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EMERGING TECHNOLOGIES AND ACCOUNTING FUNCTIONS IN DEPOSIT MONEY BANKS IN NIGERIA

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Abstract

The integration of emerging technologies like artificial intelligence, blockchain, and robotics is redefining accounting functions and processes. To keep up with the current trends and maintain their competitiveness, Deposit Money Banks (DMBs) in Nigeria have had to adopt new technologies. However, the extent to which the deployment of the technologies is needed, useful, and improves accounting functions in Nigeria's context remains an area to be fully explored. This study, therefore, examines emerging technologies and accounting functions in DMBs in Nigeria. A cross-sectional survey design was adopted for the study. Primary data were sourced through the administration of a questionnaire. A convenience sampling technique was used to select 50 respondents from among the staff of the top seven DMBs. Descriptive statistics and thematic analysis were used to analyze the data. The findings of the study showed that emerging technologies can be deployed for accounting functions at any level in DMBs. Also, routine data entry tasks improved at an advanced level, reconciliation improved at an average level, and financial reporting preparation improved at an advanced level, respectively, with the deployment of emerging technologies in DMBs. The study recommends that DMBs should expand the use of emerging technologies across all accounting functions and should create measures that will ensure the smooth implementation of technological solutions.

Keywords: *Accounting, Artificial Intelligence, Blockchain, Emerging Technologies, Robotics Process Automation.*

INTRODUCTION

1.1 Background and Statement of the Problem

Technology has become a major force driving different disruptions across the world. The continuous advancement in technology has necessitated the need for organizations to brace up and move with the current technological trends. Emerging technologies such as Artificial Intelligence (AI), blockchain, and robotics, and their integration are becoming prevalent in organizations as the technologies are being deployed to streamline business processes, enhance productivity, promote efficiency, remain competitive, and improve decision-making. These technologies are also responsible for significant changes in accounting functions, particularly in banks where a large volume of data is being processed daily.

AI is a technology that can perform tasks that are historically done only by human beings. AI functions by learning, reasoning, and predicting an outcome based on the data it has been trained on. It is a combination of various technologies, including machine learning, deep learning, and natural language processing. Robotics is the creation of physical machines that can perform

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tasks in the real world. Robotics is a different technology that leverages AI and its technologies to enable them to perceive, reason, and act autonomously. Blockchain technology is a decentralized, digital ledger that records transactions in blocks, linked cryptographically, providing a transparent and secure record-keeping system (Soori, *et al.,* 2023).

Prior to the advent of technology, accounting functions were done manually, relying on a paper-based system. Accounting functions refer to recording financial transactions, summarizing, and preparing the financial statements for various uses. It also encapsulates routine data entry and bank reconciliation. Routine data entry is a fundamental task in banks. It involves the input of data into computer systems from various sources, such as paper documents, electronic files, or online forms (Baviskar *et al.,* 2021). Reconciliation involves comparing two sets of records to ensure they agree. Bank reconciliation is the process of comparing the bank statements against the records of a company to verify the accuracy and consistency of data. Preparation of financial reports entails summarizing the financial activities of an organization for a particular period (Eziefule, *et al.,* 2022).

In Nigeria, Deposit Money Banks' (DMBs) operations and activities require accountants to handle and process a large amount of data daily, the majority of which are routine tasks. Besides, the banks have a huge number of customers to relate with, which necessitated the need for them to process and generate individualized reports for their customers in real-time any time of the day, whether electronically or in hardcopy. Achieving these manually constitutes a herculean task for bank staff. Additionally, the traditional practices of performing routine data entry, bank reconciliation, and preparing financial reports were laced with human errors, cumbersome, tiring, and time-consuming.

Accountants had to cope with performing tedious routine record entry, sorting, updating, and calculating financial figures, and missing out on important data when preparing the financial reports. In the modern banking environment, emerging technologies are being integrated to automate routine data entry, bank reconciliation, and generate financial information in real-time. Emerging technologies, including AI-based accounting software, chatbots, big data, data analytics, blockchain, robotics, and more, are being deployed for different functions in the banking industry (Lehner, *et al.,* 2022; Joseph & Gaba, 2020; Munoko, *et al.,* 2020).

However, the extent to which the emerging technologies can be deployed and how they subsequently improve accounting functions in banks are shrouded. Furthermore, the use of emerging technologies for accounting functions in relation to DMBs has not been deeply and explicitly dealt with (Anzor *et al.* 2024; Adeyemo & Okoronkwo, 2024; Olumoyegun *et al.* 2024; Edibo *et al.,* 2024). Despite the avalanche of literature on AI and accounting, there is a scarcity of work done to examine the depth at which AI and emerging technologies are needed for accounting functions, the extent of their usage, and how they have improved accounting functions in DMBs in Nigeria.

Most existing studies (Hussin *et al.,* 2024; Pauceanu, *et al.,* 2020; Lehner *et al.,* 2022; Hasan, 2022; Joseph *et al.,* 2020; Munoko *et al.,* 2020) have focused on AI only and non-accounting functions like fraud prevention and detection, and efficiency, neglecting AI, robotics and blockchain technology in accounting functions like routine data entry, bank reconciliation and preparation of financial reports. Additionally, existing literature showed that DMBs had concentrated on the use of the emerging technologies, especially AI on non-accounting functions such as customer relationship management, chatbots, fraud detection and prevention, predictive analysis, and credit risk management (Anzor *et al.* 2024; Adeyemo & Okoronkwo,

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2024; Olumoyegun *et al.* 2024; Edibo *et al.,* 2024). In light of this, this study examined emerging technologies and accounting functions, focusing on deposit money banks in Nigeria because of the large volume of data they deal with daily and the personalized information needed by each customer of a bank.

1.2 Objectives of the Study

The general objective of the study is to examine emerging technologies and accounting functions in deposit money banks in Nigeria. The specific objectives are to;

i. examine the degree to which AI, blockchain technology, and robotics process automation can be deployed in performing accounting functions in deposit money banks in Nigeria,
ii. evaluate the extent to which the use of AI, blockchain technology, and robotics process automation has improved accounting functions in deposit money banks in Nigeria.

1.3 Scope of the Study

This study focused emerging technologies and accounting functions, the extent of their usage, and the how they have improved accounting functions in banks in Nigeria. The study is limited to the banking sector and focused on the top seven DMBs in Nigeria due to their customer size and international authorization. Respondents were selected from the staff of the banks. Methodologically, the study used descriptive statistics and thematic analysis to analyze the collected data. The independent variable is emerging technologies proxied by AI, Blockchain Technology (BT), and Robotics Process Automation (RPA). The dependent variable is accounting functions proxied by routine data entry, bank reconciliation, and financial reports preparation.

1.4 Plan of the Study

The first section of the study focuses on the introduction, objectives, significance, and scope of the study. The second section dwells on the review of related literature, which encapsulates conceptual review, theoretical framework, empirical review, and conceptual framework. The third section is on the methodology employed by the study for analysis of the objectives, while the fourth section is on the results and discussion, and the fifth section is on conclusion and recommendation.

LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Accounting Functions

Accounting entail the various processes of recording, summarizing, analyzing, and interpreting the financial information of an organization and making it available for various users to make informed decisions. Accounting functions include routine data entry, bank reconciliation, and preparation of financial reports. These functions were done traditionally. The traditional accounting methods involve manual methods of recording financial transactions and preparing financial reports. Accounting functions encapsulate different processes, and the traditional method of achieving each of the processes, which requires a high degree of precision and

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meticulousness, is cumbersome, especially where a large volume of transactions is involved (Odonkor et al., 2024). Furthermore, the traditional method is susceptible to human errors, fraud, missing records, delay in generating financial reports, and more.

However, the evolution of technology and its integration have revolutionized accounting functions (Odonkor *et al.,* 2024). Modern accounting functions encompass the transformation of traditional accounting methods and systems into technologically driven systems and processes that automate different accounting functions. The manual recording has changed to automated recording, repetitive tasks have also been automated, information is generated in real-time, paperwork has been replaced by accounting software, data accuracy has been enhanced, financial information can be accessed anywhere, and data analytics and visualizations help to analyze trends and make informed decisions.

Routine Data Entry

Routine data entry is the process of inputting data into the computer system. It is the repetitive and systematic process of recording financial data, such as deposits, withdrawals, and transfers, into the accounting systems of a bank. According to Baviskar *et al.,* (2021) routine data entry involves the input of data into computer systems from various sources, such as paper documents, electronic files, or online forms. The traditional method of data entry has been a labor-intensive and consuming process, which is often prone to human error. However, the integration of AI and robotics process automation has accelerated the routine tasks (Eziefule *et al.,* 2022).

Bank Reconciliation

Reconciliation entails comparing two sets of records to ensure they agree. Bank reconciliation is the process of comparing the bank statements against the records of a company to verify the accuracy and consistency of data. It is an accounting function of verifying and ascertaining the balance in a company's ledger with that of the bank statement. It is a critical process in accounting, banking, and other financial operations to verify the accuracy and consistency of data. Traditionally, reconciliation has been a manual and time-consuming process, requiring meticulous attention to detail (Ezeifule *et al.,* 2022). However, the deployment of technology such as AI and robotics has sped up bank reconciliation processes, as they can handle complex reconciliations that involve large datasets and multiple variables and automatically reconcile transactions between different accounts (Ezeifule et al., 2022).

Financial Reports

Financial reports are the documents through which organizations communicate their business and financial activities to users within and outside the organization. The financial reports include, among other information, the comprehensive income statement which shows the financial performance and statement of financial position of the organization; the cash flow statement which shows the organization's operating, financing and investing activities and the statement of changes in equity which explains the changes in the organization's equity; as well as notes to the accounts, and five-year financial summary.

Financial reports were done manually before the integration of technology (Eziefule, *et al.,* 2022). According to Odonkor *et al.,* (2024), one of the key advantages of AI in accounting is its ability to provide real-time insights and analytics. Unlike traditional methods, which often

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involve a time lag between data entry and report generation, AI-driven systems offer instantaneous analysis, enabling more timely and informed decision-making (Tandiono, 2023). Also, the deployment of robotics and blockchain has helped to speed up financial reports preparation, reduce human error, and prevent and detect fraud.

2.1.2 Emerging Technologies in Accounting

Accounting Software

Accounting software is a set of programs that are developed to handle accounting functions. It is a program designed to collect, store, and process financial data into usable information that can be retrieved to make informed decisions. Accounting software is also an application that is used to perform financial transactions such as sales and purchases recording, inventory management, accounts payable and receivable management, payroll, trial balance, and financial statements. Accounting software is a part of an accounting information system that is used to generate financial information for decision-making.

Accounting software helps in streamlining accounting functions, removing the manual paperwork, and creating automated processes for easier performance. The use of accounting software helps accountants reduce time spent on manual recordings and minimize errors, helping to enhance their efficiency and allowing them to expand their roles to include advisory and strategic decision-making. This is also asserted by Thottoli (2020) that using accounting software has changed the accounting process, including transactional entry, data storage, and preparation of financial statements.

Accounting software is now cloud-based, which involves the use of the internet to access the software from anywhere and on any device. According to Agrawal and Jethy (2024) the shift from traditional, on-premises accounting systems to cloud-based platforms offers numerous advantages, including improved accessibility, scalability, and collaboration capabilities. Cloud-based accounting software supports simultaneous multiple use within an organization, mobile accessibility, scalability and flexibility, integration with third-party apps, and customizable dashboards (Meng, 2022; Liu, 2020).

Cloud Computing

Cloud computing has become synonymous with remote work capabilities, particularly relevant in today's work environment. It entails the delivery of computing services, including storage, processing, and applications using the internet (Atadoga, *et al.,* 2024). Cloud computing is the technology that allows data to be stored in the cloud instead of on a physical storage device. It creates the avenue for data to be accessed from anywhere and on any device. Before cloud computing, software was installed on devices and could only be accessed on the device housing the software. This means that any damage to the physical device could result in the loss of data.

However, cloud computing has helped to eradicate the use of a local server or a particular physical device, ensuring access to data and information anywhere. This is also opined by Barakat, *et al.* (2023) that cloud computing enables organizations to access and utilize computing resources on demand through a network of remote servers without relying on local servers or hardware. Furthermore, cloud computing offers opportunities for scalability, operational efficiency, and improved productivity.

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Artificial Intelligence

Artificial Intelligence (AI) is the technology that is used to perform tasks that can only be done by human beings before, such as reasoning and making predictions. The concept of AI involves machines carrying out tasks that typically require human intelligence in an AI strategy (Zhang *et al.,* 2023). AI functions by learning, reasoning, and predicting an outcome based on the data it has been trained on. AI combines various technologies, including machine learning, deep learning, and natural language processing. Kumar and Gupta (2023) defined AI as the field of science that deals with rivaling the capabilities of modern computer systems to resolve issues using human-like complex capabilities of reasoning, learning, and self-correction. According to Haenlein and Kaplan (2019, as cited in Hasan, 2022) AI is the ability of a system to accurately understand external data, learn from it, and apply what it has learned to fulfill specific goals and tasks through flexible adaptation.

AI has been applied to different sections of business operations, including accounting, production, auditing, sales, research, and development. It is opined by Alonge *et al.,* (2024) that AI systems can process vast amounts of data quickly and accurately, enabling organizations to automate routine financial report tasks. This automation not only reduces the time and effort required for manual data entry and reconciliation but also minimizes the risk of human error. AI-powered tools can also enhance predictive analytics capabilities, enabling organizations to forecast financial performance more accurately (Alonge *et al.,* 2024).

Blockchain Technology

Blockchain technology is a decentralized, digital ledger that records transactions in blocks, linked cryptographically, providing a transparent and secure record-keeping system. According to Nielsen (2023) a blockchain is an electronic record designed to record transactions that occur within a network involving different participants. Blockchain technology allows for the secure and cost-effective transmission of any value (data, assets, cash, and information) in real time (Zhang, *et al.,* 2020). It is used to record both financial and non-financial transactions and enables smart contracts, protecting and transferring ownership of assets, verifying people's identities and credentials. The use of blockchain technology has eliminated the need for a central storage and control authority. It is digitally transforming transactions by allowing the contracts to be digitally embedded in databases that are transparent and provide security against tampering. (Tripathi, *et al.,* 2023).

Robotics Process Automation

Robotics is a technology that focuses on the design, construction, and applications of robots that can perform tasks traditionally done by humans (Adejuwon and Unuesiri, 2024). A variant of robotics technology is robotics process automation. Robotics Process Automation (RPA) uses software robots to automate rule-based, repetitive tasks, such as data entry, invoice processing, and reconciliations, which reduces the need for human intervention and improves efficiency. According to Anzor *et al.* (2024) RPA is an AI application that enables organizations to use software robots to automate repetitive tasks. Olumoyegun *et al.,* (2024) opined that RPA uses a number of techniques to mimic routine human activities automatically, repeatedly, faster, and more accurately. According to Hasan (2022) RPA is a software that can be used to automate established business processes by running other application software, and it is different from AI in that it is process-driven while AI is data-driven.

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2.1.3 Emerging Technologies and Interference with Accounting Functions

There have been various interferences of emerging technologies with accounting functions, including cloud computing, artificial intelligence, blockchain technology, and robotics process automation. Cloud computing has been integrated into accounting; thus, accounting software can now be accessed virtually. Cloud computing has made it possible for accounting functions to be performed anywhere and not on a designated device. Users of accounting software can use different at the same on various device. Also, it is submitted by Adejugbe (2024) and Nwobodo, et al. (2024) that cloud computing has enabled organizations to shift their financial reporting system to the cloud, which allows them to access financial information from anywhere, thus allowing for real-time reporting and updates. Cloud-based accounting software, as asserted by Nair, *et al.,* (2019) offers a wide array of features aimed at streamlining financial management processes and improving overall efficiency. Some of the features of cloud-based accounting software include multi-user collaboration, mobile accessibility, customizable dashboards, integration with third-party apps, automated bank feeds, scalability, and flexibility.

AI technology is now being deployed to handle certain accounting tasks. According to Schaudt (2023) AI in accounting refers to the implementation of machine learning and natural language processing to simplify accounting functions. The use of AI in accounting can automate routine tasks, including data entry, invoice processing, and reconciliation. Likewise, AI algorithms can identify anomalies and patterns in financial data to help detect fraudulent activity. This is also affirmed by Hussin *et al* (2024) that AI can be utilized for various accounting tasks, including data entry, financial analysis, and fraud detection. Additionally, AI can help automate the generation of financial reports to provide real-time insights into financial performance, thus allowing accountants to focus on activities that require human cognitive abilities. Lehner, *et al.,* (2022) asserted that advanced AI-based accounting software can handle more demanding tasks than classic accounting information systems, including the cognitive capabilities of humans.

In another vein, blockchain technology in accounting has helped to provide a secure and auditable record of transactions. It has also made it easier to verify the accuracy of financial records. Also, blockchain technology. According to Hasan (2022), blockchain in accounting and auditing has the potential to change the nature of corporate reporting, payment technology, audit design, audit evidence, transaction validation, and many other facets of accounting and auditing.

Also, robotics in accounting offers potential for streamlined processes, enhanced transparency, and improved auditability, though it's not a complete replacement for traditional accounting methods. Robotic Process Automation (RPA) in accounting uses software "bots" to automate repetitive tasks like data entry, invoice processing, and reconciliation, improving efficiency and accuracy. RPA streamlines data entry by automating the transfer of information between systems, such as accounting software and Enterprise Resource Planning (ERP) systems (Odonkor, *et al.,* 2024; Eziefule, *et al.,* 2022; Chukwuani, 2024).

2.2 Theoretical Framework

The integration of emerging technologies is driving the operations of the banking sector in Nigeria. The objective of this study, which is to examine the extent of usage and the improvement of the technologies in accounting functions, informed the two theories on which this study is anchored. The theories are the Technology Acceptance Model (TAM) and the Theory of Task-Technology Fit (TTF). TAM and TTF were selected as they provide insights

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into user acceptance, fit for task performance, and resulting organizational outcomes.

TAM was developed by Fred Davis in 1989 and was updated in 1996. It is premised on two main criteria for accepting a technology, which are perceived ease of use and perceived usefulness. Perceived ease of use, as explained by the model, is when a user perceives that a technology will be easy to use to lessen the burden of job performance, while perceived usefulness refers to the degree to which a user perceives that using a technology will enhance their job performance. TAM was selected for this study because it resonates with the reasons for adopting the use of AI, robotics, and blockchain to perform accounting functions, which are the effectiveness and efficiency (perceived ease of use) and the usefulness (perceived usefulness) of using the technologies for accounting functions. Put differently, the adoption of TAM for this study explains whether the use of AI and other emerging technologies enhances the performance of accounting functions and reduces the burden associated with them.

The theory of Task-Technology Fit (TTF) propounded by Goodhue and Thompson (1995) is premised on the fact that technology will only be used if it fits the tasks for which it is to be used. According to the theory, there should be an alignment between technology and task requirements. Technology will only have a positive impact on job performance if it has the capabilities to match the tasks for which it is deployed. TTF was selected for this study because it underscores the adoption of emerging technologies (AI, robotic process automation, and blockchain technology) for accounting functions such as routine data entry, bank reconciliation, and financial reports. It helps to explain if the emerging technologies are fit for the accounting functions being done in the deposit money banks. The combination of the two theories for this study helps to measure both the usage and the effectiveness of the emerging technologies for performing accounting functions.

2.3 Empirical Review

There have been different studies on AI, robotics process automation, and blockchain technology, and their relationship with accounting functions. Some of the literature are reviewed below;

Hussin *et al.* (2024) examined the impact of Artificial Intelligence (AI) on the accounting profession. The study is a concept paper that sheds light on how AI has reformed the accounting field and redefined the roles and responsibilities of accountants. Focusing on three themes, which are automation of routine tasks, enhanced data analysis, and value-added of the professional roles, the study claimed that AI has impacted the three themes studied. However, the study is limited as it relied on published articles; there was no fresh collection of data to validate the results of the literature used in the study.

Chukwuani (2024) investigates the transformational impact of automation and artificial intelligence (AI) on the accounting profession, with a focus on evolving skillsets, ethical considerations, and long-term implications. Employing a qualitative research approach, the study examined data privacy, transparency, and compliance challenges, emphasizing the necessity for robust ethical frameworks and governance structures to align AI technologies with moral values and regulatory standards. Enhanced capabilities for fraud detection and real-time financial insights are highlighted as significant benefits of AI integration, offering improved accuracy, efficiency, and decision-making. The long-term implications of automation and AI in accounting reveal the emergence of strategic and advisory roles, the necessity for continuous reskilling, and the ongoing evolution of the profession.

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Anzor *et al.* (2024) examined the impact of Artificial Intelligence (AI), specifically computer vision and Robotic Process Automation (RPA) on fraud detection in Deposit Money Banks in Southeast Nigeria. Using a descriptive survey design, data were collected from employees within various banking institutions in Southeast Nigeria via a questionnaire. Data was analyzed using a Z-test. The findings indicate that Computer Vision had a significant positive effect on insider fraud detection, and Robotics had a significant positive effect on card fraud monitoring in money deposit banks in Southeast, Nigeria. However, the study is limited as it focused on a non-accounting function - fraud detection.

Olumoyegun *et al.* (2024) worked on the effect of artificial intelligence on customer satisfaction of selected deposit money banks in Lagos State, Nigeria. The study used multiple regression analysis. The findings of the study were that the electronic payment system has a significant effect on customer experience, and the robotic advisory system has a significant effect on customer loyalty. The study concluded that the electronic payment system contributes positively to the customers' experience. The study involved AI but did not encapsulate accounting functions, thus creating a limitation on the study.

Edibo *et al.,* (2024) studied the impact of artificial intelligence technologies and business process optimization of commercial banks in Nasarawa State, Nigeria. Data were collected using a structured questionnaire, which was analyzed using frequency, percentages, mean, standard deviation, and regression analysis. The results showed a significant positive effect of machine learning algorithms, natural language processing, robotic process automation, virtual assistants, and decision support systems on the efficiency of operations in commercial banks.

Akinadewo (2021) examined the relationship between Artificial Intelligence (AI) and Accountants' Approach to Accounting Functions (AAAF). The study used the research design method through a structured questionnaire. The targeted population and the sample size was 205, which comprises accountants with experience in systems' application for accounting and other financial transactions' functions. A purposive sampling technique was adopted to determine the respondents. The results of the logit regression analysis revealed that with the t-calculated of 3.183 > t-tabulated of 0.002 at a 5% level of significance, artificial intelligence has a significant positive impact on accountants' approach to accounting functions. This implies that when AI is adopted, accountants will significantly change their approach to functional activities.

2.3.1 Gap in Literature

The study focused on emerging technologies, the extent of their usage, and the effect on accounting functions in Nigerian deposit money banks. Reviewing existing literature in the topic area, it was discovered that existing studies (Hussin *et al.,* 2023; Pauceanu *et al.,* 2020; Lehner *et al.,* 2022; Hasan, 2022; Joseph *et al.,* 2020; Munoko *et al.,* 2020) focused on AI only in accounting, while robotics and blockchain technology were left out. Besides, their studies did not consider accounting functions in relation to the emerging technologies. Furthermore, blockchain and robotics were added to this study because they also played vital roles in automating accounting functions in banks. Therefore, empirically, this study will increase available literature on emerging technologies and accounting functions.

A developing country like Nigeria has a scarcity of empirical studies on the topic as it relates to accounting functions in DMBs, thus creating a geographical gap for the study to fill. Also, existing literature showed that banks had concentrated the use of the emerging technologies on

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non-accounting functions such as customer relationship management, chatbots, fraud detection and prevention, predictive analysis, and credit risk management. Besides, deposit money banks in Nigeria deal with a large volume of data daily and must also provide personalized information needed by each customer of a bank. Thus, the banking sector selected for the study is a cogent one.

2.4 Conceptual Framework

The conceptual framework depicts the author's conceptualization of the study, which was arrived at after a thorough review of the concepts used, adoption of suitable theories, and review of related literature to identify gaps in the study area. The independent variable is emerging technologies proxied by AI, blockchain technology, and robotics process automation, while the dependent variable is accounting functions proxied by routine data entry, bank reconciliation, and financial reports preparation. Figure 1 depicts the conceptual framework for the study.

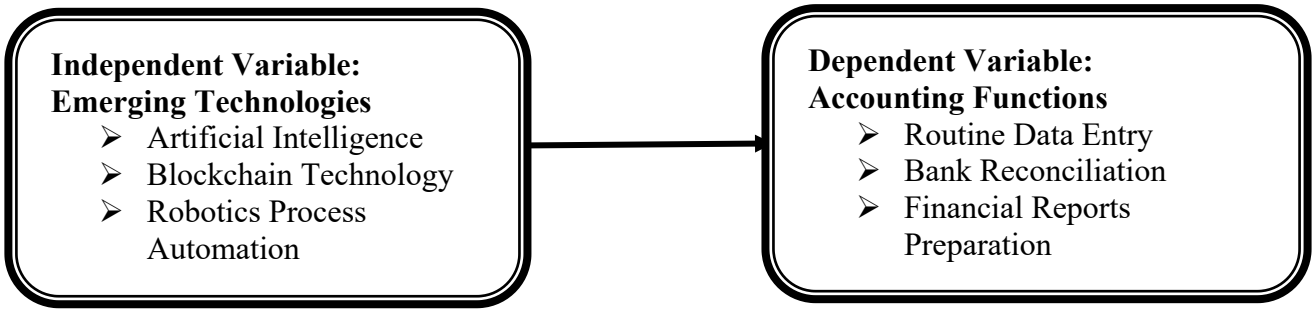

Figure 1: Conceptual Framework
Source: Author's Compilation, 2025

METHODOLOGY

The study area is the banking industry in Nigeria with a special focus on Deposit Money Banks (DMBs). The DMBs sector is selected because they are involved in high-frequency transactions, and they have a large number of customers who need real-time, customized financial information more than other sectors. The research design adopted for the study is a cross-sectional survey design. The design is chosen because the study entails the collection of data from different locations at the same time. The population of the study comprises the population of the deposit money banks in Nigeria. There are 22 Deposit Money Banks in Nigeria (CBN Website, 2024).

Purposive sampling technique was used to select the top seven DMBs, using their customer size, and international authorization as the criteria, which means the selected banks handle more transactions, and thus need more sophisticated technologies. Likewise, a purposive sampling technique was used to select the sample size of 50 respondents, who are professional accountants and staff of the DMBs. The source of data was primary, since the data needed for this study could only be obtained from the respondents. Data were collected through the administration of a closed-ended questionnaire to selected respondents. The questionnaire was uploaded to Google Forms and shared with the respondents online via their email. The questionnaire were subjected to reliability and validity tests to check their internal consistency and to ensure that the questionnaire measure what they should measure. The questionnaire were adapted from Adeyemo *et al.,* (2024) and modified to suit the objectives of this study.

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The independent variable is emerging technologies proxied by AI, Blockchain, and Robotics Process Automation (RPA). The dependent variable is accounting functions proxied by routine data entry, bank reconciliation, and financial reports preparation. The emerging technologies were used to explore the type of technology needed for accounting functions in DMBs, the extent to which they can be deployed to perform accounting functions and if they have improved accounting functions. Accounting functions will be used to determine the type of functions that DMBs need the emerging technologies for.

Mixed methods comprising both quantitative and qualitative analyses were employed for the research. The quantitative method involved the use of descriptive statistics, and the qualitative method entailed thematic analysis. The statistical techniques were chosen because they allow for a deeper exploration of the topic and provide more insights into the subject. The thematic analysis of the objectives was done in line with Braun and Clarke's (2006) six-step framework, which comprises being familiar with the data, generating initial codes, searching for themes, reviewing themes, defining themes, and writing-up. Also, latent thematic analysis was chosen. This allows for identification and examination of underlying ideas, assumptions, conceptualizations, and ideologies that are theorized as shaping or informing the semantic content of the data (Braun *et al.,* 2006).

RESULTS AND DISCUSSION

This section is on the results of the analysis of the study. Descriptive statistics and thematic analysis were employed for the objectives of the study. The respondents were staff of the selected deposit money banks in Nigeria.

4.1. Demographic Information of Respondents

Table 1 provides an insight into the demographic details of the respondents used for this study. The respondents are professional accountants selected from the banking sector. The results revealed that the respondents are well educated, possessing both Master's and Doctoral degrees as well as professional qualifications in the Association of Certified Chartered Accountants (ACCA) and the Institute of Chartered Accountants of Nigeria (ICAN). Furthermore, the years of experience of the respondents revealed a high trend of experience between 11 years and more than 15 years.

4.2 Reliability and Validity of Questionnaire

The research instrument, which is the questionnaire, was subjected to both reliability and validity tests. Face validity and content validity were done to ascertain the validity of the questionnaire. This involved the use of two experts from the academic and banking industry, respectively. The reliability test was done using Cronbach's Alpha, which was used to establish the internal consistency of the questionnaire. Cronbach's alpha takes values between 0 and 1, and values of at least 0.7 are regarded as satisfactory, while the preferred value is 0.8. The results of the Cronbach's Alpha are presented in Table 2. The values are 0.828 for questions on the degree of deployment of emerging technologies in DMBs and 0.811 for questions on the extent of usage of emerging technologies in DMBs.

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Table 1: Demographic Information of Respondents

Factors	Items	Percentage	Total
Academic Qualification	M.Sc./ MBA	85.7%	100%
	PHD	14.3%	
Professional Qualification	ACCA	14.3%	100%
	ICAN	85.7%	
Years of Experience	Less than 5 Years	14.3%	100%
	5 to 10 Years	0%	
	11 to 15 Years	71.4%	
	Above 15 Years	14.3%	
Department	Accounting/Finance	100%	100%

Source: Author's Compilation, 2025

Table 2: Reliability and Validity of Measuring Items

Factors	Number of Items	Cronbach's Alpha Value
Questions related to the degree of deployment of emerging technologies in DMBs.	4	0.828
Questions related to the extent of usage of emerging technologies in DMBs.	5	0.811

Source: Author's Compilation, 2025

4.3 Results on Objectives

The results of the two objectives of the study were obtained from the mixed methods employed by the study. The first part is on the results of the descriptive statistics, and the second part is on the thematic analysis**.**

Descriptive Statistics of the Objectives

Responses on the type of accounting functions banks use emerging technologies for:

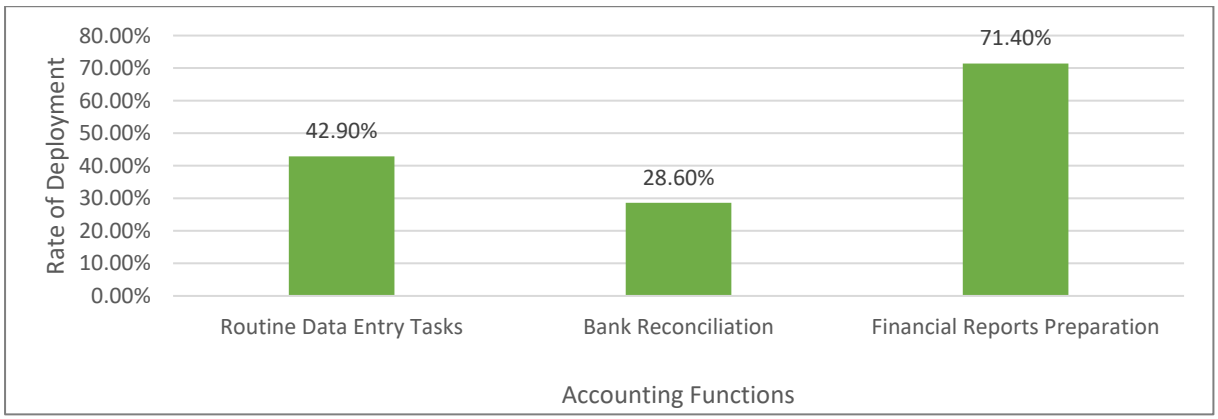

Figure 2: Types of Accounting Functions
Source: Author's Compilation, 2025

The result, as presented in Figure 2, showed that 42.9% of the respondents said their bank uses emerging technologies for routine data entry, 28.6% for bank reconciliation, and 71.4% for

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financial reports preparation. This translates to the fact that deposit money banks use emerging technologies more for financial reports preparation and routine data entry than reconciliation.

Responses on the type of emerging technologies banks deployed for accounting functions:

The result in Figure 3 revealed that all the banks (100% responses) have deployed the use of Artificial Intelligence, while 71.43% and 14.3% have deployed robotic process automation and blockchain technology and respectively. This means that banks find the use of AI and robotic process automation more important than blockchain technology.

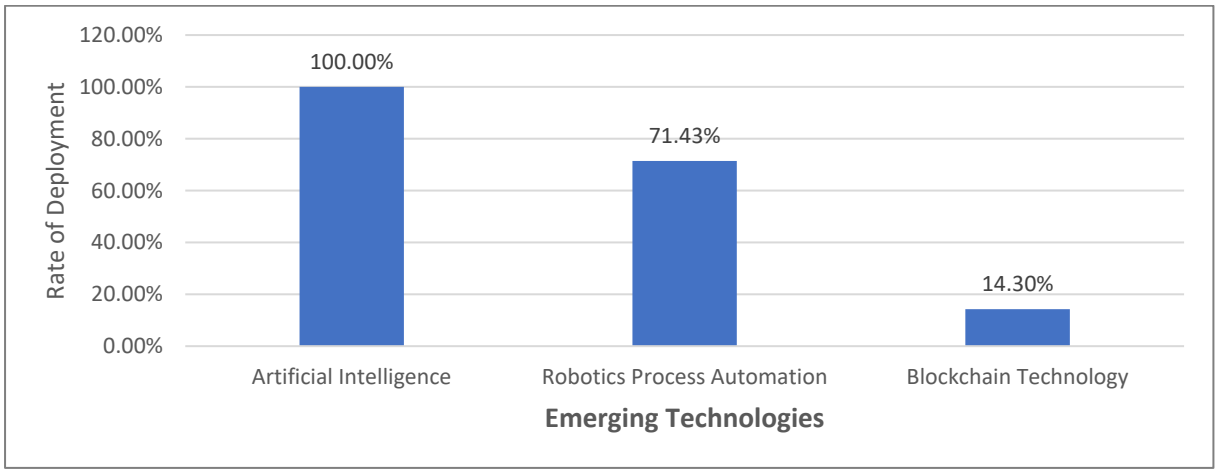

Figure 3: Types of Emerging Technologies
Source: Author's Compilation, 2025

Objective One: The degree to which emerging technologies can be deployed in performing accounting functions

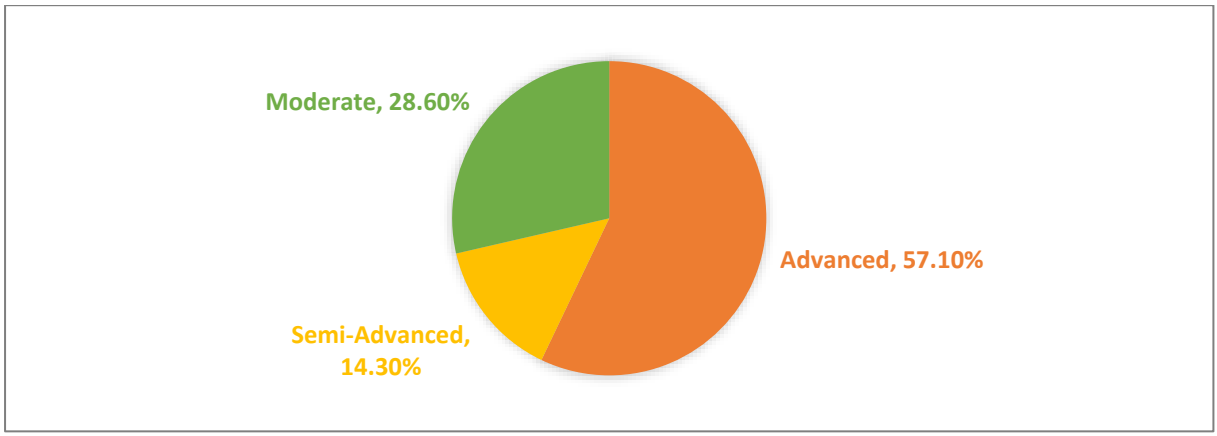

Figure 4: Level of Deployment of Emerging Technologies
Source: Author's Compilation, 2025

Responses on the first objective showed results (Figure 4) of the extent to which emerging technologies can be deployed in performing accounting functions in deposit money banks in Nigeria. 57.1% of the respondents claimed emerging technologies can be deployed at an advanced level, 14.3% said they can be deployed at a semi-advanced level, while 28.6% thought that they can only be deployed at a moderate level for accounting functions. Responses gathered on the degree to which emerging technologies can be deployed for accounting functions showed that emerging technologies can be deployed at any level – advanced, semi-advanced, and

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moderate levels. This suggests that the deployment is subject to the extent to which individual banks assume a particular technology is needed for accounting functions in the bank. This is determined by the length of processes required by an accounting function and the volume of data generated by each bank. This implies that a bank with a lengthy process may have to deploy RPA at an advanced level for a particular accounting function. Likewise, a bank that needs to generate a large volume of data may deploy AI at an advanced level than other banks.

Objective Two: The extent to which the use of emerging technologies have improved accounting functions in deposit money banks in Nigeria

Responses on the extent to which the use of emerging technologies has improved routine data entry tasks, bank reconciliation, and financial report preparation in deposit money banks:

Results (Figure 5) showed that 42.8% of the respondents claimed that the use of emerging technologies has improved routine data entry tasks at an advanced level, 14.3% of the respondents claimed a semi-advanced and low-level improvement, respectively, while 28.6% gave a moderate improvement response. Further results (Figure 5) revealed that 34.9% of the respondents claimed that the use of emerging technologies has improved bank reconciliation tasks at an advanced level, 16.1% of the respondents claimed a semi-advanced level, 23.6% gave a moderate improvement response, while 25.4% claimed a low-level improvement. It was also discovered from the results (Figure 5) that 57.1% of the respondents claimed that the use of emerging technologies has improved financial reports preparation at an advanced level, 28.6% of the respondents claimed a semi-advanced level, while 14.3% asserted a moderate level improvement.

The responses produced different perceptions across the three functions. There were responses of advanced, semi-advanced, and moderate level improvement; the emerging technologies have improved financial reports preparation more at an advanced level, then routine data entry, and lastly, bank reconciliation. This suggests that each bank experiences the emerging technologies depending on the level of deployment in the bank. Additionally, it was discovered that AI, blockchain technology, and robotics process automation are all needed for accounting functions in DMBs. Also, findings revealed that AI, blockchain technology, and RPA can be deployed for routine data entry, financial reports preparation, and bank reconciliation, respectively. This is because the accounting functions are both data-driven and process-driven simultaneously.

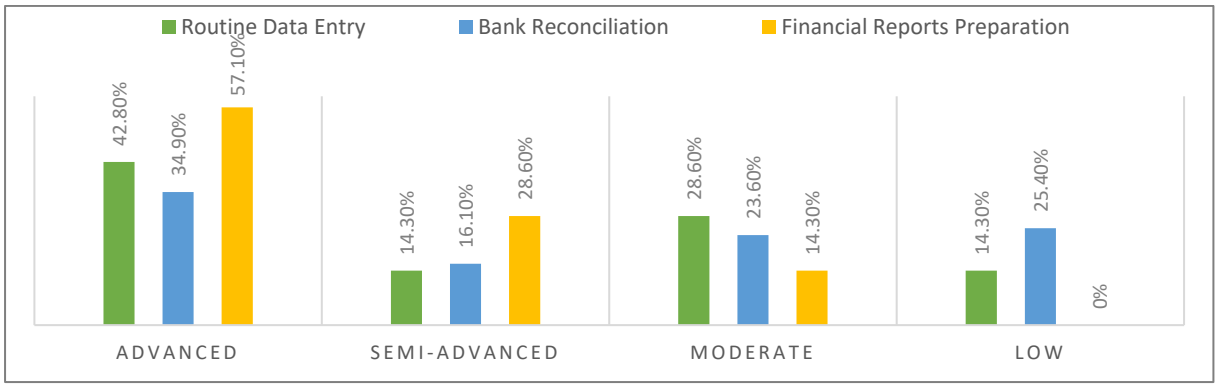

Figure 5: Rate of Improvement of Accounting Functions Using Emerging Technologies
Source: Author's Compilation, 2025

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Thematic Analysis of the Objectives

The thematic analysis of the objectives was done in line with Braun and Clarke's (2006) six-step framework, and the latent level of thematic analysis was used to analyze the themes identified.

Theme: Predominant Use of Emerging Technologies in Accounting Functions

The responses indicate that emerging technologies are predominantly used for financial reports preparation (71.4%) and routine data entry tasks (42.9%). This implies that DMBs find it more necessary to use emerging technologies for financial reports preparation and routine data entry; hence, the deployment of emerging technologies is more relevant to two accounting functions than bank reconciliation. It means that banks prioritize automation, speed, and accuracy for accounting functions that are high-frequency and high-volume. Furthermore, the responses showed that all three emerging technologies considered in this study play a distinct and complementary role in the accounting functions. While AI is used to generate data, RPA is used to automate processes, thus reducing the time used to prepare financial reports. Blockchain technology also helps to enhance the security of data. The result is in line with the theories of the study – TAM and TTF. This means that the emerging technologies are easy to use (ease of use) and useful (usefulness) in reducing the burden of traditional methods of preparing financial reports. Also, the results further explain that emerging technologies align with or are fit (TTF) for accounting functions in the banking sector. The result agrees with the findings of Chukuwani (2024) and Odonkor (2024).

Theme: Dominance of Artificial Intelligence and Robotic Process Automation

The analysis reveals that 100% and 71.43% of banks have respectively adopted Artificial Intelligence (AI) and Robotic Process Automation (RPA) for accounting functions. In contrast, only 14.3% of banks have implemented blockchain technology. This suggests that AI and RPA are more needed, hence the high rate of deployment of the two for accounting functions. It signals that AI and RPA are more beneficial for the automation of processes and the generation of data in performing accounting functions. This is the result of voluminous data that needs to be generated and the various processes that need to be followed.

AI is data-driven, and RPA is process-driven; this implies that both AI and RPA are interdependent in performing accounting functions. For example, RPA is used to automate the process of account opening online, while AI is used to generate the data of customers who opened an account online. Likewise, transactions that involve deposit, withdrawal, or transfer involve both RPA and AI to automate processes and generate data, respectively. Furthermore, the strong reliance on AI and RPA shows that DMBs will be able to perform more tasks within a minimum time frame. The low adoption of blockchain signifies its less importance to the accounting function in DMBs. The result implies that using AI and RPA more for accounting functions emphasizes the ease of use and usefulness of technology in TAM and the fitness of the technology for performing accounting functions according to TTF. The result is in agreement with the outcome of Chukuwani (2024).

Theme: Perceived Capability of Emerging Technologies for Accounting Functions

57.1% responses to this indicate that emerging technologies can be deployed at an advanced level for accounting functions, while 28.5% and 14.3% signaled, respectively, moderate and

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semi-advanced deployment. This suggests that while a large percentage believe that emerging technologies can handle and enhance accounting functions at any stage, some believe that emerging technologies are still limited in their use to perform accounting functions. There are no responses that suggest that emerging technologies cannot be deployed for accounting functions. This implies that emerging technologies, at any stage, are useful for accounting functions. The result agrees with the findings of Chukuwani (2024) and Odonkor (2024).

Theme: Effect of Emerging Technologies on Accounting Functions

The responses on routine data entry tasks showed that the use of emerging technologies has improved the accounting function. It reveals that using the technologies for routine data entry has helped to automate repetitive tasks, improve productivity, enhance accuracy, and improve the speed of performing the accounting function. However, the varied responses mean the deployment of the technologies for routine data entry tasks differs among the banks, which could be a result of differences in human resources and infrastructure.

Also, there are varying perceptions regarding the effect of emerging technologies on bank reconciliation. The responses show that while some banks have seen significant improvement in their use of emerging technologies for bank reconciliation, others have mixed responses that centre around semi-advanced, moderate, and low improvement, respectively. This suggests that the degree to which each bank needs the emerging technologies for the bank reconciliation function differs, depending on the volume of data and frequency of transactions.

Furthermore, a good percentage of the responses claimed an advanced level improvement in the preparation of financial reports using emerging technologies. Other responses are a mixture of semi-advanced and moderate level improvement. This implies that emerging technologies have helped to streamline the various processes involved in the preparation of financial reports, thus enhancing accuracy and speed, reducing human errors, improving productivity, and promoting timely decision-making through the availability of financial reports in real-time. The result corroborates the work of Chukuwani (2024) and Odonkor (2024).

CONCLUSION AND RECOMMENDATION

The study concluded that emerging technologies such as AI, robotics process automation, and blockchain can be deployed for routine data entry, bank reconciliation, and preparation of financial reports at any level in DMBs. Also, routine data entry tasks improved at an advanced level, reconciliation improved at an average level, and financial reporting quality improved at an advanced level, respectively, with the deployment of emerging technologies in DMBs. Consequent to the conclusion of the study, it is recommended that DMBs should adopt more AI-powered accounting systems that can help with the processing of a large volume of data. Also, DMBs should enhance their use of robotics process automation tools for routine data entry and bank reconciliation. Additionally, DMBs should improve on their use of blockchain technology to manage and store financial records. Furthermore, DMBs should create measures that will ensure the smooth implementation of technological solutions.

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