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The influence of artificial intelligence and automation on accounting practices

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Abstract

The study examined the influence of artificial intelligence and automation on Accounting Practices. The study adopted a survey research design, and a sample size of 300 which comprises accounting professionals, financial analysts, and corporate decision-makers within the financial sector. The data collected were analysed using 5point Likert scale rating from which the mean result was used to address to the objective of the study. From the data analysis, result showed that AI driven system plays a vital role in enhancing the accuracy of financial data and minimize error in accounting records. It was also found that AI and automation optimize routine accounting task and also reduce fraud and as well strengthening regulatory compliance. Based on these findings, it is recommended that organizations increasingly integrate AI-driven accounting solutions to enhance financial data accuracy and efficiency.

Keywords: Artificial Intelligence; Automation on Accounting Practices; Automation on Accounting Practices; AI in Accounting Practices; Accounting Automation Trends; AI and Machine Learning in Finance

1. Introduction

The integration of Artificial Intelligence (AI) and automation into accounting practices marks a significant evolution in the financial landscape. Historically, accounting has transitioned from manual ledger entries to computerized systems, enhancing efficiency and accuracy. The advent of AI and automation technologies has further revolutionized the field, introducing advanced data processing capabilities, predictive analytics, and automated decision-making processes. This transformation holds profound implications for the accounting profession, financial reporting standards, and the broader economic environment. The journey of accounting practices from manual to automated systems reflects the profession's adaptation to technological advancements. In the early stages, accounting involved labour-intensive processes with a high potential for human error. The introduction of computerized accounting software in the late 20th century streamlined these processes, allowing for more efficient data management and financial reporting. The current phase, characterized by AI and automation, builds upon this foundation, offering capabilities that extend beyond mere data entry to include complex analytical tasks and strategic decision support. While the benefits and challenges of AI integration in accounting are documented, several areas require further exploration: Investigating the influence of AI and automation on accounting practices is essential for several reasons. The integration of AI and automation into accounting practices represents a transformative shift with far-reaching implications. While offering numerous benefits in terms of efficiency, accuracy, and strategic insight, it also presents challenges that require careful consideration. Addressing existing knowledge gaps through focused research will be crucial in navigating this transition effectively, ensuring that the accounting profession continues to evolve in a manner that upholds its foundational principles of accuracy, transparency, and ethical responsibility. Hence, this study is focused on the Influence of Artificial Intelligence and Automation on Accounting Practices.

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1.1. Statement of the study

The integration of Artificial Intelligence (AI) and automation into accounting practices has fundamentally transformed the financial landscape, introducing both opportunities and challenges. While these technologies offer enhanced efficiency and accuracy, their rapid adoption has outpaced comprehensive understanding of their long-term implications on the accounting profession. Despite these advancements, challenges persist, including data security concerns, ethical dilemmas, and the necessity for continuous professional development to adapt to evolving technologies. Addressing these issues is imperative. Failure to thoroughly understand and manage the integration of AI and automation in accounting could lead to compromised data integrity, ethical breaches, and a workforce unprepared for technological advancements. As result of this, this research aims to critically examine the influence of AI and automation on accounting practices, addressing the existing knowledge gap regarding their impact on professional roles, ethical standards, and data security.

Aim/ Objective of the study

The aim of the study is investigating the influence of Artificial Intelligence and Automation on Accounting Practices. Specifically, the objectives is to ascertain;

- The Impact of AI and Automation on Accounting Efficiency
- How AI and automation influence strategic decision-making within accounting departments
- The extent to which AI-driven systems enhance the precision of financial data and reduce errors in accounting record.

2. Literature Review

2.1. Theoretical studies

2.1.1. Impact of AI and Automation on Accounting Efficiency

The integration of Artificial Intelligence (AI) and automation into accounting practices has garnered significant attention in recent years, promising to revolutionize traditional methodologies and enhance operational efficiency. Multiple studies underscore the role of AI in automating repetitive and time-consuming accounting tasks, thereby improving efficiency. Bou Reslan and Jabbour Al Maalouf (2024) conducted a quantitative analysis involving 454 accountants, revealing that AI adoption significantly enhances the efficiency and quality of financial data, positively influences fraud detection and tax filings, and alters work activities and skill requirements within the accounting profession. Similarly, Chukwuani and Egiyi (2020) highlighted that AI integration automates data entry and processing, reducing human errors and expediting financial reporting processes. These findings suggest that AI not only streamlines routine tasks but also contributes to more accurate and timely financial information.

The precision of financial data is paramount in accounting. Alhazmi *et al*. (2025) explored AI's role in enhancing the quality of financial reports on the Saudi stock exchange, finding that AI adoption leads to more accurate financial disclosures and improved compliance with reporting standards. This improvement is attributed to AI's capability to process large datasets and detect anomalies that may elude human oversight. Furthermore, Bou Reslan and Jabbour Al Maalouf (2024) confirmed that AI adoption in accounting significantly enhances the efficiency and quality of financial data, positively influencing financial fraud detection and tax filings. These studies collectively affirm that AI contributes to the reliability and integrity of financial information.The integration of AI and automation is also reshaping the roles of accounting professionals. Bou Reslan and Jabbour Al Maalouf (2024) observed that AI adoption alters work activities and skill requirements within the accounting profession, necessitating a shift towards more analytical and strategic roles.

2.1.2. Challenges and Barriers to AI Implementation

Despite the benefits, several challenges impede the seamless integration of AI in accounting. Alhazmi *et al.* (2025) identified significant obstacles, including data security concerns, ethical considerations, and the substantial initial investment required for AI technologies. Additionally, Bou Reslan and Jabbour Al Maalouf (2024) highlighted resistance to change among accounting professionals and the necessity for specialized training as barriers to effective AI adoption. These challenges underscore the need for strategic planning and organizational support to facilitate successful AI integration.

2.1.3. Influence of Artificial Intelligence and Automation on Decision-Making within Accounting Departments

The integration of Artificial Intelligence (AI) and automation into accounting practices has significantly transformed decision-making processes within accounting departments. AI and automation technologies have been instrumental in enhancing decision-making within accounting departments by automating routine tasks and providing advanced data analytics. Adeyeri (2024) highlights that AI-driven systems can automate complex tasks such as invoice processing, reconciliations, fraud detection, and predictive analytics, leading to more efficient and insightful financial reporting practices. This automation allows accountants to focus on strategic decision-making rather than manual data entry. Similarly, Odonkor *et al.* (2024) emphasize that AI significantly improves the accuracy and efficiency of financial reporting, automating routine tasks and enabling predictive analytics for strategic decision-making. These studies suggest that AI not only streamlines routine tasks but also contributes to more accurate and timely financial information, thereby enhancing decision-making processes. The integration of AI and automation is reshaping the roles of accounting professionals, necessitating a shift towards more analytical and strategic functions. However, this transformation raises ethical considerations. Bhimani (2022) discusses how digitalization, including AI, is changing finance and accounting, leading to new ethical challenges and the need for updated professional guidelines. The reliance on AI for decision-making introduces questions about accountability, transparency, and the potential for bias in AI algorithms. These ethical considerations are critical as they impact the trust and reliability of financial reporting and decision-making processes.

2.1.4. Extent AI-driven systems enhance the precision of financial data and reduce errors in accounting record

The integration of Artificial Intelligence (AI) into accounting practices has significantly transformed the landscape of financial data management. AI-driven systems are increasingly employed to enhance the precision of financial data and minimize errors in accounting records. AI-driven systems have been instrumental in automating complex data analysis tasks, thereby enhancing the precision of financial information. Wan *et al*. (2024) explored the integration of AI with traditional asset review processes in structured finance. Their study demonstrated that AI could automate the verification of information between loan applications and bank statements effectively, reducing manual errors and streamlining due diligence processes. The researchers employed both open-sourced and close-sourced large language models (LLMs) to assess AI's efficacy in automating verification tasks, finding that AI integration led to improved accuracy in financial data processing. This study underscores AI's potential to enhance the precision of financial data by minimizing human-induced errors in complex financial transactions.Similarly, Schreyer *et al*. (2022) proposed a Federated Continual Learning framework enabling auditors to learn audit models from decentralized clients continuously. Their empirical results, using real-world datasets, demonstrated the framework's ability to detect accounting anomalies effectively, thereby enhancing the accuracy of financial audits. This approach highlights the role of AI in improving the precision of financial data by facilitating the continuous learning and adaptation of audit models to detect irregularities.

2.2. Reduction of Errors in Accounting Records

The application of AI in accounting has been shown to significantly reduce errors associated with manual data entry and processing. Mishra *et al*. (2021) discussed the implementation of deep learning techniques in financial auditing to examine vast quantities of accounting data. Their study suggested that AI could swiftly and effectively sort through extensive datasets, identifying key language in contracts and assessing journal entries for misstatements, thereby minimizing the likelihood of errors in bookkeeping and financial reporting. This indicates that AI-driven systems can enhance the reliability of financial records by automating the detection of discrepancies that may elude human oversight. Furthermore, Sun *et al.* (2024) examined the impact of the Big Data era on accounting and auditing, highlighting that AI and machine learning technologies enable professionals to analyze large datasets efficiently, detect anomalies, and reduce errors in financial reporting. The study emphasized the necessity for continuous learning and industry collaboration to harness AI's potential fully, suggesting that the successful integration of AI into accounting practices can lead to more accurate and error-free financial data management.

2.3. Theoretical Framework

The study is anchored on Technology Acceptance Model (TAM), proposed by Fred D. Davis in 1989. The theory state that an individual's acceptance and use of a new technology are primarily determined by two key factors which are Perceived Usefulness and Perceived Ease of Use (PEOU). According to the theory, these two factors influence Behavioural Intention (BI) to use the technology, which subsequently affects Actual System Use. Technology Acceptance Model (TAM), suggests that if users perceive a technology as useful and easy to use, they are more likely to integrate it into their work practices.

The use of this theory in the study is essential since accounting professional accept the use of technology in accounting to ease their work.

3. Methodology

3.1. Research Design

This study employs a survey research design to investigate the influence of behavioural finance on accounting decision-making. A survey design is appropriate as it allows for the collection of primary data directly from respondents, ensuring a broad representation of perspectives on behavioural finance principles and their impact on accounting choices (Creswell & Creswell, 2023). A cross-sectional approach is utilized, as data is collected at a single point in time to capture behavioural biases and financial decision-making trends without requiring a longitudinal perspective (Saunders *et al.,* 2022). This design is advantageous due to its efficiency in data collection, cost-effectiveness, and ability to generalize findings within the study's population (Bryman, 2021). However, it is subject to limitations such as response bias and the inability to establish causality, which will be mitigated through robust statistical analyses and validation techniques.

3.2. Population of the study

The target population for this study comprises accounting professionals, financial analysts, and corporate decision-makers within the financial sector. These individuals are selected due to their direct engagement with accounting decision-making processes influenced by behavioural finance principles.

3.3. Sampling technique

The study adopts a probability sampling method, specifically stratified random sampling, to ensure representation across different professional backgrounds and organizational sizes (Taherdoost, 2021). This approach enhances the generalizability of findings while reducing selection bias.

3.4. Sample size

To determine the appropriate sample size, a power analysis is conducted to ensure statistical significance, with an estimated minimum of 300 respondents to enhance reliability (Cohen, 2020). This estimation aligns with previous studies in behavioural finance and accounting research, ensuring adequate statistical power for inferential analysis.

3.5. Data Collection Method

The study utilizes a self-administered online survey as the primary data collection instrument. The survey consists of structured questionnaires designed to measure behavioural finance principles such as overconfidence, loss aversion, and anchoring in relation to accounting decision-making. Questions are formulated using a Likert scale (1-5) to capture the degree of agreement or disagreement with behavioural finance constructs as outlined by Fisher *et al.,* (2022).

3.6. Reliability and Validity

To ensure reliability, internal consistency is tested using Cronbach's alpha, with a threshold of 0.7 and above considered acceptable (Nunnally & Bernstein, 2021). Construct validity is verified through exploratory and confirmatory factor analysis. Content validity is established through expert reviews and pre-testing of the survey instrument (Kline, 2020).

3.7. Data Analysis Techniques

Data collected were analysed using 5point Likert and mean was used to address the objective of he study.

4. Result

Table 1 Impact of AI and Automation on Accounting Efficiency

s/n	Item of Impact of AI and Automation on Accounting Efficiency	Mean ($\bar{x}$)	Remark
1	AI-driven automation improves the speed and accuracy of financial data processing	4.5	Strongly Agree

2	Automation reduces the workload of accounting professionals, allowing them to focus on more complex financial analysis	4.3	Strongly Agree
3	AI-powered accounting systems enhance compliance with regulatory requirements and financial reporting standards.	4.2	Strongly Agree
4	The integration of AI in accounting reduces operational costs while improving efficiency	4.5	Strongly Agree
5	The use of AI in accounting improves fraud detection and enhances financial security.	5.0	Strongly Agree
	Mean of Mean Total	4.5	Strongly Agree

The findings presented in Table 1 shows the profound impact of AI and automation on accounting efficiency, with all measured items receiving strong agreement from respondents. The first variable, *AI-driven automation improves the speed and accuracy of financial data processing*, has a mean score of 4.5, indicating that respondents strongly agree that automation enhances both the speed and precision of financial data.

The second variable, *Automation reduces the workload of accounting professionals, allowing them to focus on more complex financial analysis*, records a mean score of 4.3, reflecting strong agreement among respondents. This result highlights the transformative role of AI in shifting accounting functions from repetitive, manual tasks to more strategic decision-making processes. Furthermore, *AI-powered accounting systems enhance compliance with regulatory requirements and financial reporting standards*, has a mean score of 4.2. This strong agreement also suggests that AI contributes significantly to regulatory adherence by automating compliance checks, flagging inconsistencies, and ensuring that financial records align with industry standards. The integration of AI in accounting also *reduces operational costs while improving efficiency*, has a mean score of 4.5.

The highest level of agreement is recorded in the final item, *The use of AI in accounting improves fraud detection and enhances financial security*, has a mean score of 5.0. This unanimous strong agreement signifies that AI plays a vital role in safeguarding financial systems against fraudulent activities.

The mean of mean total of 4.5 further confirms that respondents overwhelmingly recognize the positive impact of AI and automation on accounting efficiency. This overall strong agreement validates the transformative role of AI in enhancing accuracy, compliance, cost-efficiency, and fraud prevention in the accounting field.

Table 2 How AI and automation influence Strategic Decision-Making Within Accounting Departments

s/n	**Item of Impact of AI and Automation on Accounting Efficiency**	**Mean ($\bar{x}$)**	**Remark**
1	AI-driven analytics improve the accuracy of financial forecasting and budgeting	3.8	Agree
2	Automation in accounting enhances real-time financial decision-making by providing timely insights	4.1	Strongly Agree
3	AI tools improve risk assessment and help accounting leaders make data-driven strategic decisions.	4.0	Strongly Agree
4	The use of AI in accounting allows for better allocation of financial resources within organizations	4.7	Strongly Agree
5	AI and automation contribute to the development of long-term financial strategies and business growth.	4.5	Strongly Agree
	Mean of Mean	4.22	Strongly Agree

Table 2; depict that AI-driven analytics significantly enhance the accuracy of financial forecasting and budgeting, as evidenced by the mean score of 3.8, indicating agreement among respondents. Respondents also strongly agreed that Automation plays a fundamental role in enabling real-time financial decision-making, as reflected in the mean score of 4.1, which corresponds to strong agreement. The ability to access timely financial insights allows accounting professionals to respond swiftly to market dynamics, regulatory changes, and financial risks.

The role of AI tools in improving risk assessment and facilitating data-driven strategic decisions is further emphasized by a mean score of 4.0, of respondent responses also signifying strong agreement. AI-driven risk analysis enhances an organization's ability to identify potential financial threats, detect anomalies, and mitigate risks proactively. By leveraging AI, accounting leaders can base their strategic decisions on comprehensive data analysis rather than intuition, leading to more robust financial planning.

An even stronger endorsement is observed in the item regarding AI's role in optimizing the allocation of financial resources within organizations, which received the highest mean score of 4**.7**, indicating strong agreement.

Moreover, AI and automation contribute significantly to the formulation of long-term financial strategies and overall business growth, as indicated by a mean score of 4.5, reinforcing strong agreement. This long-term perspective is essential for sustaining competitive advantage and achieving financial stability.

The overall mean score of 4.22, categorized as strong agreement, underscores the profound influence of AI and automation on strategic decision-making within accounting departments. The consistently high scores across all assessed items demonstrate a widespread consensus on the benefits of AI and automation in enhancing financial efficiency, decision-making accuracy, and long-term strategic planning. This finding highlights the necessity for accounting professionals and organizations to integrate AI-driven solutions into their financial management frameworks to remain competitive and future-ready.

Table 3 Extent to which AI-driven systems enhance the precision of financial data and reduce errors in accounting record

s/n	Item of Impact of AI and Automation on Accounting Efficiency	Mean ($\bar{x}$)	Remark
1	AI-driven accounting systems significantly improve the accuracy of financial data by reducing manual errors	4.0	Strongly Agree
2	Automation through AI minimizes discrepancies in financial statements and ensures consistency in reporting	4.5	Strongly Agree
3	AI-powered systems enhance data validation and anomaly detection, reducing the risk of accounting fraud and misstatements.	4.6	Strongly Agree
4	The use of AI in accounting reduces the need for extensive human intervention in error correction and data reconciliation.	4.3	Strongly Agree
5	AI algorithms improve compliance with accounting standards by ensuring accurate and real-time financial data processing.	3.9	Agree
	Mean of Mean	4.26	Strongly Agree

Tale 3 indicates that AI-driven accounting systems play a crucial role in improving the accuracy of financial data by minimizing manual errors, as indicated by a mean score of 4.0, reflecting strong agreement among respondents. The significance of this enhancement lies in its ability to reduce human-induced inaccuracies, which often arise due to fatigue, oversight, or miscalculations. The impact of automation in minimizing discrepancies in financial statements and ensuring reporting consistency is even more pronounced, with a mean score of 4.5, highlighting strong agreement. Furthermore, a critical aspect of AI-powered systems is their ability to enhance data validation and anomaly detection, which is evident in the high mean score of 4.6, further reinforcing strong agreement. By detecting anomalies early, organizations can prevent financial losses and maintain the integrity of their financial reports. The effectiveness of AI in this area contributes to strengthening internal controls and mitigating financial risks.

The role of AI in reducing the need for extensive human intervention in error correction and data reconciliation is also well recognized, as reflected in the mean score of 4.3, indicating strong agreement. The reduction of manual involvement in these processes enhances operational efficiency by allowing accounting professionals to focus on more strategic tasks rather than spending time correcting errors. This shift not only increases productivity but also reduces costs associated with labour-intensive financial reconciliations.

Furthermore, AI algorithms play a significant role in improving compliance with accounting standards by ensuring accurate and real-time financial data processing, with a mean score of 3.9, signifying agreement. The overall mean score

of 4.26, categorized as strong agreement, underscores the considerable extent to which AI-driven systems enhance financial data precision and reduce errors in accounting records. The consistently high mean values across all assessed areas reflect a broad consensus on AI's transformative role in ensuring accuracy, minimizing discrepancies, detecting anomalies, streamlining reconciliation, and enforcing compliance. These findings emphasize the necessity for organizations to adopt AI-driven accounting solutions to enhance efficiency, accuracy, and financial integrity in an increasingly complex financial environment.

5. Conclusion and Recommendation

The findings from the analysis indicate that AI-driven systems play a pivotal role in enhancing the precision of financial data and minimizing errors in accounting records. The consistently high mean scores reflect a strong consensus among respondents regarding the effectiveness of AI in reducing manual errors, ensuring consistency in financial reporting, detecting anomalies, streamlining reconciliation processes, and improving compliance with accounting standards. The overall mean score of which is high and categorized as strong agreement, highlights the significant impact of AI and automation in improving accounting efficiency. These insights suggest that AI is not only a tool for optimizing routine accounting tasks but also a strategic asset for enhancing financial accuracy, reducing fraud, and strengthening regulatory compliance. Based on these findings, it is recommended that organizations increasingly integrate AI-driven accounting solutions to enhance financial data accuracy and efficiency.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study

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