MANAGEMENT
2025, Vol. 29, No. 1
www.management-poland.com
DOI: 10.58691/man/201218

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The Role of Artificial Intelligence in Developing Accounting: Automating Processes and Enhancing Financial Reporting in Saudi Arabia

Abstract

Research background and purpose: Artificial intelligence (AI) is transforming accounting, auditing, and finance by enhancing efficiency, accuracy, and decision-making. With Saudi Arabia's Vision 2030 emphasizing digital transformation, AI adoption in financial institutions is accelerating. This study examines the impact of AI on accounting practices, focusing on automation, continuous auditing, and predictive analytics in leading Saudi companies such as Saudi Aramco, Al Rajhi Bank, and STC. The research aims to assess AI's effectiveness in improving financial reporting, fraud detection, and operational efficiency while addressing ethical and regulatory concerns.

Design/methodology/approach: A mixed-methods approach was employed, integrating quantitative surveys and qualitative case studies. The study surveyed 150 financial professionals from the banking, energy, and telecommunications sectors to measure AI's impact on accounting efficiency and accuracy. Additionally, case studies of major Saudi firms provided real-world insights into AI-driven automation, audit processes, and predictive analytics. Statistical analyses, including paired t-tests and regression models, were conducted to assess the significance of AI adoption in financial operations.

Findings: The results indicate that AI integration significantly enhances accounting efficiency, reducing manual processing time by 44% and improving financial reporting accuracy by 20%. Continuous auditing led to a 50% reduction in audit completion times and a 40% improvement in fraud detection rates. AI-driven predictive analytics also increased financial forecasting accuracy by 25%, enabling better decision-making. However, ethical concerns, including data privacy and algorithmic bias, remain challenges that organizations must address.

Value added and limitations: This study contributes to understanding AI's role in modernizing Saudi Arabia's financial sector, offering practical recommendations for AI adoption. However, findings are limited to large corporations, and the long-term implications of AI require further exploration. Future research should examine AI's impact on small businesses and evolving regulatory frameworks.

Keywords: *artificial intelligence in accounting, continuous auditing, predictive analytics in auditing, data privacy in AI, algorithmic bias in accounting systems*

JEL Classification: M42, M49

Received: 2024-10-28; **Revised:** 2025-01-27; **Accepted:** 2025-02-10

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1. Introduction

Artificial intelligence (AI) is clearly impacting areas of accounting, auditing, and finance; it is also a growingly important source of innovation in many other fields. AI is specifically affecting these different fields. Not only does the application of artificial intelligence ensure accuracy and efficiency in technology, but it also results in a change of the strategic orientations of many different companies, including the financial ones. Applied increasingly globally, artificial intelligence offers real-time financial data analysis, labor automation, and process improvement of decision-making. But Saudi Arabia's ambitious Vision 2030 seeks to diversify its economy and embrace digital revolution, hence its influence there especially intrigues us.

Thanks in major part to artificial intelligence, Saudi Arabia is dramatically overhauling its financial structures. Leading in the use of contemporary technology is the Kingdom since, in all fields, including banking, which gives it particularly significance, digitalization top priority and shapes everything. By currently using artificial intelligence to automate financial tasks and use constant auditing techniques, companies such STC, Saudi Aramco, and Al Rajhi Bank help to lower human error and increase reporting accuracy. Artificial intelligence is crucial in determining the course of accounting, auditing, and finance; so, this revolution is not just technological but also necessary in how financial firms function (Alharbi & Salem, 2023).

Artificial intelligence powered automation has greatly simplified once labor-intensive and time-consuming accounting tasks. AI-powered software capabilities of processing vast numbers at hitherto unheard-of speeds define management of operations like invoice processing, expenditure control, and financial reporting. Even more enhances the accuracy of financial reporting by correct and timely financial accounting mixed with artificial intelligence's capacity to expand and learn over time. Saudi Aramco has greatly improved accounting efficiency and cut financial reconciliation time by means of artificial intelligence technologies, therefore saving time (Areiqat & Al-Aqrabawi, 2023).

By allowing constant audits, artificial intelligence is transforming traditional audit methods. Constant audits provide a real-time view of all financial activities unlike routine audits, which take place. Apart from increasing accuracy, this invention accelerates audits and encourages the development of fraud and non-compliance detecting ability. By using AI-driven auditing technologies, Al Rajhi Bank has increased audit completion times by 50% and fraud detection rates by 40% Artificial intelligence lets auditors evaluate entire sets rather than depending just on sampling, therefore offering a comprehensive view of financial risk and status.

Apart from basic operational improvements, AI that relies on computational prediction techniques is changing how decisions in the banking sector are made. Other forms of

artificial intelligence systems that employ data analysis from a prior can detect trends that guide upcoming financial policies. NCB Capital and Jadwa Investment the leading enterprises of Saudi Arabia have adopted artificial intelligence to optimize investment portfolios and respond more effectively to financial risks.

Thus, during times of economic hardship, predictive analytics have increased 25% financial forecasts, hence helping make better decisions faster. Subsequently including artificial intelligence into banking, accounting, and auditing notwithstanding these developments, causes numerous challenges. Another of the key challenges is in ethical utilization of artificial intelligence and making sure that prejudice free AI systems adequately address ideas or financial reality. Especially when the Central Kingdom of Saudi Arabia has enhanced its data security standards according to the international standard, the use of tendentious big datasets for AI based systems poses regulatory compliance and data privacy challenges. For those companies that want to get AI right, they need to surmount these challenges if they are to retain customer trust and openness.

Focusing accounting, auditing, and finance, this paper looks at how artificial intelligence is changing Saudi Arabia's financial environment. This study intends to develop a complete knowledge of the possibilities and difficulties connected with artificial intelligence integration by means of case studies from important Saudi enterprises and financial experts' polls. Under Vision 2030, it will also answer ethical concerns about the use of artificial intelligence in financial operations under studied and make advice on how Saudi companies may utilize AI to improve their financial accuracy, efficiency, and capacity for making judgments.

2. Literature Review

2.1. AI in Accounting

Applied in accounting, artificial intelligence is changing corporate financial processes. Historically, accounting has been a labor-intensive profession in which responsibilities include data input, ledger management, and financial reconciliation reliant on extensive manual work. As artificial intelligence technology has evolved, however, many procedures have been automated as more exact and fast control of financial data is made possible. Robotic process automation (RPA) and other AI-powered technologies might be (Smith & Liu, 2022) now managing processes such invoice processing, expenditure classification, and financial reporting with low human involvement. Two artificial intelligence disciplines most clearly alter optical character recognition (OCR) and natural language processing (NLP). These technologies let artificial intelligence systems collect and evaluate data from contracts, invoices, and paperwork

thereby lowering the need for human data input. For corporate accounting divisions, Saudi Aramco and STC have effectively used AI-powered OCR technology, for example, so drastically reducing the mistake rate in financial reports and so saving processing time for invoices (Alharbi & Salem, 2023).

Moreover, accounting systems driven by artificial intelligence such as Xero and QuickBooks alter the way companies predict financial patterns. By use of machine learning techniques analysis of past data, these systems might forecast future financial trends and highlight any variations suggesting fraud or mistakes. Big companies with sophisticated financial systems—including those in the Saudi banking and oil industries—find considerable value in this forecasting capacity. Accountants who monitor financial planning and analysis are leaving routine accounting chores behind more strategic consulting roles as artificial intelligence develops (Areiqat and Al-Aqrabawi, 2023).

2.2. AI in Continuous Auditing

Among the most revolutionary applications of artificial intelligence in accounting is constant auditing. Conventional auditing methods might call for a limited number of transactions, which could lead to fraud or unnoticed abnormalities. Conversely, AI-driven continuous auditing systems can monitor every transaction in real-time, therefore providing a more whole view of financial procedures. By use of machine learning, these systems identify patterns, anomalies, and suspicious activities, therefore enabling auditors to view potential threats as they arise (Smith & Liu, 2022). Saudi Arabia's companies, like Al Rajhi Bank, have installed continual auditing systems driven by artificial intelligence. Audit completion times have dropped 50% and fraud detection rates have risen 40% because of these answers Alshehri & Alzahrani, 2024. This from periodic to continuous auditing is quite beneficial for businesses like banks and multinational corporations that do a lot of transactions. Artificial intelligence helps to significantly improve the quality and reliability of financial statements by letting auditors evaluate the full financial data of a company instead of dependent on sample-based audits.

Although continuous auditing obviously offers advantages, ethical use of artificial intelligence in this context poses challenges. For example, artificial intelligence algorithms may convey biases if they are educated on inadequate or flawed datasets. This might provide erroneous audit findings or maybe unwarranted claims of non-compliance. Companies must continuously evaluate and enhance their artificial intelligence systems to ensure they remain free from preconceptions and fulfill ethical auditing standards (Brucks & Zeithaml, 2018).

2.3. Predictive Analytics in Accounting

Still another use artificial intelligence finds in accounting is predictive analytics. Driven by extensive historical and present financial data analysis, artificial intelligence-based predictive analytics systems may help to forecast future trends, therefore leading companies to make more intelligent financial decisions. These strategies are rather important considering Saudi Arabia's unstable economic environment, in which fluctuations in oil prices and global market conditions may drastically influence financial performance (Khan & Rehman, 2023).

Predictive analytics driven by artificial intelligence have been introduced into accounting systems by top Saudi banks including Jadwa Investment and NCB Capital. By adding real-time data into market fluctuations, these instruments help financial managers to maximize investment portfolios and more accurately regulate risks. Applied in predictive analytics, artificial intelligence increased the accuracy of financial estimates by 25%, therefore allowing businesses to respond faster to changing economic conditions. (Khan & Rehman, 2023). From this follows better investment returns and more efficient resource usage.

Emphasizing too much predictive analytics also begs moral issues. Any flaws in the underlying datasets might provide erroneous predictions as artificial intelligence systems only reflect the data they have been educated on. Moreover, leaning too much on artificial intelligence models can lead to a disappearance of human oversight of decision-making. Companies have to strike a balance between leveraging AI's predictive capacity and ensuring finance managers are engaged in evaluating results and making strategic choices (Areiqat & Aqrabawi, 2023).

2.4. Ethical Considerations in AI Adoption

Although artificial intelligence offers several benefits for accounting, its acceptance begs for ethical issues particularly with respect to data protection and algorithmic bias. Large databases, often including private financial data, let artificial intelligence systems be feasible. Companies in Saudi Arabia, where data privacy laws are increasing, must ensure sure their artificial intelligence systems satisfy both local and international data protection laws like the General Data Protection Regulation (GDPR) (Areiqat & Al-Aqrabawi, 2023).

Still another major concern is algorithmic bias. By teaching artificial intelligence systems on historical facts, the AI may replicate and exaggerate natural prejudices in that subject. Under the accounting and auditing paradigm, this might produce financial predictions or distorted audit results. AI systems may, for example, wrongly classify transactions from specific demographic groups as suspicious, which would lead to

unwarranted inquiry. Companies must constantly assess their artificial intelligence systems to identify and correct any algorithm biases in order to manage this challenge (Brucks & Zeithaml, 2018).

Finally, one needs to give labor movement some thought. As artificial intelligence starts automating more accounting tasks, growing fear over robots replacing human accountants is justified. Though it can do some tasks faster, artificial intelligence can assist in making difficult ethical judgments or understanding difficult human circumstances. Thus, artificial intelligence should be considered as a tool enhancing human ability for making decisions rather than as a replacement for human accountants. Businesses should allocate staff member training budgets so they may focus on more strategic, value-added initiatives and collaborate with artificial intelligence.

3. Methodology

3.1. Research Design

This paper presents a comprehensive study of how artificial intelligence is changing Saudi Arabian accounting practices by way of a mixed-processes approach—that is, integrating qualitative and quantitative research methodologies. The mixed-methods approach emphasizes for one the pragmatic challenges as well as the mathematical benefits artificial intelligence offers to accounting, auditing, and financial decision-making.

Case studies of well-known Saudi companies—including Saudi Aramco, Al Rajhi Bank, and STC—verify the qualitative component of the research. Emphasizing predictive analytics, continuous audits, and automation, these case studies provide real-world accounting department artificial intelligence application insights. The quantitative component is a comprehensive poll of 150 financial experts from several sectors compiling data on their views of how artificial intelligence influences financial accuracy, efficiency, and compliance.

3.2. Sampling

The sample for the quantitative research consists of 150 Saudi Arabian financial experts, obtained by stratified random sampling to offer a representative cross-section of the financial sector. The sample comprises professionals from different fields, including banking, energy, telecommunications, and auditing, therefore offering a whole view of how artificial intelligence is changing accounting processes.

The participants' chosen criteria consisted of:

1. **Job role:** Participants must occupy professions related to financial management, auditing, or accounting.

2. **Experience with AI:** Participants should have some understanding or experience of artificial intelligence technology and systems implemented in their businesses.
3. **Geographic location:** Every participant was in Saudi Arabia as the study focused on the banking sector under Vision 2030.

Al Rajhi Bank, Saudi Aramco, and STC were chosen for the qualitative case studies based on their leadership in using artificial intelligence technology all throughout the region. These companies are a fantastic source of information on the useful applications of artificial intelligence, therefore augmenting understanding of the technological and organizational developments AI has brought about in accounting techniques.

3.3. Data Collection

Data for the qualitative analysis was collected through **in-depth interviews** and **document analysis**. Senior accountants and financial managers from Saudi Aramco, Al Rajhi Bank, and STC were interviewed using semi-structured questionnaires. The interviews focused on:

- the specific AI tools used in their accounting departments,
- the impact of AI on reducing errors, improving efficiency, and enhancing audit processes,
- the ethical concerns associated with AI adoption, particularly in terms of data privacy and algorithmic bias.

In addition to interviews, company reports and internal documents related to AI implementation were analyzed to triangulate the data and provide further context.

The **quantitative data** was collected through a **structured survey** distributed to 150 financial professionals. The survey was designed to measure the perceived impact of AI on key accounting metrics such as:

- time spent on manual accounting tasks before and after AI implementation,
- accuracy of financial reporting before and after AI integration,
- changes in audit completion times due to AI-driven continuous auditing.

The survey included a mix of **Likert scale** questions (ranging from 1 = strongly disagree to 5 = strongly agree) to gauge participants' perceptions of AI's effectiveness, as well as **open-ended questions** to capture qualitative insights on the challenges of AI adoption.

3.4. Data Analysis

The qualitative data collected from the case studies was analyzed using **thematic analysis**. This involved coding the interview transcripts and identifying recurring themes related to AI's role in accounting, automation, and ethical concerns. Key themes that emerged included:

- **Efficiency improvements**: AI's ability to reduce the time spent on manual tasks.
- **Error reduction**: The role of AI in minimizing human errors in financial reporting.
- **Ethical challenges**: Concerns about data privacy and the potential for AI systems to introduce algorithmic bias in auditing processes.

These themes were compared across the three companies to identify common patterns and unique organizational challenges in adopting AI.

For the quantitative data, **descriptive and inferential statistics** were used to analyze the survey responses. **Descriptive statistics** compiled a synopsis of the main statistics, including the average drop-in time spent on hand-made accounting chores and the average gain in financial reporting accuracy following artificial intelligence implementation.

The statistical significance of the noted variations between pre- and post-AI deployment criteria was determined by means of a paired **t-test**. For instance, the average **45 hours** weekly spent on human accounting chores before artificial intelligence integration matched the **25 hours** spent later. The **t-test** basically says if these variations were statistically significant.

Furthermore, examined was the relationship – using a regression analysis – between changes in financial accuracy and efficiency and the degree of artificial intelligence deployment. This paper measured the extent to which artificial intelligence use results in certain accounting outcomes, like audit completion times and mistake reduction.

3.5. Statistical Analysis (Preliminary Results)

The descriptive statistics revealed substantial improvements in accounting efficiency after AI integration. On average, the time spent on manual tasks decreased by 44%, from 45 hours per week to 25 hours per week. In addition, financial reporting accuracy increased by 20%, from an average accuracy rate of 70% before AI implementation to 90% after AI adoption.

Table 1. **Impact of AI on Accounting Efficiency**

Metric	Before AI Implementation	After AI Implementation
Time spent on manual tasks	45 hours per week	25 hours per week
Audit completion time	3 months	1 month
Accuracy of financial reports	70%	90%

Source: own study

3.6. Hypothesis Testing

H1: AI implementation improves the accuracy of financial reporting.
Result: Supported. The accuracy of financial reporting improved by 20% ($p < 0.01$) after AI integration.
H2: Continuous auditing reduces audit completion time.
Result: Supported. Audit completion times were reduced by 50%, from 3 months to 1 month ($p < 0.01$).

3.7 Inferential Statistics

The paired t-test findings verified that the decrease in time spent on hand accounting chores was statistically significant ($t(149) = 9.23$, $p < 0.001$). Likewise, the statistically substantial rise in financial reporting accuracy ($t(149) = 7.89$, $p = 0.001$) shows that artificial intelligence clearly affected these important accounting measures.

With $R^2 = 0.82$, $p = 0.001$ the regression analysis revealed a high positive link between the degree of AI implementation and accounting efficiency gains. This implies that more benefits in financial accuracy and time savings relate to more degrees of artificial intelligence integration.

4. Results

This study unambiguously reveals that artificial intelligence (AI) has improved accounting methods in Saudi Arabia, especially with relation to the development of audit processes, accuracy, and efficiency. Understanding the revolutionary role artificial intelligence plays in the process of simplifying accounting operations and enhancing the processes of financial reporting within large Saudi companies depends on the findings of the quantitative survey and the qualitative case studies.

4.1. Efficiency Improvements

The main result of the research is the notable increase in operational efficiency brought about by artificial intelligence inclusion. When artificial intelligence technology was implemented, survey evidence revealed on balance that, on average, time taken on manual accounting operations such as data entry, processing of invoices, and financial transactions decreased by 44 %, from 45 hours per week to 25 hours per week. With lesser physical efforts requiring men's input in the form of accounting helpers less physical work allowed these professionals to focus on some higher-level tasks such as financial analysis and Strategising.

Hire AI OCR text and Saudi Aramco were able to filter through the numerous financial documents and make work easier using AOT. This cut data entering human mistakes as well as 35% of invoice processing time. Similarly, **STC** observed that artificial intelligence-driven automation solutions have enabled its accounting teams to evaluate more financial data faster and more precisely, therefore increasing general productivity.

4.2. Improved Accuracy in Financial Reporting

Moreover, revealing a clear increase in financial reporting accuracy are the results. From 70% before artificial intelligence was introduced to 90% thereafter, participants exhibited an average increase in financial reporting accuracy. The case studies confirm this conclusion: all three of the companies—Saudi Aramco, STC, and Al Rajhi Bank—report considerable gains in the accuracy and reliability of their financial statements.

Al Rajhi Bank's AI-driven financial analytics solutions allow the accounting team to more accurately identify changes in financial data. As artificial intelligence algorithms automated error discovery and speedy transaction cross-checking, the accuracy of the bank's financial reporting improved 20%. These advances particularly benefited audit seasons as the artificial intelligence system found any variations before they became big problems.

4.3. Faster Audit Completion Times

Furthermore, very important in cutting audit completion times has been artificial intelligence. Many Saudi businesses would be able to monitor real-time financial activities if their auditing strategy were changed from periodic to continuous. Following artificial intelligence integration, standard audit cycles dropped from three months to just one month, therefore cutting half of the audit completion times.

Using consistent audit techniques at **Al Rajhi Bank** allowed quick discovery of any fraud and non-compliance problems. The bank's AI-powered auditing technology greatly accelerated the audit process by always looking for anomalies and thereby lowering the requirement for human review. Forty percent of fraud detection rates dropped underlining even more the relevance of artificial intelligence in improving financial audit speed and accuracy.

4.4. Predictive Analytics and Decision-Making

More importantly is the way artificial intelligence supports predictive analytics, therefore enhancing methods of financial decision-making. Artificial intelligence systems may

predict future financial trends by means of large volumes of historical and real-time data analysis, therefore guiding companies in improved decision-making. Using AI-driven predictive analytics tools, respondents said their financial forecast accuracy increased by 25%.

NCB Capital and Jadwa Investment were two interesting companies applying artificial intelligence for predictive analytics. By means of AI algorithm analysis of market data, these companies were able to improve their investment strategy and better forecast adjustments in changes in the market. Given Saudi Arabia's unstable economic status, in which fluctuations in oil prices might have a significant impact on financial markets, this ability proved quite beneficial. Once artificial intelligence was introduced into their financial planning, both companies shown better methods of risk management and increased investment returns.

4.5. Interpretation of Results

The results of this study amply support the hypothesis that integration of artificial intelligence enhances accounting efficiency, accuracy, and audit performance inside Saudi companies. The numbers show that artificial intelligence technologies—particularly automation and continuous auditing—have most obviously contributed to reduce the time and effort required for fundamental accounting tasks, improve the accuracy of financial reporting, and hasten the audit process.

From Saudi Aramco, Al Rajhi Bank, and STC case studies, real-world instances of how artificial intelligence-driven solutions might transform accounting procedures abound. These companies have confirmed that artificial intelligence can revolutionize financial methods by not only turning repetitive tasks into automated processes into something that is menial but also into providing real time probable risk and opportunity detection. The findings highlight even more the need of predictive analytics for most sundry financial decisions.

Artificial intelligence technologies help firms predict market conditions and adapt to new economic environment by helping them to better analyze massive amounts of financial information. This has proved quite useful for companies operating in Saudi Arabia, where economic factors including oil prices might significantly affect financial performance.

4.6. Challenges and Ethical Considerations

Although everyone would agree that there always are benefits in using artificial intelligence techniques in accounting, this paper also outlines the challenges and concerns that need to be addressed. Some of their concerns include matters concerning data privacy mainly because artificial intelligent systems operate with

databases that may contain private financial data. Yet, serious concern should be paid to comprehensive encryption, anonymization, and periodic audits which should be used in any implementation of the AI. Business organizations have to be certain that their artificial intelligence systems meet local and/or international data protection laws such as GDPA, hence maintaining consumer confidence and their privacy. Another difficulty is that the AI algorithms are built to be prejudiced because they rely on circumscribed or biased data sets. From this may come wrong financial forecasts, audit results or discriminated treatment of selected operations. Thus, using AI, companies are obliged to check the AI systems continuously to identify sources of prejudice and address them in a timely manner, making certain that the utilization of the technology in decision making is free and fair.

Finally, there is the issue of **workforce displacement**. As AI continues to automate more accounting tasks, there is growing concern that human accountants may be replaced by machines. While AI can handle repetitive tasks with greater speed and accuracy, it cannot replicate the complex ethical judgments and decision-making skills of human accountants. Therefore, companies must focus on integrating AI as a tool to enhance, rather than replace, human expertise in accounting.

5. Discussion

The findings of this study underscore the transformative impact of artificial intelligence (AI) on accounting practices within Saudi Arabia. The results indicate that AI integration has led to significant improvements in accounting efficiency, accuracy, and audit processes. These findings are particularly relevant given Saudi Arabia's Vision 2030 initiative, which prioritizes the modernization and digital transformation of various sectors, including finance.

5.1. Impact on Accounting Efficiency

One of the most obvious results of artificial intelligence implementation is the less time spent on hand accounting chores. This gives free accountants more time for higher level responsibilities including strategic decision-making, risk management, and financial analysis. By default, regular process automation of data input and invoice processing helps to lower human error—which may result in financial misstatements or delays in financial reporting. The case studies show that businesses like STC and Saudi Aramco have seen notable increase in production with artificial intelligence-driven automation technologies.

These increased degrees of efficiency help not just internal operations but also have more widespread consequences on the worldwide competitiveness of Saudi companies. More Saudi Arabian businesses embracing artificial intelligence technology will help

them to compete with foreign businesses now using AI to simplify their accounting practices. Given the global corporate environment become more digitalized, the results of this study imply that businesses ignoring artificial intelligence might be at a competitive disadvantage.

5.2. Improved Financial Accuracy

An improved accuracy in financial reporting is another significant outcome of artificial intelligence acceptance. Real-time processing of enormous volumes of financial data by artificial intelligence makes more correct and consistent financial statements feasible. This is especially important in industries such as banking and energy that deal in complex financial transactions. Through constant transaction monitoring and error identification, AI systems ensure financial rule compliance and help companies avoid costly mistakes.

With Al Rajhi Bank, the use of AI-driven financial analytics tools has obviously improved financial record accuracy. This supports the confidence and trust of outside stakeholders, including lawmakers and investors as well as internal decision-making. Accurate financial reporting is a foundation of corporate governance; hence, the application of artificial intelligence to increase reporting accuracy might produce more transparent and accountable corporate operations all throughout the financial sector.

5.3. Operational Metrics Beyond Traditional Accounting Indicators

Accounting ratios represent the relationships between two or more elements in financial statements controlled by the parent company. These ratios serve as essential analytical tools employed by shareholders, regulatory bodies, and stakeholders to evaluate a company's profitability, operational efficiency, and financial stability. Key accounting indicators include liquidity ratios, profitability ratios, efficiency ratios, and financial sustainability metrics, making them critical components in strategic decision-making processes.

Operational Metrics Beyond Traditional Accounting Indicators

1. **Time Spent on Manual Accounting Tasks Before and After AI Implementation:** While this reflects the improvement in accounting efficiency due to the adoption of artificial intelligence, it does not constitute a traditional financial indicator.
2. **Accuracy of Financial Reporting Before and After AI Integration:** Although enhanced reporting accuracy highlights improvements in output quality, it is not classified as a conventional analytical ratio used to evaluate financial performance.

3. **Changes in Audit Completion Time Due to AI-Powered Continuous Auditing:** Although this demonstrates operational advancements, it is not categorized as a primary metric for assessing financial performance.

Key accounting indicators primarily focus on core financial data that directly reflects a company's performance, such as liquidity ratios, profitability ratios, and efficiency ratios. Conversely, metrics associated with the integration of advanced technologies, such as artificial intelligence, are considered secondary indicators aimed at improving operational efficiency rather than offering traditional financial analysis. This distinction underscores the importance of focusing on conventional indicators to ensure consistency and transparency in financial analysis while utilizing secondary metrics as complementary tools.

5.4. Continuous Auditing and Fraud Detection

Among the several significant findings this study reveals, the one most significant is how artificial intelligence detects fraud and ongoing audits helps. Sometimes using traditional auditing techniques might cause one to miss fraud or anomalies across several audit cycles. Artificial intelligence based continuous auditing solutions, using real-time transaction monitoring, give a whole view of a company's financial position. Auditors might thus find and fix any current occurrences of fraud or non-compliance instead of waiting until the next audit cycle.

The situation of Al Rajhi Bank shows how artificial intelligence (AI) might greatly affect fraud detection rates and audit completion timeframes. Driven by artificial intelligence, the bank's auditing technology reduced the audit cycle from three months to one month and increased the forty percent fraud detecting rate. This was achieved by means of detections of continuous transaction anomalies. These changes have a big impact on Saudi Arabia's banking sector; its main concerns are regulatory compliance and fraud prevention.

5.5. Ethical and Regulatory Considerations:

Although artificial intelligence clearly helps accounting, the study also draws attention to various ethical and legal issues. Data privacy is one of the main issues as proper operation of artificial intelligence systems depends on large volumes of financial data. Businesses have to make sure their artificial intelligence systems follow both local rules—such as Saudi Arabia's data protection rules—as well as international guidelines such the General Data Protection Regulation (GDPR). Ignorance of this might lead to legal fines, consumer mistrust, and data leaks.

Still another ethical issue is algorithmic prejudice. Training for artificial intelligence systems comes from past data, which can include prejudices that the AI algorithms

could amplify. In financial decision-making especially, this is especially troublesome as biassed algorithms could treat some transactions or clients unfairly. Businesses have to make consistent investments in audits of their artificial intelligence systems to find and reduce any biases that could develop, therefore guaranteeing that their AI-driven decision-making procedures stay open and fair.

6. Conclusion

Especially focused on automation, continuous audits, and financial reporting accuracy, this study has revealed how much artificial intelligence (AI) is affecting Saudi Arabian accounting practices. The findings imply that integration of artificial intelligence generates significant increases in efficiency, accuracy, and audit completion times, therefore providing a useful tool for businesses seeking to modernize their financial management systems.

Artificial intelligence's ability to automate routine accounting chores lets professionals concentrate on more strategic activities even if its participation in continuous auditing guarantees that businesses could track their financial operations in real-time and more precisely identify any fraud or non-compliance issues. Moreover, artificial intelligence's predictive analytics provide businesses complete market pattern analysis guiding their financial decisions and therefore aid to lower risks.

Still, the findings also draw attention to several issues that need to be addressed should artificial intelligence be applied in financial systems. Two of the most urgent ethical issues are data privacy and algorithmic bias; businesses have to ensure their artificial intelligence systems follow pertinent guidelines and stay free from prejudices influencing financial decision-making.

The results of this study provide the following suggestions for businesses trying to use artificial intelligence in their accounting systems:

1. Invest in AI-Driven Automation: Companies should make investments in artificial intelligence technology driven by regular accounting chores including data input, invoice processing, and financial reconciliation. This will increase effectiveness and free accounting experts to concentrate on higher-level responsibilities, adding greater value to the company.
2. Adopt Continuous Auditing Systems: Using AI-driven continuous auditing systems that track financial transactions in real-time can help businesses. This will lower audit completion times, increase audit accuracy, and help the business to spot early on fraud or non-compliance concerns.
3. Utilize Predictive Analytics: Predictive analytics technologies driven by artificial intelligence may offer businesses insightful analysis of market trends and support more wise financial decisions. These technologies should be included in financial

planning procedures by businesses to maximize investment strategies and control risks more successfully.

4. Ensure Compliance with Data Privacy Regulations: Companies have to make sure their artificial intelligence systems follow local as well as global data privacy rules, including Saudi Arabia's legislation and the GDPR. This will keep consumer confidence and assist to protect private financial information.
5. Mitigate Algorithmic Bias: Regular audits of artificial intelligence systems are crucial to find and fix any algorithmic biases that could develop in the systems. Businesses should make continuous investments in training for their artificial intelligence systems to guarantee their ethical, fair, and transparent decision-making practices persist.
6. Prioritize Workforce Training: As artificial intelligence keeps automating more accounting chores, businesses should give workforce training top priority so that staff members may collaborate with AI technologies. This will guarantee that human accountants may use artificial intelligence to improve their capacity for decision-making instead of having technology replace them.

Acknowledgement

The authors extend their appreciation to the Deanship of Scientific Research at Northern Border University, Arar, KSA for funding this research work through project number NBU-FFR-2025-1527-01.

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