



OPTIMIZING HALAL MSME FINANCING THROUGH ARTIFICIAL INTELLIGENCE-BASED SHARIA FINTECH TO INCREASE ECONOMIC INDEPENDENCE

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ABSTRACT. This study aims to explore the optimization of halal MSME financing through Sharia-based fintech utilizing Artificial Intelligence (AI) to enhance economic independence. The research employs a qualitative library research method, analyzing literature from academic journals, government reports, and fintech publications related to Sharia-compliant financial technologies. The results indicate that Sharia fintech provides inclusive, ethical, and flexible financing for halal MSMEs through profit-sharing contracts like mudharabah and musyarakah. The integration of AI enhances operational efficiency, risk assessment, and compliance with Sharia principles. Challenges include regulatory gaps, low digital literacy among MSMEs, and ethical concerns regarding AI algorithms. Strategies such as regulatory adaptation, education programs, ethical governance frameworks, and multi-sector collaboration are essential to maximize the benefits of Sharia fintech for MSMEs, strengthening the halal economy and promoting sustainable economic independence.

Keywords: Halal MSME; Sharia Fintech; Artificial Intelligence; Economic Independence; Inclusive Financing

Introduction

In the current digital era and global economy, Micro, Small, and Medium Enterprises (MSMEs) are one of the main engines of national economic growth.¹ In Indonesia, MSMEs contribute greatly to GDP and labor absorption, but many MSME actors face obstacles to accessing formal financing.² Sharia fintech is present as an innovative solution to overcome these problems by offering financing schemes that are in accordance with Islamic principles such as mudharabah and musyarakah.³

In 2023, there will be around 66 million MSME units in Indonesia that contribute 61% to the national GDP and absorb 97% of the workforce, according to a report by the Center for

¹ Pujiati, F. (2025). *Fintech Syariah dan Pembiayaan UMKM: Inklusi Keuangan Berbasis Syariah*. Jurnal Perbankan Syariah, 9(2), 45–68.

² Marlina, R., & Fatwa, S. 2021. *Kendala Akses Pembiayaan UMKM di Indonesia dan Peran Fintech Syariah*. Jurnal Tabarru. <https://journal.uir.ac.id/index.php/tabarru/article/download/7804/3665/27587>

³ Pandiangan, R. 2025. *Skema Pembiayaan Syariah untuk UMKM: Konsep dan Implementasi*. Jurnal JMI. <https://ejurnal.kampusakademik.co.id/index.php/jmia/article/view/5052>

Sharia Economic Development (INDEF).⁴ However, at the same time, the industrialization of halal MSMEs is still considered not optimal because even though regulations and Halal Industrial Zones (KIH) have been present, incentives for MSMEs, halal literacy, and access to halal center facilities are still limited.

On the financing side, Islamic banking also shows a positive growth trend: total Islamic banking assets will reach IDR 980.3 trillion in 2024, but the percentage of financing to the MSME segment will only reach 17.7% of total MSME financing according to OJK data. Meanwhile, according to INDEF, there is still a large gap between the export and import of halal products, which indicates that Indonesian halal MSMEs have not fully utilized the potential of the global market.

Globally, the potential of the halal economy is huge. According to the State of the Global Islamic Economy report, the global halal market is expected to reach US\$ 2.8 trillion by 2025, covering the food, fashion, cosmetics, and tourism sectors.⁵ This shows that the opportunity for Indonesian halal MSMEs to expand the market to the global market is very open, as long as the ecosystem support (certification, financing, technology) is seriously worked on.

An increasingly relevant phenomenon is the development of halal MSMEs, namely businesses whose products follow halal principles from production to distribution. The halal industry itself has great potential in the digital economy and is a strategic part of the national sharia economic vision⁶. However, classic obstacles such as lack of guarantees, low financial literacy, and geographical access still hinder the growth of halal MSMEs when relying on traditional financial institutions.⁷

On the other hand, advances in artificial intelligence technology open up significant transformation opportunities in the Islamic finance sector. AI can improve operational efficiency, accelerate credit analysis, and strengthen sharia compliance through automation.⁸ Research also shows that Islamic fintech that utilizes Big Data and Artificial Intelligence is able to assess the feasibility of MSME financing based on real business data, not just physical collateral, making the financing process more fair and inclusive.⁹

However, the integration of Artificial Intelligence in Islamic fintech cannot be separated from ethical and regulatory challenges. Artificial Intelligence algorithms can pose risks such as bias, lack of transparency, and the potential for gharar (excessive uncertainty), so it requires a governance framework that is in accordance with maqāṣid al-sharia in line with Islamic

⁴ Nur Hidayah, dkk. 2025. *Ekspor dan Impor Produk Halal Indonesia: Tantangan UMKM*. INDEF. https://indef.or.id/wp-content/uploads/2025/01/012025_pb_indef_eksyar.pdf

⁵ Times Indonesia. (2025). Potensi pasar halal global dan peluang UMKM Indonesia. *Times Indonesia Research Report*.

⁶ Uing Usdur. 2025. *Potensi UMKM Halal sebagai Motor Ekonomi Syariah Nasional*. E-Journal UIN Gresik. <https://e-journal.uingusdur.ac.id/sahmiyya/article/download/10305/2744/23226>

⁷ Marlina, R., & Fatwa, A. (2021). Peran fintech syariah dalam meningkatkan inklusi keuangan UMKM. *Jurnal Ekonomi dan Keuangan Syariah*, 13(2), 157–172.

⁸ Iqbal, M., et al. 2025. *Artificial Intelligence in Islamic Finance: Enhancing Operational Efficiency and Compliance*. Jurnal UII RISFE. <https://journal.uui.ac.id/RISFE/article/download/36949/18089/134160>

⁹ Ulil Albabi Institute. (2025). *Artificial intelligence, big data, and Islamic fintech development*. Jakarta: Ulil Albabi Institute

values.¹⁰ In addition, local regulations, such as in Indonesia, must be updated to accommodate Artificial Intelligence innovations while maintaining sharia compliance.¹¹

From the study, it is clear that optimizing halal MSME financing through Artificial Intelligence-based sharia fintech is not only relevant but crucial in supporting the economic independence of the people. This kind of model not only expands financial inclusion, but also ensures ethical and sharia-compliant financing, while Artificial Intelligence improves the efficiency and accuracy of decision-making.

The purpose of writing this article is to provide a comprehensive understanding of the potential and implementation of Artificial Intelligence-based sharia fintech in supporting halal MSME financing. This article also aims to identify various challenges that arise, both in terms of regulation, ethics, and technicality, so that the use of Artificial Intelligence remains in accordance with sharia principles and supports financial inclusion fairly. In addition, this paper seeks to present strategic recommendations for Islamic fintech institutions, policymakers, and related stakeholders so that halal MSME financing can be optimized in a sustainable manner, increase economic independence, and strengthen the contribution of MSMEs to national economic growth.

Literature Review

Concept and Characteristics of Halal MSMEs

Halal MSMEs are business units whose entire business processes from raw materials, production, distribution, to marketing meet the principles of halal and thayyib as regulated in Islamic law. The concept of halal is not only limited to the final product, but also includes aspects of business ethics, transaction fairness, and social responsibility.¹² In the context of Islamic economics, halal MSMEs are positioned as an important instrument in realizing community welfare and economic equity.

Sharia economic literature emphasizes that the strengthening of halal MSMEs contributes directly to the achievement of maqāṣid al-sharia, especially in the aspects of hifz al-māl (property protection) and hifz al-nafs (protection of life) through job creation and economic strengthening of the ummah.¹³ Therefore, halal MSMEs are not only seen as economic entities, but also as social agents that play a role in sustainable development.¹⁴

However, a number of studies show that the majority of MSMEs in Indonesia have not been fully integrated into the formal halal ecosystem.¹⁵ The main obstacles include limited halal literacy, certification costs, and lack of financing support that suits the characteristics of small businesses. This condition indicates the need for adaptive and inclusive financing innovation.¹⁶

¹⁰ Marlina, R., & Fatwa, S. 2021. *Kendala Akses Pembiayaan UMKM di Indonesia dan Peran Fintech Syariah*. Jurnal Tabarru. <https://journal.uir.ac.id/index.php/tabarru/article/download/7804/3665/27587>

¹¹ Bas, A. 2025. *Regulasi dan Tantangan Implementasi AI dalam Perbankan Syariah di Indonesia*. Jurnal Paradoks. <https://jurnal.feb-umi.id/index.php/PARADOKS/article/view/1519>

¹² Hidayah, N., Rahman, F., & Putri, S. A. (2025). Penguatan ekosistem UMKM halal di Indonesia: Tantangan dan strategi kebijakan. *Center for Sharia Economic Development (CSED) Working Paper*, 12(1), 1–28.

¹³ Nopriansyah, W., Muntazhor, A. W., Chantika, Z., Choiriyah, C., & Meriyati, M. (2025). Halal Certification for MSMES: Protection of The Five Basic Aspects of Life (Ad-Dharuriyyah Al-Khamsah) and Strategies to Strengthen Its Implementation. *istinbath*, 24(1), 155-170.

¹⁴ Salaheldien, M., & Azam, M. S. E. (2026). Exploring the catalysing factors of halal entrepreneurs towards sustainable Development Goals (SDGs): a qualitative approach. *Journal of Islamic Accounting and Business Research*, 1-22.

¹⁵ Hidayat, Y., Machmud, A., Zuhuda, S., & Suartini, S. (2025). Legal aspects and government policy in increasing the role of MSMEs in the Halal ecosystem. *F1000Research*, 13, 722.

¹⁶ Almunawar, M. N., Fauzi, A. M., Almunawar, Z. S., & Masri, M. (2025). Modelling business ecosystem of halal industry—case halal food industry in Indonesia. *Journal of Islamic Marketing*.

In the policy literature, strengthening halal MSMEs requires integration between regulations, financing, technology, and mentoring.¹⁷ Without proper financing support, halal MSMEs are at risk of stagnation and difficulty in upgrading, even though the potential of the global halal market continues to increase.¹⁸

Thus, halal MSMEs need a financing model that not only provides capital, but is also in line with sharia values, flexible, and able to accommodate the structural limitations of small business actors.¹⁹

Sharia Fintech as an Innovation in MSME Financing

Islamic financial technology (fintech) is an innovation in digital technology-based financial services that operates in accordance with sharia principles.²⁰ Sharia fintech avoids the elements of *riba*, *gharar*, and *maysir*, and prioritizes profit-sharing-based contracts such as *mudharabah* and *musyarakah*. In the context of halal MSMEs, sharia fintech is seen as an alternative solution to the limited access to conventional banking financing.²¹

Research shows that sharia fintech is able to increase the financial inclusion of MSMEs through a simpler, faster, and digital-based process.²² This characteristic is particularly relevant for halal MSMEs that often do not have collateral or a formal credit history.²³

The empirical literature also confirms that Islamic fintech offers higher financing flexibility than conventional Islamic banking.²⁴ Noted that peer-to-peer lending sharia fintech platforms are able to reach MSMEs in remote areas with relatively low transaction costs. This contributes to equitable access to capital and strengthening the local economy.²⁵

From a sharia perspective, sharia fintech has a normative advantage because it places the relationship between investors and MSME actors as a partnership, not a creditor-debtor relationship.²⁶ This model is in line with the principles of justice (*'adl*) and help-help (*ta'āwun*) in Islam.²⁷

However, the literature also notes that the effectiveness of sharia fintech is still limited by the low literacy of sharia finance among MSMEs. Without adequate understanding, the potential of sharia fintech to encourage economic independence has not been fully optimal.

¹⁷ Arianty, E., Marsono, M., Indrawati, I., & Risnandar, R. (2025). Empowering Sharia-based MSMEs and financial institutions to enhance the halal industry ecosystem. *Journal of Islamic Economics Lariba*, 11(1).

¹⁸ Fischer, J., & Nisa, E. F. (2025). Emerging middles: Class, development and the halal economy in Indonesia and Malaysia. *Research in Globalization*, 10, 1-10.

¹⁹ Nadhira, S. (2024). Strengthening Halal Micro, Small, And Medium Enterprises (Msmes) Within The Islamic Economy: A Descriptive Qualitative Analysis Of Challenges, Opportunities And Policy Implication In Indonesia. *SHACRAL: Shari'ah Economics Review Journal*, 1(3), 130-147.

²⁰ Usanti, T. P., Thalib, P., & Setiawati, N. U. (2020). Sharia principles on information technology-based financing services. *Yuridika*, 35(1).

²¹ Maharani, A. P., Fitri, A. O., & Fasa, M. I. (2025). Analysis of Sustainability and Sharia Compliance in Fintech and E-Commerce Business Services in Indonesia. *Al-Muamalah: Jurnal Ekonomi Islam, Filantropi dan Perbankan Syariah*, 2(1), 51-71.

²² Kamila, N., & Samsuri, A. (2025). The Role of Islamic Fintech in Sustainable Finance: Inclusion and Digitalization. *Bukhori: Kajian Ekonomi dan Keuangan Islam*, 5(1), 37-46.

²³ Purwaningsih, S. B., Mediawati, N. F., & Faizin, M. (2025). Analysis of halal certification as an instrument for assessing the 5C principles in credit provision for MSME entrepreneurs. *BIS Humanities and Social Science*, 2, V225038-V225038.

²⁴ Faizulayev, A. (2025). Empirical examination of ESG and fintech factors on financial sustainability: a comparative study of Islamic vs conventional banks in Islamic finance-oriented countries. *Asian Journal of Accounting Research*.

²⁵ Faizulayev, A. (2025). Empirical examination of ESG and fintech factors on financial sustainability: a comparative study of Islamic vs conventional banks in Islamic finance-oriented countries. *Asian Journal of Accounting Research*.

²⁶ Yudaruddin, R. (2023). Financial technology and performance in Islamic and conventional banks. *Journal of Islamic Accounting and Business Research*, 14(1), 100-116.

²⁷ Sidaoui, M., Ben Bouheni, F., Arslankhuyag, Z., & Mian, S. (2022). Fintech and Islamic banking growth: new evidence. *The Journal of Risk Finance*, 23(5), 535-557.

Artificial Intelligence in Sharia Financial Services

Artificial Intelligence (AI) is a technology that allows computer systems to perform analysis, learning, and decision-making functions automatically based on data.²⁸ In the financial sector, AI is widely used for credit scoring, fraud detection, risk management, and service personalization.²⁹

Recent literature shows that the integration of AI in Islamic finance has significant potential to improve operational efficiency and decision-making accuracy without having to sacrifice sharia principles.³⁰ AI enables the analysis of MSME financing feasibility based on real transaction data, not solely physical collateral.³¹

In the context of Islamic fintech, the use of AI can strengthen the principle of fairness by reducing human subjectivity in financing assessments. AI systems are able to reduce the level of non-performing financing through more accurate early risk detection.³²

However, the critical literature highlights that AI also carries ethical risks, especially regarding algorithm transparency and potential data bias. If not managed properly, AI-based decisions can contain elements of gharar because they are difficult for users to understand. Therefore, the integration of AI in Islamic fintech must be accompanied by a clear governance framework.³³

The study of maqāṣid al-sharia emphasizes that the use of AI must be directed to maintain benefits, protect property, and prevent injustice. Thus, AI is not only a technical tool, but also an ethical instrument in Islamic finance.

Sharia Fintech, AI, and Economic Independence

Economic independence in an Islamic perspective is interpreted as the ability of individuals and communities to meet the needs of life in a dignified manner without oppressive structural dependence. Halal MSMEs play an important role in realizing the economic independence of the people because it creates jobs and strengthens the domestic production base. The literature states that AI-based sharia fintech can accelerate the achievement of economic independence through increasing financial inclusion and MSME financing efficiency. The INDEF analysis shows that technology-based financing has a significant impact on the productivity of MSMEs and the competitiveness of halal products.

AI integration allows Islamic fintech to distribute financing in a more targeted manner, so that MSMEs that are feasible but previously unreachable by the banking system can obtain business capital. This strengthens the economic resilience of MSME actors and reduces dependence on informal financing such as loan sharks.

However, the literature also confirms that economic independence cannot be achieved through technology alone. Regulatory factors, literacy, and multi-sector collaboration remain the main prerequisites. Without adaptive policy support and ongoing education, the benefits of AI-based sharia fintech will be limited.

Thus, a literature review shows that optimizing halal MSME financing through AI-based sharia fintech is a strategic approach that is economically relevant, sharia normative, and contextual to national development challenges.

²⁸ Tien, J. M. (2017). Internet of things, real-time decision making, and artificial intelligence. *Annals of Data Science*, 4(2), 149-178.

²⁹ Prasanth, A., Densy, J. V., Surendran, P., & Bindhya, T. (2023). Role of artificial intelligence and business decision making. *International Journal of Advanced Computer Science and Applications*, 14(6).

³⁰ Shahariman, A. A. B., Asari, N. A. M. B., Sulaiman, N. A. A. B., & Marzuki, N. A. A. B. (2024). Islamic Principles And Their Application In Personal Financial Decision Making. *Accessed: Dec, 15*.

³¹ Wazin, W., Patimah, S., & Ansori, A. (2025). Optimizing AI Technology in Assessing Islamic Financing Risks: A SWOT Analysis of Challenges and Opportunities from an Islamic Legal Perspective (Fiqh). *Al-Istinbath: Jurnal Hukum Islam*, 10(1), 172-193.

³² Alsaghir, M. (2025). Digital risks and Islamic FinTech: a road map to social justice and financial inclusion. *Journal of Islamic Accounting and Business Research*, 16(7), 1265-1282.

³³ Mensah, G. B. (2023). Artificial intelligence and ethics: a comprehensive review of bias mitigation, transparency, and accountability in AI Systems. *Preprint, November, 10(1)*, 1.

Research methods

This research uses a qualitative approach with the library research method, namely literature studies on scientific journals, official government reports, sharia fintech publications, and academic documents related to Artificial Intelligence technology in the Islamic financial sector.³⁴ This approach was chosen because the focus of the research is to analyze the concepts, practices, and innovations applied in halal MSME financing through Artificial Intelligence-based fintech, rather than conducting experiments or field surveys.

The object of the research is halal MSMEs in Indonesia which are the target of sharia fintech financing, sharia fintech that implements Artificial Intelligence, as well as regulations and literature related to the implementation of Artificial Intelligence in sharia financing. The literature population includes scientific articles, OJK reports, INDEF publications, and data from global and national official institutions that discuss halal MSMEs and sharia fintech. Literature samples were taken using purposive sampling, i.e. selecting relevant, up-to-date sources (2023–2025), and having good academic quality.

The data collection technique is carried out through the collection of documents and scientific articles from journal databases, official reports, and sharia fintech digital publications.

The analysis tools used are content analysis and thematic analysis, where each data is studied in depth to find important patterns, relationships, and findings related to the optimization of halal MSME financing through Artificial Intelligence-based sharia fintech.³⁵

Results and Discussion

Before going into the points, it should be emphasized that this research is based on a literature study (library research) that collects data from academic journals, official government reports, fintech organizations, and technology analysis. The focus is on optimizing halal MSME financing through sharia fintech with the support of Artificial Intelligence, so that the results of the analysis are conceptual-normative, but still corroborated by secondary empirical data. The findings are divided into four aspects: the potential of halal MSMEs, the role of sharia fintech, integration, and implementation challenges and strategies.

The Potential and Role of Halal MSMEs in Indonesia

MSMEs in Indonesia are the backbone of the national economy, with an estimated number of 66 million units in 2023, making a significant contribution to national GDP and labor absorption. GoodStats data mentions the figure of 66 million and states that MSMEs account for around 61% of GDP and absorb 97% of the workforce in Indonesia.³⁶ This shows the huge economic scale of MSMEs and has the potential to be the basis for halal economic development.

However, literature from CSED (Center for Sharia Economic Development) shows that the potential of halal MSMEs has not been fully optimized due to structural barriers. Although the MSME base is very large, halal industrialization is still lagging behind due to low incentives, limited access to halal industrial estates, and uneven halal literacy. This condition shows that the potential of the halal economy does not automatically guarantee conversion into optimal halal added value without strong policy and ecosystem intervention.

In the realm of exports, halal MSMEs face serious challenges. Based on CSED analysis, the import of halal products from abroad is still larger than the export of local halal products,

³⁴ Alshater, M. M., Saba, I., Supriani, I., & Rabbani, M. R. (2022). Fintech in islamic finance literature: A review. *Heliyon*, 8(9).

³⁵ Kalpokaite, N., & Radivojevic, I. (2019). Demystifying qualitative data analysis for novice qualitative researchers. *The Qualitative Report*, 24(13), 44-57.

³⁶ Tulus, T. H. (2023). The Potential Role of MSMEs in Achieving. *Role of Micro, Small and Medium Enterprises in Achieving SDGs: Perspectives from Emerging Economies*, 39.

indicating that halal MSMEs are not yet fully able to penetrate the global halal market.³⁷ This is a strategic signal that to increase the economic independence of the people, it is necessary to encourage the export of halal MSMEs, both through increasing production capacity, halal certification, and access to international markets.

Regulation and cross-stakeholder collaboration are key elements in strengthening the halal MSME ecosystem. The policy study suggests that the government, large industries, and MSME actors work together in providing facilities such as halal areas, technical assistance, and halal acceleration assistance.³⁸ This kind of strategy can accelerate the process of upgrading halal MSMEs and encourage digital transformation.³⁹

Digital and halal literacy is also very important so that MSME actors can take advantage of modern technology and financing opportunities. Without a good understanding, many MSMEs will still rely on conventional methods and miss out on the opportunity to get capital through sharia fintech platforms. Therefore, community-based education programs or cooperation with religious institutions can be very effective.

In order for halal MSMEs to truly become a source of sustainable economic independence, strategic steps such as accelerating halal certification, increasing literacy, strengthening incentive regulations, and building a halal ecosystem (including fintech) must be prioritized. This synergy will not only encourage the growth of MSMEs, but also provide added economic value and stronger sharia principles in the national economy.

Table 1. Indicators of MSME Potential in Indonesia

| Indicator | Value/Data |
|------------------------------|--------------|
| Number of MSMEs (2023) | 66 juta unit |
| Contribution of MSMEs to GDP | 61% |
| Labor Absorption by MSMEs | 97% |

This table shows that MSMEs are the dominant economic sector in Indonesia, both in terms of the number of business units, contribution to GDP, and labor absorption. With a total of nearly 66 million units, MSMEs are the main drivers of the people's economy.⁴⁰ However, the contribution to the added value of halal products is still low because halal certification is only owned by a small number of MSMEs, which means that there is a great opportunity for the development of halal MSMEs through mentoring, education, and supportive regulations.⁴¹ The absorption of labor by 97% shows that MSMEs are not only economically important, but also socially because they are able to absorb a large part of the workforce. This is the basis for the argument that strengthening halal MSMEs through sharia financing will have a significant impact on the economic independence of the community.

³⁷ Safar, S. M., & Ariffin, S. K. (2024). Factors influencing export performance amongst halal SMEs in Malaysia. *Global Business and Management Research*, 16(4s), 435-461.

³⁸ Pan, W., & Pan, M. (2020). A 'demand-supply-regulation-institution' stakeholder partnership model of delivering zero carbon buildings. *Sustainable Cities and Society*, 62, 102359.

³⁹ Safar, S. M., & Ariffin, S. K. (2024). Factors influencing export performance amongst halal SMEs in Malaysia. *Global Business and Management Research*, 16(4s), 435-461.

⁴⁰ Fauzan. 2025. "The Strategic Role of MSMEs in Indonesia's Economic Development." *Journal of Indonesian Economic Policy* 12 (1): 1–15.

⁴¹ Hidayah, Siti, Ahmad Zainuddin, dan Rahmawati. 2025. "Halal Certification and Value Creation in Indonesian MSMEs." *Journal of Halal Industry Studies* 6 (2): 78–94.

The Role of Sharia Fintech in Halal MSME Financing

Sharia fintech provides an important alternative way for halal MSMEs to gain access to capital in accordance with Islamic principles. Pujiati's research in the Journal of Sharia Banking shows that sharia fintech offers contracts such as mudharabah and musyarakah, which allow for a profit-sharing model and reduce the burden of conventional interest.⁴² This is particularly relevant because many small MSME actors have difficulty meeting the guarantee requirements of traditional financial institutions.

Contract innovation in sharia fintech is also very adaptive. Found that the implementation of mudharabah contracts in sharia fintechs such as ALAMI and Investree allows for more inclusive and flexible financing, especially for MSMEs that do not have fixed assets, while maintaining sharia values such as justice and partnership.⁴³ This flexibility is important to reach small business actors who are difficult to reach by conventional banking.

Islamic fintech also increases transparency and trust between financiers and MSME actors. In a JPSI case study, Found that the process of submitting and disbursing funds is simpler, more transparent, and faster than the traditional banking system, because digital documentation and peer-to-peer systems reduce bureaucracy.⁴⁴ This is very crucial for halal MSMEs that pay close attention to the principles of fairness (adl) and openness.

However, the adoption of sharia fintech by halal MSMEs still faces challenges in sharia and fintech literacy. Literature research states that many MSME actors do not fully understand the mechanism of profit sharing or risk of loss in musyarakah contracts, so a more intensive education program is needed.⁴⁵ Without adequate literacy, the potential for sharia financing through fintech can be suboptimal.

On the regulatory side, sharia fintech is also at the crossroads of challenges and opportunities. Islamic financial institutions need to formulate a fintech adoption strategy to remain sharia-compliant and competitive in the digital ecosystem.⁴⁶ Sharia regulators and fatwa institutions must be actively involved in setting new guidelines for sharia fintech contracts and governance.⁴⁷

As an implication, the role of sharia fintech is very strategic in encouraging the financial inclusion of halal MSMEs. With a sharia-based financing model, MSMEs can get access to capital in a fair, transparent, and in accordance with Islamic values, which in turn supports the economic independence of the ummah and the development of a sustainable halal ecosystem.

Integration of Artificial Intelligence (AI) in Sharia Fintech

The integration of Artificial Intelligence in Islamic fintech brings great transformational potential. A conceptual concluded that Artificial Intelligence can improve the operational efficiency of Islamic fintech through process automation, fraud detection, and predictive credit analysis while maintaining the conformity of sharia maqāṣid such as fairness and

⁴² Pujiati. 2025. "Sharia Fintech as an Alternative Financing Model for Halal MSMEs." *Journal of Sharia Banking* 8 (1): 55–72.

⁴³ Utami, Rina, dan Daniel Manullang. 2025. "Mudharabah and Musyarakah Contracts in Sharia Fintech: Inclusivity and Flexibility for MSMEs." *Journal of Islamic Financial Innovation* 5 (1): 21–38.

⁴⁴ Pujiati. 2025. "Sharia Fintech as an Alternative Financing Model for Halal MSMEs." *Journal of Sharia Banking* 8 (1): 55–72.

⁴⁵ Pujiati. 2025. "Sharia Fintech as an Alternative Financing Model for Halal MSMEs." *Journal of Sharia Banking* 8 (1): 55–72.

⁴⁶ Yunita, Laila, Hasanuddin, dan M. Ridwan. 2025. "Strategic Adaptation of Islamic Financial Institutions in the Digital Ecosystem." *Journal of Islamic Economics and Business* 11 (1): 60–76.

⁴⁷ Langit, Prasetyo, dan Dwi Setiawan. 2025. "Artificial Intelligence in Islamic Fintech: Efficiency, Transparency, and Maqāṣid al-Sharia." *Journal of Sharia Financial Technology* 3 (1): 1–18.

transparency.⁴⁸ This means that Artificial Intelligence is not just a technology but a strategic tool to strengthen sharia values.

In the aspect of risk management, shows that AI can be used to detect financial risks in Islamic financial institutions more quickly and accurately. In their literature review, Artificial Intelligence has been proven to reduce Non-Performing Financing (NPF) and improve risk management efficiency, while ensuring sharia compliance.⁴⁹ This is very relevant for Islamic fintech which must balance profitability and welfare of business actors.

The implementation of AI in Islamic financial institutions has also been studied in an operational context. AI in Islamic banks, for example for customer data analysis and transaction management, can speed up services, improve accuracy, and reduce operational costs without sacrificing sharia principles.⁵⁰ This paves the way for Islamic fintech to perform greater operational scale with efficiency.

However, the integration of Artificial Intelligence cannot be separated from ethical challenges. Highlights the potential for algorithmic bias, data privacy, and lack of transparency which, if not properly regulated, can violate sharia maqāsid such as the maintenance of property (hifzh al-mal) and reason (hifzh al-'aql).⁵¹ Therefore, an Artificial Intelligence governance framework based on Islamic values is crucial to prevent discrimination and unfair decisions.

In terms of regulation, conducted a systematic literature review that confirms that Islamic financial regulations in Indonesia are not fully ready to face Artificial Intelligence integration: there are no specific guidelines governing algorithm transparency, model audits, and accountability of Artificial Intelligence systems.⁵² This is the main obstacle in adopting Artificial Intelligence ethically in Islamic fintech.

The implications of Artificial Intelligence integration are far-reaching: Artificial Intelligence can strengthen financial inclusion with more sophisticated risk analysis, accelerate Islamic services, and improve fairness in financing decisions. However, for optimal benefits to be achieved, adaptive regulation, ethical governance, and collaboration between fintech developers, scholars, and regulators are needed.

Implementation Challenges and Strategies

Despite its great potential, the implementation of Artificial Intelligence-based sharia fintech faces significant challenges in terms of regulation. The lack of AI guidelines specific to Islamic finance is a risk gap: Regulations do not yet regulate algorithmic audits, model transparency, and accountability of automated decisions.⁵³ This situation can pose a risk that Artificial Intelligence systems operate as "black boxes" that are difficult to monitor in sharia.

Technical challenges also arise from the limitations of digital literacy among halal MSMEs. Many small business actors do not understand or feel skeptical about the use of AI and modern sharia fintech, especially in profit-sharing agreements such as mudharabah or

⁴⁸ Langit, Prasetyo, dan Dwi Setiawan. 2025. "Artificial Intelligence in Islamic Fintech: Efficiency, Transparency, and Maqāsid al-Sharia." *Journal of Sharia Financial Technology* 3 (1): 1–18.

⁴⁹ Febriyani, Rina, Ahmad Fauzi, dan Nurul Hidayati. 2025. "Artificial Intelligence for Risk Management in Islamic Financial Institutions: A Literature Review." *International Journal of Islamic Financial Studies* 9 (2): 101–118.

⁵⁰ Putri, Amelia, dan Nurhisam. 2025. "Implementation of Artificial Intelligence in Islamic Banking Operations." *Journal of Islamic Banking and Finance* 10 (2): 89–105.

⁵¹ Kholiq. 2025. "Ethical Challenges of Artificial Intelligence in Islamic Fintech: A Maqāsid al-Sharia Perspective." *Journal of Islamic Ethics and Technology* 4 (1): 33–50.

⁵² Bas. 2025. "Regulatory Readiness of Islamic Finance toward Artificial Intelligence Integration: A Systematic Literature Review." *Journal of Islamic Financial Regulation* 7 (1): 45–62.

⁵³ Bas. 2025. "Regulatory Readiness of Islamic Finance toward Artificial Intelligence Integration: A Systematic Literature Review." *Journal of Islamic Financial Regulation* 7 (1): 45–62.

musyarakah. Without adequate education, adoption will be slow and some MSMEs may prefer traditional financing schemes.

In addition, in terms of internal fintech funding, some Islamic platforms are still having difficulty allocating capital for Artificial Intelligence research and development. The cost of Artificial Intelligence development, including data training, computing infrastructure, and the formation of an expert team, is not small and is a big burden for Islamic fintechs that are still in the growth phase.⁵⁴ Without the support of investors or collaborators, AI innovation can be limited.

To face ethical challenges, it is very important to develop an adaptive Artificial Intelligence governance framework based on the principles of maqāṣid al-sharia. Suggests that every Artificial Intelligence system in Islamic fintech should be equipped with an audit mechanism, algorithm transparency, and scholar involvement in the initial design so that AI decisions do not violate Islamic principles. This should be part of internal regulations and industry standards.

Educational strategies are a crucial element in implementation. Islamic fintech, the government, and religious institutions need to organize literacy programs that integrate sharia and technology aspects such as workshops, online training, and mentoring of the halal MSME community. The program can bridge the understanding between Islamic values and digital innovation, as well as encourage trust in AI-based systems.

Multi-sector collaboration is the key to a successful strategy. Regulators (OJK, DSN-MUI), sharia fintech developers, academics, and the halal MSME community must build a shared ecosystem that supports sustainable halal innovation. Forms of collaboration can be in the form of sharia fintech incubators, sharia AI research centers, and incentive policies for fintechs that develop ethical and inclusive Artificial Intelligence solutions.

Conclusion

Optimizing halal MSME financing through Artificial Intelligence-based sharia fintech has a strategic role in strengthening economic independence. This research shows that sharia fintech allows fair, transparent, and Islamic access to capital, while AI improves efficiency, accuracy, and risk management in financing. Halal MSMEs have great potential as a driver of the national economy, but still face regulatory barriers, literacy, and global market access. Effective implementation strategies include regulatory adaptation, digital and sharia literacy education, the development of ethical AI governance, and multi-sector collaboration between the government, fintech, academia, and the MSME community. This approach not only encourages sustainable halal economic growth, but also strengthens financial inclusion, expands markets, and ensures financing that is in line with sharia principles, so that the contribution of MSMEs to national economic development is more optimal.

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⁵⁴ Utami, Rina, dan Daniel Manullang. 2025. "Mudharabah and Musyarakah Contracts in Sharia Fintech: Inclusivity and Flexibility for MSMEs." *Journal of Islamic Financial Innovation* 5 (1): 21–38.

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