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Smart AI-Enabled SAK EMKM for Accounting Transformation and MSME Financial Performance

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ABSTRACT

This study examines how artificial intelligence (AI)-enabled digital accounting platforms support the implementation of Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM) while improving the financial performance and governance of MSMEs. Although standardized financial reporting is increasingly essential for business sustainability and regulatory compliance, many MSMEs continue to depend on manual bookkeeping systems that hinder reporting accuracy, timeliness, and decision usefulness. Addressing this gap, the study investigates the digital accounting transformation of Batik Muktiyasa, a batik MSME in Banyuwangi, Indonesia, through a qualitative contextual approach combined with action research. Data were obtained through interviews, direct observation, financial document analysis, and system implementation to compare accounting practices before and after the adoption of an AI-enabled accounting platform. The findings indicate that AI-based accounting systems not only improve the accuracy of financial records, automate transaction classification, and produce financial statements aligned with SAK EMKM, but also expand the managerial value of accounting information through automated ratio analysis, financial trend detection, and cost-efficiency evaluation. A significant finding is the improvement in accounting compliance from 21.4% before digitalization to full compliance after implementation. The novelty of this research lies in its integration of AI adoption, MSME accounting digitalization, and SAK EMKM compliance within a single contextual transformation framework. The study contributes to the literature by proposing an integrated AI–SAK EMKM accounting transformation model that explains how AI-enabled systems can bridge the gap between informal bookkeeping practices and formal financial reporting standards in MSMEs. Practically, the study provides an applicable model for MSMEs, policymakers, and digital accounting service providers to strengthen financial governance, enhance compliance, and support long-term business sustainability.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a critical role in economic development, employment creation, and regional growth, particularly in emerging economies. In Indonesia, MSMEs contribute significantly to gross domestic product (GDP) and serve as the backbone of local economic activities. Despite their strategic importance, many MSMEs continue to face persistent challenges in financial management, particularly in producing reliable financial statements and implementing standardized accounting practices. Weak financial recording systems limit MSMEs' ability to evaluate performance, access financing, and maintain sustainable growth. Previous studies indicate that limited accounting literacy and inadequate recording systems remain major barriers to structured financial reporting and governance

improvement among MSMEs (Ramdani et al., 2022; Clemente-Almendros et al., 2024).

The rapid development of digital technologies, particularly artificial intelligence (AI), has introduced new opportunities to transform accounting practices. AI-enabled accounting systems allow automated transaction recording, real-time processing, anomaly detection, and predictive analytics that improve financial information quality and decision-making capabilities (Han et al., 2023; Kureljusic & Karger, 2024). Several studies report that digital transformation enhances operational efficiency and financial performance in SMEs (Merín-Rodríguez et al., 2024; Seppänen et al., 2025).

However, empirical findings remain inconsistent. While some research demonstrates that AI adoption significantly improves financial performance and governance, other studies highlight that digital transformation may not automatically generate performance gains due to limited organizational readiness, technological capability gaps, and financial constraints (Hafeez et al., 2025; Kock Lim & Wei Seng, 2024; Sagala & Őri, 2024). These contradictory findings indicate that the relationship between AI adoption and MSME performance remains theoretically and empirically unresolved.

Furthermore, although the adoption of digital accounting technologies has been widely discussed, limited research has examined how AI-enabled accounting platforms support compliance with formal accounting standards, particularly in MSMEs. Most prior studies focus on general digital transformation outcomes without explicitly linking technological adoption to accounting standard implementation (Schwaeke et al., 2025; Jamal et al., 2025). This limitation is particularly relevant in emerging economies, where simplified accounting standards such as Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM) are introduced to improve MSME financial reporting quality (Ikatan Akuntan Indonesia, 2016). However, empirical evidence suggests that many MSMEs still struggle to implement these standards due to limited technical capability and structured recording systems (Setiawan et al., 2024).

From a theoretical perspective, prior studies tend to examine digital transformation, AI adoption, and accounting compliance separately, resulting in fragmented explanations. Although TOE, RBV, DOI, and the Information System Success Model offer relevant insights, limited studies integrate these perspectives to explain how AI-enabled accounting systems simultaneously affect accounting compliance and financial performance in MSMEs. This gap motivates the development of an integrated analytical framework in this study.

Therefore, this study aims to address these gaps by examining how AI-enabled digital accounting platforms support the implementation of SAK EMKM and improve MSME financial performance. This research focuses on Batik Muktiyasa, a batik MSME in Banyuwangi, Indonesia, to provide contextual empirical evidence of accounting transformation through AI-based digitalization. By integrating the TOE framework, Resource-Based View (RBV), Diffusion of Innovation (DOI), and the Information System Success Model, this study proposes an integrated AI–SAK EMKM transformation model that explains how digital accounting technologies enhance financial governance and organizational performance.

This study contributes to the literature by clarifying the relationship between AI-enabled accounting adoption, accounting compliance, and MSME financial performance, integrating multiple theoretical perspectives, and providing contextual evidence from an emerging economy setting.

Accordingly, this study addresses the following research questions:

1) How does AI-enabled digital accounting improve compliance with SAK EMKM?
2) How does AI-based analysis influence MSME financial performance?

By addressing these questions, this research aims to provide both theoretical and practical contributions to the growing debate on AI-driven accounting transformation and MSME financial governance.

2. Literature Review

2.1 Conceptual and Theoretical Foundations

Artificial Intelligence and Accounting Transformation in MSMEs

The rapid advancement of artificial intelligence (AI) has significantly reshaped accounting practices by enabling automation, predictive analytics, and real-time financial reporting. AI-based accounting systems enhance data processing efficiency, reduce human error, and improve financial reporting reliability (Han et al., 2023; Kureljusic & Karger, 2024; Stratopoulos & Wang, 2025). These technological capabilities are particularly relevant for MSMEs, where limited accounting expertise and manual bookkeeping practices often hinder financial governance and decision-making quality.

However, empirical evidence regarding AI adoption in MSMEs remains inconclusive. Some studies argue that AI-driven digital transformation improves organizational performance through enhanced efficiency and strategic decision-making (Merín-Rodríguez et al., 2024; Seppänen et al., 2025). Conversely, other studies indicate that technological adoption alone does not guarantee improved performance, particularly when organizations lack digital readiness, technological capability, and institutional support (Hafeez et al., 2025; Sagala & Őri, 2024). These conflicting findings suggest that the effectiveness of AI adoption depends not only on technological capabilities but also on organizational and environmental conditions.

This debate highlights the need for a more integrated theoretical framework to explain how AI-enabled accounting systems influence both compliance and financial performance in MSMEs. Therefore, this study integrates four theoretical perspectives: the Technology–Organization–Environment (TOE) framework, Resource-Based View (RBV), Diffusion of Innovation (DOI), and the Information System Success Model.

Technology–Organization–Environment (TOE) Framework

The TOE framework explains AI-enabled accounting adoption through three dimensions: technological characteristics, organizational readiness, and environmental pressure. In this study, TOE is particularly relevant for understanding MSME readiness, technological capability, and compliance-related external demands.

Resource-Based View (RBV)

From an RBV perspective, AI-enabled accounting systems can be viewed as strategic capabilities that improve information quality, decision-making, and operational efficiency (Barney, 1991). However, because RBV focuses primarily on internal resources, it is complemented in this study by TOE and DOI to better explain adoption and implementation dynamics.

Diffusion of Innovation (DOI)

DOI explains how perceived usefulness, compatibility, and complexity shape the adoption of AI-enabled accounting systems (Rogers, 2003). In MSMEs, these factors are important because technology adoption depends heavily on usability and fit with existing business practices.

Information System Success Model

The Information System Success Model emphasizes system quality, information quality, and service quality as determinants of system effectiveness and organizational performance (DeLone & McLean, 2003). In accounting systems, improved system quality enhances data accuracy and reporting reliability, while improved information quality supports managerial decision-making.

Previous studies highlight that AI-enabled accounting systems improve system quality and information quality, thereby enhancing financial performance and

governance (Nóbrega et al., 2023). However, prior research rarely links information system success directly to accounting compliance, particularly in MSMEs.

This study extends the Information System Success Model by positioning accounting compliance as an intermediate outcome linking system quality and financial performance.

2.2 Review of Empirical Studies

Recent empirical studies show mixed findings regarding the effectiveness of AI adoption in MSMEs. Several studies demonstrate that AI improves financial performance through enhanced efficiency, better decision-making, and improved information quality (Nóbrega et al., 2023; Merín-Rodríguez et al., 2024). In contrast, other studies find that the benefits of AI adoption are contingent on organizational readiness and external support, suggesting that technology alone does not guarantee improved outcomes (Hafeez et al., 2025; Sagala & Őri, 2024).

In addition, prior research has predominantly focused on direct relationships between AI adoption and firm performance, often neglecting intermediate mechanisms such as accounting compliance and financial information quality. Methodologically, many studies rely on single-theory approaches (e.g., TOE or RBV only), resulting in fragmented explanations. Contextually, limited studies focus specifically on MSMEs, particularly in emerging economies where regulatory compliance (e.g., SAK EMKM) plays a critical role.

These limitations indicate the need for a more integrated and mechanism-based approach to understanding AI adoption outcomes.

2.3 Identification of the Research Gap

Based on the theoretical and empirical review, three key research gaps are identified. First, prior studies tend to examine AI adoption and performance separately without integrating multiple theoretical perspectives, leading to incomplete explanations of adoption dynamics. Second, there is limited empirical evidence linking AI-enabled accounting systems to accounting compliance, particularly in the MSME context. Third, previous research rarely investigates the mediating mechanisms through which AI influences financial performance, such as financial information quality and compliance improvement.

Therefore, this study addresses these gaps by developing an integrated framework that links AI adoption, accounting compliance, and financial performance in MSMEs.

2.4 Development of the Conceptual Framework

Although each theoretical framework provides valuable insights, prior studies often apply these perspectives independently, resulting in fragmented explanations of AI adoption in MSMEs. This study integrates TOE, RBV, DOI, and the Information System Success Model to develop a comprehensive conceptual framework.

In this integrated framework:

- TOE explains AI adoption drivers
- DOI explains adoption dynamics
- RBV explains strategic capability development
- IS Success Model explains performance outcomes

This integrated framework proposes that AI-enabled accounting systems influence MSME financial performance through two primary mechanisms:

1. Accounting compliance improvement
2. Financial information quality enhancement

This theoretical synthesis positions AI-enabled accounting systems not only as technological tools but also as governance mechanisms that improve financial transparency and organizational performance.

Thus, this study contributes to the literature by proposing an integrated AI–SAK EMKM transformation framework that links technological adoption, accounting compliance, and financial performance in MSMEs. This integrated perspective strengthens theoretical

abstraction and addresses gaps in previous research that examined these relationships separately.

2.5 Hypotheses Development

Based on the conceptual framework, this study proposes that AI-enabled accounting systems positively influence financial performance both directly and indirectly through accounting compliance and financial information quality. AI adoption is expected to improve system quality and information quality, which in turn enhances decision-making and organizational outcomes. Furthermore, improved compliance is expected to strengthen financial governance and contribute to better financial performance.

These relationships are formulated into empirically testable hypotheses that extend prior literature by integrating technological, organizational, and governance perspectives in the MSME context.

3. Research Methods

3.1 Research Design

This study adopts a qualitative action research design combined with a single-case study approach to examine the implementation of an AI-enabled accounting system in improving MSME financial performance and compliance with SAK EMKM. The action research approach was selected because this study not only observes organizational phenomena but also actively participates in the implementation and evaluation of accounting system transformation. This design enables a deeper understanding of organizational change processes, technological adoption, and accounting transformation in real-world contexts.

The use of a single-case study is intentionally employed to provide an in-depth and contextually rich analysis of accounting transformation within MSMEs. Although single-case studies may limit statistical generalization, they enable analytical generalization by generating theoretical insights and conceptual contributions applicable to similar contexts. This approach is particularly appropriate given the exploratory nature of AI-enabled accounting adoption in MSMEs, which remains underexplored in emerging economies. Therefore, this study aims to generate theoretical propositions rather than statistical generalization.

The selected case for this study is Batik Muktiyasa, an MSME located in Banyuwangi, Indonesia. This case was chosen using purposive sampling based on three criteria: (1) the business previously relied on manual accounting practices, (2) the enterprise adopted an AI-enabled accounting system during the research period, and (3) financial performance data were available before and after system implementation. These criteria allow the study to capture accounting transformation processes comprehensively.

3.2 Research Context and Setting

This study is conducted in an MSME located in Banyuwangi, Indonesia, specifically Batik Muktiyasa. The selection of this context is based on its relevance to the research objectives, particularly in examining the transformation from manual accounting practices to an AI-enabled accounting system.

The MSME context is highly relevant because many small and medium enterprises still rely on traditional accounting methods and face challenges in adopting digital technologies, especially in compliance with SAK EMKM. This setting provides a rich environment to explore the interaction between technology, organizational practices, and regulatory compliance.

3.3 Population and Sample / Research Participants

This study uses purposive sampling to select a single case that meets specific criteria. The selected MSME must:

1. Previously rely on manual accounting practices,
2. Adopt an AI-enabled accounting system during the study period, and

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3. Have available financial data before and after system implementation.

The participants in this study include the business owner, financial administrators, and operational staff. These participants are selected to provide comprehensive insights into accounting practices, system adoption, and organizational transformation.

3.4 Data Sources and Data Collection

Data were collected through multiple sources to enhance methodological rigor and triangulation. The data collection techniques included:

1. Semi-structured interviews
   Interviews were conducted with business owners, financial administrators, and operational staff to understand accounting practices, digital adoption challenges, and perceived benefits of AI-enabled systems.
2. Direct observation
   Observations were conducted during the implementation of the AI-enabled accounting system to capture operational changes, workflow adjustments, and system utilization.
3. Document analysis
   Financial records, transaction data, and accounting reports were analyzed before and after system implementation to evaluate accounting transformation and performance improvement.
4. System-generated quantitative indicators
   Quantitative indicators such as financial ratios, reporting accuracy, transaction processing efficiency, and compliance levels were extracted from the AI-enabled accounting platform.

The inclusion of quantitative indicators within a qualitative action research design is intended to support data triangulation and strengthen analytical validity. These indicators are not used for statistical hypothesis testing but rather to support qualitative interpretation and explain organizational transformation processes.

3.5 Measurement of Variables and Research Instruments

The key concepts in this study are operationalized through qualitative indicators and system-based metrics.

1. AI-enabled accounting system adoption is measured through system usage, automation level, and integration with accounting processes.
2. Accounting compliance is assessed based on adherence to SAK EMKM standards, including completeness and accuracy of financial reporting.
3. Financial information quality is measured through relevance, reliability, and accuracy of financial data.
4. Financial performance is evaluated using indicators such as profitability, efficiency, and transaction processing effectiveness.

The instruments used in this study are adapted from prior studies and aligned with recent literature to ensure construct validity.

3.6 Data Analysis Techniques

Data analysis was conducted using a qualitative thematic analysis approach combined with comparative before-and-after evaluation. The analysis followed three stages:

1. Data reduction
   Interview transcripts, observation notes, and documents were coded and categorized based on themes related to accounting transformation, AI adoption, and financial performance.
2. Data display
   Findings were organized into thematic categories aligned with the theoretical framework, including technological adoption, organizational capability, accounting compliance, and financial performance.
3. Conclusion drawing and verification
   Cross-validation was conducted by comparing findings from multiple data sources, including qualitative narratives and quantitative indicators.

Additionally, a before-and-after comparative analysis was conducted to assess

changes in accounting compliance and financial performance following AI system implementation. This mixed analytical strategy ensures consistency between qualitative action research and quantitative performance indicators.

3.6 Validity, Reliability, and Trustworthiness

To strengthen methodological rigor, this study employed several validation strategies:

1. Data triangulation
   Multiple data sources (interviews, observations, documents, and system data) were used to ensure consistency of findings.
2. Method triangulation
   The study combines qualitative analysis with quantitative indicators to enhance analytical depth.
3. Member checking
   Research findings were validated through confirmation with business owners and stakeholders to ensure interpretive accuracy.
4. Audit trail
   All research procedures, data collection processes, and analytical decisions were documented to ensure transparency and replicability.
5. Prolonged engagement
   The researcher engaged with the organization during the implementation period to improve contextual understanding and reduce bias.

These strategies enhance the credibility, dependability, and confirmability of the research findings.

3.8 Ethical Considerations

This study ensured ethical research practices by obtaining informed consent from participants, maintaining data confidentiality, and ensuring that the implementation of the AI-enabled accounting system did not disrupt business operations

3.9 Research Procedure

The research is conducted through the following stages:

1. Identification of research problem and objectives
2. Selection of case study and participants
3. Data collection (interviews, observation, and document analysis)
4. Implementation of AI-enabled accounting system
5. Data analysis and interpretation
6. Validation through triangulation and member checking
7. Drawing conclusions and formulating theoretical contributions

3.10 Methodological Limitations

This study is limited by its single-case design, which may restrict statistical generalization. However, it allows for deep contextual analysis and theoretical contribution. Additionally, the involvement of the researcher in action research may introduce bias, although this is mitigated through triangulation and validation techniques.

4. Results and Discussion

4.1 Research Results

1. Sample Description and Contextual Overview

This study focuses on the implementation of an AI-based accounting system at Batik Muktiyasa. Prior to adoption, financial recording was conducted manually using cash books and Excel, resulting in fragmented documentation, delayed reporting, and limited financial visibility. After implementation, the AI-enabled system automated transaction classification, generated standardized financial statements, and enabled real-time financial monitoring.

This transformation reflects the technological dimension of the Technology–Organization–Environment (TOE) framework, where perceived technological benefits influenced adoption decisions. The automation capabilities reduced manual workload and improved reporting accuracy, consistent with prior studies suggesting that AI-enabled

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systems enhance operational efficiency and decision-making quality in SMEs. However, beyond operational efficiency, the findings indicate that AI adoption also strengthened governance practices by improving compliance with accounting standards. This extends prior research that primarily focused on efficiency outcomes and overlooked governance implications.

The findings further suggest that technological adoption alone was insufficient to generate performance improvements. Organizational readiness, including user capability and management commitment, played a critical role in successful implementation. This finding supports the organizational dimension of the TOE framework and aligns with international studies highlighting the importance of organizational readiness in digital transformation success. External pressures, such as financial transparency requirements and access to financing, also influenced adoption decisions, reinforcing the environmental dimension of TOE.

Table 1. Comparison of Traditional Recording Methods and SAK EMKM Provisions

Aspect	Recording Method	
	Traditional Recording Method (Batik Muktiyasa)	SAK EMKM Provisions
Recording System	Manual, using cash books and Excel	Integrated and structured
Report Preparation	Only sales & purchase recap	Must prepare complete reports according to standards
Data Accuracy	Prone to errors & not validated	More accurate due to validation features
Presentation Speed	Not real-time	Real-time and automatic

Source: Processed Primary Data (2025)

The findings show that manual recording delays financial information and reduces its usefulness for managerial decision-making. Manual bookkeeping also increases the likelihood of recording errors and weakens reporting reliability (Han et al., 2023; Kureljusic & Karger, 2024). In Batik Muktiyasa, the digital transformation process occurred through a sequence of needs identification, platform design, transaction input, automated verification, report generation, and standardized presentation. This process supports the view that technology integration improves efficiency and information quality in MSMEs (Ueasangkomsate & Bunthungsub, 2025).

Table 2. Summary of AI Analysis Results and Implications

Aspects	Analysis Components	
	AI Analysis Results	Interpretation & Implications
Financial Ratios	Generate basic ratios (profit margin, simple liquidity, inventory turnover)	Provide an initial overview of business profitability and efficiency
Financial Trends	Display monthly sales, expenses, and cash flow patterns	Help identify seasonal patterns and fluctuations in demand
Automatic Evaluation	Identify inefficiencies in cost structures	Uncover unscheduled raw material purchases & unstable cash flow
Strategic Recommendations	Recommendations for purchasing consolidation, cost reduction, inventory optimization	Supporting data-driven decisions to increase profitability

Source: Processed Primary Data (2025)

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The AI-based automatic evaluation reveals that the frequent purchase of raw materials in small quantities increases operational costs and weakens liquidity. This finding is consistent with the study by Hendrawan et al. (2024), which demonstrates that digital platforms enable MSMEs to detect operational inefficiencies that are not easily identified through manual recording. Furthermore, AI generates immediately actionable insights by analyzing transaction patterns and cost structures, thereby strengthening the role of digitalization not merely as a recording tool but also as an effective decision support system for MSME management (Han et al., 2023; Nóbrega et al., 2023).

The implementation of AI-based accounting digitalization at Batik Muktiyasa is consistent with prior studies showing that artificial intelligence improves the accuracy, speed, and reliability of financial recording processes. Han et al. (2023) emphasize that AI can reduce human error, improve data structure, and strengthen the validity of accounting reports through process automation.

In line with the results of this study, Nóbrega et al. (2023) state that the application of AI in MSMEs improves the effectiveness of financial management, especially in ratio analysis, transaction anomaly detection, and data-based recommendation preparation. This reinforces the research findings that digital analytics features in the AkuntansiUMKM application provide direct benefits to business owners.

The integration of ratio, trend, evaluation, and recommendation features shows that digitization can improve MSMEs' ability to read financial conditions in real-time.

Table 3. Monthly Sales, Expenses, and Net Profit Trends (Processed from AI 2023)

Month	Sales (Rp)	Expenses (Rp)	Net Profit (Rp)
Jan	1.490.000	800.000	690.000
Feb	6.725.000	5.210.000	1.515.000
Mar	8.925.000	9.286.500	-361.500
Apr	7.905.000	7.678.500	226.500
May	11.717.000	8.366.500	3.350.500
Jun	23.205.000	19.235.000	3.970.000
Jul	10.315.000	9.475.000	840.000
Aug	8.985.000	6.205.500	2.779.500
Sep	10.350.000	9.157.000	1.193.000
Oct	24.710.000	12.992.000	11.718.000
Nov	29.805.000	16.263.000	13.542.000
Dec	22.475.000	18.015.000	4.460.000

Source: Processed Primary Data (2025)

The analysis shows that net profit was negative in March, due to an increase in expenses that was not offset by an increase in sales. However, recovery occurred after April and peaked in October and November. This pattern shows the high seasonal influence on batik product sales. Theoretically, seasonal patterns are important to plan for in production and inventory management.

In addition, the net profit margin of 26.36% indicates relatively good profitability performance, although the interpretation should be made cautiously due to limited supporting data such as COGS and liabilities.

The pattern of sales and profit fluctuations found in this study is also in line with the research by Hansen and Bøgh (2021), which shows that MSMEs have financial

patterns that are highly influenced by the seasons, so that AI-based digitalization helps business owners recognize these patterns more accurately.

Overall, AI-based accounting digitalization has been proven to improve the quality of Batik Muktiyasa's financial information, improve its recording structure, and strengthen its managerial capabilities in decision-making. These findings further reinforce the theoretical argument that technology can bridge the gap between traditional MSME accounting practices and formal reporting standards.

Additionally, the challenges in adopting digital technology that arose during the implementation process are consistent with the research by Ueasangkomsate and Bunthungsub (2025), which explains that the success of MSME digital transformation is influenced by organizational readiness and technological adaptation capabilities.

Table 4. SAK EMKM Compliance Scoring Before and After AI Implementation.

No	Compliance Indicator	Before AI	After AI
1	Statement of Financial Position	0	2
2	Income Statement	1	2
3	Notes to Financial Statements	0	2
4	Asset Classification	1	2
5	Liability Classification	0	2
6	Reporting Period Consistency	1	2
7	Disclosure of Material Information	0	2
	Total Score	**3**	**14**

Source: Processed Primary Data (2025)

Compliance Level (%)

- Before AI: 21.4%
- After AI: 100%

2. Data Quality and Preliminary Analysis

This study employs a qualitative case study approach supported by descriptive financial data analysis. As such, traditional statistical tests such as normality, multicollinearity, or reliability testing are not applicable. However, data quality was ensured through triangulation of primary data sources, including financial records, system-generated reports, and observational data from the AI-enabled accounting system.

The financial data used in this study were obtained from primary processed data (2025) generated directly from the AI-based accounting system at Batik Muktiyasa. The system ensures data integrity through automated transaction classification, validation controls, and standardized reporting mechanisms, thereby minimizing human error and data inconsistency. This aligns with Han et al. (2023), who emphasize that AI-based systems improve data structure, reduce errors, and enhance the validity of accounting information.

In addition, data consistency was ensured by cross-checking transaction records with system outputs, ensuring that financial reports accurately reflect underlying transactions. This approach supports the findings of Ueasangkomsate and Bunthungsub (2025), who highlight that digital systems enhance data accuracy and reliability in MSMEs.

The data utilized in this study are therefore considered valid, reliable, and suitable for supporting further analysis related to accounting transformation, compliance, and financial performance.

3. Main Analytical Results

The main analytical results of this study are derived from descriptive analysis of system

outputs, including financial ratios, trend analysis, automatic evaluation, and compliance scoring.

First, the AI system generates basic financial ratios such as profit margin, liquidity indicators, and inventory turnover. These ratios provide an initial overview of the firm's financial health and operational efficiency. Second, trend analysis shows monthly fluctuations in sales, expenses, and net profit, as presented in Table 3. The data reveal seasonal variations in business performance, with significant peaks observed in October and November.

Third, the system performs automatic evaluation by identifying inefficiencies in cost structures. The AI detected frequent small-scale raw material purchases, which increase operational costs and negatively affect liquidity. This finding is consistent with Hendrawan et al. (2024), who state that digital platforms enable MSMEs to identify inefficiencies that are difficult to detect through manual systems. Fourth, the AI system provides strategic recommendations based on data patterns, including cost reduction strategies, purchasing consolidation, and inventory optimization. These recommendations support data-driven decision-making, reinforcing the role of AI as a decision support system, as supported by Han et al. (2023) and Nóbrega et al. (2023).

Overall, the main analytical results demonstrate that AI-enabled accounting systems not only record financial transactions but also transform raw data into actionable insights for managerial decision-making.

4. Hypothesis Testing Results / Key Findings

This study does not employ formal statistical hypothesis testing; instead, it focuses on identifying key empirical findings based on the transformation of accounting practices following AI implementation. The main findings are presented as follows:

1. AI-enabled accounting systems improve financial reporting quality
   The implementation of the system resulted in automated and standardized financial reporting, improving accuracy and consistency. This is reflected in the shift from manual recording to integrated reporting aligned with SAK EMKM.
2. AI adoption enhances operational efficiency
   The automation of transaction processing reduced manual workload and improved reporting speed. This supports the argument that AI enhances operational performance in MSMEs.
3. AI systems improve accounting compliance
   The compliance score increased from 21.4% to 100% after system implementation, indicating full alignment with SAK EMKM requirements.
4. AI supports better financial decision-making
   Through ratio analysis, trend identification, and predictive insights, the system enables more informed and data-driven managerial decisions.
5. Organizational readiness influences successful adoption
   The findings indicate that technological benefits alone are insufficient without adequate organizational readiness, including user capability and management commitment. This aligns with the TOE framework.

These findings collectively indicate that AI-enabled accounting systems play a transformative role in improving financial management, compliance, and decision-making in MSMEs.

5. Visual Presentation of Results

Tables are used to clearly present the empirical findings of this study in a structured and interpretable manner. Table 1 presents the comparison between traditional recording methods and SAK EMKM provisions, highlighting the differences in system structure, reporting requirements, data accuracy, and reporting speed. Table 2 summarizes the AI analysis results, including financial ratios, trend analysis, automatic evaluation, and strategic recommendations, demonstrating how the system transforms financial data into actionable insights.

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Table 3 presents the monthly sales, expenses, and net profit trends, illustrating seasonal variations in business performance and identifying periods of financial growth and decline. Table 4 shows the SAK EMKM compliance scoring before and after AI implementation, clearly indicating a significant improvement from 21.4% to 100% compliance. Each table is explicitly referenced in the text to guide the reader in understanding the empirical findings. The use of structured tables enhances clarity and allows for systematic comparison of results before and after the implementation of the AI-based accounting system.

4.2 **Research Discussion**

1. *Interpretation of Key Findings*

The empirical findings demonstrate that the implementation of an AI-enabled accounting system at Batik Muktiyasa leads to substantial improvements in financial reporting quality, operational efficiency, and regulatory compliance. These outcomes directly address the research objective of examining how AI transforms accounting practices within MSMEs.

The results indicate that before AI adoption, financial information was fragmented, delayed, and prone to errors, while after implementation, financial data became structured, standardized, and available in real-time. This transformation confirms that the perceived technological benefits—such as automation, accuracy, and speed—serve as primary drivers of system adoption within the Technology–Organization–Environment (TOE) framework.

Moreover, the improvement in SAK EMKM compliance from 21.4% to 100% provides strong evidence that the system significantly enhances regulatory adherence. This suggests that AI-enabled accounting systems do not merely improve efficiency but also function as compliance-enabling mechanisms, ensuring that financial reporting aligns with established accounting standards. In addition, the findings reveal that AI-generated insights—such as financial ratios, trend analysis, and cost evaluation—enhance managerial decision-making. These results indicate that the system supports not only operational recording but also strategic analysis, thereby addressing the research question regarding the broader role of AI in financial management.

2. *Comparison with Previous Studies*

The findings of this study are consistent with Han et al. (2023), who emphasize that AI improves accuracy, reduces human error, and enhances the validity of financial reporting. Similarly, Nóbrega et al. (2023) argue that AI strengthens financial management through automated ratio analysis, anomaly detection, and recommendation systems. Furthermore, the results align with Hendrawan et al. (2024), who demonstrate that digital platforms enable MSMEs to identify operational inefficiencies that are not easily detectable through manual processes. The identification of excessive small-scale raw material purchases in this study supports this argument, highlighting the practical value of AI in cost management.

The seasonal pattern observed in this study is also consistent with Hansen and Bøgh (2021), who highlight that MSMEs often exhibit strong seasonality in financial performance. However, this study extends previous findings by demonstrating that AI systems enable more accurate detection and interpretation of these patterns in real time. Additionally, the findings support Ueasangkomsate and Bunthungsub (2025), who emphasize that digital transformation success depends on organizational readiness. This study reinforces their argument by showing that technological benefits alone are insufficient without adequate human and organizational support.

3. *Theoretical Contributions*

This study contributes to multiple theoretical frameworks by demonstrating how they operate in an integrated and sequential manner. First, within the TOE framework, the findings confirm that technological advantages (automation, real-time reporting) and organizational readiness (user capability and

management commitment) are critical determinants of AI adoption. The environmental dimension is also supported through external pressures such as financial transparency requirements and access to financing.

Second, the Diffusion of Innovation (DOI) theory is supported through the observation that perceived usefulness and compatibility influence the adoption and sustained use of the system. The gradual improvement in financial performance indicates that adoption outcomes evolve over time, reinforcing the temporal dimension of innovation diffusion. Third, from a Resource-Based View (RBV) perspective, AI-enabled accounting systems function as valuable, rare, and difficult-to-imitate organizational resources. These systems enhance financial visibility and support better resource allocation, thereby contributing to competitive advantage.

Fourth, this study extends the Information System Success Model by identifying accounting compliance as a critical intermediate outcome. While previous studies primarily focus on system quality and information quality, this study demonstrates that these dimensions directly influence regulatory compliance, which in turn supports financial performance. By integrating these frameworks, the study provides a more comprehensive theoretical explanation of AI-enabled accounting transformation, demonstrating that technological adoption leads to capability development, which ultimately improves organizational outcomes.

4. Practical and Policy Implications

From a practical perspective, the findings suggest that MSME owners should adopt AI-enabled accounting systems not merely as operational tools but as strategic assets that enhance governance, compliance, and decision-making. The system's ability to generate standardized financial reports aligned with SAK EMKM can improve access to financing, as financial transparency is a key requirement for lenders and investors.

In addition, the system's analytical capabilities enable MSMEs to identify inefficiencies, optimize costs, and manage cash flow more effectively. This highlights the importance of leveraging digital tools for strategic planning, not just record-keeping. From a policy perspective, governments and regulatory bodies should encourage the adoption of AI-based accounting systems by providing training, incentives, and infrastructure support. This is particularly important in emerging economies, where many MSMEs still rely on manual accounting practices.

Furthermore, institutions supporting MSMEs should focus on enhancing digital literacy and organizational readiness, as these factors are critical to successful implementation, consistent with the TOE framework.

5. Integration with the Research Gap

This study addresses several gaps identified in prior literature. First, while existing studies predominantly focus on the efficiency gains of AI adoption, this study demonstrates that AI also significantly improves accounting compliance and governance. This expands the scope of AI research in accounting by incorporating regulatory dimensions. Second, prior research often examines technological adoption in isolation, without integrating multiple theoretical perspectives. This study fills this gap by combining TOE, DOI, RBV, and the Information System Success Model into a unified analytical framework, providing a more holistic understanding of AI adoption and its outcomes.

Third, there is limited empirical evidence on the application of AI in MSMEs, particularly in developing countries. This study contributes to this gap by providing case-based evidence from Batik Muktiyasa, offering contextual insights into how AI transforms accounting practices in resource-constrained environments. Finally, this study bridges the gap between traditional accounting practices

and formal reporting standards by demonstrating how AI-enabled systems facilitate compliance with SAK EMKM. This highlights the role of digital technology as a bridge between informal and formal financial systems.

6. Acknowledgement of Study Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the study is based on a single case (Batik Muktiyasa), which limits the generalizability of the findings. Future research should consider multiple cases or larger samples to validate and extend the results. Second, the analysis is based on a limited time period, which may not fully capture long-term financial performance or the sustainability of AI implementation outcomes.

Third, the study does not incorporate advanced statistical hypothesis testing, as it relies on descriptive and qualitative analysis. Future research may employ quantitative methods to further validate the relationships between variables. Fourth, the findings are context-specific and may be influenced by external factors such as market conditions, industry characteristics, and organizational culture, which were not fully controlled in this study.

5. Conclusion

This study synthesizes the empirical evidence on the implementation of AI-enabled accounting systems in MSMEs, specifically at Batik Muktiyasa. The findings demonstrate that the adoption of AI-based accounting systems significantly transforms financial management practices by improving reporting quality, enhancing compliance with SAK EMKM, and supporting data-driven decision-making. These results confirm that the research objectives have been successfully achieved, particularly in explaining how digital transformation reshapes accounting practices and organizational capabilities within MSMEs.

Furthermore, the study highlights that AI-enabled accounting systems function not only as operational tools but also as governance mechanisms that strengthen financial transparency and accountability. By integrating technological, organizational, and environmental dimensions, the findings reinforce the importance of a holistic approach to digital transformation. Overall, this study contributes to bridging the gap between traditional accounting practices and formal financial reporting standards, particularly in resource-constrained MSME contexts.

5.1 Summary of Key Findings

This study identifies several key empirical findings aligned with the research objectives. First, the implementation of AI-enabled accounting systems significantly improves financial reporting quality by automating transaction classification, standardizing financial statements, and enabling real-time monitoring. This transformation reduces manual errors and enhances data accuracy.

Second, AI adoption enhances operational efficiency by reducing manual workload and accelerating reporting processes. The system enables faster and more reliable financial information, which is critical for managerial decision-making.

Third, the study finds a substantial improvement in accounting compliance, as reflected in the increase from 21.4% to 100% compliance with SAK EMKM after system implementation. This indicates that AI-based systems play a crucial role in aligning MSME practices with formal accounting standards. Fourth, AI-enabled systems support better financial decision-making through analytical features such as ratio analysis, trend identification, and automatic evaluation of cost structures. These features enable MSMEs to identify inefficiencies and optimize resource allocation.

Finally, the findings highlight that organizational readiness—particularly user capability and management commitment—is a critical factor influencing the success of AI adoption, alongside technological and environmental drivers.

5.2 Theoretical Contributions

This study contributes to the academic literature by extending and integrating multiple theoretical frameworks. First, the findings reinforce the Technology–Organization–Environment (TOE) framework by demonstrating that successful AI adoption is influenced by the interaction of technological benefits, organizational readiness, and environmental pressures. The study extends TOE by showing that these factors not only drive adoption but also shape post-adoption outcomes such as compliance and performance.

Second, the study supports the Diffusion of Innovation (DOI) theory by confirming that perceived usefulness and compatibility influence the adoption and continued use of AI systems. Additionally, the findings highlight that performance improvements occur gradually, emphasizing the dynamic nature of innovation diffusion.

Third, from a Resource-Based View (RBV) perspective, the study identifies AI-enabled accounting systems as strategic organizational capabilities that enhance financial visibility and decision-making. This extends RBV by demonstrating the role of digital capabilities in improving MSME competitiveness. Fourth, this study extends the Information System Success Model by introducing accounting compliance as a key intermediate outcome linking system quality and financial performance. This contribution provides a more comprehensive understanding of how information systems create value in MSMEs. Overall, the study advances theoretical understanding by integrating these frameworks into a unified explanation of AI-enabled accounting transformation, thereby addressing gaps in prior research that examined these theories in isolation.

5.3 Practical and Policy Implications

The findings of this study have important implications for practitioners, managers, and policymakers. For MSME practitioners, the results suggest that adopting AI-enabled accounting systems can significantly improve financial management, transparency, and compliance. Business owners are encouraged to view such systems not merely as tools for record-keeping but as strategic assets that support decision-making and long-term sustainability.

For managers, the study highlights the importance of organizational readiness, including employee capability and leadership commitment, in ensuring successful implementation. Investment in training and change management is therefore essential to maximize the benefits of digital transformation. From a policy perspective, the findings indicate that governments and supporting institutions should promote the adoption of digital accounting systems among MSMEs. This can be achieved through training programs, financial incentives, and infrastructure support. Enhancing digital literacy and providing access to user-friendly accounting platforms can accelerate the transition from informal to formal financial systems. Furthermore, improved compliance with SAK EMKM can enhance MSMEs' credibility and facilitate access to financing, contributing to broader economic development.

5.4 Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. First, the study is based on a single case (Batik Muktiyasa), which limits the generalizability of the results to other MSMEs with different characteristics or operating environments. Second, the analysis focuses on a relatively short observation period, which may not fully capture the long-term impact of AI implementation on financial performance and organizational sustainability.

Third, the findings are context-specific and may be influenced by external factors such as market conditions, industry characteristics, and organizational culture, which were not fully explored in this study. These limitations suggest that while the findings provide valuable insights, caution should be exercised in

generalizing the results beyond the studied context.

5.5 Directions for Future Research

Based on the limitations and findings of this study, several directions for future research are proposed. First, future studies should examine multiple MSMEs across different industries and regions to enhance the generalizability of findings and provide comparative insights into AI adoption in diverse contexts.

Second, longitudinal research is needed to assess the long-term impact of AI-enabled accounting systems on financial performance, organizational capabilities, and business sustainability. Third, future research may employ quantitative methods, such as regression analysis or structural equation modeling, to test the relationships between technological adoption, organizational readiness, compliance, and performance more rigorously.

Fourth, additional variables such as digital literacy, organizational culture, and external institutional support can be incorporated to provide a more comprehensive understanding of AI adoption in MSMEs. Finally, future studies may explore the integration of emerging technologies, such as big data analytics and blockchain, with AI-based accounting systems to further enhance financial transparency and decision-making capabilities.

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