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Artificial Intelligence and Enhancing Accounting Practices in Selected African Countries

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Abstrak

Tujuan – *Seiring dengan upaya perusahaan di Afrika untuk melakukan modernisasi dan bersaing secara global, adopsi Kecerdasan Buatan (AI) menjadi sangat penting dalam transformasi praktik akuntansi mereka, khususnya di Nigeria, Afrika Selatan, dan Kenya. Oleh karena itu, tujuan dari penelitian ini adalah untuk mengkaji peran AI dalam meningkatkan proses akuntansi dan efisiensi operasional di beberapa perusahaan multinasional terpilih di tiga Negara yang kurang banyak diteliti.*

Desain/Metodologi/Pendekatan – *Penelitian ini menggunakan desain penelitian kuantitatif melalui kuesioner yang didistribusikan kepada Chief Financial Officers (CFO)/Akuntan di 30 perusahaan multinasional dengan riwayat adopsi AI yang terdokumentasi. Data yang diperoleh dianalisis menggunakan alat statistik seperti analisis konten, grafik, dan ukuran tendensi sentral untuk mengeksplorasi dampak AI.*

Temuan – *Hasil penelitian menunjukkan adanya peningkatan yang signifikan dalam praktik akuntansi akibat adopsi AI, dengan Afrika Selatan sebagai negara yang paling unggul dalam implementasi, diikuti oleh Kenya dan Nigeria. Hasil penelitian juga mengungkapkan manfaat jangka panjang, termasuk pengurangan kesalahan manusia, proses yang lebih efisien, dan peningkatan ketepatan waktu pelaporan keuangan, terutama di perusahaan-perusahaan Afrika Selatan. Studi ini menyimpulkan bahwa adopsi AI sangat penting bagi perusahaan yang ingin meningkatkan efisiensi operasionalnya.*

Keterbatasan/implikasi Penelitian – *Kebaruan ilmiah dari penelitian ini terletak pada analisis komparatif adopsi AI di tiga negara Afrika, yang memberikan wawasan baru tentang bagaimana inovasi berbasis AI dapat meningkatkan proses organisasi dan efisiensi. Relevansi penelitian ini didasarkan pada pentingnya AI dalam mengoptimalkan praktik akuntansi, yang pada akhirnya meningkatkan daya saing bisnis di kawasan Sub-Sahara Afrika.*

Keywords: ***Kecerdasan Buatan, Peningkatan Praktik Akuntansi, Perusahaan Multinasional Terdaftar, Afrika Sub-Sahara***

Abstract

Purpose – As the firms in Africa strive to modernize and compete globally, Artificial Intelligence adoption becomes imperative for the transformation of their accounting practices, particularly in Nigeria, South Africa, and Kenya. The aim of this study is therefore to examine the role of AI in improving accounting processes and operational efficiency in selected multinational companies in three under-studied countries.
Design/methodology/approach – The study used a quantitative research design through questionnaires distributed to Chief Financial Officers/Accountants in 30 multinational firms with a documented history of AI adoption. The data were analyzed using statistical tools such as content analysis, figures, and measures of central tendency to explore AI's impact.
Findings – The study's results disclosed a significant improvement in accounting practices due to AI adoption with South Africa leading in implementation, followed by Kenya and Nigeria. The result also revealed long-term benefits, including reduced human error, streamlined processes, and improved financial reporting timelines, particularly in South African firms. The study concluded that AI adoption is essential for firms seeking to enhance operational efficiency
Research limitations/implications – This study's scientific novelty is the comparative analysis of AI adoption across three African economies, which provides fresh insights into how AI-driven innovations improve organizational processes and efficiency. Its relevance stems from the significance of AI in optimizing accounting practices, which boosts the competitiveness of businesses in Sub-Saharan Africa.

Keywords: Artificial Intelligence, Enhancing Accounting Practices, Listed Multinational Companies, Sub-Saharan Africa

Introduction

The transformational power of artificial intelligence (AI) is becoming more widely acknowledged across a range of industries. Over time, artificial intelligence (AI) in accounting has grown in popularity due to its extensive use by numerous companies (Adams & Duncan, 2022). According to this study, artificial intelligence (AI) has advanced accounting procedures as it can perform things that humans cannot, including making financial judgments on its own (Adegbite & Nakpodia, 2020). AI has the ability to improve a company's accuracy, efficiency, and speed of decision-making, suggesting a major turning point in contemporary financial management and decision-making (Aitkazinov, 2023).

The adoption and application of AI in accounting, on the other hand, may differ significantly among different nations, especially in Africa. Research indicates that accountants in these nations are already incorporating technology into their daily accounting routines to enhance financial results and decrease the amount of time spent on tasks (Akinwale & Olayemi, 2022). Since AI offers numerous advantages, such as enabling data-driven decision-making, revealing insights through data analytics, and saving a substantial amount of time by automating repetitive tasks (Aldoseri *et al.*, 2023).

The processing, analysis, and reporting of financial transactions have been completely transformed by artificial intelligence (AI) technologies such robotic process automation, machine learning, and natural language processing (Allioui & Mourdi, 2023). According to

Andriosopoulos *et al*. (2019), these technologies speed up financial reporting, increase transparency, and decrease human error. This study provides a useful review of the effectiveness of implementing AI to improve accounting processes and close the gap between developed and developing markets by comparing businesses in a few African nations. With a focus on Nigeria, South Africa, and Kenya specifically, this study examines the functions of AI adoption and how it affects the development of accounting procedures in African businesses.

This research is significant because it attempts to increase business stakeholders' comprehension of how AI can improve accounting practices and efficiency in specific African countries, despite the fact that it is limited by the availability of data and the speed at which AI technologies are evolving, which may affect best practices during the study period.

Problem Statement and Research Gap

While implementing AI has many advantages for improving accounting procedures and facilitating efficient financial decision-making for businesses throughout Sub-Saharan Africa, some of these nations have been slower to adopt AI than developed nations (Akinwale & Olayemi, 2022). Nonetheless, companies in this area have adopted AI with notable success, which has enhanced their efficiency and accounting procedures (Andriosopoulos *et al*., 2019). Furthermore, Sub-Saharan African businesses frequently encounter a variety of obstacles that prevent them from successfully integrating AI into their accounting systems and procedures, including legislative limitations, a lack of technology infrastructure, and unwillingness to change (Okoye & Nwaigwe, 2021).

This paper addresses these issues as well as the possible avenues for enhancing accounting procedures.

Few studies have looked at how AI affects the accounting practices of businesses in specific African nations, particularly Nigeria, South Africa, and Kenya, despite the fact that there is a wealth of research on the adoption of AI to improve accounting practices, such as studies by Brown *et al.* (2020) and Aldoseri *et al.* (2023). A notable gap in the literature is the variation in AI adoption in the aforementioned countries. By examining the variations in AI adoption across a few Sub-Saharan African nations, this study seeks to close this gap. To do so, a comparative analysis is required to determine the factors that facilitate and hinder the use of AI in improving accounting procedures.

A small number of papers reflect recent scholarly interest in AI's effects on the accounting profession (Adams & Duncan, 2022). There is still a need for more thorough research, particularly in the accounting industry, even if academics have observed an increasing trend in the integration of AI solutions in business. Even with this study's thorough examination, there are still a number of gaps in the literature. First, nothing is known about the particular obstacles to the adoption of AI in Kenya's and Nigeria's manufacturing and retail industries. Developing solutions to boost AI adoption in various domains requires an understanding of these obstacles. Second, additional longitudinal research is required to monitor the long-term effects of AI adoption on African nations' accounting procedures and organizational performance. Last but not least, an analysis of earlier research by Khan & Kumar (2021); Huang & Gig-Wang (2022); Lawal (2022); Aitkazinov (2023); and Nguyen & Lee (2024) shows that studies on the use of AI to improve accounting procedures in multinational corporations in these nations have been conducted. Additionally, there aren't many comparative studies that use Kenya, South Africa, and Nigeria as

coverage areas to look at AI adoption and its consequences in other emerging economies. Such studies might offer further standards and information to other African nations looking to adopt AI accounting procedures.

This study therefore aims to examine the impact of AI-driven on enhancing accounting practices in Nigeria, South Africa and Kenya. Specifically, the research:

a. assess the extent to which AI has been integrated into accounting practices in selected multinational companies in South Africa, Kenya, and Nigeria;
b. compare the AI adoption rate and its effects on accounting practices in South Africa, Kenya, and Nigeria; and
c. determine how differ the AI tools used in South Africa, Kenya, and Nigeria.

It is based on the above background that this research seeks to ask questions that to what extent has AI been integrated into accounting practices in South Africa, Kenya, and Nigeria? How do AI adoption rates and outcomes differ across multinational companies in South Africa, Kenya, and Nigeria? And differ are the AI tools used in South Africa, Kenya and Nigeria?

Literature Review & Hypothesis

Theoretical Framework

This study is based on the Technology Acceptance Model (TAM), which was created by Davis in 1989 and predicts how users will behave when adopting new technologies (Andriosopoulos *et al*., 2019). According to TAM, two important factors—Perceived Ease of Use (PEOU) and Perceived Usefulness (PU)—have a significant impact on technology acceptance (Andriosopoulos *et al*., 2019). PEOU represents the belief that using the system will require little effort, while PU is the belief that a specific system will enhance job performance (Andriosopoulos *et al*., 2019). Together, these factors influence a user's attitude toward the technology, influencing both their intention to use it and its actual usage.

In this study, TAM helps evaluate how accounting professionals integrate AI tools into their daily accounting tasks and how AI adoption influences reporting efficiency and accuracy (Davenport & Ronanki, 2018). TAM is crucial for understanding the various factors affecting the acceptance and usage of AI technologies in accounting practices and financial reporting (Davenport & Ronanki, 2018). It offers insight into how accounting professionals in multinational firms perceive and adopt AI technology in accounting (Davenport & Ronanki, 2018). The model perceives the usefulness and ease of using as the primary drivers for the adoption of new technology (Davenport & Ronanki, 2018).

By highlighting the difficulties that staff may have when learning and utilizing AI technologies, this model provides a useful lens for evaluating how these technologies are embraced and used in accounting (Huang & Gig-Wang, 2022). By providing information on these elements, TAM helps put the results in the larger organizational, regional, and worldwide patterns that influence the use of AI in accounting and financial reporting, particularly in developing nations.

To put it another way, TAM is used in this study to better understand how accounting professionals would be impacted by the adoption of AI tools in multinational corporations located in African nations (Khan & Kumar, 2021). Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), two important notions, are the focus of TAM, which is used to assess how these aspects influenced the adoption of AI in accounting processes. For example, PU assessed how much accounting professionals thought that

utilizing AI tools would improve their performance on the job, specifically in terms of increasing accounting accuracy, reducing errors, and expediting reporting timelines. In this study, participants were asked to score statements on the anticipated advancements in financial reporting, data accuracy, and daily chores that AI would bring about.

Aside from that, the Perceived Ease of Use (PEOU) construct assessed how simple accounting experts thought the AI systems would be to understand and use. Their expectations on the work required to master these systems and the ease or complexity of using AI tools were captured in the survey questions. To ascertain the impact of the PU and PEOU on the willingness of organizations' finance managers to incorporate AI into their accounting procedures, data from these TAM aspects was examined. Thus, the TAM framework offered insights into these professionals' perceptions of AI's advantages and applicability, which might help guide this study's research of adoption patterns in Nigeria. Kenya and South Africa

AI and Accounting Practices

As regular tasks become automated, accountants can transition into more strategic roles by concentrating on analysis, forecasting, and decision-making (Adams & Duncan, 2022). AI-driven auditing tools are revolutionizing financial reporting by automating complex tasks, improving accuracy, and ensuring regulatory compliance (Adams & Duncan, 2022). AI integration has streamlined these activities, leading to significant improvements in both efficiency and accuracy. Machine learning algorithms excel in categorizing transactions (Akinwale & Olayemi, 2022) by learning from historical data and applying this knowledge to current transactions. This automation reduces the time and effort required for bookkeeping, allowing accountants to focus on more strategic roles.

However, businesses around the world are using AI to automate complex accounting processes, improve the accuracy of financial reports, and ensure regulatory compliance. However, AI adoption in accounting practices across Sub-Saharan Africa, including Nigeria, has been slow due to issues like inadequate infrastructure, limited access to advanced technologies, and a shortage of skilled professionals (Brynjolfsson & Mc-Afee, 2017). Adegbite and Nakpodia's (2020) research identifies these barriers and emphasizes the need for supportive policies and technological investments to accelerate AI adoption.

Due to technological, skill-related, and regulatory barriers, the use of AI in accounting processes is restricted in several African nations, including as South Africa, Nigeria, and Kenya (Khan & Kumar, 2021). AI adoption in accounting and financial procedures has advanced in Nigeria, South Africa, and Kenya, although it is still lagging in many African nations (Oseni, 2021). With its highly developed financial sector and robust technological infrastructure, South Africa is a leader in the adoption of cutting-edge technologies, such as artificial intelligence (AI), in accounting and financial management. These technologies enable the integration of AI solutions and enhance the accuracy and efficiency of financial reporting (Huang & Gig-Wang, 2022). Routine work automation has undergone a radical change as a result of the integration of AI into accounting procedures (Brown et al., 2020).

The existing literature on AI-driven financial reporting demonstrates a transformative potentiality across various sectors, as evidenced by Akinwale and Olayemi's (2022) call for supportive regulatory frameworks to encourage AI innovation. For example, Oseni (2021) describes how AI reduces human error, leading to more reliable financial reports (Brown *et al*., 2020). Automation of accounts reconciliation ensures the accuracy and consistency of financial

records, but traditionally a manual process prone to errors (Brynjolfsson & Mc-Afee, 2017).

Numerous companies and innovation hubs centered on financial technology, including artificial intelligence, can be found in a nation's developing tech ecosystem, especially in Nigeria (Nguyen & Lee, 2024). Furthermore, technological developments in financial services are supported by regulatory agencies like the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC) (Khan & Kumar, 2021). The widespread use of AI in accounting, however, may be hampered by Nigeria's numerous obstacles, including regulatory barriers, infrastructure limitations, and a lack of knowledge and experience in the field (Lawal, 2022). Notwithstanding these challenges, Nigeria's continuous advancements in the financial and technology sectors point to a bright future for the use of AI in accounting (Okoye & Nwaigwe, 2021).

AI research may be hampered by inconsistent data availability and a dearth of digital financial records. For example, data sharing may be restricted by Nigerian financial reporting and data protection laws (Huang & Gig-Wang, 2022), which highlights the importance of filling this talent gap with focused training initiatives. However, a number of issues unique to Sub-Saharan Africa, such as labor readiness, continue to impede the adoption of AI in countries like Kenya, South Africa, and Nigeria. In the meantime, Kenya is making great strides in using AI and other technical advancements in a number of industrial and other fields, including accountancy. Initiatives like the "Silicon Savannah," which are driving its expanding tech ecosystem, have expanded AI-based financial technology solutions (Huang & Gig-Wang, 2022).

These procedures have been completely transformed by AI technologies, particularly machine learning algorithms (Onyango & Ogutu, 2020). This has made it possible to input financial data from several sources quickly and accurately, greatly reducing errors and the need for manual intervention (Oseni, 2021). Furthermore, integrating AI into accounting and financial reporting procedures is made more difficult by a lack of proper technology infrastructure, such as poor IT systems and low internet penetration (Owolabi & Adeyemi, 2021).

This procedure has been revolutionized by AI-driven accounts reconciliation, which quickly compares big datasets, finds disparities, and automatically reconciles accounts (Zhang & Zheng, 2020). By identifying complex data patterns that human processes might overlook, AI algorithms might increase accuracy and productivity (Smith & Brown, 2024). However, Nguyen & Lee (2024) highlight the lack of internet infrastructure, access to computers, and digital literacy as barriers to AI adoption. According to Onyango and Ogutu (2020), regulatory restrictions pertaining to financial disclosure and data privacy also present substantial obstacles. Because AI-driven reconciliation is real-time, inconsistencies can be found and fixed quickly, improving the accuracy of financial reporting and regulatory compliance (Smith & Brown, 2024).

Routine bookkeeping tasks, such as transaction classification and financial report preparation have historically required meticulous manual labor (Huang & Gig-Wang, 2022). These AI systems handle multiple data types and structures, establishing a centralized, error-free database that is crucial for dependable financial reporting (Owolabi & Adeyemi, 2021). AI in accounting has reduced errors enhanced productivity and improved accuracy, drastically transforming accountants' duties and enabling more strategic. However, there are still obstacles to the adoption of AI in accounting, such as cultural opposition, the digital gap, and legal barriers (Oseni, 2021).

Nigeria is becoming more interested in AI for accounting's contribution to corporate success for a number of reasons (Lawal, 2022). The necessity for capacity-building activities to create competence in AI applications is underscored by the lack of AI talent in developing economies (Zhang & Zheng, 2020). In order to foster an innovative culture in Sub-Saharan African businesses, this study examines these issues and offers solutions. With Okoye & Nwaigwe (2021) highlighting AI's influence on financial reporting quality and process efficiency, the integration of AI into financial and accounting procedures is becoming more widespread in industrialized countries.

Research Hypotheses

Based on the above literature reviewed, this research hypothesized that:

a. AI has not been fully integrated into accounting practices in South Africa, Kenya, and Nigeria.
b. There is no difference in AI adoption rates and outcomes differ across multinational companies in South Africa, Kenya, and Nigeria.
c. The AI tools used in South Africa, Kenya and Nigeria are not differs.

Research Method

In order to ensure representation from various emerging economies and to capture country-level variations in AI adoption, the study adopted a comparative approach, focusing on thirty multinational companies operating in South Africa, Kenya, and Nigeria. This design allows for a thorough analysis of the impact of AI on accounting practices in these countries. A multi-stage sampling technique was used, first using a purposive sampling technique to select thirty multinational companies from each of the three countries known to have a history of adopting AI in their accounting practices. These firms represent important industries such as technology, manufacturing, finance, and retail.

A questionnaire given to the organizations' accountants and chief financial officers (CFOs) was used to gather quantitative data for the study, which examined how the use of AI could improve accounting methods among the chosen companies in African nations. To find any possible problems with the questionnaire and make the required changes prior to the full-scale study, a pilot test was carried out utilizing a small-scale survey. Descriptive statistics, including chart distribution, mean, and standard deviation, as well as content analysis for both numerical and non-numerical data, were used to analyze the data using statistical tools and SPSS. AI adoption rates, adjustments to reporting schedules, and financial reporting error rates were among the variables examined.

Results and Discussion

Study Result

The descriptive analysis results reported in Table 1 provide a comprehensive analysis of the impact of AI adoption on accounting practices of selected multinational firms in three selected African countries. The results revealed that greater automation. The report comprises eight major aspects, including AI adoption rates, the percentage of task automation among others. China and Zheng (2020) define AI Adoption Rates as the proportion of the study's sampled firms that have included AI technologies into their accounting procedures. This measure, which measures how much the chosen organizations are adopting AI technologies for accounting reasons, is used to compare adoption levels among them in South Africa, Kenya, Nigeria, and across other industries.

The comparing error rates measure the frequency of accounting errors before and after the implementation of AI tools (Aitkazinov, 2023). This metric offers insight into how AI can reduce manual errors, improve data accuracy, and improve overall reliability in financial reporting, which is typically measured by examining discrepancies in financial records and reports produced with and without AI intervention (Chukwuani & Amaka, 2020). The reporting timelines measure the amount of time needed to complete financial reports (Zhang & Zheng, 2020). The comparison of timelines before and after AI adoption determines the impact of AI on the speed and efficiency of financial report generation; the shorter the reporting timelines following AI implementation, the better the indication of improvements in workflow efficiency (Smith & Brown, 2024).

The percentage of accounting tasks that have been automated by AI, including automated accounts reconciliation, data entry, and financial forecasting, is measured by the proportion of accounting tasks automated (Zhang & Zheng, 2020). More AI integration in accounting is indicated by a higher proportion (Smith & Brown, 2024). The integration of AI has resulted in organizational changes, including adjustments to job hierarchy structures, positions, and staff responsibilities (Aitkazinov, 2023). It depicts the revolutionary accounting brought about by the use of AI, which causes workers to refocus their attention from mundane duties to more strategic positions.

Table 1
Descriptive Analysis Result

SN	Items	Valid	Mean	SD
1	AI Adoption Rates	30	0.78	0.15
2	The Percentage of Accounting Tasks Automated	30	0.70	0.15
3	Level of AI Tools Usage	30	0.67	0.13
4	Comparing Error Rates	30	0.70	0.20
5	Reporting Timelines Before and After AI Adoption	30	0.68	0.18
6	Tracking Changes in Descriptions, Employee Roles, and Hierarchical Structures	30	0.67	0.13
7	Financial Reporting Improvements	30	0.72	0.13
8	Organizational Changes in Various Countries	30	0.67	0.13

Source: Data Analysis (2024)

Based on the results generated in the table above, the mean values for each item offer insights into the average impact observed across the firms studied in Nigeria, Kenya and South Africa. For instance, the mean value for AI adoption rates is 0.78, indicating a high rate of AI adoption among these firms. The standard deviation (SD) value which is low indicates consistent findings across the sampled firms with the highest changes observed in error rate reduction in post-AI adoption era.

The results also reveal that AI adoption and automation are significant across the region, with a mean value of 0.78 for AI Adoption Rates and 0.70 for the percentage of accounting tasks automated. Error rates have notably improved post-AI implementation, as reflected by the mean value of 0.7000 for Comparing Error Rates. Additionally, reporting timelines have become faster, with a mean of 0.6833 for Reporting Timelines Before and After AI Implementation. The improvements in financial reporting, indicated by a mean value of 0.7167, highlight the positive impact of AI on financial accuracy and quality. Organizational changes, with a mean value of 0.6667, further suggest that AI adoption has led to significant structural shifts within these firms. The data summary confirms the validity of the findings, with all items having valid data and no missing values. In summary, the data from Table 1 clearly descloses that AI adoption has significant impact on accounting practices in African countries. The result exhibits increased automation, faster reporting timelines, improved accuracy in financial reporting and significant organizational positive changes underscoring the transformative impact of AI on the accounting practices in the Africa.

Table 2
Summary of AI Tool Usage by Selected Countries

AI Tool	South Africa (%)	Kenya (%)	Nigeria (%)
Machine Learning (ML)	87	72	60
Robotic Process Automation (RPA)	85	75	60
Natural Language Processing (NLP)	80	65	55
AI-Driven Auditing Tools (ADAT)	82	68	52
Blockchain (BC)	55	40	35
Predictive Analytics (PA)	78	70	50

Source: Data Analysis (2024)

Table 2 dicloses that ML Algorithms were frequently used across firms for predictive analytics, data-driven forecasting and error detection in financial records. This tool enabled businesses to analyze big data, identify trends and make strategic financial predictions. Firms in South Africa showed the highest ML adoption rate of 87% by utilizing algorithms for tasks like trend forecasting and risk assessment. In Kenya, ML adoption rate is 72% by the firms there, while in Nigeria; the firms there utilized 60% level of adoption rate. RPA was the most commonly adopted tool for automating routine accounting tasks like data entry, invoicing, and reconciliations. It significantly reduced manual errors and improved processing speed. RPA adoption was highest in South Africa, with 85% of the companies using it, followed by 75% in Kenya and 60% in Nigeria. The study showed that RPA contributed to up to a 70% reduction in time spent on routine tasks across all sampled firms.

NLP was primarily used for analyzing unstructured data from financial documents, enhancing reporting efficiency and allowing firms to extract insights from narrative data quickly. This tool was instrumental in report drafting and compliance analysis. NLP adoption rates varied significantly, with South Africa leading at 80%, Kenya at 65%, and Nigeria at 55%. Firms using NLP reported quicker turnaround times for report generation and enhanced accuracy in extracting financial insights.

AI-driven auditing tools that integrate ML and RPA were employed to conduct automated audits, identify discrepancies, and streamline compliance checks. These tools improved reliability by reducing manual errors during audits. Adoption was particularly high in South Africa (82%), reflecting the country's strong regulatory environment and demand for compliance. Kenya had a 68% adoption rate, while Nigeria reported 52%. Firms reported up to a 90% reduction in error rates when using AI auditing tools.

Although not as widely adopted, blockchain technology was used for transaction verification, providing a transparent and tamper-proof ledger of transactions, particularly valuable in finance-related firms. South African' firms NLP adoption rate is 55%, in Kenya is 40%, and in Nigeria is 35%. More so, Blockchain adoption was limited but showed potential in companies where transaction transparency and security were critical.

PA tools were used to forecast sales, operational costs and cash flows which help firms in decision-making and resource planning. The study discovered that 78% of South African firms, 50% of Nigerian firms and 70% of Kenyan firms utilized PA tools with their often usage in the manufacturing and retail sectors.

The results also highlight South Africa's leadership in AI accounting adoption with Kenya indicating moderate levels of adoption and Nigeria slightly lower. This comparative analysis discloses the diversed AI tools uses and uncovered their impact on enhancing the accuracy of financial reporting and speediness of the reports the targeted multinational firms.

Table 3
AI Adoption Rate in Selected Countries

	South Africa (%)	Kenya (%)	Nigeria (%)
Proportion Of Accounting Tasks Automated	90	75	60
AI Adoption Rate Benefit	95	80	70

Source Data Analysis (2024)

Table 3 discloses that with an adoption rate of 95%, South Africa consistently leads the finance sector in adopting AI, followed by Kenya with an adoption rate of 80% and Nigeria with a rate of 70%. This trend is consistent across firms, with South Africa maintaining the highest levels of AI adoption rate. The table shows that the proportion of accounting tasks that are automated follows a similar pattern, with South Africa leading with 90% automated tasks, Kenya with 75% automated tasks, and Nigeria with 60%.

Table 4
Comparison of AI in Accounting Impact on FAP at Country Level

Factors	South Africa (%)	Kenya (%)	Nigeria (%)
AI Adoption Rates	85	70	55
The Proportion of Accounting Tasks Automated	80	65	50
Level of AI Tools Usage	82	68	52
Comparing Error Rates	88	72	54
Reporting Timelines Before and After AI Implementation	86	71	53
Employee Roles, and Hierarchical Structures	83	69	51
Financial Reporting Improvements	81	67	55
Organizational Changes in Various Countries	79	66	54

Source: Data Analysis, 2024

Table 4 shows how the use of AI has affected South Africa, Kenya, and Nigeria. The picture compares and contrasts the effects of AI in accounting on Financial and Accounting Processes (FAP). According to the report, South Africa is leading the way in the adoption of AI, with a 90% adoption rate and a high level of AI integration in its accounting processes. Kenya has a 75% adoption rate, compared to 60% in Nigeria. A like pattern can be seen in the percentage of accounting tasks that are automated, with South Africa automating 85% of tasks, Kenya 70%, and Nigeria 55%.

South Africa continues to lead the globe in the adoption of AI technologies, with 80% of the population adopting them, compared to 65% in Kenya and 50% in

Nigeria. South Africa claimed a 90% drop in errors, followed by Kenya at 70% and Nigeria at 50%. Error rates are another indicator of this leadership. The application of AI has also significantly improved reporting deadlines; South Africa has experienced an improvement of 85%, Kenya 70%, and Nigeria 60%. Organizational structures are also significantly impacted by AI. Compared to 65% in Kenya and 55% in Nigeria, AI has had a substantial impact on job descriptions, staff functions, and hierarchical structures in South Africa, where its impact rate is 80%.

In South Africa, Kenya, and Nigeria, the quality of financial reporting has improved by 85%, 70%, and 60%, respectively. South Africa is the country with the most AI-induced organizational changes, with an impact of 80%, followed by Kenya with 65% and Nigeria with 55%. In summary, South Africa is the leader in the application of AI and its related advantages in accounting, achieving the greatest percentages across all metrics that were analyzed. Kenya shows a moderate level of AI use and impact, whereas Nigeria has the lowest adoption and benefits.

The data suggests that improvements in reporting, accounting practices, and organizational efficacy are directly related to the application of AI. Closing the gap may require Nigeria and Kenya to accelerate their AI implementation and address the obstacles to more comprehensive AI accounting integration.

Discussion of Findings

This study investigates how AI might enhance accounting procedures in publicly traded multinational corporations located in three Sub-Saharan African nations. The results show that the implementation of AI has a major favorable impact on accounting processes, especially in South Africa, Kenya, and Nigeria. According to the findings, AI-powered solutions are transforming a number of financial operations processes, including regular work and strategic decision-making. The high average AI adoption rate indicates that many businesses in the area have included AI into their bookkeeping procedures.

According to the study, mistake rates have significantly decreased, particularly in South Africa, while Kenya and Nigeria have seen very modest gains. This decrease in errors after AI implementation demonstrates how AI may reduce human error and improve financial data accuracy. Faster reporting deadlines have also resulted from the implementation of AI, especially in South Africa as opposed to Kenya and Nigeria. Better decision-making and regulatory compliance, as well as increased investor trust and financial market transparency, depend on these accuracy and timeliness gains.

According to the statistics, the use of AI has accelerated financial reporting, enhanced accuracy, and increased automation. The adoption of AI is highest in South Africa, Kenya, and Nigeria. According to the mean value for organizational changes, integrating AI causes major changes in businesses, resulting in more flexible and dynamic structures. Eighty percent of South African businesses reported alterations to their hierarchical structures, job descriptions, and staff duties. These results support the beneficial effects of AI adoption on accounting procedures and are consistent with earlier study by Adams and Duncan (2022); Aitkazinov (2023); Callista and Puji (2024) and Smith and Brown (2024). Routine chores can be automated to boost productivity and efficiency by reducing physical labor.

According to the survey, accounting businesses in South Africa, Kenya, and Nigeria have significantly increased their use of AI. The most widely used technologies, which automate repetitive processes like data entry and invoice processing, are machine learning

(ML) and robotic process automation (RPA). Efficiency was raised and manual error rates were drastically decreased as a result of this automation. Another important technology that allowed businesses to glean insights from unstructured data, including financial reports, was natural language processing (NLP). This improved the speed and accuracy of reporting. AI-powered auditing systems were also becoming more popular since they automated audit procedures and decreased human mistake. Blockchain technology showed promise in improving transaction security and transparency, especially in the financial industry, despite its less widespread adoption.

In order to support strategic decision-making, predictive analytics technologies were also utilized to estimate cash flows, sales, and operating expenses. In terms of AI adoption across all technologies, South Africa was at the forefront, followed by Kenya and Nigeria. The study emphasizes how AI has the ability to completely transform accounting procedures by enhancing productivity, precision, and judgment. To stay ahead in the rapidly changing technological scene, businesses are urged to embrace AI, invest in talent, give data quality first priority, and work with technology providers.

According to the data, South Africa automates 85% of accounting processes, Kenya 70%, and Nigeria 55%, highlighting AI's contribution to productivity and efficiency. According to this, businesses who use AI report increased operational effectiveness, decreased human error, and simplified accounting procedures. The beneficial effects of AI are further shown by the low standard deviation numbers, which show consistency in the advantages across enterprises. Adoption of AI also represents a larger trend toward a tech-driven workplace, where work is redefined and jobs are mechanized. South African businesses are better positioned to use AI for strategic advantage, but Kenya and Nigeria have experienced less impact. Businesses in Kenya and Nigeria might need to adopt AI more quickly if they want to stay competitive.

Conclusion and Recommendation

Conclusion

According to the study's findings, the use of AI has significantly enhanced accounting procedures throughout Sub-Saharan Africa, particularly in South Africa, Kenya, and Nigeria. Process automation, accuracy, and organizational reorganization have all significantly improved as a result of AI. Businesses who have implemented AI extensively have seen increases in productivity, data precision, and reporting speed, highlighting the technology's revolutionary potential in the accounting industry. According to the research, South Africa is leading the area in the adoption of AI thanks to its strong infrastructure and highly qualified workforce, while Kenya and Nigeria are only lagging behind. A regional plan encouraging AI use is essential to maximizing these benefits.

By offering concrete proof of AI's beneficial effects on accounting procedures in Sub-Saharan Africa, this work advances our understanding. In addition to highlighting how AI propels organizational transformation, particularly in job roles and company structures, it provides a comparative examination of AI adoption and its implications in South Africa, Kenya, and Nigeria. By concentrating on these three nations, the study offers practitioners and policymakers important insights into the advantages and difficulties of adopting AI.

Recommendations

The study's conclusions lead to the following ranking of suggestions for maximizing AI's advantages for Sub-Saharan African accounting practices: Businesses should spend money on training to improve workers' AI-related

competencies. The skills gap will be closed by upskilling initiatives, particularly in Kenya and Nigeria, facilitating easier adoption of AI-driven accounting procedures. It is advised to work with academic institutions and training facilities to provide specialized AI courses. Investing in a strong digital infrastructure is crucial to enabling AI. Internet access and digital technologies should be given top priority by policymakers, particularly in Nigeria where infrastructure limitations continue to be a problem. Through the sharing of resources and knowledge, public-private partnerships can hasten this growth.

Governments ought to enact AI-friendly laws that safeguard privacy and encourage data sharing. Firms will be encouraged to confidently employ AI technologies if there are clear regulatory rules. Adoption will be further accelerated by incentives like tax breaks for businesses that invest in AI. Promote collaborations between South African, Kenyan, and Nigerian businesses. South African businesses might exchange resources and best practices with their Kenyan and Nigerian counterparts. In Sub-Saharan Africa, regional cooperation can promote information sharing and result in uniform AI adoption procedures. In order to create context-specific solutions, local research on AI in accounting should be encouraged. These kinds of projects have the potential to spur innovation and provide AI solutions that are specifically suited to the requirements of accounting departments in Africa. R&D will pay off in the long run, despite the hefty initial cost. By strategically implementing AI, these ideas seek to advance accounting processes and build on the study's encouraging findings. This study looked at how AI is changing accounting procedures at multinational corporations in South Africa, Kenya, and Nigeria. The study emphasized how the use of AI has improved organizational roles, reporting accuracy, and mistake reduction. Businesses utilizing AI have observed quicker, more accurate financial reporting, with South Africa leading the way.

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