



The Application of Artificial Intelligence in Accounting Reporting within the Banking Sector

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ABSTRACT

Artificial Intelligence (AI) has emerged as a significant innovation supporting digital transformation in the banking sector. In the context of financial reporting, AI offers effective solutions to enhance efficiency, accuracy, and transparency in the reporting process. This study aims to analyse the role of AI in supporting financial reporting in the banking sector, including its benefits and the challenges faced. Using a literature review approach, this research reveals that AI technology enables banks to automate routine tasks, detect anomalies in financial reports, and provide predictive data to support strategic decision-making. However, the implementation of AI also presents challenges such as the need for substantial investment, system integration with existing infrastructure, and compliance with regulations. This study concludes that the application of AI has the potential to revolutionize financial reporting practices, providing significant competitive advantages while driving efficiency and security in banking operations.

1. INTRODUCTION

In the ever-evolving digital era, Artificial Intelligence (AI) has emerged as a major innovation driving significant transformations across various sectors, including the banking industry. AI offers solutions capable of automating routine tasks, improving accuracy, and enabling deeper, more comprehensive data analysis. According to Fukuyama (2018), AI contributes to the development of software and internet technologies that have revolutionized modern lifestyles.

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In the banking sector, AI not only enhances operational efficiency but also provides a more personalized and secure banking experience for customers (Ayunda & Rusdianto, 2021). Accounting reporting is a crucial aspect of banking operations that demands high levels of accuracy and transparency. However, the banking industry currently faces numerous challenges in financial reporting, including rapid regulatory changes, data inconsistencies, and high operational costs due to continued reliance on manual processes. A study by the Center for Financial Professionals (CeFPro) found that 58% of banking institutions are concerned about the impact of regulatory changes on financial reporting, while 49% identified data inconsistencies as a major cause of errors in financial reports. With its ability to process large volumes of data quickly and accurately, AI has significant potential in supporting accounting reporting. Bussmann et al. (2021) found that AI can help identify significant financial patterns and detect anomalies in financial statements, minimizing errors and enhancing trust in financial reports. Additionally, AI enables automation in data collection and analysis, reducing time spent on manual tasks and improving operational efficiency.

Lubis (2014) emphasizes the importance of a systematic approach in accounting research to understand complex phenomena, including AI implementation in financial reporting. Lubis also highlights that technological integration in accounting must consider human behavior and ethical aspects to ensure optimal AI implementation without overlooking fundamental accounting principles (Lubis, 2014). AI is also useful in helping academics plan more creatively and provide relevant information to users more quickly (Azmi et al., 2024). Furthermore, in his journal on "*Akuntansi Keperilakuan*", Lubis explains that technologies like AI can influence decision-making behavior within organizations, including in the banking sector. AI enables faster, data-driven decision-making; however, human intervention remains necessary to ensure alignment with the organization's strategic goals (Lubis, 2017). Despite its many benefits, AI implementation in accounting reporting also faces several challenges, such as data privacy concerns, system integration complexity, and ethical issues related to its use (Dicuonzo et al., 2019). Therefore, it is crucial for the banking industry to not only leverage AI as an innovation tool but also ensure that its application aligns with ethical standards and regulatory frameworks.

This study aims to explore the utilization of AI in accounting reporting within the banking industry, its impact on operational efficiency, and the challenges associated with its implementation. By understanding both its potential and limitations, this research seeks to provide broader insights into AI's role in improving financial governance.

2. LITERATURE REVIEW

The Concept of Artificial Intelligence in Financial Accounting within Banking

Artificial Intelligence (AI) has become an increasingly applied technology in the banking industry, particularly in financial accounting. AI encompasses various techniques such as machine learning, natural language processing (NLP), and robotic process automation (RPA), which enable the automation of accounting tasks previously performed manually (Deloitte, 2024). According to McKinsey, AI implementation in banking can improve operational efficiency by up to 4.7% of the industry's total revenue. AI allows systems to learn from historical patterns and provide more accurate predictions related to financial trends and business risks, aiding banks in strategic decision-making.

AI Implementation in Financial Reporting within Banking

Financial reporting is a critical aspect of banking operations that demands high levels of accuracy and transparency. AI can be utilized to automate transaction recording, analyse financial statements, and detect anomalies in financial data that may indicate errors or potential fraud (Deloitte, 2024). Generative AI is also being increasingly used in financial

reporting to assist accountants in preparing reports with greater accuracy and efficiency. This technology enables report generation based on historical data and market trends, thereby enhancing the quality of information presented to stakeholders.

AI in Auditing and Fraud Detection within Banking

One of the primary benefits of AI in financial accounting for banking is its ability to detect fraud and enhance audit quality. AI can analyse transaction patterns and identify anomalies that may indicate suspicious activity. According to EY, AI has been adopted by several major banks to improve fraud detection and compliance with financial regulations. AI enables auditors to conduct more in-depth examinations using algorithms that can identify unusual patterns in financial reports, helping banks reduce fraud risks and increase financial reporting transparency.

AI in Financial Decision-Making within Banking

AI also plays a role in financial decision-making by providing more accurate and rapid data-driven analyses. This technology enables banks to make strategic decisions based on financial trend predictions and risk assessments. According to the Swiss Bankers Association, AI has been utilized in various banking aspects, including credit risk management, investment analysis, and financial strategy optimization. AI also facilitates automation in asset management and investment strategies, thereby enhancing bank profitability.

Challenges and Ethics in AI Implementation in Financial Accounting for Banking

Despite the numerous benefits AI offers in banking and financial accounting, several challenges must be considered, including data privacy concerns, system integration complexity, and ethical issues related to AI usage in financial decision-making. According to McKinsey, AI implementation in banking must align with regulatory and ethical frameworks to ensure optimal usage without posing risks to institutions and stakeholders. Therefore, the banking industry must ensure that AI utilization in financial reporting complies with established standards and regulations.

3. RESEARCH METHOD

This study employs a qualitative approach using the library research method to understand how Artificial Intelligence (AI) is applied in accounting reporting within the banking sector. The library research method was chosen because it enables researchers to explore relevant literature, such as books, journal articles, research reports, and other official documents related to the implementation of AI in the banking sector.

The data used in this study consists of secondary sources, including: (a). Academic books: References that explain the basic concepts of AI and accounting reporting. (b). Scientific journal articles: Recent studies reviewing the application of AI in risk management, operational efficiency, and digital transformation in banking. (c). Official documents: Regulations and guidelines relevant to financial institutions, such as those from the Financial Services Authority (Otoritas Jasa Keuangan or OJK) and Bank Indonesia.

Data collection techniques are carried out by: (1). reading, analyzing, and summarizing relevant literature to obtain information that supports the research objectives. (2). Identifying key themes, such as reporting efficiency, anomaly detection, and data-driven decision-making.

The data collected is analyzed using the content analysis method, which includes: (a). Reviewing the content of the literature to identify patterns and relationships relevant to the implementation of AI in accounting reports. (b). Connecting findings with existing theories,

such as the principles of operational efficiency and transparency in accounting reports. (c). Summarizing the impacts and challenges of AI implementation based on the analyzed data.

This research focuses on: first, the role of AI in enhancing efficiency and accuracy in accounting reporting within the banking sector. Second, the impact of AI implementation on financial governance and strategic decision-making. Finally, Challenges faced in implementing AI, such as technology integration and ethical issues. Through this, it is expected to gain a comprehensive understanding of the contribution of AI to accounting reporting in banking, thereby providing relevant recommendations for the development of the financial sector.

4. RESULTS AND DISCUSSION

This research indicates that the implementation of Artificial Intelligence (AI) in accounting reporting within the banking sector provides several significant benefits, both in terms of operational efficiency and improving the reliability of financial reports. The key findings from this study are as follows: efficiency and accuracy in financial reporting, faster and more informed decision-making, enhancing financial data security, and operational cost reduction

Efficiency and Accuracy in Financial Reporting

AI enables banks to automate accounting report processes, thereby reducing human errors and improving data accuracy. AI-based systems can identify suspicious transaction patterns, detect anomalies, and provide corrective recommendations in real-time (Fukuyama, 2018; Bussmann et al., 2021). Lubis (2014) states that the importance of a systematic approach in accounting research to understanding complex phenomena, including the application of technologies such as AI in financial reporting.

Faster and More Informed Decision-Making

With rapid AI-based data analysis, decision-makers in the banking sector can more easily evaluate current financial conditions and formulate strategies based on data produced by AI (Chang et al., 2020). Lubis (2017), in his journal on "*Akuntansi Keperilakuan*" explains that technologies such as AI can influence decision-making behavior within organizations, including in the banking sector.

Enhancing Financial Data Security

The implementation of AI helps protect sensitive data used in financial reporting. This technology is also capable of monitoring suspicious activities to prevent fraud or data breaches (Dicuonzo et al., 2019). Lubis (2017) also emphasizes that the application of technology in accounting must consider ethical and transparency aspects to maintain public trust.

Operational Cost Reduction

AI-supported automation reduces the need for manual work in accounting reporting. This allows banks to reallocate human resources to other strategic tasks (Husna, 2020).

The table below summarizes recent journal articles relevant to this study:

Table 1. Artificial Intelligence

No	Article Title	Source & Year	Authors	Indexed In	Citation Count	Main Content
1	Generative AI in Banking and Financial Services	McKinsey, 2025	Kamalath et al.	Scopus	120+	AI improves banking operational efficiency by 4.7% of total industry revenue.
2	Human + AI in Accounting: Early Evidence from the Field	SSRN, 2025	Choi & Xie	SSRN	80+	AI increases accountants' productivity by 55% and reduces financial report preparation time.
3	Generative AI in Financial Reporting and Accounting	Deloitte, 2024	Cassidy & Hittner	Scopus	95+	AI aids in financial reporting based on historical data and market trends.

Source: Data Processed, 2025

In addition to journal articles, the following table summarizes relevant books and conference proceedings:

Table 2. Artificial Intelligence (book & Conference)

No	Book/Proceedings Title	Source & Year	Authors	Focus
1	Artificial Intelligence in Accounting and Auditing	Springer, 2024	Pierotti et al.	AI integration in accounting and auditing, and its impact on transparency.
2	Artificial Intelligence in Accounting: Practical Applications	Routledge, 2020	Ng & Alarcon	AI applications in accounting, including machine learning and NLP.

Source: Data Processed, 2025

Literature Classification by Theme

Based on the collected literature, classification was carried out according to the following main themes: (1). Efficiency and Accuracy in Financial Reporting. *Generative AI in Banking and Financial Services* (McKinsey, 2025) states that AI enhances banking operational efficiency by 4.7% of total industry revenue. *Human + AI in Accounting: Early Evidence from the Field* (Choi & Xie, 2025) reports that AI reduces financial report preparation time by 7.5 days and boosts accountants' productivity. (2). AI in Auditing and Fraud Detection. *Generative AI in Financial Reporting and Accounting* (Deloitte, 2024) reveals that AI helps auditors conduct more in-depth examinations through algorithms that detect irregularities in financial reports. *Artificial Intelligence in Accounting and Auditing* (Pierotti et al., 2024) shows that AI is used in banking systems to enhance compliance with financial regulations. (3). Challenges and Ethics in AI Implementation. *Artificial Intelligence in Accounting: Practical Applications* (Ng & Alarcon, 2020) discusses that data privacy and system integration complexity are major

challenges in AI adoption in banking. *Artificial Intelligence in Accounting and Auditing* (Pierotti et al., 2024) explains that regulations and ethics must be considered in AI-based financial decision-making.

DISCUSSION

Efficiency and Accuracy in Financial Reporting

According to *McKinsey (2025) in "Generative AI in Banking and Financial Services"*, AI has proven to enhance banking operational efficiency by automating various accounting tasks. AI reduces manual workload in transaction recording and financial report preparation, increasing accountants' productivity as documented in *Choi & Xie (2025) in "Human + AI in Accounting: Early Evidence from the Field"*. Additionally, AI facilitates automated financial data processing and reduces human errors, thereby improving financial reporting accuracy, as discussed in *Cassidy & Hittner (2024) in "Generative AI in Financial Reporting and Accounting"*.

AI in Auditing and Fraud Detection

As noted in *Deloitte (2024) in "Generative AI in Financial Reporting and Accounting"*, AI has been adopted in audit systems to identify anomalies in financial reports. This technology enables auditors to improve transparency and accuracy in financial examinations. Furthermore, *Pierotti et al. (2024) in "Artificial Intelligence in Accounting and Auditing"* reports that AI has become an essential tool in enhancing compliance with financial regulations in banking. Leveraging algorithmic analysis, AI enables faster and more precise fraud detection compared to traditional auditing methods.

Challenges and Ethics in AI Implementation

Despite AI's widespread adoption in banking financial accounting, challenges such as data privacy and system integration complexity remain significant barriers. *Ng & Alarcon (2020) in "Artificial Intelligence in Accounting: Practical Applications"* highlights the necessity for robust data security frameworks to protect customer information. Additionally, regulatory and ethical concerns in AI usage must be addressed, as explained in *Pierotti et al. (2024) in "Artificial Intelligence in Accounting and Auditing"*. They emphasize the importance of adhering to financial regulations and implementing AI ethically in financial decision-making.

5. CONCLUSION

The application of Artificial Intelligence (AI) in accounting reports has brought significant changes to the banking sector. AI offers various benefits, such as enhanced operational efficiency, improved financial reporting accuracy, and ease in strategic decision-making. This technology is capable of automating complex processes, detecting anomalies, and minimizing risks through data-driven analysis.

AI also helps banking institutions manage financial risks more effectively, including financing and operational risks. The use of this technology enables banks to improve data security, reduce operational costs, and provide better services to customers. Amid the challenges of the digital era and workforce disruptions, AI has become a key strategy for banks to remain competitive.

However, AI implementation faces several challenges, such as the need for substantial investment, technological infrastructure development, employee training, and compliance with regulations. To maximize AI's benefits, a holistic approach that considers technological, ethical, and regulatory aspects is required. In conclusion, AI is an innovative solution with the potential to revolutionize the banking industry, particularly in accounting reports. With proper management and integration, this technology can serve as a driving force to achieve efficiency, accuracy, and security in the digital era.

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