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# Transformation of Digital Accounting Practices in MSMEs in the Artificial Intelligence Era and Its Contribution Towards Sustainable Development Goals (SDGs)

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**A B S T R A C T**

The development of Artificial Intelligence (AI), which goes hand in hand with digital transformation, has a significant impact on changes in accounting practices in the Micro, Small, and Medium Enterprises (MSMEs) sector. This study aims to examine the dynamics of digital accounting practices in MSMEs in the AI era, examine the contribution of AI in increasing the effectiveness of accounting activities, and explain its role in supporting the achievement of Sustainable Development Goals (SDGs). The method used in this study is a Systematic Literature Review (SLR) with a qualitative descriptive approach. Research data was obtained from various relevant reference sources, including national and international journals, scientific articles, and official reports related to the research topic. The results show that the implementation of AI-based digital accounting can improve the efficiency of transaction recording, the quality of financial reports, the transparency of business management, and the effectiveness of decision-making in MSMEs. In addition, the implementation of AI helps minimize human error and supports more structured and real-time financial management. AI-based digital accounting transformation also contributes to the achievement of SDGs 8, SDG 9, and SDG 12 through increased productivity, innovation, and efficient use of resources.

Keywords: Artificial Intelligence, Digital Accounting, Digital Transformation, Micro, Small, and Medium Enterprises, Sustainable Development Goals

## INTRODUCTION

Advancements in information technology in the era of Artificial Intelligence (AI) have significantly influenced various sectors, including accounting. Digital transformation has encouraged a shift from conventional accounting practices toward digital-based systems that are more efficient, accurate, and capable of operating in real time. Digital accounting is not merely focused on the use of software applications but also involves the integration of advanced technologies such as artificial intelligence, big data, and cloud computing into the processes of recording, processing, and reporting financial information.In Indonesia, the development of Micro, Small, and Medium Enterprises (MSMEs) has made a substantial contribution to the national economy. According to data from the Ministry of MSMEs of the Republic of Indonesia in 2024, approximately 30.18 million MSMEs have been registered in the Single Data Information System for MSMEs (SIDT-UMKM). Furthermore, national estimates in 2023 indicated that the number of MSMEs reached approximately 66 million units, representing more than 99% of all business entities operating in Indonesia. MSMEs contribute

around 61% of Indonesia's Gross Domestic Product (GDP), equivalent to IDR 9,580 trillion, and employ approximately 117 million workers, accounting for about 97% of the national workforce. These figures demonstrate the strategic role of MSMEs as the primary drivers of national economic growth.

Despite their significant contribution, MSMEs continue to face various challenges, particularly in financial management and accounting practices. Field observations indicate that many MSME failures are not caused by a lack of market demand or poor product quality but rather by weak financial management. Many business owners still rely on manual bookkeeping, lack systematic financial reporting, and frequently mix personal and business finances. Consequently, business decision-making becomes less effective, and long-term business sustainability is difficult to maintain.

The Indonesia Deposit Insurance Corporation (LPS) has identified weak financial record-keeping as one of the primary causes of MSME failure. International surveys further reveal that more than 80% of MSMEs in Asia fail within their first three years of operation. In Indonesia, approximately 25% of MSMEs cease operations within their first two years, 45% fail after five years, and nearly 65% do not survive beyond ten years. One of the major contributing factors is the low level of business digitalization, as many MSMEs still conduct their operations manually.

These challenges also limit MSMEs' access to financing from formal financial institutions. Many business owners are unable to provide adequate financial statements when applying for business loans from banks. Data from the Ministry of MSMEs in 2025 indicate that approximately 69.5% of MSMEs still lack access to bank financing. Meanwhile, a study by [1] projected that MSME financing needs will reach IDR 4,300 trillion by 2026, while the currently available financing amounts to only around IDR 1,900 trillion. This situation highlights a significant financing gap resulting from inadequate financial management systems among MSMEs.

On the other hand, the level of MSME digitalization in Indonesia remains relatively low. Data from the Ministry of Communication and Information Technology indicate that approximately 68% of Indonesian MSMEs have not optimally utilized digital technology in their business activities. Moreover, Indonesia lags behind several ASEAN countries, including Singapore and Vietnam, in terms of MSME digitalization. Small and Medium Enterprises (SMEs) in Singapore play a crucial role in the national economy, accounting for approximately 99% of all businesses, contributing around 47% of GDP, and providing employment for 72% of the workforce. In 2024, SMEs contributed significantly to Singapore's fastest economic growth within the previous 18 months. The Singaporean government has actively promoted digital transformation among SMEs, yielding remarkable results. Digital adoption among SMEs reached 95.1% in 2024, while the average use of digital solutions increased from 2.0 business areas in 2023 to 2.3 areas in 2024. Even more notably, AI adoption among SMEs increased more than threefold within a year, rising from 4.2% in 2023 to 14.5% in 2024. SMEs utilizing AI-based solutions through the Productivity Solutions Grant (PSG) achieved an average cost reduction of 52%. Furthermore, Singapore has established SME Centres that serve as hubs for digitalization training, artificial intelligence development, and business networking, making Singapore's SME ecosystem one of the most advanced and competitive in Southeast Asia. In contrast, low digital literacy, inadequate technological infrastructure, limited access to training, and insufficient capital remain major obstacles to the implementation of digital accounting systems among Indonesian MSMEs.

In this context, AI-based digital accounting emerges as a promising solution. Artificial intelligence enables the automation of transaction recording, rapid and accurate financial data analysis, and real-time financial reporting. AI implementation in accounting has been shown to reduce financial reporting processes from weeks to mere hours. For MSMEs, such efficiencies can lower operational costs, minimize human errors, increase productivity, and support more effective business decision-making.

Beyond its economic benefits, the transformation of digital accounting practices is closely linked to the achievement of the Sustainable Development Goals (SDGs), particularly those related to decent work and economic growth (SDG 8), industry, innovation, and infrastructure (SDG 9), and responsible consumption and production (SDG 12). AI-based digital accounting can enhance transparency, efficiency, and business sustainability, thereby supporting more inclusive and sustainable economic development.

[2] through a literature review study, explained that the implementation of Artificial Intelligence in accounting and auditing provides economic benefits and improves audit quality. However, its implementation continues to face challenges related to competency gaps and infrastructure limitations, particularly within large corporations. Similarly, [3] found that the integration of Accounting Information Systems (AIS) and AI accelerates financial recording, analysis, and reporting processes for MSMEs, although the study was limited to a literature review. [4] empirically demonstrated that MSMEs adopting AI-based digital accounting experience improved efficiency and greater accuracy in financial reporting, despite ongoing challenges associated with low digital literacy. Additionally, [5] emphasized that AI has a significant positive impact on financial accounting practices in the digital era; however, the study remained general in scope and did not specifically address the Indonesian MSME context.

Therefore, a research gap exists regarding the integration of AI-based digital accounting in MSME practices and its impact on financial management effectiveness and sustainable development. Consequently, this study is important for providing a more comprehensive understanding of the transformation of digital accounting practices among MSMEs in the AI era and their contribution to the achievement of the Sustainable Development Goals (SDGs).

This study aims to analyze the transformation of digital accounting practices among MSMEs in the era of Artificial Intelligence, examine the role of AI in improving the quality and efficiency of accounting practices, and explain the contribution of digital accounting to the achievement of the Sustainable Development Goals (SDGs). Through this research, it is expected that a deeper understanding will be gained regarding the importance of adopting digital technologies in accounting systems to support the development of MSMEs that are more modern, efficient, transparent, and sustainable.

## LITERATURE REVIEW

### Sustainability and Modern Business Sustainability

Sustainability refers to a development concept that emphasizes balancing economic, social, and environmental aspects in meeting current societal needs without compromising the ability of future generations to meet their own needs. This concept emerged as a response to various global challenges, including climate change, economic inequality, natural resource exploitation, and rapid technological advancements that influence modern business activities. In the business world, sustainability is no longer viewed solely as an environmental preservation effort but also as a strategy for ensuring long-term business continuity. Companies and business actors are expected not only to focus on economic profit but also to consider the social and environmental impacts of their operational activities. Therefore, sustainability has become an essential component of modern business decision-making.

The implementation of sustainability in modern business encompasses three main dimensions known as the triple bottom line: profit (economic benefits), people (social responsibility), and planet (environmental preservation). These three aspects must be balanced to ensure sustainable business growth. In the context of MSMEs, business sustainability can be achieved through transparent financial management, efficient resource utilization, improved service quality, and the ability to adapt to digital technological developments. The advancement of digital technology and Artificial Intelligence (AI) provides significant opportunities to support modern business sustainability. Digital transformation enables companies and MSMEs to improve operational efficiency, accelerate decision-making processes, and optimize resource utilization more effectively. Digital systems also assist business owners in monitoring business activities in real time, thereby reducing waste and increasing productivity.

In accounting, sustainability is closely related to the role of accounting as a tool for management, control, and the provision of transparent and accountable financial information. Accounting is not only responsible for recording financial transactions but also supports decision-making oriented toward business sustainability. Through the implementation of AI-based digital accounting, financial recording and reporting processes can be carried out more efficiently, quickly, and accurately, helping MSMEs establish modern and sustainable business management systems.

The sustainability concept is globally embodied in the Sustainable Development Goals (SDGs), established by the United Nations (UN) as a sustainable development agenda through 2030. In the context of this study, the implementation of AI-based digital accounting in MSMEs is closely linked to several SDGs, particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). Therefore, the transformation of digital accounting practices not only improves MSME business efficiency but also contributes to more inclusive and sustainable economic development.

### Digital Accounting in MSMEs

Digital accounting is an evolution of conventional accounting systems that utilizes information technology in recording, processing, and reporting financial information. This transformation enables accounting processes to be conducted more quickly, accurately, efficiently, and in real time through the use of accounting software, cloud computing, big data, and Artificial Intelligence (AI).

According to [6], Accounting Information Systems (AIS) play a crucial role in supporting the efficiency and effectiveness of financial data management. These systems not only facilitate transaction recording but also generate relevant financial information for managerial decision-making. In Indonesia, Micro, Small, and Medium Enterprises (MSMEs) contribute significantly to the national economy. MSMEs account for more than 61% of Indonesia's Gross Domestic Product (GDP) and employ the majority of the national workforce. However, many MSMEs still face challenges in financial management, particularly regarding systematic financial recording and reporting.

Research by [7] found that most MSMEs continue to use simple manual bookkeeping focused only on cash inflows and outflows. This condition results in incomplete financial information, making business decision-making more difficult. Additionally, low levels of financial literacy and digital skills remain major obstacles to digital accounting adoption. To address these challenges, the Indonesian government has introduced the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM). The implementation of these standards is expected to assist MSMEs in preparing financial statements that are more transparent, accountable, and compliant with established standards.

### Digital Transformation in Accounting Practices

Digital transformation refers to the process of changing organizational work systems through the utilization of digital technologies to improve effectiveness, efficiency, and service quality. In accounting, digital transformation shifts traditional manual bookkeeping toward integrated technology-based systems. [8] explains that modern accounting practices are increasingly dependent on digital infrastructure that supports automation, real-time data access, and integrated reporting systems. As a result, accounting functions are no longer limited to transaction recording but now include data analysis and strategic decision-making.

[9] argue that digital transformation positively influences sustainable organizational performance. Digitalization improves information quality, accelerates business processes, and enhances operational efficiency. In practice, various digital accounting applications such as SIAPIK, Accurate Online, Jurnal by Mekari, and QuickBooks have helped MSMEs reduce manual workloads, accelerate reporting processes, and improve financial data accuracy.

**Artificial Intelligence (AI) in Accounting**

Artificial Intelligence (AI) is a technology that enables computer systems to perform analysis, learning, and decision-making processes automatically, mimicking human cognitive abilities. In accounting, AI is used to support transaction recording automation, financial statement analysis, error detection, digital auditing, and cash flow forecasting. [8] identifies AI as one of the most transformative technologies in modern accounting because of its ability to improve audit quality, data analysis, and financial reporting efficiency.

[9] also demonstrated that AI implementation positively affects organizational performance and digital leadership. AI enables organizations to process data more rapidly, accurately, and systematically.

For MSMEs, AI implementation in digital accounting systems offers several benefits:

1. Reducing human errors in transaction recording.
2. Accelerating financial statement preparation.
3. Assisting in business financial condition analysis.
4. Supporting data-driven decision-making.
5. Facilitating access to formal financing.

Therefore, AI has become a crucial factor in transforming digital accounting practices among MSMEs.

**Previous Studies**

Numerous studies have investigated digital accounting transformation and the application of Artificial Intelligence (AI) in MSMEs. [7] found that implementing the SIAPIK application improved financial literacy among MSME owners and facilitated the preparation of more structured and systematic digital financial reports. These findings indicate that digital technology in accounting systems can enhance financial management understanding among business owners.

Furthermore, [10] reported that AI-based Digital Financial Reporting programs positively impacted MSMEs' ability to prepare financial statements independently. AI-based systems were found to improve recording efficiency and simplify financial data management processes. [9] also demonstrated that digital transformation and AI implementation positively influence sustainable organizational performance. Digitalization enhances information quality, accelerates business processes, and improves operational efficiency.

Meanwhile, [8] explained that AI and digitalization have transformed modern accounting practices into more data-driven and technology-oriented systems. The use of digital accounting systems enables financial recording and reporting processes to be carried out more quickly, accurately, and in real time. Based on these previous studies, digital transformation and AI implementation have shown positive impacts on accounting practices and financial management. However, studies specifically examining the transformation of digital accounting practices among MSMEs and their contribution to the Sustainable Development Goals (SDGs) remain limited, highlighting the importance of this research.

**Supporting Theory**

This study employs the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) as its primary theoretical framework. UTAUT2 was developed by [11] as an extension of the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain technology acceptance and usage behavior in various digital contexts.

UTAUT2 suggests that technology adoption and usage are influenced by several key factors:

1. Performance Expectancy – the degree to which individuals believe that using technology will improve business or job performance.
2. Effort Expectancy – the perceived ease of using technology.
3. Social Influence – the impact of social environments on an individual's decision to use technology.
4. Facilitating Conditions – the availability of infrastructure, facilities, and resources supporting technology use.
5. Habit – the extent to which users routinely utilize technology.

In this study, UTAUT2 is used to explain how MSME owners accept and adopt AI-based digital accounting technologies in managing business finances. The theory is considered relevant because it effectively explains the factors influencing digital technology adoption among MSMEs in the era of digital transformation and Artificial Intelligence.

**Conceptual Framework**

The advancement of Artificial Intelligence (AI) and digital transformation has driven fundamental changes in MSME accounting practices, shifting from manual bookkeeping systems to automated digital systems. However, the adoption of digital accounting technology does not occur automatically. It is influenced by various factors explained through the UTAUT2 framework. These factors include performance expectancy (the belief that AI can improve business performance), effort expectancy (ease of operating digital accounting systems), social influence (the impact of business communities and government policies), facilitating conditions (the availability of infrastructure and training support), and habit (routine technology usage in daily activities).

When these five factors are adequately fulfilled, MSMEs can effectively implement AI-based digital accounting systems. Such implementation directly improves transaction recording efficiency, financial reporting quality, business management transparency, and financial decision-making effectiveness. Ultimately, enhanced financial management contributes to strengthening MSME productivity and competitiveness, thereby supporting the achievement of the Sustainable Development Goals (SDGs),

particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production).

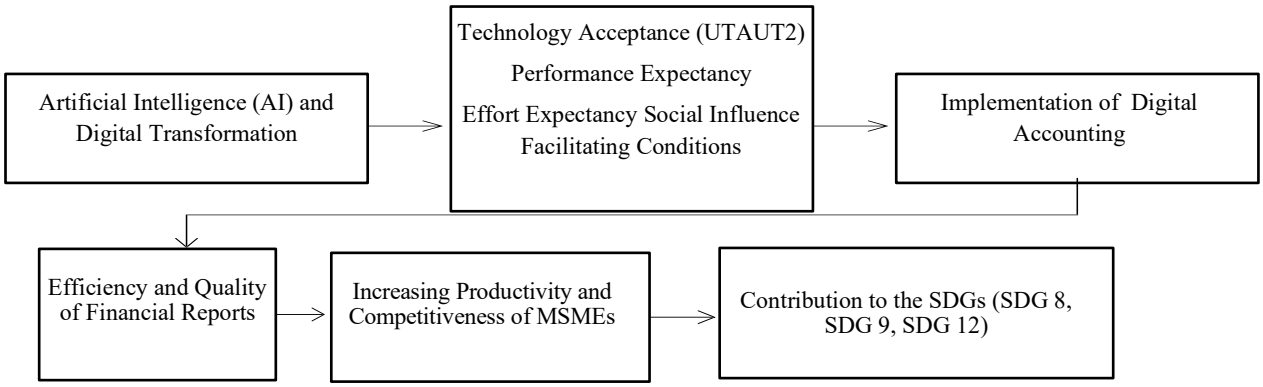


Figure 1. Framework of thinking

## METHODS

This study employs a Systematic Literature Review (SLR) method with a qualitative descriptive approach. This method is utilized to identify, analyze, and synthesize previous research findings related to the transformation of Artificial Intelligence (AI)-based digital accounting practices among Micro, Small, and Medium Enterprises (MSMEs) in supporting the achievement of the Sustainable Development Goals (SDGs).

The implementation of the literature review follows the guidelines proposed by [12], which include: (1) formulating research questions to be addressed through the selected research method; (2) focusing on comprehensive literature search and collection strategies; (3) documenting the Systematic Literature Review process to enable readers to evaluate the completeness of the study; (4) establishing inclusion and exclusion criteria for assessing each primary study; (5) determining the information extracted from each primary study and defining quality assessment criteria; and (6) utilizing the Systematic Literature Review as a foundation for quantitative meta-analysis.

### Research Questions

This study aims to analyze the development of AI-based digital accounting practice transformation among MSMEs and its contribution to the achievement of the Sustainable Development Goals (SDGs). Based on these objectives, the following research questions (RQs) were formulated:

a. RQ1: How has the transformation of digital accounting practices occurred among MSMEs in the era of Artificial Intelligence?
b. RQ2: What is the role of Artificial Intelligence in improving the quality and efficiency of MSME accounting practices?
c. RQ3: How does AI-based digital accounting contribute to the achievement of the Sustainable Development Goals (SDGs)?

### Keyword Identification and Literature Search

Data collection was conducted through a search of scientific articles indexed in the Google Scholar database. The literature search process employed several keywords relevant to the research topic, including “Digital Accounting,” “Digital Transformation of MSMEs,” “Artificial Intelligence in MSMEs,” and “SDGs and MSMEs.” These keywords were used to obtain scientific references supporting discussions on digital technology implementation and sustainability within the MSME sector.

The literature search procedure consisted of the following stages:

a. Accessing the Google Scholar database through [https://scholar.google.com]
b. Entering the selected research keywords into the search field
c. Selecting articles published between 2021 and 2026
d. Identifying articles relevant to the research focus

The initial search process yielded 28 articles related to the research topic.

### Literature Classification

The collected articles were subsequently classified based on their research focus to facilitate the data analysis process. During the article selection stage, inclusion and exclusion criteria were established to ensure that the literature sources used were relevant and met the required quality standards.

**Inclusion Criteria**

a. IC1: The study was obtained from the Google Scholar database.
b. IC2: The study was published between 2021 and 2026.
c. IC3: The study discusses digital accounting, digital transformation of MSMEs, Artificial Intelligence (AI), and Sustainable Development Goals (SDGs).

**Exclusion Criteria**

a. EC1: The study is not relevant to digital accounting, digital transformation of MSMEs, AI, and SDGs.
b. EC2: The study originates from invalid or non-scientifically indexed sources.

**Data Analysis Technique**

The data analysis was conducted using a qualitative descriptive approach through several stages, including reading, identifying, comparing, and synthesizing the findings of previous studies that met the selection criteria. The selected articles were analyzed to obtain a comprehensive understanding of the development of AI-based digital accounting practice transformation among MSMEs and its contribution to the achievement of the Sustainable Development Goals (SDGs).

Table 1. Classification of Research Literature

| No | Research Category | Number of Initial Articles | Selected Articles |
|---|---|---|---|
| 1 | Digital Accounting | 5 | 3 |
| 2 | Digital Transformation of MSMEs | 12 | 8 |
| 3 | Artificial Intelligence (AI) in MSMEs | 5 | 3 |
| 4 | SDGs and MSMEs | 6 | 4 |
| | Total | 28 | 18 |

Of the 28 articles identified through the Google Scholar database, 18 met the inclusion criteria (IC1–IC3) and were used in the analysis, while 10 articles were excluded based on the exclusion criteria (EC1–EC2). Exclusions were made for three main reasons: the articles did not specifically address the relationship between digital accounting, AI, and MSMEs (EC1); there was overlap with other articles without additional analytical value; or the articles came from sources not officially indexed (EC2). Through this selection process, the 18 retained articles were deemed the most relevant and credible to answer the three research questions in this study.

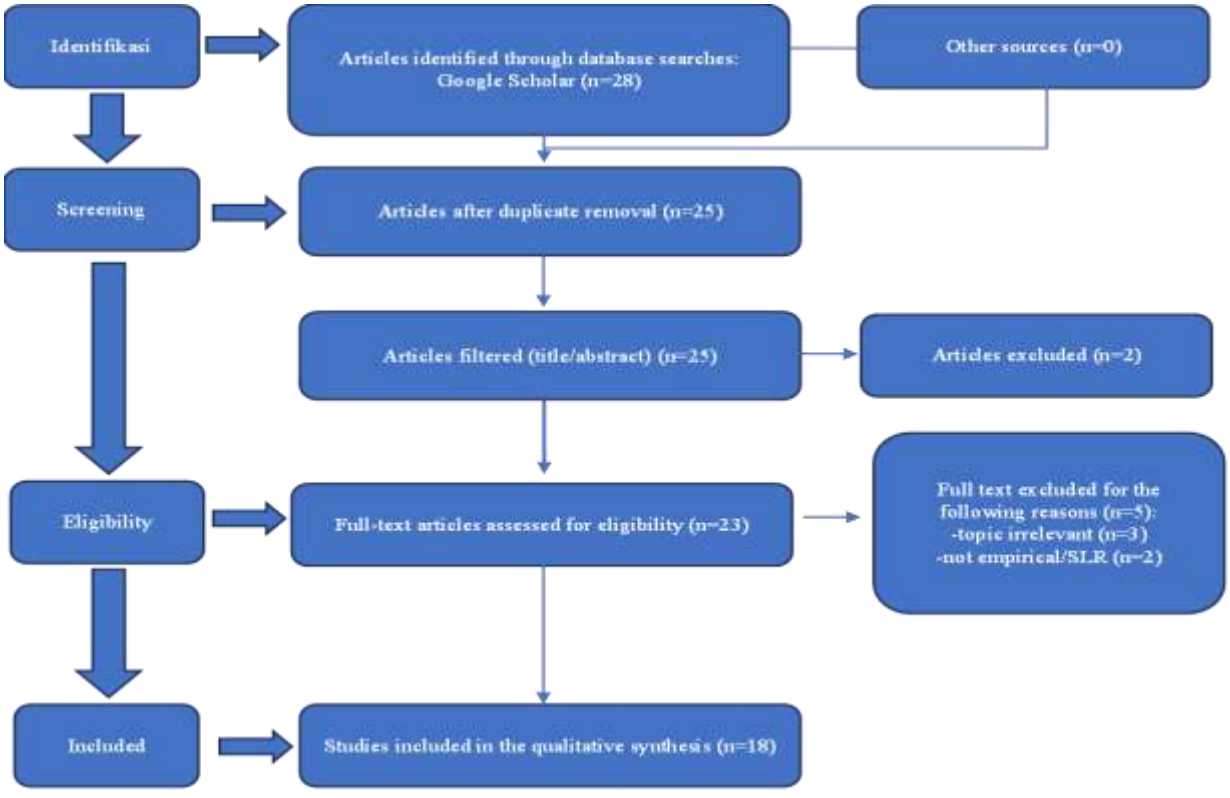


Figure 2. PRISMA diagram

**RESULTS AND DISCUSSION**

A review of previous studies indicates that the transformation of Artificial Intelligence (AI)-based digital accounting among Micro, Small, and Medium Enterprises (MSMEs) has become an increasingly relevant topic in the era of digital technological advancement. Numerous studies have examined the implementation of digital technologies, the role of AI in improving the efficiency of financial management, and its impact on business sustainability. However, studies that specifically integrate AI-based digital accounting transformation in Indonesian MSMEs with its contribution to the achievement of the Sustainable Development Goals

(SDGs) remain relatively limited. Therefore, a synthesis table of previous studies is presented to highlight the similarities and differences between existing research and the study developed in this research.

Table 2. Synthesis of Previous Research

| No | Researcher & Year | Research Title/Focus | Research result | Linkage to Research |
|---|---|---|---|---|
| 1 | [7] (Setya Dwi Jayanti et al., 2025) | Implementation of the SIAPIK application in MSMEs | The implementation of the SIAPIK application can improve the financial literacy of MSMEs and facilitate the preparation of more structured and systematic digital financial reports. The use of digital technology helps business actors better understand financial management. | This research is relevant because it also discusses the application of digital accounting to MSMEs. The difference is that this study links digital transformation with AI and its contribution to the SDGs. |
| 2 | [10] (Gurendrawati et al., 2026) | AI-based Digital Financial Reporting for MSMEs | AI-based digital financial reporting programs have a positive impact on the ability of MSMEs to independently prepare financial reports, improve record-keeping efficiency, and simplify the management of business financial data. | While similar to the discussion of AI in MSME accounting systems, this study places greater emphasis on the comprehensive transformation of digital accounting practices and its relationship to sustainable development goals (SDGs). |
| 3 | [9] (Mahmood et al., 2024) | Digital transformation and AI on sustainable organizational performance | Digital transformation and the implementation of AI have a positive impact on sustainable organizational performance through improved information quality, accelerated business processes, and operational efficiency. | This research provides a theoretical basis for the relationship between digital transformation and sustainability, but does not specifically address digital accounting practices in MSMEs. |
| 4 | [8] (Nyantakyi Asare, 2026) | AI and digitalization in modern accounting practices | Advances in AI and digitalization are transforming accounting practices into ones that are more data- and technology-driven, making financial recording and reporting faster, more accurate, and more real-time. | This research is relevant in explaining changes in modern accounting practices, but it has not yet focused on MSMEs and their contribution to the SDGs. |
| 5 | [13] (Dwirini et al., 2025) | The Influence of Accounting Digitalization and Social Networks on the Competitiveness of Palembang Culinary MSMEs | The results of the study prove that accounting digitalization, competition, and social networks have a significant positive effect on modern management accounting in culinary MSMEs with an influence value of 73.9%. | They are closely related because they both discuss the digitalization of accounting in MSMEs and the impact of digital technology on financial management and business development. |
| 6 | [14] (Lubis et al., 2025) | Challenges and Opportunities for Accounting in Facing Accounting Digitalization | Accounting digitalization is transforming the role of accountants from routine work to strategic functions such as data analysis and decision-making. Key challenges include low digital competency and limited infrastructure. | Relevant because it shows the development of modern accounting practices that influence the preparation and reporting of corporate finance, including affiliated companies that require integrated information and reporting systems. |

| | | | | |
|---|---|---|---|---|
| 7 | [15] (Anjarwati et al., 2023) | The Evolution of Accounting Information Systems in the Digital Era: A Literature Review of Trends, Challenges, and Opportunities<br>The Impact of Accounting Digitalization on Efficiency and Cost Reduction in Companies<br>MSME Entrepreneurs in Bandung City | Accounting digitalization has been proven to increase efficiency and reduce operational costs for MSMEs. Furthermore, digitalization improves financial data accuracy and speeds up transaction processing, although technical skills and resource constraints remain. | This article is highly relevant because it discusses the impact of accounting digitalization on MSME efficiency and the challenges of implementing digital technology in business financial management. |
| 8 | [16] (Putra Prima et al., 2025) | The Impact of Digital Accounting and Management Quality on the Sustainability of SMEs: A TOE Perspective | Digital accounting improves the efficiency and sustainability of MSMEs. | Related because they both discuss the digital transformation of MSME accounting for sustainability. |
| 9 | [17] (Vijayakumar & Harish, 2026) | Sustainability and Resilience of MSMEs in the Era of Artificial Intelligence (AI) | AI helps improve the productivity and resilience of MSMEs despite barriers to technology adoption. | Highly relevant because the main journal discusses digital accounting practices in the era of Artificial Intelligence. |
| 10 | [18] (Pratamansyah, 2024) | Digital Transformation and MSME Growth: An Analysis of the Impact of Technology on the Performance of Small and Medium Enterprises in Indonesia | Digital transformation has a significant impact on the efficiency and performance of MSMEs. | Sangat berkaitan dengan peningkatan efektivitas UMKM melalui teknologi digital. |
| 11 | [19] (Putra et al., 2023) | Digital Transformation in MSMEs to Increase Market Competitiveness | Digital transformation increases the efficiency and competitiveness of MSMEs, but digital literacy is still a constraint. | Relevant because it discusses the digital transformation of MSMEs in the modern technology era. |
| 12 | [20] (M. Hasan et al., 2021) | Digital Transformation of Culinary MSMEs in Jatinegara Village, East Jakarta | Digital transformation helps MSMEs adapt to technological developments and the digital market. | Relevant because it discusses the digital transformation process in MSMEs. |
| 13 | [21] (Bahasoan et al., 2025) | Digital Transformation in MSMEs:<br>A Driver of Economic Growth and<br>Inclusion in Developing Countries | Digital transformation increases the productivity and economic growth of MSMEs. | Relevant because it connects MSME digitalization with sustainability and the SDGs. |

| | | | | |
|---|---|---|---|---|
| 14 | [22] (Astuti & Rosita, 2024) | The Importance of Digital Transformation for MSMEs in Indonesia's Economic Development | Digitalization helps MSMEs improve productivity and business management. | Regarding the application of digital technology in MSME business practices. |
| 15 | [23] (Alviani & Munawaroh, 2025) | Digital Transformation in MSMEs to Increase Market Competitiveness | Digital technology improves the competitiveness and decision-making of MSMEs. | Regarding the use of digital technology for MSME development. |
| 16 | [24] (Pongtambing et al., 2023) | The Role and Opportunities of Artificial Intelligence in MSME Business Processes | AI can increase the efficiency and competitiveness of MSMEs in the digital era. | Supporting the transformation of AI-based digital accounting practices for MSMEs for business sustainability and the SDGs. |
| 17 | [25] (Arief et al., 2024) | Utilizing Artificial Intelligence (AI) Technology to Increase Sales and Sustainability of MSMEs | The use of AI helps marketing innovation and business sustainability for MSMEs. | Regarding the contribution of AI to the sustainability of MSMEs and the achievement of SDGs. |
| 18 | [26] (Andriana & Fadilah, 2024) | Implementing Artificial Intelligence (AI) in Designing Communication Strategies Marketing MSME Products | AI increases the effectiveness of MSME marketing strategies and data analysis. | In line with the application of AI in the digital transformation of MSMEs to increase efficiency and sustainability |

The novelty of this study lies in the integration of Artificial Intelligence (AI)-based digital accounting practice transformation among Micro, Small, and Medium Enterprises (MSMEs) with its contribution to the achievement of the Sustainable Development Goals (SDGs). Previous studies have generally focused on AI implementation, accounting digitalization, or digital transformation separately, either in large corporations or MSMEs. In contrast, this study not only examines the implementation of AI-based digital accounting in MSMEs but also analyzes its relationship with sustainable development, particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). Therefore, this study provides a more comprehensive perspective on the role of AI-based digital accounting in supporting MSME sustainability in the era of digital transformation.

**Transformation of Digital Accounting Practices in MSMEs in the Era of Artificial Intelligence**

The literature review findings indicate that the transformation of digital accounting practices among MSMEs in the era of Artificial Intelligence (AI) occurs gradually and is influenced by various internal and external factors. Prior to the digitalization era, most MSMEs managed their financial records manually using simple cash books that only recorded cash inflows and outflows without preparing complete and systematic financial statements [7]. This condition resulted in inadequate financial information for supporting business decision-making and fulfilling formal financing requirements.

With the emergence of digital transformation, the first wave of change was characterized by the adoption of software-based accounting applications such as SIAPIK, Accurate Online, Jurnal by Mekari, and QuickBooks. The implementation of these applications has been proven to reduce manual work, accelerate reporting processes, and improve the accuracy of MSME financial data [8]. [7] demonstrated that the implementation of the SIAPIK application significantly improved MSME owners' financial literacy and assisted them in preparing more structured digital financial statements.

The next wave of transformation was marked by the integration of AI technology into MSME digital accounting systems. [3] found that the synergy between Accounting Information Systems (AIS) and AI enables the automation of transaction recording, account reconciliation, and real-time financial reporting. Furthermore, AI allows MSME owners to shift from administrative roles to strategic decision-making roles, as time previously spent on operational tasks can now be allocated to analyzing financial data and developing more adaptive business strategies. [4] also empirically demonstrated that MSMEs adopting AI-based digital accounting experienced significant improvements in reporting efficiency and data accuracy compared to those still relying on manual bookkeeping.

Within the UTAUT2 framework, the adoption of AI-based digital accounting technology among MSMEs is influenced by five key factors. First, performance expectancy, which refers to MSME owners' belief that AI can enhance business performance through faster reporting and more accurate financial analysis. Second, effort expectancy, which relates to the ease of technology use; the more intuitive the accounting application interface, the higher the likelihood of adoption. Third, social influence, referring to the impact of business communities, government institutions, and financial institutions in encouraging the use of digital accounting systems. Fourth, facilitating conditions, including technological infrastructure, internet connectivity, and training support. Fifth, habit, which reflects the tendency of MSME owners already accustomed to using digital technology to adopt digital accounting systems more easily.

**The Role of Artificial Intelligence in Improving the Quality and Efficiency of MSME Accounting Practices**

Artificial Intelligence contributes significantly to improving the quality and efficiency of MSME accounting practices through several key mechanisms. First, the automation of transaction recording. AI enables digital accounting systems to automatically classify and record financial transactions based on historical data patterns, thereby reducing dependence on manual input that is prone to errors. [8] emphasized that AI is among the most transformative technologies in modern accounting due to its ability to significantly enhance audit quality, data analysis, and financial reporting efficiency.

Second, AI accelerates the preparation of financial statements. The implementation of AI in accounting systems has been shown to reduce financial reporting processes from weeks to mere hours. This directly enhances MSMEs' ability to generate accurate and timely financial reports, which are essential requirements for obtaining credit from formal financial institutions. [10] demonstrated that AI-based Digital Financial Reporting programs improve MSMEs' ability to prepare financial statements independently without relying on professional accounting services that incur additional costs.

Third, AI supports risk analysis and cash flow forecasting. AI can analyze historical financial data to identify patterns, detect transaction anomalies, and predict future cash flows. This predictive capability assists MSME owners in making more informed, data-driven business decisions. [9] found that AI implementation positively affects organizational performance and digital leadership by enabling faster, more accurate, and more systematic data processing.

Fourth, AI enhances financial literacy and competencies. [5] found that the positive impact of AI in accounting extends beyond operational efficiency to include the development of new skills among MSME owners. Regular interaction with AI-based accounting systems indirectly improves business owners' understanding of fundamental financial concepts, including income statements, balance sheets, and cash flow statements.

Nevertheless, the literature also identifies several challenges associated with AI implementation in MSME accounting. [5] noted that major challenges include system integration complexity, human resource readiness, potential algorithmic bias, and data security and privacy risks. [4] further highlighted that low digital literacy, conservative organizational cultures, and limited capital remain structural barriers faced by many Indonesian MSMEs, particularly those operating in regions with inadequate technological infrastructure.

**Contribution of AI-Based Digital Accounting to the Achievement of Sustainable Development Goals (SDGs)**

The literature review findings indicate that the transformation of AI-based digital accounting among MSMEs is closely associated with the achievement of three major SDGs: SDG 8, SDG 9, and SDG 12.

a. SDG 8 – Decent Work and Economic Growth

The implementation of AI-based digital accounting directly contributes to SDG 8 by enhancing productivity, operational efficiency, and MSME competitiveness. [10] stated that the implementation of digital financial reporting systems supports SDG 8 through increased productivity and strengthened business capacity among MSMEs. With more accurate and structured financial statements, MSMEs have greater opportunities to access bank financing for business expansion. This is particularly relevant considering that data from the Ministry of MSMEs 2025 indicate that approximately 69.5% of MSME owners still lack access to bank credit due to weak financial management practices. Improved access to financing subsequently promotes business growth, job creation, and income generation, which are central objectives of SDG 8.

b. SDG 9 – Industry, Innovation, and Infrastructure

The adoption of AI in MSME accounting systems represents a tangible form of technological innovation that supports SDG 9. The transition from manual bookkeeping to AI-based accounting systems reflects industrial transformation driven by digital innovation. [9] demonstrated that digital transformation positively influences sustainable organizational performance through improved information quality, accelerated business processes, and enhanced operational efficiency. Comparisons with SMEs in Singapore provide an inspiring example, where AI adoption increased more than threefold within a single year and generated average cost savings of 52%, illustrating the substantial potential that Indonesian MSMEs could achieve if innovation ecosystems were developed more systematically.

c. SDG 12 – Responsible Consumption and Production

AI-based digital accounting supports SDG 12 by improving transparency, accountability, and resource management efficiency within MSMEs. Digital accounting systems enable more detailed and real-time recording and monitoring of resource utilization, allowing business owners to identify inefficiencies and make more responsible consumption decisions. The implementation of Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM) within digital accounting ecosystems further strengthens financial governance and accountability among MSMEs. Consequently, it contributes to more efficient and sustainable production and consumption patterns in line with the objectives of SDG 12.

## CONCLUSIONS

Based on the results of the literature review, it can be concluded that the transformation of digital accounting practices among Micro, Small, and Medium Enterprises (MSMEs) in the era of Artificial Intelligence (AI) has demonstrated significant progress from manual bookkeeping systems to more automated, efficient, and data-driven digital systems. The implementation of digital technology in accounting practices enables transaction recording, financial statement preparation, and business data management to be conducted more quickly, accurately, and in real time. Various digital accounting applications, such as SIAPIK, Accurate Online, Jurnal by Mekari, and QuickBooks, have proven effective in helping MSMEs improve the quality of financial management and facilitate business decision-making processes.

Artificial Intelligence (AI) also plays a crucial role in enhancing the effectiveness and efficiency of MSME accounting practices. AI implementation enables the automation of transaction recording, accelerates financial reporting processes, supports business financial analysis, and minimizes human errors. Furthermore, the use of AI encourages MSME owners to better understand data-driven financial management, thereby improving business productivity and competitiveness. Nevertheless, AI adoption among MSMEs still faces several challenges, including low levels of digital literacy, limited technological infrastructure, inadequate training opportunities, and financial constraints.

The transformation of AI-based digital accounting in MSMEs also contributes to the achievement of the Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). The implementation of digital accounting systems enhances transparency, improves resource utilization efficiency, and strengthens MSME financial governance in a more accountable and sustainable manner. Therefore, the transformation of AI-based digital accounting practices not only supports the economic development of MSMEs but also contributes to more inclusive and sustainable development.

Based on the findings of this study, several recommendations can be proposed. For MSME owners, it is recommended to improve digital literacy and develop competencies in utilizing AI-based digital accounting systems to enhance the effectiveness, transparency, and structure of business financial management. MSMEs should also take advantage of the various digital accounting applications available to support the preparation of more accurate and standardized financial statements.

For governments and related institutions, stronger support is required through digitalization training programs, the provision of technological infrastructure, and expanded access to financing for MSMEs. Furthermore, policymakers are encouraged to strengthen mentoring and educational initiatives regarding the importance of AI-based digital accounting in supporting business sustainability and enhancing MSME competitiveness in the era of digital transformation.

For future researchers, it is recommended to conduct empirical studies through direct field observations or interviews with MSME owners to obtain more in-depth insights into the implementation of AI-based digital accounting practices. Future studies may also focus on specific business sectors or quantitatively examine the impact of AI adoption on MSME financial performance, thereby enriching the body of knowledge on digital accounting transformation and sustainable development..

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