

UTILIZATION OF THE AI-BASED ISLAMIC ACCOUNTING INFORMATION SYSTEM AS A SOLUTION FOR TRANSPARENCY AND EFFECTIVENESS IN FINANCIAL MANAGEMENT OF MSMEs

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in the Indonesian economy, but they still face challenges in financial management, particularly related to transparency and effectiveness of financial reporting. The purpose of this study is to examine the use of an Artificial Intelligence (AI)-based Accounting Information System (AIS) with a sharia approach as a solution to increase transparency and effectiveness of MSME financial management. The research method used is a literature study by conducting an in-depth analysis of relevant literature and sources. The results of the study indicate that the implementation of an AI-based AIS can automate recording, improve the quality of financial reports, and support more appropriate decision-making, while the integration of sharia accounting principles ensures the alignment of financial governance with Islamic values. The main obstacles identified are limited human resources, implementation costs, and uneven technological infrastructure. The AI-Based Islamic Accounting System is presented as an innovative solution that supports MSMEs in increasing transparency and effectiveness of financial management in a sustainable manner, while still prioritizing sharia accounting principles.

Keywords: Accounting Information Systems, MSMEs, Finance, Artificial Intelligence

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are one of the main indicators of the Indonesian economy. According to data from the Ministry of Cooperatives and SMEs, the MSME sector contributes more than 60% of the national Gross Domestic Product (GDP) and absorbs approximately 97% of the total workforce in Indonesia (Kemenkop UKM RI, 2023). This indicates that MSMEs have a very important and strategic position in supporting national economic growth, especially in areas that have not been touched by the large industrial sector. Furthermore, MSMEs also play a crucial role in encouraging entrepreneurship and reducing unemployment (Putra, RR, & Lilis, S. H, 2022). MSMEs still face various managerial challenges, one of which is a weak financial recording and reporting system that can hinder sustainable business growth.

The main problem in MSME financial management is the lack of transparency and effectiveness. Many MSMEs use manual recording methods, lack a standardized accounting system, lack basic accounting understanding, and are limited by the technology used (Tambunan, TT H, 2020). One consequence of weak financial management is the inability of MSMEs to obtain financing from formal financial institutions, as they are unable to present accurate and reliable financial reports. The ability to manage finances appropriately is crucial for improving business accountability, ease of access to financing, and the trust of consumers and business partners.

Along with advances in digital technology, artificial intelligence (AI) has become a promising innovation in transforming accounting information systems. AI technology can automate transaction recording processes, analyze financial data, and present accurate, real-time reports (Davenport, TH, & Ronanki, R, 2020). The integration of AI into accounting systems has been proven to improve operational efficiency and reduce the risk of human error. One solution offered to MSMEs is the implementation of an Accounting Information System (AIS). An AIS is a combination of information technology and accounting processes that can help companies or business actors systematically record, process, store, and present financial information. By using an AIS, MSMEs can

improve operational efficiency, reduce the risk of recording errors, and produce more accurate and timely financial reports (Daniyati, Roni, & Anisa Sains, 2023).

The use of AI-based accounting technology in Indonesia needs to be adapted to local values, including the religious and spiritual aspects of society. Ideally, the implemented financial system should not only be efficient and accurate but also align with Islamic sharia principles. Values such as honesty (amanah), justice (adl), and the prohibition of usury are essential foundations in financial transactions (Karim, 2020). Therefore, an accounting information system is needed that is not only technology-based but also incorporates Islamic values, namely *an AI-Based Islamic Accounting System*. An AI-based Accounting Information System with an Islamic approach not only supports efficient recording and reporting but also ensures that all financial processes are carried out in accordance with sharia principles, such as zakat management, transaction contracts, and profit-sharing reporting (Aditya Darmawan & Aditya Agung Nugraha, 2025). The presence of this system is an ideal alternative solution for MSMEs, especially those operating in the halal and Islamic finance sectors.

The effective implementation of AIS in business entities, including Sharia-compliant companies, is becoming increasingly important to improve the efficiency and transparency of financial reporting. Modern technology-based accounting information systems can automate various accounting processes, thereby reducing the risk of human error and increasing the accuracy and speed of financial reporting (Al-Matari, AS et al., 2022).

Efficiency in financial management can be achieved through the use of an integrated accounting information system, which allows for real-time transaction recording and automation in the preparation of financial reports. Research by Mutoharoh et al. (2020) found that digitizing accounting information has a significant impact on increasing the profitability of micro, small, and medium enterprises (MSMEs) in Indonesia (Mutoharoh et al., 2020). This indicates that the application of technology in accounting not only provides benefits in terms of efficiency but also contributes to increased business competitiveness. Previous studies have shown that automating transaction recording can reduce human error and accelerate the financial reporting process, as well as increase stakeholder trust (Al-Matari, AS et al., 2022).

Transparency in Islamic financial reporting can be improved through the implementation of accounting information systems that enable more open data access for stakeholders. Research conducted by Solikhatin et al. (2024) states that an accounting information system based on Islamic economic principles can increase public trust in Islamic financial institutions (Solikhatin, F.A. et al., 2024). This transparency is crucial for building credibility and ensuring compliance with Islamic accounting standards established by the Islamic Accounting Standards Board (DSAS) and other relevant organizations (Yanti, E. et al., 2023).

Based on this background, it is important to examine in depth how the use of an AI-Based Islamic Accounting Information System can improve the transparency and effectiveness of MSME financial management in the digital era. This study aims to provide an empirical overview and contribute to the literature on Islamic accounting and MSME digitalization.

LITERATURE REVIEW

Accounting Information System (AIS)

An Accounting Information System (AIS) is a collection of various components that work together effectively to manage financial data, including accounting software, databases, operational procedures, and human resources responsible for managing that financial information (Diah Rachmawatie Novida, 2025). The use of an Accounting Information System (AIS) enables companies to manage financial transactions directly or in real time,

simplify the audit and reporting process, and support compliance with applicable accounting regulations. An AIS also facilitates tracking of each transaction by providing a detailed and clear audit trail. This audit trail records all stages of the transaction process, allowing companies to increase operational transparency because all financial transactions can be easily verified and audited (Hilia ANRIVA et al., 2024).

The implementation of an accounting information system enables MSMEs to obtain accurate, consistent, and timely information, making the system's performance crucial in meeting information needs and supporting the achievement of business goals. Furthermore, the existence of clear standards facilitates user understanding and optimal use of the system. This allows the accounting information system to function more efficiently in the long term by providing accurate, timely, and reliable data (Rasyid et al., 2024).

The main elements of an accounting system are forms, records consisting of journals, ledgers and subsidiary ledgers, and reports. An accounting information system has four objectives: a) To provide information for managing business activities; b) To improve the information produced by existing systems, both regarding quality, accuracy of presentation and information structure; c) To improve accounting control and internal checks, namely to improve the level of reliability of accounting information and to provide complete records regarding the accountability and protection of company assets; d) To reduce clerical costs in maintaining accounting records (Liya Alfi Fitriya, 2023).

An accounting information system is a computer-based system that collects, processes, and analyzes financial data to produce financial information. The information from this data processing output can serve as the basis for organizational decision-making. Accounting information systems help gather information by converting raw data into financial data for reporting purposes, which is then used for decision-making (Nuril Firdaus & Rohmawati Kusumaningtias, 2021). Optimally used accounting information systems within an institution can facilitate the organization's adaptation to changing and improving environments, provide a better internal control system, and enhance the organization's external relations (Nuril Firdaus & Rohmawati Kusumaningtias, 2021).

Artificial Intelligence (AI) in Accounting

Artificial Intelligence (AI) is a branch of computer science that focuses on developing systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, pattern recognition, and decision-making (Russell, S. & Norvig, P., 2021). In the field of accounting, AI has become a significant innovation because it can automate processes, improve accuracy, and strengthen the transparency of financial reports (Davenport, T.H. & Ronanki, R, 2018).

Artificial Intelligence (AI) technology has transformed modern accounting practices, from bookkeeping automation to predictive analytics. Study (Pinuji & Khomsiyah, 2024) Research on Islamic banking in Indonesia demonstrates that AI dimensions such as analytical capabilities, process automation, and predictive intelligence significantly improve AIS efficiency. This finding is supported by Abueid et al. (2024), who identified that AI adoption in the MSME audit and accounting sector can improve the quality of financial reports, although digital infrastructure readiness is a critical success factor.

The implementation of AI in accounting can be applied through various technologies, such as machine learning, natural language processing, expert systems, and robotic process automation (RPA). This technology helps accountants to automatically record transactions, detect financial anomalies, prepare reports in real time, and predict company cash flow (Kokina, J. & Davenport, T. H, 2017). For example, machine learning algorithms can classify transactions into appropriate accounts, while RPA can speed up the typically time-consuming bank reconciliation process. The use of AI in accounting also plays a significant role in reducing human error and operational costs, thereby

achieving effective financial management, especially in the Micro, Small, and Medium Enterprises (MSMEs) sector which often faces resource constraints (Issa, H. et al., 2016). AI can also support the audit function by conducting continuous auditing and continuous monitoring to achieve greater transparency and accountability (Yoon, K. & Zhang, L., 2015).

However, the use of AI in accounting is not without challenges. Some emerging issues include limited digital literacy among accountants, the need for significant technology investment, the risk of algorithmic bias, and ethical and regulatory aspects, including compliance with accounting and sharia standards (Kokina, J. & Davenport, T. H., 2017). Therefore, a sound technology governance approach is needed so that the application of AI in accounting truly provides added value, especially in the context of sharia accounting, which emphasizes fairness, openness, and trustworthiness. Thus, AI not only improves technical efficiency but also strengthens transparency and accountability in financial reporting, especially for MSMEs that require simpler yet reliable system support (Davenport, T. H., & Ronanki, R., 2020).

Sharia Accounting Principles

Sharia accounting is an accounting system based on Islamic principles derived from the Qur'an, Hadith, scholarly consensus, and ijtihad, with the aim of realizing justice, transparency, and accountability in financial reporting. Unlike conventional accounting which is profit-oriented, sharia accounting emphasizes moral and social values that are in line with the maqasid al-shariah, namely protecting religion, life, mind, descendants, and property (Haniffa, R. & Hudaib, M., 2001).

Sharia Accounting Principles are based on the values of justice, honesty, and accountability that support the objectives of sharia (maqasid al-shari'ah) which are realized through honest, complete financial reporting, and free from practices prohibited by sharia such as usury, gharar (uncertainty), and maysir (speculation) (Lewis, MK, 2001). Thus, sharia accounting not only records material aspects, but also pays attention to spiritual and social aspects, including the obligations of zakat, infaq, sedekah, and fair distribution of profits (Triyuwono, I., 2011). Sharia audits are conducted by auditors who understand Islamic principles to ensure a company complies with Sharia regulations. Sharia accounting principles integrate Islamic values into financial recording and reporting (Asta & Olii, 2023).

Sharia accounting standards were developed by international institutions such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and also by the Financial Accounting Standards Board (DSAK-IAI) in Indonesia through the Sharia PSAK. These standards regulate the recognition, measurement, presentation, and disclosure of sharia-based transactions, such as murabahah, mudharabah, musyarakah, ijarah, and wakalah (Indonesian Institute of Accountants (IAI), 2019). In addition, sharia accounting also has a social accountability dimension, where financial reports are not only intended for capital owners or investors, but also for the wider community, regulators, and Allah SWT as the absolute owner of all assets (al-malik al-haqiqi) (Baydoun, N. & Willett, R., 2000). This makes sharia accounting have a strategic role in realizing sustainable, ethical, and Islamic-compliant finance, including in the financial management of MSMEs.

Challenges of MSME Financial Management

Financial management is crucial for the development and sustainability of Micro, Small, and Medium Enterprises (MSMEs). MSMEs face various obstacles in managing their finances due to several key factors. One is limited funding, making it difficult for them to invest in new technologies such as hardware, software, or information technology services needed to improve business efficiency. Limited access to resources and software makes it difficult for MSMEs to prepare budgets, assess performance, access

financing, and manage finances effectively, which can reduce their ability to compete in the market. (Sisilia Anyel Faridawati et al., 2024).

In managing MSME finances, it is important to separate personal and business finances because this helps MSMEs manage cash flow in a more structured and orderly manner. By separating personal and business finances, business owners will more easily identify sources of income and expenses directly related to the business, thus facilitating the preparation of clear, accurate, and transparent financial reports. (Fitrah et al., 2025) . There are also obstacles in the form of resistance to change, particularly related to the uncertainty of the benefits and risks of adopting new technological innovations, which tends to resist such change. Another factor that contributes to this is the inadequate technological infrastructure, particularly the availability of a stable and reliable internet network, which remains a significant problem in some remote areas. All of these issues represent major challenges that must be overcome so that MSME financial management can run effectively and support sustainable business development. (Octiva et al., 2024).

METHODS

This study uses a descriptive qualitative approach with a literature review method. Data were collected from relevant secondary sources, including national and international scientific journals, books, and other related documents discussing MSME financial management and the implementation of Artificial Intelligence-based Accounting Information Systems (AIS) and sharia accounting principles. The analysis process includes identifying appropriate literature, then classifying and comparing findings from various sources to obtain a comprehensive picture of the challenges, opportunities, and strategies for using AI-based accounting information systems with an Islamic approach in MSMEs. The results of the analysis are presented descriptively to explain how this technology can improve the transparency and effectiveness of MSME financial management while considering aspects of compliance with sharia principles.

RESULTS

Opportunities for Utilizing Accounting Information Systems for MSMEs

a) Operational Efficiency, AIS enables the automation of transaction recording, profit and loss calculations, and financial reporting. This reduces the risk of human error and speeds up administrative work. Time typically spent on manual bookkeeping can be diverted to strategic activities such as product development and marketing. According to (Daniyati, Roni, & Kharisma, 2023) , MSMEs in Karangmalang that implemented AIS experienced increased efficiency and regularity in transaction recording; b) Financial Report Quality Improves, AIS helps produce structured, easy-to-understand financial reports that comply with accounting standards. These reports serve as a crucial basis for business evaluations, strategy development, and supporting documents when applying for loans from financial institutions. (Lubis & Lufriansyah, 2024) emphasize that report quality is a crucial factor in improving business performance through AIS; c) Affordable Cloud Technology Access, Using cloud accounting makes it easier for MSMEs to access financial data anytime and anywhere without the need for expensive computer equipment. Cloud-based applications typically also include automatic backup and data security features. (Novitasari et al., 2023) state that cloud accounting is particularly suitable for MSMEs because it is lightweight, cost-effective, and flexible; d) Improving Credibility and Access to Financing, MSMEs with effective financial recording and reporting systems will gain greater trust from banks, investors, and other supporting institutions. Valid reports can serve as collateral for obtaining financing, participating in data-driven training, or establishing strategic partnerships. (Daniyati, Roni, & Kharisma, 2023) show that MSMEs that have begun implementing digital accounting systems find it easier to establish business partnerships and access capital.

Utilization of AI-Based Islamic Accounting Information Systems in MSME Practices

The use of an Artificial Intelligence (AI)-based Accounting Information System (AIS) with an Islamic approach in MSMEs aims to combine technological efficiency with compliance with Sharia principles. AI technology plays a role in automating the recording process, transaction classification, report analysis, and real-time error detection, thereby reducing reliance on error-prone manual processes. (Pinuji & Khomsiyah, 2024).

In practice, the implementation of AI-Based Islamic SIA in MSMEs can include several key features: a) Automation of transaction recording in accordance with sharia contracts, such as murabahah, mudharabah, and musyarakah, with direct adjustments to the financing structure and profit sharing (Solikhatin et al., 2024); b) AI-based audit trail capable of tracking data changes to ensure the integrity of financial information (Abueid et al., 2024); c) Predictive analytics for cash planning and business performance projections, thus helping MSME owners make more timely decisions (Muhammad Dharma Tuah Putra Nasution et al., 2024).

Research (Abueid et al., 2024) shows that MSMEs adopting AI in accounting experience significant improvements in the quality of financial reports, particularly in terms of reliability and transparency, which impacts the ease of obtaining financing from Islamic financial institutions. This finding is supported by research by Muhammad Dharma Tuah Putra Nasution et al., 2024. which highlights that the adoption of technology in halal MSMEs increases consumer confidence due to the guarantee of sharia compliance in every transaction.

Thus, AI-Based Islamic AIS is not just a financial recording tool, but also a strategic instrument for building business reputation, expanding market access, and strengthening the position of MSMEs in the increasingly competitive Islamic economic ecosystem.

The Influence of AIS on Transparency and Effectiveness of MSME Finances

Ayem and Wahidah (2021) stated that loans can increase MSME productivity. In terms of capital, MSMEs may benefit from easier access to financial resources. Future decision-making can benefit from MSMEs' transparency in their financial reports. Making finance available to MSMEs has been shown to increase their efficiency. As in Pakpahan (2020), the People's Business Credit program facilitates MSMEs' access to capital loans from the banking sector based on quality financial reports. Furthermore, financial accounts may reveal a company's viability, thus increasing the availability of funds (Fuadli & Padmantyo, 2024) .

Financial literacy can be defined as a process of increasing knowledge, skills, and confidence to improve financial well-being and enable people to manage their finances more effectively. According to Desyanti (2016), understanding and possessing knowledge about financial literacy and financial inclusion is crucial for MSMEs. This is because financial inclusion and literacy influence financial management, which in turn impacts the performance and sustainability of MSMEs. (Damayanti et al., 2024).

Challenges and Strategies in Implementing Accounting Information Systems in MSMEs

The challenges in implementing accounting information systems in MSMEs are as follows: a) Limited human resources and accounting literacy; b) Many MSMEs lack basic accounting skills or lack understanding of information technology. This is a major obstacle to operating an AIS. Furthermore, there is a lack of trained human resources within their organization who can assist in implementing these systems. Basic accounting education and training are urgently needed. (Lubis & Lufriansyah, 2024); c) Implementation cost constraints; d) Although some accounting applications are available for free, many MSMEs still face financial constraints for supporting equipment (computers, printers), internet access, and training. MSMEs in remote or rural areas also

face limited technological infrastructure. (Novitasari et al., 2023) suggest a phased approach using a simple cloud-based system as a viable initial solution; e) Low awareness of the importance of financial reports; f) Most small business owners don't consider financial reports important and rely more on intuition to run their businesses. Yet, financial reports are a vital tool for analyzing business conditions, determining strategies, and preventing cash flow leakage. (Meilisa Amalia, 2023) notes that understanding financial reports has a significant impact on the effectiveness of business decisions; g) Uncertainty of the business environment; h) Uncertainties such as inflation, regulatory changes, or disasters like pandemics can disrupt the continuity of accounting systems. In such circumstances, MSMEs tend to revert to manual systems, considering technology too complicated or irrelevant during unstable times (Robiur Rahmat Putra & Lilis, 2022), which suggests that under conditions of high uncertainty, the positive impact of AIS on performance can diminish.

Research conducted Juniarti and Rai explained that with the rapidly growing number of MSMEs, they must be able to survive and develop strategies to compete with other MSMEs in the open market. Business performance must be considered to ensure MSMEs can survive and excel in competition with similar MSMEs (Juniariani & Rai, 2020). Therefore, it is crucial to implement a computer-based Accounting Information System (AIS) and provide training to enable MSMEs to utilize it optimally in business management. To develop an effective marketing strategy that differentiates itself from competitors, human resources must possess a creative and innovative mindset in their marketing plans. A business will struggle to grow if its managers lack a clear understanding of the systems used to promote its products efficiently. (Indriyani et al., 2023).

CONCLUSION

The use of an Artificial Intelligence-based Accounting Information System (AIIS) with an Islamic approach has significant potential to increase the transparency and effectiveness of MSME financial management in the digital era. This system not only facilitates accurate and real-time financial recording and reporting but also ensures compliance with Sharia principles, which is an added value for MSMEs operating in the halal and Islamic finance sectors. The implementation of an AI-Based Islamic AIS can improve operational efficiency, the quality of financial reports, and business credibility, leading to easier access to formal financing. However, challenges such as limited human resources, technological infrastructure, and low awareness of the importance of financial reports remain significant obstacles that need to be addressed through education, training, and a phased approach in implementing this technology. Therefore, integrating technology with local values and appropriate strategies is key to the successful development of digital and Sharia-based MSME financial management. Further research is recommended to conduct empirical research using quantitative or mixed methods to directly examine the impact of implementing an AI-Based Islamic Accounting Information System on MSMEs in various regions, as well as examining cultural and technological factors in more depth to produce more applicable and contextual recommendations.

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