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ANALYSIS OF ARTIFICIAL INTELLIGENCE-BASED ACCOUNTING INFORMATION SYSTEMS AND DIGITAL BUSINESS STRATEGIES ON MICROENTERPRISE PERFORMANCE TOWARDS SUSTAINABLE PROGRESS

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ABSTRACT

The goal of this research is to develop a model of system information assurance (SIA) based on artificial intelligence (AI) that can improve microbusiness performance. Using meta-analysis to compare several previous studies, this study identified the most important factors in the implementation of AI-based SIA. The results of the study show that this system contributes to improving operational efficiency, increasing cash flow, and developing data-driven business processes. The newly developed model incorporates AI technology into a variety of authentication functions in order to improve the efficiency of microbusinesses. This concept provides a foundation for the development of more effective and long-term AI-based knowledge systems. The study indicates that AI deployment in AIS improves MSME resilience in the digital economy while also promoting inclusive and sustainable growth. These findings offer policymakers and business practitioners useful insights into helping MSMEs' digital transformation.

Keywords: Artificial Intelligence, Accounting Information Systems, Digital Business Strategy, Microenterprise Performance, Sustainable Progress

INTRODUCTION

Digital transformation is a critical aspect in improving the competitiveness and digitalization of governance and performance of Micro, Small, and Medium Enterprises (MSMEs), particularly in the face of increasingly rapid technological disruption. However, MSMEs continue to confront hurdles in implementing digital technology due to a lack of financial and technical resources. One creative solution to this problem is the use of Artificial Intelligence (AI) in accounting information systems (AIS), which helps to improve the efficiency, accuracy, and transparency of financial reporting. AI in AIS offers automated financial recording, more accountable budget management, and real-time data-driven decision-making, assisting MSMEs in improving their long-term business competitiveness. Thus, the purpose of this study is to investigate the influence of AI implementation in AIS on digital business strategies and MSME performance, with a particular emphasis on operational effectiveness and its contribution to more inclusive and sustainable economic growth.

Several studies have examined the influence of technology in accounting systems and digital business, but there is still a lack of information about how AI directly affects MSME performance. Bharadwaj et al. (2013) emphasized that a successful digital business strategy depends on effective technological adaptation (Bharadwaj et al., 2013). Holopainen et al. (2023) demonstrated that the effectiveness of digital strategies in businesses is substantially affected by the use of AI in business performance monitoring (Holopainen et al., 2023). Furthermore, Ferreras-Méndez et al. (2021) discovered that AI-based advances in accounting systems can boost small enterprises' strategic decision-making (Ferreras-Méndez et al., 2021). Jin et al. (2022) investigated the impact of AI-based accounting automation and discovered that the use of this technology can reduce human errors and accelerate the financial audit process (Jin et al., 2022). Hasan (2022) also stated that integrating AI in accounting can increase audit quality and financial reporting efficiency (Hasan, 2022). This study builds on prior research by offering a comparative perspective on the use of AI in AIS in various MSME industries, as well as its impact on business sustainability in the digital economy era. According to Yusuf et al., Artificial Intelligence (AI) has the ability to provide faster and more accurate analysis. AI implementation in accounting information systems encompasses a wide range of applications, including robotic process automation, machine learning, and language learning. Accountants must use high-quality data, do thorough research, and learn new skills in order to implement AI. AI-based accounting systems provide benefits such as faster data processing and more accurate judgments, but they also confront obstacles such as privacy and data quality (Yusuf et al., 2024). Muh. Fathir Maulid Yusuf et al. found that implementing AI systems in accounting improves efficiency, accuracy, and decision-making. Nonetheless, the variety of the study's findings implies that organizational context is critical to the successful integration of AI technology into accounting systems. Companies who want to integrate AI technology in accounting systems must assess their particular conditions and assure proper preparation and risks before taking such a step (Muh. Fathir Maulid Yusuf et al., 2023).

The purpose of this study is to conduct a comparative analysis of the influence of Artificial Intelligence (AI) adoption in accounting information systems on digital business strategies and MSMEs' performance in order to achieve long-term progress. The use of AI in AIS allows for the automation of a variety of activities, including cash flow forecast with machine learning, fraud detection, and investor sentiment analysis via natural language processing (NLP), which improves the efficiency and transparency of MSME financial management. Furthermore, AI assists micro firms in reducing administrative workload, allowing them to focus on more competitive business strategies in the global market while also contributing to more inclusive economic growth. This study also examines the use of AI in AIS across sectors to determine its usefulness in enhancing MSMEs' financial performance and competitiveness in the digital economy. Thus, the findings of this study are expected to help MSME players, academics, and policymakers develop more effective technology-based digital strategies. Since there is a good correlation between AIS quality and organizational culture, companies can recover because strong information systems facilitate decision-making, operational control, problem analysis, and innovation. This is especially true in response to the changes in business habits and activities caused by the COVID-19 pandemic (Supriyati et al., 2025).

This study employs a qualitative method with a descriptive and explanatory design to investigate the elements that determine the efficacy of AI deployment in AIS in the MSMEs. Data were gathered using survey methodologies, in-depth interviews with MSME players, and firsthand observation of AI-based accounting systems in the field.

Thematic analysis of interview findings and survey data was utilized to determine the major patterns that arose as a result of the technology's installation. This study, employing a sample of MSMEs in Bandung Regency that have deployed AI-based AIS systems, can provide a more accurate picture of the impact of this technology in a real business context (DISKOPUKM Kabupaten Bandung, 2025). The findings reveal that using AI in AIS considerably enhances the efficiency of MSME financial management, including transaction recording, financial analysis, and strategic decision-making. Case studies from diverse MSMEs demonstrate how AI integration automates accounting operations, decreases the risk of human error, and enhances the accuracy and speed of financial reporting. Furthermore, AI contributes to predictive analysis for cash management and possible fraud detection in financial transactions, which was previously impossible for small enterprises to achieve (Jin et al., 2022). This result is consistent with the research of Manel et al. (2023), which highlights that AI can replace monotonous accounting duties, but human supervision is still required to assure accuracy and conformity with accounting standards (Manel et al., 2023).

Based on the study's findings, integrating AI into AIS has a considerable positive impact on MSMEs' digital business strategy and performance. By decreasing the administrative load of financial recording and reporting, SMEs may focus more on business strategy development and product innovation (Saleem et al., 2024). Furthermore, AI adoption provides MSMEs with opportunity to grow their markets by boosting financial transparency and data accessibility for potential investors and business partners (Lehner et al., 2022). However, the biggest barrier to AI application is the necessity for suitable technology infrastructure and enhanced digital literacy among MSME participants (Islam et al., 2024). As a result, the government and allied organizations must provide support in the form of training, incentives, and laws to encourage the use of this technology in the MSME sector.

Research Questions (RQ)

A. How does the implementation of Artificial Intelligence in Accounting Information Systems influence digital business strategy in microenterprises?
B. What are the comparative effects of AI-driven Accounting Information Systems on the financial performance of microenterprises across different industries?
C. To what extent does AI integration in Accounting Information Systems contribute to the sustainable progress of microenterprises in the digital economy?

LITERATURE REVIEW

Recent study has highlighted the importance of digital transformation in the management of Micro, Small, and Medium-sized Enterprises (MSMEs). Technology-based developments, particularly in the realm of accounting information systems, have expedited governance digitization and MSME performance improvement. One of the fastest-expanding ways is the use of Artificial Intelligence (AI) in accounting information systems to boost MSMEs' efficiency, transparency, and competitiveness in the digital age.

A. Digitalization and Transformation of MSME Governance

Digitalization has become a critical aspect in enhancing the competitiveness and management efficiency of micro, small, and medium-sized businesses (MSMEs). To remain competitive in the global market, MSMEs must integrate digital systems into their business processes as technology advances. Digitalization in MSME governance takes many forms, ranging from digital marketing and supply chain management to technology-based accounting information systems. Previous studies have found that digitalization has a substantial impact on MSME governance and performance. Bharadwaj et al. (2013) emphasize the relevance of technology adaptability in increasing corporate competitiveness. In the context of MSMEs, digitalization includes not only digital marketing, but also more effective financial and operational management aspects through the use of information technology

(Bharadwaj et al., 2013). As a result, this section will analyze the relevant literature on the role of digitalization in MSME governance and how this transition affects corporate sustainability. Creating the business strategy model entails extracting four crucial components from the business plan: objectives, operational processes, conditions, and metrics (Supriyati, Suharman, et al., 2023).

Research on MSME digitalization can be divided into three categories: (1) the influence of digitalization on MSMEs' operational efficiency, (2) the effect of digitalization on MSMEs' competitiveness, and (3) barriers to MSMEs' use of digital technology. Several studies have found that digitalization improves the operational efficiency of MSMEs. According to Bharadwaj et al. (2013), small businesses can use digital technology to automate a variety of activities, including inventory management and transaction recording (Bharadwaj et al., 2013). According to Latifah et al. (2021), accounting digitalization improves transparency and accuracy in financial reporting, which boosts investor confidence and access to funding sources (Latifah et al., 2021). From a competitive standpoint, digitalization allows MSMEs to strengthen their marketing techniques and broaden their consumer base. According to Holopainen et al. (2023), firms that integrate digital strategies with performance management likely to have more consistent growth than those that continue to rely on old approaches (Holopainen et al., 2023). Furthermore, research by Ferreras-Méndez et al. (2021) reveals that digital-based innovation plays an essential role in enabling product development and boosting corporate flexibility in responding to market changes (Ferreras-Méndez et al., 2021). However, MSMEs continue to confront a number of hurdles in adopting digital technologies. Several studies show that the primary barriers to MSMEs adopting digital systems are poor technological infrastructure, a lack of digital literacy, and expensive initial investment costs (Islam et al., 2024). Furthermore, data security risks and the lack of clear legislation addressing company digitization are two factors that must be considered in the adoption of this technology (Lehner et al., 2022).

While many studies have looked at the influence of digitalization on business governance, there is still a lack of awareness of how MSMEs in various industry sectors adapt to digital transformation. Most prior studies have concentrated on digitalization in large or medium-sized businesses, whereas the characteristics and needs of MSMEs are frequently unique and have not been adequately examined in academic research (Saleem et al., 2024). Furthermore, few studies explore how MSMEs may overcome the hurdles of implementing digitization, particularly in terms of accounting systems and financial management. As a result, this study seeks to fill a gap by examining the influence of digitalization on MSME governance and investigating options for overcoming barriers to digital technology adoption.

Based on the literature study, it is possible to conclude that digitization has a significant impact on MSMEs' operational efficiency, competitiveness, and financial governance. However, infrastructure restrictions, a lack of digital literacy, and data security concerns continue to be significant barriers to MSMEs' adoption of digital technologies. As a result, this study will delve deeper into how MSMEs can maximize the use of digitalization in their accounting and business management information systems, as well as solutions for overcoming current hurdles.

B. Artificial Intelligence-Based Accounting Information System

The use of Artificial Intelligence (AI) in accounting information systems (AIS) is revolutionizing financial management by automating tasks such as transaction recording, financial reporting, and anomaly identification. AI greatly minimizes human error, improves accuracy, and speeds up mundane operations such as data input and reconciliation, freeing accounting professionals to focus on strategic analysis and decision-making. Additionally, AI delivers deeper insights into financial data, allowing for improved decision-making and more precise financial management. As corporate operations become more complicated and require faster decision-making, the use of AI in AIS becomes increasingly important, especially for MSMEs, which frequently face resource limits while handling their finances. The essence of entrepreneurship is the process of creating something that has value by requiring effort and time, taking financial, psychological, and social risks, and receiving a salary and personal satisfaction (Supriyati, Radiansyah, et al., 2023). Given its potential to improve efficiency and transparency in financial systems,

this section examines existing research on AI implementation in AIS, including its benefits and the problems connected with using this technology. In accounting, a company's financial information is communicated. Accounting also uses symbols to represent information, just like a common language. Specific rules govern the use of these symbols (Yadiati & Supriyati, 2024).

Research on AI in AIS can be divided into three categories: (1) automation and efficiency in AI-based accounting, (2) the impact of AI on financial decision-making, and (3) implementation issues. Several studies have found that AI significantly adds to the automation of accounting operations. According to Jin et al. (2022), artificial intelligence (AI) can replace manual duties like transaction recording, financial auditing, and financial statement analysis, increasing efficiency and decreasing human error. Elmegaard et al. found that AI has significantly altered the way humans handle accounting. Its capacity to automate mundane duties like transaction recording and financial classification has freed up accounting professionals' time for in-depth examination. He also stated that in the context of accounting, AI is more than simply a tool; it is a strategic partner who plays a significant role in extracting valuable insights from financial data. By combining historical and real-time data, AI can provide more accurate forecasts to help businesses make decisions (Elmegaard et al., 2022). To convert financial data into the financial information required for managerial decision-making and external stakeholders, AIS consists of both physical and non-physical components that are connected (Supriyati & Bahri, 2020). Numerous SMEs employ AIS to collect additional information that aids owners in decision-making. Ultimately, this results in heightened efficiency, profitability, and overall performance for SMEs (Supriyati et al., 2022). The right decision-making can bring success to a business. The important role of financial reports for SMEs is to provide account information to achieve business success (Supriyati et al., 2024).

Jin et al. found that AI systems can automate typical accounting processes like data entry, invoice processing, and transaction classification, potentially reducing the time necessary for these tasks. It also stressed the significance of integrating data from many sources in AI systems to create more in-depth analysis and accurate forecasts in an accounting setting (Jin et al., 2022). Another study by Hasan found that the incorporation of AI technology will continue to put the historical method of an accountant's profession to the test, as it will alter the findings of audits undertaken. Accountants and auditors must be ready to respond swiftly to the incorporation of AI technology in the accounting system, as changing firm performance indicators is a challenge and a market need (Hasan, 2022). Kanaparthi (2024) demonstrated that AI can evaluate enormous amounts of financial data and make more accurate forecasts about cash flow, investment risk, and financial fraud detection (Kanaparthi, 2024). This is especially useful for MSMEs, which frequently have difficulties in managing cash efficiently and identifying potential business dangers. However, there are some hurdles to implementing AI in AIS. According to Islam et al. (2024), the primary barriers to using AI in MSME accounting systems include limited access to technology, a lack of AI knowledge, and worries about data security (Islam et al., 2024). Lehner et al. (2022) also revealed the results of their research that the integration of AI technology is changing the accounting profession and organizational and social relevance, in this case determining the determinants of ethical decision-making (based on Rest theory) in human and machine collaboration, accountants have identified several key areas that need to be focused on, one of the most striking is the importance of achieving transparency and auditability. Furthermore, it is crucial to comprehend the concept of accountability shared by humans and AI, as both share the same agency (Lehner et al., 2022).

Although several studies have examined the benefits of AI in AIS, there are still significant research gaps that must be addressed. Most earlier research has concentrated on the application of AI in large organizations, while the impact on MSMEs has received less scholarly attention (Saleem et al., 2024). Furthermore, there are relatively few studies that investigate how AI might be tailored to the unique demands of resource-constrained MSMEs. As a result, the purpose of this study is to bridge the gap by investigating how AI can be used in MSME AIS and assessing the elements that determine its performance. The use of AI-based accounting information systems is predicted to boost MSMEs' competitiveness by optimizing financial management, boosting accountability, and allowing for worldwide expansion. As a result, this innovation not only benefits individual MSME participants but it also helps to promote more inclusive and sustainable economic growth. According to the literature assessment, AI has enormous promise

for increasing the efficiency, accuracy, and transparency of accounting processes. However, problems such as restricted access to technology, labor skills, and immature rules continue to be significant barriers to AI adoption for MSMEs. As a result, this study will look into how AI may be used in AIS to improve MSMEs' business performance and address current obstacles.

C. GAP Analysis

Research activities are critical to promoting digital transformation and increasing the competitiveness of Micro, Small, and Medium-sized Enterprises (MSMEs). In the framework of this study, research is the primary foundation for creating and implementing an Artificial Intelligence (AI)-based Accounting Information System to improve efficiency and digitize micro-enterprise governance. This study demonstrates that the use of artificial intelligence in accounting information systems may automate a variety of operations, enhance financial recording efficiency, and enable more accurate and real-time data-driven decision-making. This innovation improves the financial responsibility and transparency of MSMEs, which has been a major difficulty in operating small firms (Dewi, 2021). The study also reveals that digitizing financial governance using AI-based technologies can assist MSMEs in adapting to technological advancements. MSMEs can better compete in the global market with features like machine learning for cash flow forecast and fraud detection and natural language processing (NLP) for investor sentiment research (Nasution, 2022). Aside from boosting the competitiveness of micro-enterprises, this research has a broader impact on equitable and sustainable economic development. With a technology that reduces administrative workload, MSME companies may concentrate on developing creative business strategies. This is consistent with prior research, which found that the deployment of digital technology in the MSME sector contributes to increased national production (Setiawan & Sari, 2020). The relevance of research activities in the creation of technical advances, notably in the field of AI-based digital accounting, not only helps to improve microenterprise efficiency but also boosts general economic growth. As a result, investing in research and development (R&D) is critical to improving MSMEs' competitiveness in the digital age.

Although many studies have been completed on the benefits and problems of AI application in AIS, significant research gaps remain that require additional examination. First, most earlier studies have concentrated on major corporations or certain business sectors, while the impact of AI on MSMEs has gotten less scholarly attention (Saleem et al., 2024). Second, many studies solely focus on the technical and efficiency elements of AI in accounting without considering how these technologies fit into the entire digital business strategy (Holopainen et al., 2023). Third, few comparison studies look at how the efficiency of AI deployment in AIS varies among different types of MSMEs in different industries. As a result, this study seeks to address a gap by delving deeper into the role of AI in AIS on digital business strategy and MSME success through industry comparisons.

METHODOLOGY

This research employs qualitative research methods. Qualitative approaches are used to investigate the aspects that influence the efficacy of system implementation. The micro business actors in the Bandung Regency area, as well as partners of the Bandung Regency Cooperative and SME Office, served as the units of analysis in this study. Bandung Regency's micro enterprises were chosen due to the huge number of MSMEs that have begun to prepare for digitization. According to statistics from Sibangkitukm BEDAS Bandung Regency access in 2025, the number of MSMEs in Bandung Regency is 38,614, including 3,557 MSMEs that have joined the BEDAS Cooperative and UKM Development and Improvement Information System Program (SIBANGKIT UKM BEDAS) and 883 local brand items (DISKOPUKM Kabupaten Bandung, 2025). This study employs descriptive and explanatory designs. A descriptive design is utilized to explain the Artificial Intelligence-Based Accounting Information System for Optimizing Productivity Improvement. Governance digitalization and micro-business performance. The population used in this study consists of all MSMEs who participate in the Village's Cooperative and Small Business Service program. Purposive sampling was utilized to identify government agencies that have a direct role in system

implementation. A random sampling technique is utilized to pick MSMEs that have or are implementing the system. This study used a survey to obtain data. Respondents were given questionnaires, which included government personnel and MSME players. Interviews were conducted with policymakers and MSME owners to acquire a more in-depth insight. Observation: Directly watching the implementation of smart technology-based accounting information systems in government and MSMEs. Literature research entails gathering secondary data from official papers, journals, and pertinent publications. Figure 1 shows the research flow chart.

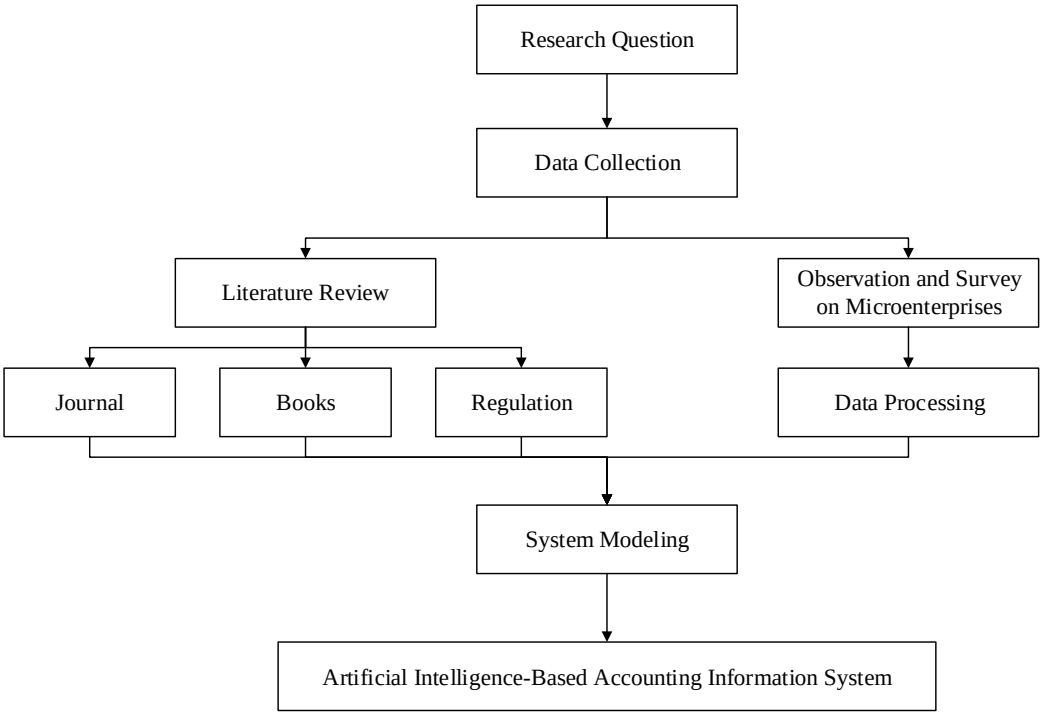

Figure 1. Research flowchart.

The following sections explain each stage in Figure 1 of the research stages.

A. The first stage of research involves developing a clear and particular study question. This study question focuses on how Artificial Intelligence (AI) is used in Accounting Information Systems and how it affects digital business strategies and microenterprise performance.

B. Data Collection: Data was gathered using a variety of approaches to get information for the investigation. There are two primary sources of data collection: a literature review, observations, and a survey of micro companies.

C. Literature Review: Collect material from diverse academic sources to better comprehend the theoretical foundation and past research. Literature is divided into three categories: journals, books, and regulations.

D. Observation and Survey of Microenterprises: Conduct direct observations and surveys to learn how they use accounting systems and how much AI has been deployed. The survey data was then processed and analyzed.

E. System Modeling: Accounting-based AI system modeling was carried out using the findings of the literature review as well as data from observations and surveys. This stage entails defining system architecture, UML diagrams, and creating AI-based system concepts.

F. Artificial Intelligence-Based Accounting Information System: The ultimate stage is to create an AI-based accounting information system that can assist micro-enterprises in developing a digital business strategy and improving their performance indefinitely.

This study analyzed the data using thematic analysis to uncover major themes in the interviews and survey results. Thematic analysis was chosen because it allows for an in-depth study of respondents' narratives, resulting in a more complete understanding of the impact of AI adoption in AIS. The collected data was then divided into important categories such as operational efficiency, financial record accuracy, digital company strategy, and technological and regulatory obstacles. The research's reliability and validity were maintained by method triangulation, which analyzes survey, interview, and observation results to ensure that conclusions are consistent. In addition, this study used purposive sampling to pick respondents who had direct experience adopting AI in their accounting systems. This technique enables the researcher to acquire more comprehensive insights that are related to the research aims. This methodology is likely to help to a better understanding of how MSMEs can optimize the use of AI in AIS to improve their competitiveness and business sustainability in the digital era.

DISCUSSION

The findings of this study indicate that incorporating Artificial Intelligence (AI) into accounting information systems (AIS) has a substantial impact on MSMEs' digital business strategy and performance. According to survey and interview results, MSMEs that have used AI in AIS have more efficiency in recording transactions, more accurate financial analysis, and a greater ability to recognize potential financial hazards. This is consistent with the findings of Jin et al. (2022), who discovered that AI-based automation in accounting may cut human error by 70% and double the speed of financial data processing compared to traditional techniques (Jin et al., 2022).

According to Manel et al.'s research, AI can replace repetitive accounting tasks and improve operational efficiency, but the role of accountants remains important in verifying the results produced by AI. Thus, while the integration of AI in the accounting system aids in task automation and financial analysis, human supervision is still required to ensure accuracy (Manel et al., 2023). Juniardi's study also found that AI in accounting enhances decision-making efficiency, accuracy, and quality. However, there are concerns about ethics and data security. The application of AI in accounting has numerous benefits, but clear laws are required to address transparency and ethical concerns (Juniardi, 2024). According to Silaen and Dewayanto's research, AI can also aid with audit automation, anomaly identification, and real-time financial statement analysis. These technologies improve audit accuracy and eliminate human error, but accountants are still required to assess results and make decisions (Silaen & Dewayanto, 2024). The combination of AI, blockchain, and machine learning increases the efficiency of transaction recording and financial accounting. Artificial intelligence can help lower the risk of fraud through automated data analysis (Kanaparthi, 2024). The use of AI and other enabling technologies in accounting has the potential to change the financial record-keeping system by improving transparency and security. The era of big data is altering the way accounting and auditing are performed through the use of AI and machine learning. These technologies allow for predictive analysis and automation of more sophisticated audit processes (Sun et al., 2024).

One of the primary advantages of AI application in AIS is enhanced financial transparency and accountability. According to Hasan's (2022) study, AI can increase audit quality by delivering real-time data-driven analysis, which helps small businesses uncover financial anomalies before they become larger concerns. The outcomes of this study confirm this notion, with MSMEs that have used AI in their accounting systems reporting enhanced financial management, which boosts investor confidence and access to venture capital. From the perspective of digital business strategy, this study discovered that AI can help MSMEs improve their competitiveness by enabling smarter and more predictive data-driven decision-making. For example, AI in AIS can be used to forecast cash flow, identify inefficient spending habits, and make strategic financial planning recommendations (Kanaparthi, 2024). MSMEs that use this tool can improve their working capital management and better allocate resources for their digital business

expansion strategy. In general, a business strategy is a process or scheme that a firm or business organization will undertake to attain success when competing in a certain market (Supriyati et al., 2024; Supriyati, Sampe, et al., 2023).

Despite the numerous benefits indicated, this study discovered several significant barriers to AI adoption by MSMEs, primarily due to a lack of technology infrastructure and digital literacy. According to interview results, many MSME owners continue to struggle with understanding and operating AI-based systems, which is consistent with the findings of Islam et al. (2024), who found that a lack of technological skills is one of the most significant barriers to MSMEs' digital transformation in various developing countries. As a result, MSME players require training and capacity-building measures in order to better optimize their usage of this technology. Furthermore, the study discovered that legal and data protection issues are significant problems in the application of AI in AIS. Several respondents expressed concern about potential data security threats and a lack of clear legislation governing the use of AI in small business financial management. This is confirmed by the findings of Lehner et al. (2022), who underlined the significance of transparent rules and data protection in AI-based systems to prevent the misuse of financial information. More supporting policies, both from the government and financial institutions, are required to ensure that MSMEs may utilize this technology safely and efficiently.

Overall, the study's findings demonstrate that AI in AIS not only increases efficiency and transparency in MSME accounting, but also helps to establish a more data-driven digital business strategy. However, to enable the successful use of this technology, a more comprehensive approach is required, which includes enhancing digital infrastructure, increasing technological awareness, and establishing clearer laws for the use of AI in MSME accounting systems. Table 1 compares research and development efforts linked to the use of Artificial Intelligence (AI) in Accounting Information Systems (AIS) in Micro, Small, and Medium Enterprises (MSMEs) in various countries, including Indonesia.

Table 1. Comparison of Research and Development Related to the Application of AI in Ais in MSMEs in Various Countries.

Countries	Research Title	Researchers	Main Findings
Europe	Artificial intelligence adoption and revenue growth in European SMEs	Lorenzo Ardito, Raffaele Filieri, Elisabetta Raguseo, Claudio Vitari	Adoption AI is significantly boosting the revenue growth of MSMEs in Europe, especially when combined with IoT and Big Data Analytics (Ardito et al., 2024).
Africa	Usefulness of accounting information systems for small business profitability in South Africa: A systematic literature review	Kansilembo Freddy Aliamutu, Msizi Vitalis Mkhize	Effective accounting information systems contribute to the profitability of small businesses in South Africa, although challenges in implementation still exist (Freddy Aliamutu & Vitalis Mkhize, 2024).
America	Integrating Artificial Intelligence in Accounting: A Quantitative Economic Perspective for the Future of US Financial Markets	Beryl Odonkor, Simon Kaggwa, Prisca Ugomma Uwaoma, Azeez Olanipekun Hassan, Oluwatoyin Farayola	The integration of AI in accounting in the US improves efficiency, accuracy, and decision-making, providing a quantitative economic perspective for the future of US financial markets (Odonkor et al., 2024).

Countries	Research Title	Researchers	Main Findings
Australia	Incorporating machine learning with the biophysical model can improve the evaluation of climate extremes' impacts on wheat yield in south-eastern Australia.	Puyu Feng, Bin Wang, De Li Liu, Cathy Waters, Qiang Yu	This research addresses the impact of climate change on agricultural crop productivity with a focus on the relationship between climate variability and crop yields. The study used long-term meteorological data as well as predictive models to analyze how changes in temperature and rainfall affect crop growth in different regions. The results show that uncontrolled increases in temperature and changes in rainfall patterns significantly reduce crop yields, especially in drought-prone areas. In addition, adaptations in agricultural techniques, such as the use of drought-resistant crop varieties and optimization of planting time, were identified as key strategies to mitigate the negative impacts of climate change on the agricultural sector. These findings provide important insights for policymakers in designing future food security strategies (Feng et al., 2019).
Indonesia	Peran dan Praktik Artificial Intelligence terhadap UMKM	Dany Arsenio, Yusuf Abdurrahman, Atika Lusi Tania, Northa Idaman	This research shows that AI positively contributes to the development of MSMEs in Indonesia through business efficiency, increased sales, improved competitiveness, marketing strategy optimization, and resource management. However, there are significant challenges in implementing AI, including infrastructure limitations, lack of technological knowledge, and data security issues (Dany Arsenio et al., 2024).

According to Table 1, which compares research from various countries, the use of Artificial Intelligence (AI) in Accounting Information Systems (AIS) has demonstrated significant benefits for Micro, Small, and Medium Enterprises (MSMEs), particularly in terms of operational efficiency, financial transparency, and strategic decision-making. In Vietnam and Malaysia, the primary variables driving AI adoption are organizational readiness, government assistance, and perceived simplicity of use, but in Palestine, AI has helped to strengthen audit and accounting standards. Meanwhile, in Indonesia, AI has helped MSMEs improve their competitiveness and marketing tactics, despite ongoing infrastructure and digital literacy issues. Overall, despite the demonstrated benefits of AI in AIS, problems like as technological limits, a lack of clear rules, and the need to increase digital skills remain significant barriers to MSMEs adopting this technology in many countries. Van et al. created a theoretical model based on TAM and TOE theories to investigate the factors influencing MSMEs in Vietnam's intention to utilize AI in accounting. The findings indicate that system stability, renewal culture, accountant capacity, government relevance, and training and retraining are significant determinants in the adoption of AI in MSME accounting (Van et al., 2024). Lim and Seng's study investigates the elements that influence Malaysian MSMEs' use of artificial intelligence in accounting. According to the findings, perceived ease of use, management support, organizational readiness, government assistance, and external pressure all have a favorable influence on MSMEs' adoption of AI for accounting operations

(Lim & Seng, 2024). Abueid et al. investigate the influence of AI on the auditing and accounting profession in Palestine, focusing on potential for MSMEs. The findings revealed a significant positive correlation between the application of AI and better audit and accounting performance quality, as well as operational efficiency (Abueid et al., 2024).

Based on the analysis of AI application literature from various previous studies and research, the following are mapped out the main factors in forming an AIS model based on AI.

A. AI in Accounting Automation
   1. Automated Data Analysis: AI can automate data entry, transaction classification, and account reconciliation with high speed.
   2. Natural Language Processing (NLP): Enables AI to understand and analyze financial documents such as balances, transactions, and contracts.
   3. Machine Learning for Account Classification: AI can accurately categorize transactions based on previous data.
   4. Integrate with ERP and accounting systems: AI must be compatible with systems like SAP, QuickBooks, or Xero for effective operations.
   5. Automated Auditing and Compliance: AI can detect issues or anomalies that indicate potential fraud or regulatory violations.

   Example of AI used: Companies such as PwC and Deloitte use AI in Robotic Process Automation (RPA) to improve audit and assurance processes.

B. AI in Financial Prediction
   1. Historical Data: AI uses historical financial data to build predictive models of cash flow, profitability, and more.
   2. Deep Learning & Time Series Forecasting: Models like LSTM (Long Short-Term Memory) are quite effective for long-term forecasting.
   3. Sentiment Analysis from News & social media: AI can analyze news and social media to predict market or company performance.
   4. Automated Financial Modeling: Artificial intelligence can generate financial forecasts based on various economic scenarios.
   5. Real-Time Processing of Market Data: AI has the ability to process market data in real time, providing immediate information for financial decision makers.

   Example: AI is used in Bloomberg Terminal to predict stock prices based on real-time data analysis.

C. AI in Financial Risk Management
   1. Deteksi Anomali & Fraud: AI uses Anomaly Detection technology to identify potentially fraudulent transactions.
   2. Credit Scoring & Credit Risk: Artificial intelligence analyzes financial data, payment history, and economic factors to determine credit risk.
   3. Stress Testing and Scenario Analysis: Artificial intelligence can simulate financial risk scenarios under a variety of economic conditions.
   4. Regulatory Compliance & Anti-Money Laundering (AML): AI assists businesses in adhering to regulations by automating transactions and monitoring suspicious activity.
   5. Automated Risk Assessment Models: Machine Learning is used to assess investment risk and provide risk mitigation recommendations.

   Example: JPMorgan Chase uses AI in its COiN (Contract Intelligence) system to automatically identify legal and financial risks in tens of thousands of contracts.

According to the characteristics described above, AI is having a substantial impact on accounting and finance, ranging from routine task automation to financial trend prediction to more accurate risk management. Successful AI implementation is dependent on data quality, system integration, and the accuracy of the machine learning model used. Figure 2 illustrates the process of creating a conceptual model.

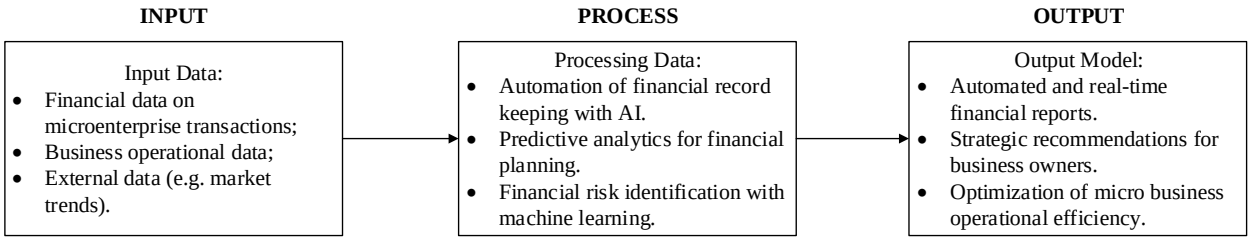

Figure 2. Conceptual Model of AI-Based Accounting Information System for MSMEs.

Figure 2 shows a conceptual model of an AI-based Accounting Information System designed specifically for micro companies. The approach integrates artificial intelligence (AI) with record keeping automation, financial analysis, and risk management to improve reporting efficiency and accuracy. The findings inform the development of digital accounting solutions that are more sensitive to the needs of MSMEs. Future research will necessitate model validation through experiments or field application to ensure its performance in a real-world corporate environment.

CONCLUSION AND RECOMMENDATION

Conclusion

This study looked at the function of artificial intelligence (AI) in accounting information systems (AIS) and how it affects digital business strategies and MSME performance. The key findings reveal that implementing AI in AIS greatly enhances MSMEs' operational efficiency, financial transparency, and strategic decision-making. AI automates accounting operations that were previously time-consuming and prone to human mistake, giving MSMEs a competitive advantage in an increasingly complicated digital economy. In addition to these advantages, the study identified many important hurdles to integrating AI in AIS, including insufficient technological infrastructure, a lack of digital literacy among MSMEs, and worries about data privacy and legislation that are not yet fully mature. However, with the correct strategy and cooperation from multiple stakeholders, AI technology can be a long-term solution for improving MSMEs' competitiveness in the digital era.

Recommendation

Based on the research findings, numerous recommendations can be made to ensure the successful application of AI in AIS for MSMEs. First, the government and allied organizations must speed inclusive digital infrastructure development, particularly in areas with low technological access. Subsidies and incentives for MSMEs can help them implement AI-based AIS systems. Second, increasing AI-focused training programs in accounting and financial management is critical to improving MSMEs' digital literacy levels. Academics, technology businesses, and government institutions can collaborate to address technological adoption difficulties. Third, clear norms and procedures for AI application in MSME financial systems should be established to ensure data security and transparency, with regulatory organizations setting ethical standards for safe and dependable implementation. Finally, more study on AI adaptation in AIS for MSMEs is required to identify the optimal techniques for various industry sectors, as well as to assess the long-term impact of AI on MSME competitiveness, which will provide significant insights for policymakers and business stakeholders.

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