal finances, and financial decision-making. Thus, sharia financial literacy involves not only knowledge of financial concepts but also the ability to apply such knowledge in financial decision-making. Financial literacy can facilitate financial inclusion because individuals who understand financial products and their associated mechanisms are more capable of identifying, evaluating, and utilizing financial services appropriate to their needs. This relationship is particularly important in sharia finance because MSME actors need to understand not only the financial benefits of a product but also the contractual and sharia characteristics underlying the product.

Previous studies provide empirical support for this relationship. Rumasukun and Maharani (2024) found that sharia financial literacy contributes to sharia financial inclusion and MSME productivity in Probolinggo. Hasyim et al. (2025), through a literature study, similarly concluded that sharia financial literacy and access are closely interconnected in encouraging MSME participation in the sharia financial system. Siswanti and Widigdo (2022) further emphasized the strategic role of sharia financial literacy in helping MSMEs obtain business capital. These findings indicate that literacy can strengthen the ability of MSME actors to participate in the formal sharia financial system. Nevertheless, empirical evidence concerning the simultaneous relationship between sharia financial literacy, sharia financial inclusion, and MSME performance remains limited, particularly in regions operating under a comprehensive sharia financial framework. Therefore, this study proposes the following hypothesis:

**H3: Sharia financial literacy has a positive effect on Sharia financial inclusion.**

**Sharia Financial Literacy and MSME Performance**

Effective sharia financial literacy helps MSME actors make more appropriate financial decisions and manage their business finances more efficiently, which ultimately contributes to improved business performance. Financial literacy is also expected to influence MSME performance through improved financial decision-making and business financial management. MSME actors with adequate financial literacy are expected to be better able to plan finances, calculate costs, select appropriate financial products, manage business cash flows, and make financing decisions. Within a sharia financial context, these abilities are complemented by an understanding of contracts and financial practices that comply with sharia principles.

Previous empirical studies have consistently identified a relationship between financial literacy and MSME performance. Financial literacy and financial inclusion influence MSME performance in Sidoarjo. also demonstrated the importance of financial literacy and inclusion for the sustainability of small businesses. In the context of sharia finance, the importance of sharia financial literacy for MSMEs in obtaining business capital, while Sharia financial literacy and financial inclusion contribute to MSME productivity (Nceong et al., 2023; Septiani & Wuryani, 2020; Siswanti & Mei Nur Widigdo, 2022). Although these studies provide evidence concerning the importance of financial literacy, much of the existing research has examined financial literacy together with general financial inclusion or has focused on particular geographical contexts. The present study specifically examines sharia financial literacy in relation to MSME performance within Aceh's sharia-based financial environment. This contextual setting provides an opportunity to examine whether financial knowledge based on sharia principles contributes directly to business performance.

**H4: Sharia financial literacy has a positive effect on MSME performance.**

**Sharia Financial Inclusion and MSME Performance**

Sharia financial inclusion refers to the extent to which MSME actors are able to access, use, and obtain sustainable benefits from sharia financial services. In this study, sharia financial inclusion is represented through access, availability, usage, quality, benefit, and sustainability of sharia financial services. Accordingly, financial inclusion goes beyond the existence of financial institutions or products; it emphasizes whether financial services can actually be utilized by MSME actors to support their economic activities. The relationship between financial inclusion and MSME performance has received considerable attention in previous studies. Azro'i et al. (2023) found that financial inclusion contributes positively to MSME sustainability within a maqashid sharia framework. Timuneno et al. (2023) also found a contribution of financial literacy and financial inclusion to the financial performance of MSMEs in Kupang. Septiani and Wuryani (2020) similarly demonstrated that financial inclusion is associated with MSME performance in Sidoarjo. These findings indicate that access to and utilization of financial services can provide MSME actors with greater opportunities to manage business finances and support business development. In the context of sharia finance, financial inclusion becomes particularly important because the effectiveness of financing and financial literacy may depend on whether MSME actors can actually access and utilize appropriate financial services. Therefore, sharia financial inclusion is positioned not only as an outcome of financing access and financial literacy but also as a factor that may directly contribute to MSME performance.

**H5: Sharia financial inclusion has a positive effect on MSME performance.**

**The Mediating Role of Sharia Financial Inclusion**

The preceding literature indicates that sharia financing access and sharia financial literacy may influence MSME performance directly. However, their effects may also operate through financial inclusion. Financing access provides MSME actors with opportunities to obtain sharia financial services, while financial literacy enables them to understand and make appropriate use of those services. Financial inclusion consequently represents the extent to which these opportunities and capabilities are transformed into actual and sustainable utilization of sharia financial services. Previous research has generally examined financing access, financial literacy, and financial inclusion either separately or through relatively limited combinations of variables. Multamuddin et al. (2023), for example, focused on determinants of MSME decisions to use sharia financing, whereas Rumasukun and Maharani (2024) examined the relationship between sharia financial inclusion and literacy and MSME productivity. Azro'i et al. (2023) and Timuneno et al. (2023) provided evidence concerning the relationship between financial inclusion and MSME performance. Although these studies establish important relationships among the constructs, they do not simultaneously integrate sharia financing access and sharia financial literacy with sharia financial inclusion as a mediating mechanism.

This limitation provides a basis for positioning sharia financial inclusion as a mediator in the present study. When MSME actors have adequate access to sharia financing and sufficient financial literacy, they are expected to have greater capacity to access, utilize, and obtain benefits from sharia financial services. Such utilization may subsequently contribute to better business performance. The mediating model is particularly relevant in Aceh because the implementation of a sharia-based financial system creates a distinctive institutional environment for examining these relationships.

Accordingly, the present study integrates Sharia Financing Access (X1), Sharia Financial Literacy (X2), Sharia Financial Inclusion (M), and MSME Performance (Y) into a single structural model. The model enables the study to examine both the direct relationships and the indirect mechanisms through which access and literacy may influence MSME performance.

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

**H6: Sharia financial inclusion mediates the effect of Sharia financing access on MSME performance.**

**H7: Sharia financial inclusion mediates the effect of Sharia financial literacy on MSME performance.**

Based on these seven hypotheses, the research model integrates Sharia Financing Access (X1) and Sharia Financial Literacy (X2) as exogenous predictors, Sharia Financial Inclusion (M) as a mediator, and MSME Performance (Y) as the endogenous variable, as presented in Figure 1.

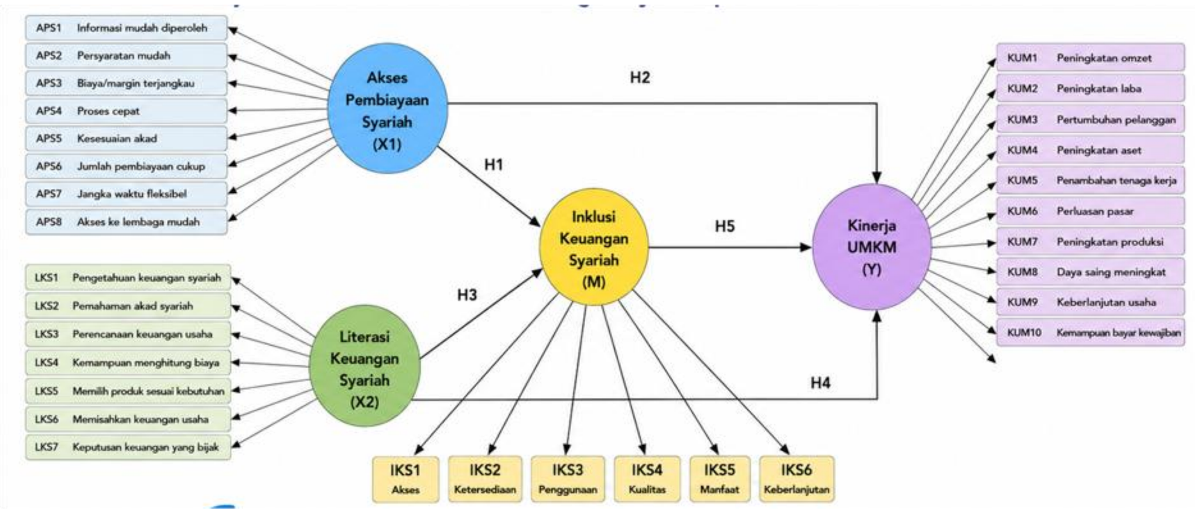


Figure 1. Research Model (Hypothesized Framework H1–H5)

Figure 1 presents the research model framework, covering all hypothesized paths (H1 - H5) along with the indicators of each construct: Sharia Financing Access (APS1 - APS8), Sharia Financial Literacy (LKS1 - LKS7), Sharia Financial Inclusion (IKS1 - IKS6), and MSME Performance (KUM1 - KUM10). This model is now consistent with the structural model estimated in SmartPLS (see Figure 2).

## 3. Methodology

This study uses a quantitative approach with a confirmatory (explanatory/hypothesis-testing) research design through a cross-sectional survey to test the causal relationships among constructs as formulated in the seven hypotheses above. This approach was chosen because the research aims to test cause-and-effect relationships among latent variables based on established theory, rather than to inductively explore a new phenomenon. The study population consists of MSME actors who use or have used sharia financial services in Aceh Province. Sampling was conducted using purposive sampling, with the criteria that (1) respondents are owners or managers of MSMEs operating in Aceh Province and (2) respondents have used or are currently using sharia financial institution products/services (sharia banks, sharia rural banks/BPRS, sharia cooperatives/BMT, or sharia microfinance institutions). The final sample used in the analysis was 378 respondents, following a data cleaning stage to ensure no incomplete or invalid data. This sample size meets the minimum adequacy for PLS-SEM analysis based on the rule-of-thumb guideline of 10 times the maximum number of structural paths pointing to a single endogenous construct (Hair et al., 2019), as well as based on power analysis (Cohen, 1988) for detecting small-to-medium effect sizes at a 5% significance level with 0.80 power. Data were collected through questionnaires distributed to MSME actors spread across 23 regencies/cities in Aceh Province, namely Banda Aceh City, Sabang

City, Aceh Besar Regency, Pidie Regency, Pidie Jaya Regency, Bireuen Regency, Lhokseumawe City, North Aceh Regency, East Aceh Regency, Langsa City, Aceh Tamiang Regency, Central Aceh Regency, Bener Meriah Regency, Gayo Lues Regency, Southeast Aceh Regency, West Aceh Regency, Nagan Raya Regency, Aceh Jaya Regency, South Aceh Regency, Southwest Aceh Regency, Aceh Singkil Regency, Subulussalam City, and Simeulue Regency. Data collection was conducted from February to May 2026.

Data was collected through a structured questionnaire using a 1-5 Likert scale (1 = strongly disagree, 5 = strongly agree), which was distributed to respondents online using Google Forms. The questionnaire was distributed through various digital communication channels, such as WhatsApp, Telegram, and MSME/business community networks in Aceh Province, yielding 378 questionnaires that met the criteria and were suitable for analysis. The research instrument adapted reflective indicators from relevant prior studies: Sharia Financing Access (APS1 - APS8: ease of information, requirements, cost/margin, process speed, contract suitability, financing amount, tenor, and institutional accessibility), Sharia Financial Literacy (LKS1 - LKS7: knowledge, contract understanding, financial planning, cost-calculation ability, product selection, separation of business finances, and decision-making), Sharia Financial Inclusion (IKS1 - IKS6: access, availability, usage, quality, benefit, and sustainability), and MSME Performance (KUM1 - KUM10: turnover, profit, customers, assets, workforce, market share, production, competitiveness, business sustainability, and ability to meet obligations). Content validity of the instrument was examined through expert judgment and a pretest prior to the main data collection to ensure clarity of language and the relevance of each item to the MSME context in Aceh.

Data analysis was conducted using the Partial Least Square Structural Equation Modeling (PLS-SEM) technique with the SmartPLS 4 software (Ringle, Wende, & Becker, 2022) with a path weighting scheme, initial weights of 1.0, stop threshold of 10-7, and maximum 3,000 iterations. The analysis was conducted in two stages, as recommended by Hair et al. (2019): (a) analysis of the measurement model (outer model) , which includes the convergent validity (outer loading and Average Variance Extracted/AVE), construct reliability (Cronbach’s alpha, rho a, and composite reliability), and discriminant validity (Fornell-Larcker criterion and Heterotrait Monotrait/HTMT ratio); and (b) analysis of the structural model (inner model), which includes the multicollinearity test (Variance Inflation Factor/VIF), coefficient of determination ($R^2$ and adjusted $R^2$), effect size ($f^2$), path coefficients and their significance, which are calculated through a 5,000-resample bootstrapping procedure (two-tailed test, 5% significance level), indirect effects for mediation testing, and the fit of the model via the Standardized Root Mean Square Residual (SRMR).

Before the big data collection, the researchers obtained informed consent from each participant and guaranteed the confidentiality of the identity and data according to the social research ethical standards. In addition, we tested data quality for potential common method bias, as data were collected through a single self-report instrument, among others by analysing the full collinearity VIF values in the structural model (Table 6), which were all far below the 3.3 threshold (Kock, 2015), indicating that common method bias is not a serious threat to the validity of this study’s findings.

## 4. Results and Discussion

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

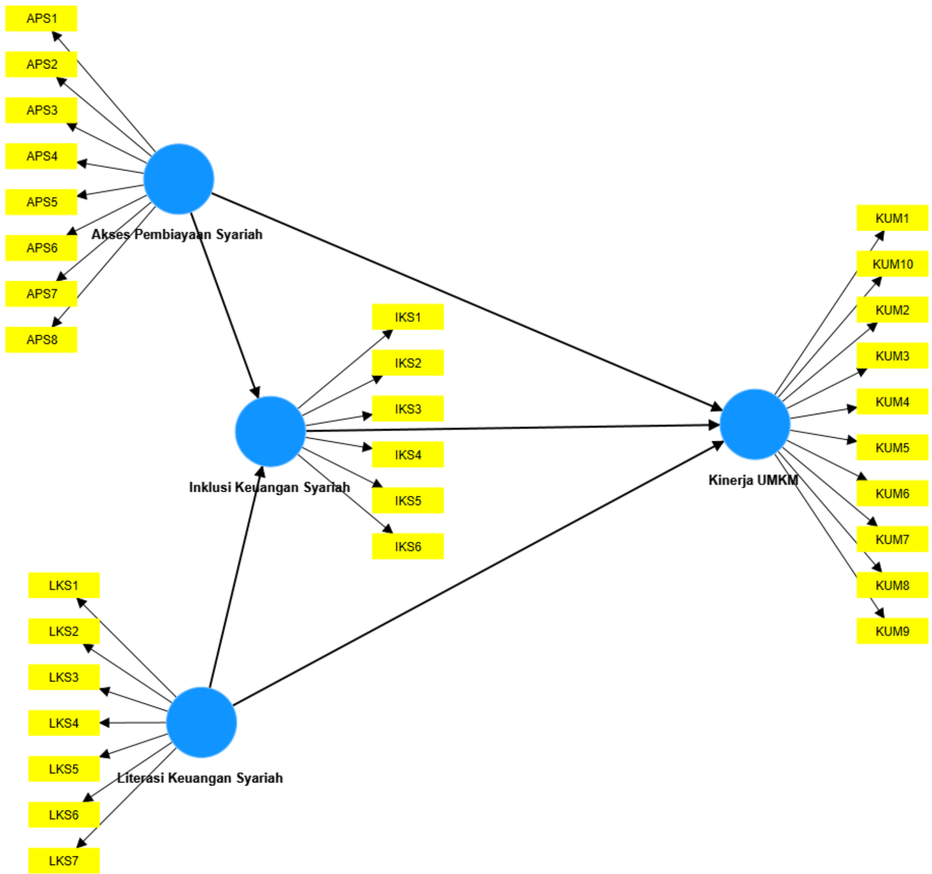


Figure 2. Estimated Structural Model Diagram (SmartPLS Output)

**Measurement Model (Outer Model)**

Table 1 presents the outer loading results for all 31 indicators. All loadings range from 0.688 to 0.824, above the recommended minimum threshold of 0.70 (except APS7, which is slightly below but still within an acceptable range), so all indicators were retained in the measurement model. The consistently high loading values for each construct indicate that each indicator validly reflects the latent construct it measures, satisfying the initial convergent validity requirement, which is further confirmed by the AVE values in Table 4.

Table 1. Outer Loadings

| Indicator | Construct | Loading |
|---|---|---|
| APS1 | Sharia Financing Access (APS) | 0.790 |
| APS2 | Sharia Financing Access (APS) | 0.776 |
| APS3 | Sharia Financing Access (APS) | 0.721 |
| APS4 | Sharia Financing Access (APS) | 0.726 |
| APS5 | Sharia Financing Access (APS) | 0.824 |
| APS6 | Sharia Financing Access (APS) | 0.781 |
| APS7 | Sharia Financing Access (APS) | 0.688 |
| APS8 | Sharia Financing Access (APS) | 0.760 |
| IKS1 | Sharia Financial Inclusion (IKS) | 0.781 |
| IKS2 | Sharia Financial Inclusion (IKS) | 0.812 |

| | | |
|---|---|---|
| IKS3 | Sharia Financial Inclusion (IKS) | 0.760 |
| IKS4 | Sharia Financial Inclusion (IKS) | 0.723 |
| IKS5 | Sharia Financial Inclusion (IKS) | 0.820 |
| IKS6 | Sharia Financial Inclusion (IKS) | 0.814 |
| KUM1 | MSME Performance (KUM) | 0.781 |
| KUM10 | MSME Performance (KUM) | 0.755 |
| KUM2 | MSME Performance (KUM) | 0.777 |
| KUM3 | MSME Performance (KUM) | 0.801 |
| KUM4 | MSME Performance (KUM) | 0.748 |
| KUM5 | MSME Performance (KUM) | 0.710 |
| KUM6 | MSME Performance (KUM) | 0.700 |
| KUM7 | MSME Performance (KUM) | 0.745 |
| KUM8 | MSME Performance (KUM) | 0.777 |
| KUM9 | MSME Performance (KUM) | 0.769 |
| LKS1 | Sharia Financial Literacy (LKS) | 0.762 |
| LKS2 | Sharia Financial Literacy (LKS) | 0.745 |
| LKS3 | Sharia Financial Literacy (LKS) | 0.773 |
| LKS4 | Sharia Financial Literacy (LKS) | 0.777 |
| LKS5 | Sharia Financial Literacy (LKS) | 0.746 |
| LKS6 | Sharia Financial Literacy (LKS) | 0.774 |
| LKS7 | Sharia Financial Literacy (LKS) | 0.722 |

**Structural Model (Inner Model) and Path Coefficients**

The model explains variance in Sharia financial inclusion of $R^2 = 0.522$ (adjusted $R^2 = 0.520$) and in MSME performance of $R^2 = 0.509$ (adjusted $R^2 = 0.505$). Based on Chin's (1998) criteria, which categorize $R^2 \geq 0.67$ as substantial, 0.33 - 0.67 as moderate, and $\leq 0.19$ as weak, both $R^2$ values are classified as moderate, indicating that the model explains a fairly large proportion of variance in both endogenous variables using a relatively parsimonious set of predictors (two exogenous constructs and one mediator).

Table 2. Path Coefficients and Hypothesis Testing H1–H5
(Bootstrapping, 5,000 resamples, n = 378)

| Hipotesis | Jalur | Koefisien (β) | SE | statistics | p-value | Keterangan |
|---|---|---|---|---|---|---|
| H1 | APS → IKS | 0.526 | 0.036 | 14.479 | <0.001 | Supported |
| H2 | APS → KUM | 0.215 | 0.049 | 4.386 | <0.001 | Supported |
| H3 | LKS → IKS | 0.335 | 0.038 | 8.816 | <0.001 | Supported |
| H4 | LKS → KUM | 0.158 | 0.043 | 3.727 | <0.001 | Supported |
| H5 | IKS → KUM | 0.455 | 0.049 | 9.233 | <0.001 | Supported |

All five hypotheses (H1–H5) are statistically supported at the 5% significance level (most at $p < 0.001$).

Table 3. Mediation Test H6–H7
(Indirect Effects, Bootstrapping)

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

| Hypothesis | Indirect Path | Indirect Effect | SE | t-statistic | p-value | Remark |
|---|---|---|---|---|---|---|
| H6 | APS → IKS → KUM | 0.240 | 0.032 | 7.594 | <0.001 | Significant mediation (partial) |
| H7 | LKS → IKS → KUM | 0.152 | 0.024 | 6.328 | <0.001 | Significant mediation (partial) |

The total effect of Sharia financing access on MSME performance (direct + indirect) is 0.455, and the total effect of Sharia financial literacy on MSME performance is 0.311. Because the direct effects of APS to KUM and LKS to KUM (H2, H4) remain significant even though the mediating paths (H6, H7) are also significant, this pattern indicates partial mediation rather than full mediation.

Table 4. Reliability and Convergent Validity

| Construct | Cronbach's Alpha | rho_a | Composite Reliability (rho_c) | AVE |
|---|---|---|---|---|
| Sharia Financing Access | 0.895 | 0.897 | 0.916 | 0.577 |
| Sharia Financial Literacy | 0.876 | 0.878 | 0.904 | 0.573 |
| Sharia Financial Inclusion | 0.876 | 0.878 | 0.906 | 0.617 |
| MSME Performance | 0.917 | 0.918 | 0.931 | 0.573 |

All constructs have Cronbach's alpha and composite reliability above 0.70 and AVE above 0.50, satisfying the threshold set by Hair et al. (2019). The highest Cronbach's alpha was found for the MSME Performance construct (0.917), supported by 10 indicators, indicating very good internal consistency among the business performance indicators. Overall, these results confirm that all four instruments (APS, LKS, IKS, and KUM) are reliable for measuring their respective constructs in the context of MSME actors in Aceh Province.

Table 5. Discriminant Validity

| | APS | IKS | KUM | LKS |
|---|---|---|---|---|
| Fornell-Larcker: APS | 0.759 | | | |
| Fornell-Larcker: IKS | 0.653 | 0.786 | | |
| Fornell-Larcker: KUM | 0.572 | 0.680 | 0.757 | |
| Fornell-Larcker: LKS | 0.378 | 0.534 | 0.483 | 0.757 |
| HTMT: IKS–APS | 0.736 | | | |
| HTMT: KUM–APS / KUM–IKS | 0.631 | 0.757 | | |
| HTMT: LKS–APS / LKS–IKS / LKS–KUM | 0.425 | 0.605 | 0.537 | |

The square root of AVE (Fornell-Larcker diagonal) for each construct is greater than its correlation with any other construct, and all HTMT ratios are below the 0.85 threshold (Henseler et al., 2015), so discriminant validity is satisfied. The highest HTMT value was found between Sharia Financial Inclusion and Sharia Financing Access (0.736), which, although still below the threshold, indicates conceptual proximity between the two constructs, which is reasonable given that financing access is essentially a precondition for financial inclusion. Conversely, the lowest HTMT was found between Sharia Financing Access and Sharia Financial Literacy (0.425), confirming that the two exogenous constructs are clearly measured as distinct from one another.

Table 6. Effect Size (f²), Inner VIF, and Model Fit

| Path | f² | Inner VIF |
|---|---|---|
| APS to IKS | 0.497 | 1.167 |
| APS to KUM | 0.054 | 1.747 |
| LKS to IKS | 0.201 | 1.167 |
| LKS to KUM | 0.036 | 1.402 |
| IKS to KUM. | 0.202 | 2.094 |

Based on Cohen's (1988) guidelines, the effect size (f²) of the APS to IKS path (0.497) is large; LKS to IKS (0.201) and IKS to KUM (0.202) are medium, while APS to KUM (0.054) and LKS to KUM (0.036) are small, indicating that although sharia financing access and financial literacy remain significant direct predictors of MSME performance, their practical contribution to the variance in MSME performance is relatively small compared to their contribution to sharia financial inclusion. All Inner VIF values (1.167–2.094) are well below the 3.3 threshold (Kock, 2015), indicating no meaningful collinearity issues. In terms of model fit, the estimated model's SRMR = 0.041, well below the 0.08 threshold (Hu & Bentler, 1999) and close to the saturated model's SRMR, indicating a very good fit and confirming that the proposed five-path structural model is consistent with the empirical data (NFI = 0.912).

**Discussion**

Support for H1 ($\beta$=0.526; $p<0.001$) and H3 ($\beta$=0.335; $p<0.001$) shows that both sharia financing access and sharia financial literacy have a positive and significant effect on strengthening sharia financial inclusion among MSME actors in Aceh. The larger coefficient for sharia financing access compared to sharia financial literacy suggests that, in Aceh's context where all financial transactions must be sharia compliant, the availability and ease of access to financing services are more determinant preconditions for financial inclusion than mere conceptual understanding of sharia principles. This finding aligns with Azro'i et al.'s (2023) argument emphasizing access as the foundation of maqashid sharia-based financial inclusion and reinforces the conclusion of Hasyim et al.'s (2025) literature reviews that sharia financial literacy and access complement one another in driving MSME participation in the sharia financial system.

The coefficients for H2 (APS to KUM = 0.215; p < $p<0.001$) and H4 (LKS to KUM = 0.158; p < $p<0.001$) show that sharia financing access and financial literacy still have a direct and significant effect on MSME performance, although the magnitudes are relatively smaller than their total effects (which also include the indirect path through Sharia Financial Inclusion). This means that part of the effect of access and literacy on MSME performance comes from making sharia financial inclusion stronger (which will be talked about more in H6 and H7). This continued significant direct effect is consistent with Septiani and Wuryani (2020), who found that literacy and access to finance directly contribute to MSME performance; is in line with Nceong et al. (2023), who confirmed the role of access and financial literacy on small business performance; and is consistent with Judijanto and Mu'min's (2024) documentation of sharia financing's contribution to national MSME growth. The larger coefficient for access compared to literacy on this path likely reflects that the impact of capital/financing is felt more directly and quickly on performance indicators such as turnover and profit, while financial literacy tends to affect performance through a more gradual improvement in decision-making patterns.

H5 (IKS to KUM = 0.455; $p < 0.001$) is the largest coefficient among all paths leading to MSME performance, confirming that sharia financial inclusion, that is, the extent to which MSME

e-ISSN: 2716-2605, p-ISSN 2721-0677
DOI: https:// https://doi.org/10.53515/lt.v8i1.223

actors actually access, use, and derive sustained benefit from sharia financial services, plays a more central role in business performance than mere availability of access or literacy understanding alone. This finding reinforces Azro'i et al. (2023) and Timuneno et al. (2023), who also found financial inclusion to be a strong predictor of business performance. From a resource-based perspective, the active use of sharia financial services can be considered a mechanism that converts financial access and knowledge (as latent resources) into tangible capabilities such as sustained cash-flow management and working-capital financing that ultimately drive improved business performance.

The indirect effects H6 (APS to IKS to KUM = 0.240; $p<0.001$) and H7 (LKS to IKS to KUM = 0.152; $p<0.001$) are statistically significant. Because the direct effects of APS on KUM and LKS on KUM remain significant alongside their indirect effects, both mediations are classified as partial mediation rather than full mediation. The implication is that sharia financing access and financial literacy are not only directly beneficial, but their benefit is more optimal when accompanied by strengthened sharia financial inclusion, meaning that merely providing access or improving literacy, without ensuring active and sustained use of sharia financial services, will not produce a maximal performance impact.

Overall, the pattern of results across all seven hypotheses (H1 - H7) forms a coherent picture: sharia financing access and sharia financial literacy are important antecedents of both sharia financial inclusion and MSME performance directly, yet sharia financial inclusion itself is the path with the largest contribution to MSME performance and functions as a partial mediator, bridging the effects of access and literacy on MSME performance. This finding is consistent with the research gap identified in the Introduction, which emphasized the necessity of a simultaneous test of these three antecedent constructs within a single structural model, particularly in the context of a region with a fully sharia-based financial system such as Aceh Province. Accordingly, the study's results empirically address all the research objectives formulated earlier, while providing a foundation for the theoretical and practical implications discussed below.

Theoretically, this study enriches the literature on Sharia finance and MSME performance by showing that Sharia financial inclusion plays a dual role both as a direct predictor (H5) and a partial mediator (H6, H7) in explaining the relationship between Sharia financing access/literacy and MSME performance. This finding complements the theoretical framework that has tended to treat financial literacy, financing access, and financial inclusion as independent antecedents(Multamuddin et al., 2023; Nceong et al., 2023; Septiani & Wuryani, 2020), by integrating all three into one coherent structural model. Furthermore, the context of Aceh Province, the only region in Indonesia with a fully sharia-based financial system, provides a unique empirical setting for testing the generalizability of financial inclusion theory within a uniformly sharia-compliant institutional environment. Accordingly, this study also contributes to the development of a model for integrating access, literacy, and inclusion performance that can be replicated in other regional contexts with different sharia financial institutional characteristics.

Practically, these findings recommend that sharia financial institutions (Bank Syariah Indonesia, Bank Aceh Syariah, sharia rural banks/BPRS, and sharia cooperatives/BMT) should not only focus on providing financing access but also actively assist MSME actors in genuinely using and sustainably benefiting from the services available (financial inclusion), given the substantial contribution of H5 to MSME performance. Aceh's local government, through its cooperative and MSME agencies and related authorities, is advised to design sharia financial literacy education programs integrated with financing-access facilitation so that both factors can mutually reinforce their impact on inclusion and MSME performance. For MSME actors, these results underscore the importance of not only seeking sharia financing access but also actively and continuously utilizing the various sharia financial services available. A post-financing mentoring program by Sharia financial institutions should also be considered as a concrete strategy to encourage more optimal service usage, given that access alone, without active use, may not necessarily have a significant impact on business performance.

## 5. Conclusion

This study aimed to examine the effect of Sharia financing access and Sharia financial literacy on MSME performance, both directly and through the mediation of Sharia financial inclusion, among MSME actors in Aceh Province. The results of the five-path model estimated in SmartPLS show that sharia financing access and sharia financial literacy have a positive and significant effect on sharia financial inclusion (H1, H3) and MSME performance (H2, H4); sharia financial inclusion also has a positive and significant effect on MSME performance (H5) and partially mediates the effect of sharia financing access and literacy on MSME performance (H6, H7), based on a sample of 378 MSME actors in Aceh Province. All seven hypotheses (H1-H7) were thus supported based on the bootstrapping results (5,000 resamples), successfully addressing all the research objectives formulated in the Introduction. Sharia financial institutions and Aceh's local government are advised to prioritize strengthening MSME actors' access to sharia financing and financial literacy, while also expanding sharia financial inclusion as a strategic bridge toward improved business performance. Future research is recommended to extend the model with additional variables (e.g., regulatory support or digital literacy), employ a longitudinal design, and broaden the sample coverage across regencies/cities to strengthen the generalizability of these findings.

## Author contribution statement

Zulfahmi: Conceptualization, methodology, data analysis, original draft preparation.
Rahmad Purnama: Literature review, data validation, writing review, and editing.
Alfian Sani: Collect data

## Acknowledgements

The authors would like to express their sincere gratitude to all individuals and institutions who contributed to the completion of this research and the preparation of this manuscript. Special appreciation is extended to the MSME actors in Aceh Province who participated as respondents and provided valuable information for this study. The authors also acknowledge the support and constructive assistance of colleagues, academic institutions, and other parties who contributed to the data collection, research process, and manuscript preparation. Their support and contributions have been invaluable to the successful completion of this research

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e-ISSN: 2716-2605, p-ISSN 2721-0677
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