Strategic Evaluation of Digital Accounting Technologies and Their Influence on the Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract: This study investigates the relationship between digital accounting technologies and the financial performance of licensed deposit money banks (DMBs) in Nigeria. It focuses on three core innovations — data analytics, automated bookkeeping, and cloud-based accounting systems — and how they collectively contribute to organisational performance. A survey research design was adopted, targeting DMBs with international authorisation licenses as of April 26, 2024. Out of Nigeria's 44 licensed banks classified into seven licensing categories, seven major DMBs, Access Bank Limited, Fidelity Bank, First City Monument Bank Limited, First Bank Nigeria Limited, Guaranty Trust Bank Limited, United Bank for Africa Plc, and Zenith Bank Plc, were selected. These institutions collectively employed 38,748 staff members. Using the Taro Yamane formula, a sample size of 396 employees was determined, and stratified sampling was applied. Data collection was conducted through a self-administered questionnaire, which yielded a reliability coefficient of 0.741 as measured by Cronbach's Alpha. Data analysis employed descriptive statistics and linear regression, which were processed using SPSS. Out of 396 distributed questionnaires, 379 were valid for analysis. Results revealed that data analytics, automated bookkeeping, and cloud-based accounting systems each had a statistically significant and positive effect on financial performance. The study concludes that embracing digital accounting innovations substantially improves operational efficiency and profitability in Nigeria's banking sector. It recommends, among other measures, that DMBs enhance their data analytics capabilities to sustain competitive advantage.

Keywords: Automation, Banking Sector, Cloud Accounting, Data Analytics, Digital Technologies.

I. INTRODUCTION

The emergence of digital accounting technologies has significantly transformed traditional accounting and financial reporting processes worldwide, including in Nigeria. These innovations leverage advanced software, automation, and cloud computing to enhance efficiency, accuracy, and decision-making within financial institutions (Ngwengeh, Messomo & Mbu, 2021). According to Fijabi and Lasisi (2023), digital accounting encompasses a suite of technological applications, ranging from cloud-based accounting platforms to blockchain-based security protocols and real-time data analytics that enable faster, more accurate financial processing and reporting.

In Nigeria's banking sector, Deposit Money Banks (DMBs) have progressively adopted such technologies to streamline operations, improve regulatory compliance, and deliver superior customer service (Odukwu et al., 2023). These banks play a pivotal role in the economy by facilitating capital formation, expanding financial inclusion, and providing credit that fuels economic growth (Alley, Hassan, Wali & Suleiman, 2023). The sector's competitive environment, coupled with macroeconomic pressures, has intensified the need for innovation (KPMG, 2023; Babel et al., 2019).

Digital accounting offers tangible benefits such as reduced operational costs, enhanced internal controls, improved data accuracy, and faster decision-making capabilities (Oladejo, Yinus & Aina-David, 2020). Automating repetitive processes like transaction posting, reconciliation, and report generation minimises human error and allows staff to focus on high-value strategic tasks

(Oladejo & Yinus, 2020). Furthermore, cloud-based systems improve accessibility, ensure data security, and support collaborative work environments (Odukwu et al., 2023).

However, these benefits are accompanied by notable risks and challenges. Cybersecurity threats, regulatory compliance complexities, skill gaps among employees, and high implementation costs remain key obstacles (Gaya, Omoro & Kinyua, 2022). The increasing sophistication of cyberattacks can compromise data integrity, lead to financial losses, and damage reputations (Amahalu, Egotum & Obi, 2020). Additionally, Nigeria's persistent digital divide restricts the reach of these innovations, particularly in rural and underserved areas (Odukwu et al., 2023).

Empirical evidence supports a positive link between digital maturity and superior financial performance in banks, with higher profitability, better asset quality, and stronger market positioning observed in digitally advanced institutions (Owolabi, Oyegoke & Olalere, 2023; Ogunsola, 2021; Ngwengeh, Messomo & Mbu, 2021; Okika & Udeh, 2019). While the transition to digital systems requires substantial investment and continuous training, the long-term operational and strategic benefits can outweigh the associated costs (Akai, Ibok & Akinninyi, 2023).

➤ *Statement of the Problem*
Over the last decade, Nigeria's banking sector has undergone a significant transformation driven by rapid advances in financial technologies, particularly in the area of digital accounting. Although multiple studies have explored individual aspects of digitalisation, such as electronic banking, automated transaction processing, or cloud-based financial reporting, few have comprehensively examined how these innovations collectively influence the financial performance of licensed DMBs. Research by Okika and Udeh (2019), Oladejo, Yinus, and Aina-David (2020), and Owolabi, Oyegoke, and Olalere (2023) has provided insights into specific tools but has not addressed the integrated effects of key innovations like data analytics, automated bookkeeping, and cloud-based systems on overall financial outcomes.

Furthermore, existing studies such as those by Ogunsola (2021), Ngwengeh, Messomo, and Mbu (2021), and Odukwu et al. (2023) have often focused on the broader theme of digital banking services without dissecting the unique operational and strategic contributions of these digital accounting technologies. This leaves a gap in understanding how they jointly drive profitability, efficiency, and competitive positioning in Nigeria's banking industry.

The gap in scholarly attention to this subject is particularly concerning given the increasingly data-driven nature of global finance and the rising expectations of stakeholders for transparency, accuracy, and speed in financial reporting. In a climate where macroeconomic instability, regulatory demands, and competitive pressures converge, the ability of DMBs to harness the combined potential of digital accounting tools may determine their capacity to remain viable. Without clear empirical evidence

on their integrated impact, bank executives may underinvest in these technologies, missing opportunities to enhance long-term financial performance and market share (Fijabi & Lasisi, 2023; Alley et al., 2023; Amahalu et al., 2020).

➤ *Aim and Objectives of the Study*
The primary aim of this study is to evaluate the influence of digital accounting technologies on the financial performance of licensed deposit money banks in Nigeria. The specific objectives are to:

➤ Analyse the impact of data analytics on the financial performance of licensed deposit money banks in Nigeria.
➤ Assess the effect of automated bookkeeping on the financial performance of licensed deposit money banks in Nigeria.
➤ Evaluate the influence of cloud-based accounting systems on the financial performance of licensed deposit money banks in Nigeria.

● H_{o1}:
Data analytics has no significant effect on the financial performance of licensed deposit money banks in Nigeria.

● H_{o2}:
Automated bookkeeping does not significantly influence the financial performance of licensed deposit money banks in Nigeria.

● H_{o3}:
Cloud-based accounting systems have no significant impact on the financial performance of licensed deposit money banks in Nigeria.

II. LITERATURE REVIEW

➤ *Advancements in Digital Accounting*
Scholars widely acknowledge that technological innovations in accounting trace back to early computing tools such as the abacus, used as far back as 500 B.C. The world is now witnessing another computational leap, particularly with the emergence of quantum computing, which offers new avenues for digital transformation in business processes (Byrd & Ding, 2023; Coccia, Roshani & Mosleh, 2022; Haabazoka, 2018). In practice, the core function of digital accounting is to provide organisations with real-time analytical capabilities, supporting strategic decision-making and enhancing activities such as marketing, sales promotions, and forward planning (Nithya & Kiruthika, 2021; Ragazou, Passas, Garefalakis & Zopounidis, 2023; Rahman, 2023).

Modern digital accounting systems integrate multiple tools that allow institutions, particularly in the banking sector, to gather, link, organise, and analyse information from diverse sources, including supply chains, customers, and competitors (Salami, Akande & Alalade, 2022; Broby, 2021; Haabazoka, 2018). By converting raw data into actionable knowledge, these systems enable managers to coordinate and adapt operational activities in response to fluctuating market conditions and external influences (Nithya & Kiruthika, 2021).

Technologies frequently adopted by banks include automated accounting platforms, Application Programming Interfaces (APIs), and Internet of Things (IoT) applications to streamline data collection and processing (Laghari, Wu, Laghari, Ali & Khan, 2022; Broby, 2021; Bhimani, 2020). Furthermore, digital banking channels, such as online portals, mobile apps, and AI-powered chatbots, enhance accessibility for customers to perform transactions, check balances, and obtain support (Laghari et al., 2022; Kaur, Ali, Hassan & Al-Emran, 2021; Haabazoka, 2018).

In addition, the integration of Robotic Process Automation (RPA), blockchain, advanced encryption, intrusion detection systems, multi-factor authentication, cloud solutions, and AI tools plays a critical role in keeping customers informed and ensuring secure financial operations (Eswaran, Rani, Ramakrishnan & Selvakumar, 2022; Villar & Khan, 2021; Oino, 2019).
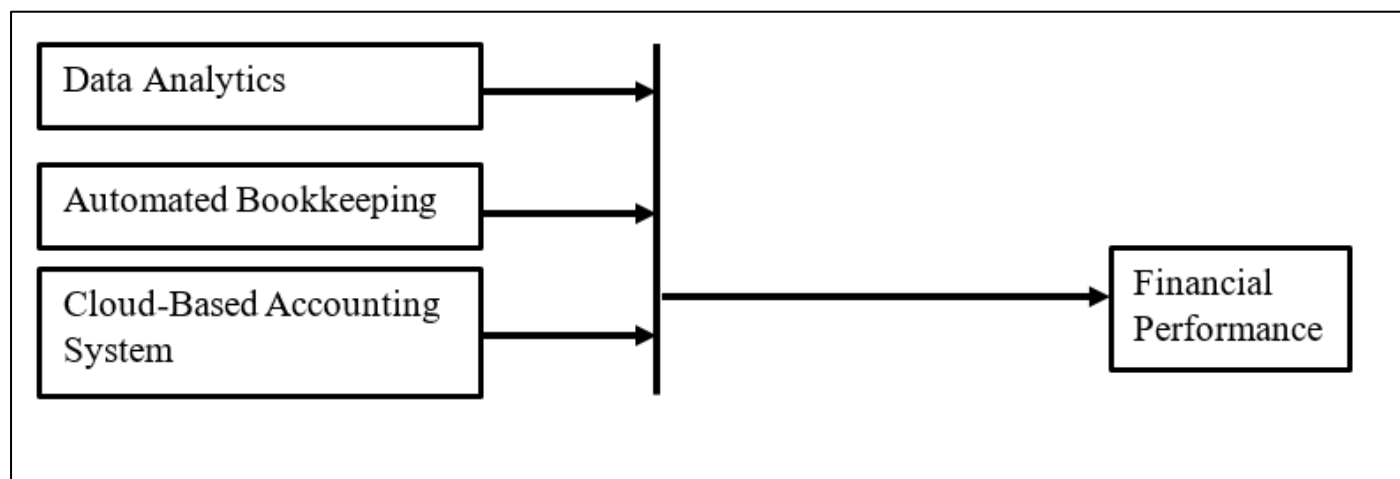

Fig 1 Conceptual Framework

> *Data Analytics in Banking*

Data analytics involves examining datasets to identify trends and patterns, employing methods such as descriptive, diagnostic, predictive, and prescriptive analysis. Each method serves a distinct function: descriptive analytics evaluates historical data to detect patterns over time; diagnostic analytics investigates underlying causes; predictive analytics applies statistical modelling and machine learning to anticipate future developments; and prescriptive analytics provides actionable recommendations for optimal outcomes (Shakya & Smys, 2021; Ali, Salman, Yaacob, Zaini & Abdullah, 2020; Davenport & Harris, 2017; Davenport & Ronanki, 2018; Bose & Bastid, 2018).

In financial services, predictive analytics is particularly vital for assessing credit risk and forecasting potential defaults (Thomas, Edelman & Crook, 2017; Ali et al., 2020; Shakya & Smys, 2021). Analysing transaction patterns enables real-time fraud detection, thereby reducing losses and reinforcing security measures (Ngai, Hu, Wong, Chen & Sun, 2017; Bhardwaj, Gopalaswamy & Gopalaswamy, 2018). Additionally, banks leverage analytics to segment clients and personalise services, a strategy that fosters customer loyalty and enhances satisfaction (Eni et al., 2023; Jagtiani & Lemieux, 2019; Kumar, Anand & Song, 2017).

> *Automated Bookkeeping*

Automated bookkeeping refers to accounting systems that independently process and record transactions using machine learning, requiring minimal human input (Kelleher, 2019; Leo Sharma & Maddulety, 2019; Beutel, List & von Schweinitz, 2019). Built upon algorithms that improve

performance over time (Mitchell, 2017; Chakraborty & Joseph, 2017; Eni et al., 2023), these systems enhance fraud prevention by scanning vast datasets for anomalies indicative of irregular activities (Ngai et al., 2017; Jurgovsky et al., 2018; Sahin et al., 2020).

> *Cloud Computing in Accounting*

Cloud computing has transformed accounting by offering remote, on-demand access to applications and resources via the Internet. Traditionally, financial accounting has provided crucial information to stakeholders in accordance with established principles and regulations (Chapellier, 2019; Tahmid, 2023; Rahman & Joy, 2024). Integrating cloud technology allows accounting systems to operate as interconnected platforms capable of analysing both financial and non-financial information, thereby strengthening organisational oversight (Mohammadi & Mohammadi, 2017; Lunga, 2021; Lambe & Ola, 2020).

This technology supports inter-organisational knowledge-sharing networks, enabling better strategic decisions (Chapellier, 2019; Tahmid, 2023). Service providers offer Software as a Service (SaaS) models that deliver up-to-date insights, such as real-time compliance with evolving accounting standards (Modisane & Jokonya, 2021; Lanz & Nearon, 2022; Polyviou, Pouloudi & Venters, 2023).

> *Measuring Financial Performance*

Financial performance reflects how effectively a business utilises its assets to generate returns for investors, encompassing both operational and investment outcomes

(Aniefor & Onatuyeh, 2019; Olayinka, 2022; Vibhakar, Tripathi, Johari & Jha, 2023). Common measures include return on assets (ROA), return on equity (ROE), and net profit margin, each providing insights into different aspects of profitability and operational efficiency (Farouk & Hassan, 2018; Singh & Mehta, 2017; Yusoff & Alhaji, 2017). Stakeholders use these indicators to assess whether companies are meeting their financial objectives and to benchmark performance against industry peers (Ngozi, Chukwudi & George, 2023; Makinde, 2021; Pam, 2020).

➤ *Theoretical Framework*

This study draws on two foundational theories: The Diffusion of Innovation (DOI) Theory developed by Rogers (1962) and the Technology Acceptance Model (TAM) formulated by Davis (1989).

➤ *Diffusion of Innovations (DOI) Theory*

Proposed by sociologist Everett Rogers in 1962, the Diffusion of Innovations theory explains the process by which new ideas, technologies, and practices spread within a social system. It outlines not only the reasons innovations are adopted but also the pace at which they diffuse through cultures (Rogers, 1962). The model identifies four essential components of diffusion: the innovation itself, communication channels, the time dimension, and the social system in which adoption occurs.

The adoption process is described in five stages: knowledge, persuasion, decision, implementation, and confirmation, and categorises adopters into five groups: innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003). In the banking context, DOI suggests that institutions evaluate digital accounting tools based on attributes such as relative advantage, compatibility, complexity, trialability, and observability before embracing them.

Empirical work supports these dimensions. For example, Sun, Nasir, and Babar (2020) and Park, Kim, and Kwon (2017) show that perceived benefits and alignment with organisational needs increase adoption likelihood. DOI also emphasises communication channels, highlighting that information dissemination and peer influence can accelerate uptake. Banks that actively promote the benefits of digital technologies tend to achieve faster adoption. Additionally, the theory underscores the role of social systems, such as organisational readiness, leadership support, and cultural factors, in shaping technology diffusion. Chatterjee, Moody, and Lowry (2020) confirm that strong leadership and supportive organisational cultures facilitate digital transformation.

➤ *Technology Acceptance Model (TAM)*

Developed by Davis (1989), the Technology Acceptance Model has become one of the most influential frameworks for understanding and predicting user acceptance of new technologies. Building on the Theory of Reasoned Action, TAM identifies perceived usefulness (PU), the extent to which a person believes a system enhances job performance, and perceived ease of use (PEOU), the degree to which using the system is free from effort, as the primary determinants of technology adoption.

These perceptions influence a user's attitude toward the technology, which in turn shapes their behavioural intention to use it, ultimately leading to actual usage (Davis, 1989; Venkatesh & Davis, 2000; Venkatesh, Morris, Davis & Davis, 2003). In this study, TAM is applied to assess how bank employees perceive the usefulness and ease of use of tools such as data analytics platforms, artificial intelligence solutions, cloud-based systems, and blockchain applications. Understanding these perceptions provides insights into the adoption patterns of digital accounting innovations.

Prior research affirms that successful technology implementation depends heavily on user acceptance (Rahi, Ghani, & Ngah, 2019; Chao, 2019; Mansoori, Mohammadi, Taheri, & Niknejad, 2020). By integrating TAM with financial performance indicators, this study also seeks to explore how acceptance of digital systems correlates with efficiency gains, improved customer satisfaction, and enhanced profitability. This approach is consistent with earlier applications of TAM in finance and accounting, which have demonstrated its explanatory strength (Al-Okaily, Al-Okaily, Al-Kasasbeh, Al-Kasasbeh & Gharaibeh, 2020; Alshehri, Drew, & Alfarraj, 2020; Wamba, Akter, Edwards, Chopin & Gnanzou, 2020).

➤ *Empirical Review*

Adeyemo and Okoronkwo (2024) examined the role of artificial intelligence (AI) in enhancing operational efficiency among five major Nigerian banks: Zenith Bank, Guaranty Trust Bank, United Bank for Africa, Access Bank, and First Bank. Using a survey of 450 employees, they found that fraud detection ($\beta = 0.460$, $t = 7.095$, $p < 0.05$), automation ($\beta = 0.202$, $t = 2.143$, $p < 0.05$), and deep learning ($\beta = 0.400$, $t = 5.445$, $p < 0.05$) significantly boosted efficiency, while chatbots had a smaller positive impact. The authors recommended prioritising fraud detection, automation, and deep learning to further improve efficiency.

Similarly, Oduwole and Fatogun (2023) investigated AI's effect on accounting practices in Nigerian banks using regression analysis on responses from 128 industry professionals. Their findings indicated that intelligent agents, expert systems, and automation each had significant positive effects on accounting performance. They concluded that strengthening AI literacy could reduce unnecessary accounting expenses.

In Jordan, Al-Dmour et al. (2023) applied the Technology–Environment–Organisation (TOE) framework to assess big data adoption in banks. Surveying 235 senior and middle managers, they found that big data usage averaged around 60% adoption, with organisational factors being the strongest predictors. Big data adoption was also linked to improved performance, and the authors highlighted the model's 61% explanatory power.

In Nigeria, Igbekoyi et al. (2023) explored the role of big data in accounting across 35 Lagos-based accounting

firms. Using OLS regression on responses from 197 participants, they concluded that data visualisation, volatility, and validity significantly influenced accounting practices, with data visualisation particularly enhancing decision-making effectiveness.

Research by Srbinoska and Donovska (2023) in Macedonia showed that while enterprise resource planning (ERP) systems were widely adopted in accounting, AI adoption remained limited due to high costs and specialised skill requirements. Both ERP and AI were found to improve reporting, decision-making, and efficiency, but barriers such as expense and training needs persisted.

In Lebanon, Boustani (2022) found that AI enhanced transaction quality in the banking sector but also carried risks of job displacement in technical roles due to automation. The absence of emotional intelligence in AI meant it could not fully replace human interaction in client relationships.

Omoge, Gala, and Horky (2022) studied AI-enabled customer relationship management (CRM) systems in Nigeria, surveying 400 bank customers. They reported that technology usage improved satisfaction and service quality, though service quality did not directly drive purchasing behaviour. Interestingly, they found that system downtimes moderated the relationship between customer satisfaction, purchase intention, and technology adoption.

Examining computerised accounting systems (CAS), Uzomah and Ihie (2022) analysed secondary data from the Central Bank of Nigeria and Federal Inland Revenue Service (2008–2018). Their regression analysis revealed that ATM and POS usage had mixed impacts: POS transactions improved return on equity but did not significantly affect profit after tax, while ATM usage reduced both return on equity and profit after tax.

Zhu and Yang (2021) investigated big data analytics in 37 banks across six Asian countries, collecting survey responses from 317 employees. They confirmed that big data and green innovation enhanced both financial and environmental performance, particularly when supported by green HR training and supply chain practices.

In Nigeria, Elegunde and Shotunde (2020) found that AI adoption improved customer satisfaction, employee efficiency, competitive advantage, and service quality in UBA and Access Bank. Regression models showed R^2 values between 0.295 and 0.574, underlining AI's significant contribution to performance.

Lastly, Kokina and Blanchette (2019) studied robotic process automation (RPA) in accounting, highlighting that successful implementation required more than technical expertise. Factors such as governance redesign, process optimisation, and task standardisation were key. The benefits they observed included reduced costs, better documentation, fewer errors, and enhanced reporting quality.

III. METHODOLOGY

This research employed a survey research design, which is particularly appropriate for answering questions related to "what," "where," "who," "how many," and "how much." The survey method is widely recognised for its applicability in descriptive and exploratory research, as it enables the collection of data from a specified population to make inferences or identify patterns (Creswell & Creswell, 2018; Saunders, Lewis, & Thornhill, 2019).

The study population consisted of all Deposit Money Banks (DMBs) operating within Nigeria. According to the official records of the Central Bank of Nigeria (CBN) as of April 26, 2024, there were forty-four (44) licensed DMBs in the country (CBN, 2024).

Table 1 Licensed Deposit Money Banks (Dmbs) as of April 26, 2024

S/N	Categories	Numbers
1	Commercial banking licence with international authorisation	7
2	Commercial banking license with national authorisation	15
3	Commercial banking license with regional authorisation	4
4	Non-interest banking license with national authorisation	4
5	Merchant banking license with national authorisation	6
6	Financial holding companies in Nigeria	7
7	Representative office	1
	Total	**44**

Source: CBN Official List of Deposit Money Banks (2024)

Consistent with the methodological approaches of previous studies (Oladejo & Yinus, 2020; Elegunde & Shotunde, 2020; Adeyemo & Okoronkwo, 2024), this research focused on commercial banks in Nigeria licensed with international authorisation. The selected banks include Access Bank Limited, Fidelity Bank Plc, First City Monument Bank Limited, First Bank of Nigeria Limited, Guaranty Trust Bank Limited, United Bank for Africa Plc, and Zenith Bank Plc.

These institutions were chosen because their international authorisation status indicates prior exposure to advanced technological infrastructures and operational frameworks. Furthermore, they possess the financial and technical capacity to adopt and integrate digital accounting innovations to enhance organisational efficiency and performance (Kama & Adigwe, 2020; Adeniran & Adediran, 2019). The distribution of employees across these banks is presented in Table 2.

Table 2 Population of the Study

S/N	Categories	Number of Employees
1	Access Bank Limited	4165
2	Fidelity Bank	3063
3	First City Monument Bank Limited	3554
4	First Bank Nigeria Limited	7957
5	Guaranty Trust Bank Limited	3321
6	United Bank of Africa Plc.	10007
7	Zenith Bank Plc.	6681
	Total	38748

Source: Annual Report (2024)

The sample size for this study was calculated using Taro Yamane (1967) formula based on the total population size obtained from the sampling frame:

$$n = \frac{N}{1 + N(e)^2}$$

Where, n = Sample size

N = Population of the study

e = Precision estimate

Confidence level is the precision estimate. The precision estimate used is 0.05. Thus:

$$n = \frac{38748}{1 + 38748(0.05)^2}$$
$$n = \frac{38748}{1 + 96.87}$$
$$n = \frac{38748}{97.87}$$
$$n = 395.91 \approx 396$$

Based on the calculation, the representative sample size for this study was determined to be 396 employees drawn from the targeted population. To select participants, a stratified sampling technique was utilised, consistent with approaches adopted in prior research (Qasaimeh & Jaradeh, 2022; Ukpong, 2022; Okpo & Eshiet, 2023). The stratification was carried out according to the respondents' place of employment, ensuring proportional representation from different institutions within the commercial banking sector. This method was chosen to prevent bias by avoiding the underrepresentation of smaller or less prominent banks.

Data collection was conducted using a self-administered questionnaire comprising two sections, labelled A and B. Section A gathered socio-demographic information from respondents, while Section B obtained their views and perceptions on the issues raised by the researcher. A five-point Likert scale was used for Section B, with response options ranging from *strongly agree (5)* to *strongly disagree (1)*. The reliability of the instrument was assessed using the internal consistency method (Cronbach's Alpha) to ensure that the items consistently measured the intended constructs.

Table 3 Reliability Statistics

Variables	Cronbach Alpha	N of Items
Data analytics	.733	5
Automated bookkeeping	.727	5
Cloud-based accounting system	.778	5
Financial Performance	.759	5
Overall	.741	20

As indicated in Table 3, all variables in the study recorded Cronbach's Alpha values exceeding 0.70, demonstrating a high level of internal consistency. This suggests that the items measuring each construct are reliable and would likely yield consistent outcomes if the study were replicated. Overall, the research instrument has an estimated reliability coefficient of 74.1%, indicating a strong likelihood of producing stable results over repeated administrations.

The data analysis involved both descriptive and inferential statistical techniques. Descriptive statistics, including frequency distributions and percentages, were applied to summarise and present the collected data. For hypothesis testing, inferential statistics, specifically the Ordinary Least Squares (OLS) regression method, were employed at a 5% level of significance to evaluate the relationships between variables. The analytical framework for the study is expressed in the following model:

$$y = f(x)$$
$$y = f(x_1, x_2, x_3 \ldots x_n) + \mu$$

$$Financial\ Performance = f(Digital\ banking\ practice) + \mu$$

$$Financial\ Performance = f(data\ analytics, automated\ bookkeeping,$$

$$cloud\ accounting\ system) + \mu$$

$$Financial\ Performance = \beta_0 + \beta_1 DA + \beta_2 AB + \beta_3 CAS + \mu$$

β_0 = Constant parameter/Intercept

$\beta_1 - \beta_3$ = Partial regression parameters

μ = Error term

IV. RESULTS

➤ *Descriptive Statistics*

As shown in Table 3, all variables in the study achieved Cronbach's Alpha values above 0.70, indicating a high degree of internal consistency. This demonstrates that the items used to measure each construct are reliable and can be expected to yield consistent results if the study is replicated. The instrument's overall reliability coefficient of 74.1% further suggests a strong probability of obtaining stable outcomes in repeated applications.

The analysis of data utilised both descriptive and inferential statistical methods. Descriptive statistics, comprising frequency distributions and percentages, were used to summarise and present the data. For hypothesis testing, Ordinary Least Squares (OLS) regression analysis was conducted at a 5% significance level to assess the relationships between variables. The study's analytical framework is represented by the following model:

Table 4 Socio-Demographic Distribution of the Respondents

Items	Categories	Frequency (N)	Percentage (%)
Age (in years)	18 – 27	250	66.0%
	28 – 37	71	18.7%
	38 – 47	19	5.0%
	48 – 57	36	9.5%
	Above 57	3	0.8%
	Total	379	100.0%
Gender	Male	154	40.6%
	Female	225	59.4%
	Total	379	100.0%
Highest Educational Qualification	SSCE	25	6.6%
	OND/NCE	44	11.6%
	HND/B.Sc.	255	67.3%
	MBA/M.Sc.	52	13.7%
	PhD	3	0.8%
	Others	0	0.0%
	Total	379	100.0%
Bank	Access Bank	40	10.6%
	Fidelity Bank	31	8.2%
	First City Monument Bank	33	8.75
	First Bank of Nigeria	79	20.8%
	Guaranty Trust Bank	33	8.7%
	United Bank for Africa	98	25.9%
	Zenith Bank	65	17.2%
	Total	379	100.0%
Job Role	Teller	58	15.3%
	Account Officer	52	13.7%
	Auditor	37	9.8%
	IT Officer	52	13.7%
	Manager	81	21.4%
	Internal Control Officer	21	5.5%
	Others	78	20.6%
	Total	379	100.0%

Source: Field Survey (2025)

The demographic distribution of respondents reveals that female participants constitute 59.4% of the sample, while male participants account for 40.6%. This suggests that the study's findings may reflect, to a greater extent, the perspectives and experiences of women in the Nigerian banking sector. In terms of educational attainment, a substantial proportion of respondents (67.3%) possess HND/B.Sc. Degrees, while 13.7% hold an MBA/M.Sc. Qualifications. This relatively high level of education implies that the participants are likely well-equipped with the knowledge and skills necessary to comprehend and apply digital accounting innovations effectively.

The respondents represent a range of banking institutions, with the highest representation from United Bank for Africa (25.9%), First Bank of Nigeria (20.8%), and Zenith Bank (17.2%). This institutional diversity enhances the study's ability to capture a broad spectrum of perspectives

across different financial organisations. Additionally, the participants occupy various professional roles, with the largest groups being Managers (21.4%), Tellers (15.3%), and Account Officers (13.7%). A further 20.6% of respondents belong to other departments not specifically listed, indicating coverage of viewpoints across multiple tiers of the organisational hierarchy. This diversity of roles ensures a comprehensive understanding of the ways in which digital accounting innovations influence different functional positions within banks.

➢ *Test of Hypotheses*

The study hypotheses were evaluated using linear regression analysis. The decision criterion stipulated that the null hypothesis (H_{o1}) would be accepted if the significance level exceeded 5%, and rejected otherwise.

Table 5 Data Analytics and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	t	Sig.
1	.485[a]	.235	.233	.55123	10.771	.000[a]

Source: Field Survey (2025)

The analysis revealed that data analytics exerts a positive and statistically significant effect on the financial performance of licensed deposit money banks in Nigeria (R = 0.485, t = 10.771, p = 0.000) at the 5% significance level. Based on this result, the first null hypothesis (H_{o1}) was rejected. It was therefore concluded that data analytics significantly enhances the financial performance of licensed deposit money banks in the country.

- *H_{o2}:*

There is no significant influence of automated bookkeeping on the financial performance of licensed deposit money banks in Nigeria.

Table 5 Automated Bookkeeping and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	t	Sig.
1	.601[a]	.362	.360	.50367	14.613	.000[a]

Source: Field Survey (2025)

The findings indicate that automated bookkeeping has a positive and statistically significant influence on the financial performance of licensed deposit money banks in Nigeria (R = 0.601, t = 14.613, p = 0.000) at the 5% significance level. Consequently, the second null hypothesis (H_{o2}) was rejected. It was therefore concluded that automated bookkeeping plays a significant role in enhancing the financial performance of these banks.

- *H_{o3}:*

There is no significant effect of a cloud-based accounting system on the financial performance of licensed deposit money banks in Nigeria.

Table 6 Cloud-based Accounting System and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	t	Sig.
1	.651[a]	.424	.423	.47829	16.669	.000[a]

Source: Field Survey (2025)

The results indicate that the cloud-based accounting system exerts a positive and statistically significant effect on the financial performance of licensed deposit money banks in Nigeria (R = 0.651, t = 16.669, p = 0.000) at the 5% significance level. Consequently, the third null hypothesis (H_{o3}) was rejected. It was therefore concluded that cloud-based accounting systems significantly enhance the financial performance of licensed deposit money banks in the country.

V. DISCUSSION

The findings from the first hypothesis reveal that data analytics has a positive and statistically significant impact on the financial performance of licensed deposit money banks in Nigeria. This outcome is consistent with Al-Dmour, Saad, Amin, Al-Dmour, and Al-Dmour (2023), whose research in Jordan demonstrated that big data analytics positively influences bank performance, albeit at a moderate level.

Similarly, Ali et al. (2020) found that big data strategies improve both operational and financial performance, particularly within the ASEAN banking sector. Zhu and Yang (2021) further supported these results, showing that data analytics strengthens financial stability and performance in banks. In the Nigerian context, Igbekoyi, Oke, Awotomilusi, and Dagunduro (2023) highlighted that data analytics, especially data visualisation, enhances the effectiveness of accounting practices, thereby improving performance outcomes.

The second hypothesis results show that automated bookkeeping significantly and positively affects financial performance. This finding aligns with global evidence on the benefits of automation in financial processes. In advanced economies, Kokina and Blanchette (2019) demonstrated that automated bookkeeping and robotic process automation (RPA) improve process efficiency and reduce error rates,

leading to enhanced financial outcomes such as more accurate reporting and lower operational costs. Srbinoska and Donovska (2023) similarly reported that automation technologies, including ERP systems, promote more accurate and timely financial reporting, thereby improving financial performance. In developing economies, specifically Nigeria, Al-Ababneh et al. (2023) found that automation boosts productivity and reduces costs in the banking sector, while Adeyemo and Okoronkwo (2024) confirmed that automation enhances operational efficiency, which translates into stronger financial results.

The third hypothesis confirms that cloud-based accounting systems have a significant positive effect on financial performance. This finding is in line with Ahmad et al. (2024), who demonstrated that such systems improve task completion and resource efficiency by providing accurate, real-time information, thus enhancing financial reporting reliability. Al-Okaily et al. (2022) also found that cloud-based systems improve performance expectancy and decision-making quality, particularly during the COVID-19 pandemic, directly influencing financial outcomes. Similarly, Eldalabeeh et al. (2021) reported that cloud accounting adoption boosts both system and service quality, thereby improving operational efficiency. Nigerian studies by Owolabi, Oyegoke, and Olalere (2023) and Akai, Ibok, and Akinninyi (2023) further corroborate these findings, confirming that cloud-based systems enhance the timeliness and accuracy of financial reporting, ultimately improving performance.

VI. CONCLUSION

This study establishes that digital accounting innovations, comprising data analytics, automated bookkeeping, and cloud-based accounting systems, significantly and positively influence the financial performance of licensed deposit money banks in Nigeria. These results highlight the transformative potential of digital accounting in strengthening operational efficiency, financial reporting accuracy, and overall bank performance.

However, the findings raise critical questions for future research: Is traditional accounting becoming obsolete in the era of digital transformation, or does it still retain relevance in addressing future financial uncertainties? These questions call for deeper academic and professional debate regarding the long-term impact of digital technologies, not only on financial performance but also on the evolving role of human expertise within the digital accounting ecosystem.

RECOMMENDATIONS

➢ Banks should invest in advanced analytics tools and specialised staff training to better leverage data insights for optimising revenue streams, managing costs, and improving profitability.
➢ Expanding and optimising automated bookkeeping systems can enhance the accuracy and efficiency of financial reporting, leading to improved asset utilisation and stronger financial outcomes.

➢ Greater adoption of cloud-based accounting systems can provide scalability, flexibility, and real-time financial reporting, thereby boosting operational efficiency and overall financial performance.

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