

## Cloud Accounting Practices on the Operational Performance of Listed Commercial Banks in Nigeria

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### ABSTRACT:

This study investigates the effect of cloud accounting practices on the operational performance of listed commercial banks in Nigeria. The research specifically examined how cloud accounting influences four key performance dimensions: financial effectiveness, customer satisfaction, internal operational processes, and employee productivity. The study adopted a survey research design and collected primary data from 132 respondents across 10 listed commercial banks in Nigeria, including account officers, ICT personnel, and management staff. Data was collected using a structured questionnaire rated on a five-point Likert scale and analyzed using Simple Regression Analysis through SPSS version 23. Reliability testing produced a Cronbach's Alpha coefficient of 0.87, confirming the internal consistency of the instrument. Findings reveal that cloud accounting practices significantly enhance financial effectiveness, internal operational processes, and employee productivity. However, the effect of cloud accounting on customer satisfaction was statistically insignificant, implying that while internal efficiency improves, customer satisfaction depends more on service quality and responsiveness. The study concludes that cloud accounting serves as a transformative mechanism for operational optimization in Nigerian commercial banks, fostering cost reduction, automation, and improved decision-making. It recommends that banks should integrate cloud accounting systems with Customer Relationship Management (CRM) tools to improve service delivery and transparency, strengthen internal data analytics, and enhance employee training to maximize the strategic benefits of cloud-based financial management.

**KEYWORDS:** *Cloud Accounting, Operational Performance, Financial Effectiveness, Customer Satisfaction, Internal Processes, Employee Productivity*

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## INTRODUCTION

The financial industry is undergoing significant transformation, with cloud computing emerging as a core enabler of innovation. Cloud accounting systems allow organizations to perform financial functions remotely, in real time, and at reduced cost, facilitating streamlined operations, improved decision-making, and increased flexibility. For commercial banks, whose operational performance is crucial, adopting cloud accounting is particularly pertinent. The transition from on-premises accounting software to cloud-hosted platforms reflects evolving customer expectations, a requirement for organizational agility, and an increasing demand for robust data access and collaboration.

A report from IDC (2023) highlighted key growth trends in the global cloud market, driven by widespread adoption of artificial intelligence and a robust ecosystem of service providers. The report showed that worldwide revenue from public cloud services reached \$669.2 billion. This is a 19.9% increase over 2022.

IDC anticipates that cloud service revenues will continue to grow. These revenues are likely to exceed \$800 billion in 2024, spurred by investments in artificial intelligence (AI)-ready infrastructure and the demand for cloud-enabled, on-demand AI tools. The 2023 Flexera State of the Cloud Report highlights that optimizing cloud use for cost savings remains a top priority for businesses worldwide. This is a critical factor in accounting as enterprises seek efficiency gains without major capital expenses. The report also notes a growing preference for multi-cloud environments, with 87% of companies implementing such strategies. A significant trend in 2023 is the rising interest in artificial intelligence (AI) and machine learning (ML) within cloud services. In these services, 48% of businesses are either experimenting with or planning to adopt these technologies within public cloud environments. The Global Cloud ERP Market report by Research and Markets (2023) offers a comprehensive analysis of the cloud-based ERP market and identifies significant growth trends and strategic developments across regions and industries. It anticipates that the cloud ERP market will expand from an estimated \$51.6 billion in 2022 to approximately \$184.7 billion by 2030, at a CAGR of 17.3%.

As cloud accounting grows, integrating it with enterprise resource planning (ERP) systems further streamlines financial processes, strengthens compliance, and raises organizational value (Miller, 2020). In Nigeria, commercial banks face strong pressure to modernize, cut costs, and improve customer service. Cloud accounting is a key tool for cutting costs and gaining real-time financial insight.

Despite the benefits of cloud accounting, Nigerian commercial banks face operational challenges: high operating costs, service disruptions, error-prone transactions, and increased fraud risk (Kola-Oyeneyin & Kuyoro, 2020; Gololo, 2018). Cloud accounting adoption is rising, but there is limited evidence on whether its practices measurably improve operational performance in banking. The links between cloud use and outcomes—cost savings, service quality, staff productivity—remain underexplored. Most literature draws from developed economies or broader business settings; the distinct context of Nigerian listed commercial banks, with unique regulatory, infrastructural, and market constraints, has received little attention. Research on the impact of cloud accounting on the balanced scorecard in Nigerian banking is scarce. Existing studies usually focus only on reporting quality or profitability. This study addresses the contextual and empirical gap by analyzing the effects of cloud accounting practices on financial effectiveness, customer satisfaction, internal processes, and employee productivity in Nigerian listed commercial banks.

## LITERATURE REVIEW

### *Cloud accounting*

Cloud accounting refers to the use of internet-based software and servers to carry out accounting functions, enabling firms to access, process, and share financial information remotely and in real time (Rao et al., 2017; Turner & Weickgenannt, 2020). According to Drew (2021), cloud platforms offer features such as invoicing, payroll, financial reporting, and data-sharing across devices and locations. By storing data on remote servers managed by third-party providers, organizations reduce reliance on in-house servers and IT staff, thereby gaining scalability, automatic updates, and improved decision-making (KPMG, 2020).

Mohanty and Mishra (2017) define cloud accounting as “online accounting via the Internet and remote servers.” They note that firms resistant to adoption may face competitive disadvantages. Ali and Thakur (2017) highlight that even accounting professionals exhibit low awareness of cloud accounting due to concerns about data security and migration costs. Yoo and Kim (2018) argue that task, technology, organizational, and environmental factors influence cloud computing adoption. Effiong et al. (2020) observe that accounting is no longer confined to desktops or office servers but is increasingly cloud-based. According to Yang et al. (2019), cloud accounting offers high reliability, scalability, and cost-performance advantages. Hendricks et al. (2021) finds that firms using cloud-based systems can improve internal controls and accelerate financial reconciliation, contributing to firm value (Sangster et al., 2020). In Nigeria, for instance, the Central Bank of Nigeria (CBN) and major banks partner with providers such as NetApp to leverage cloud services, sharing infrastructure to reduce costs (Iwuchukwu, 2017).

### **Nexus between cloud accounting practices and operational performance in Nigeria**

#### *Cloud accounting and financial effectiveness*

Cloud accounting adoption in commercial banks is driven by the need to improve efficiency, reduce costs, and enhance service delivery (Adwan & Alsaed, 2022). PwC (2023) highlights that cloud-native architecture enables automation and AI-driven processes, improving customer experience and competitiveness. Unlike traditional on-premises systems that require substantial investment in hardware and maintenance (Miller, 2020), cloud accounting operates on subscription models that reduce operational costs and enhance financial flexibility (Hassan et al., 2017; Duhamel et al., 2021). These systems also support better financial insight through real-time analytics and risk forecasting (Hendricks & Mwapwele, 2024). Through cloud-based platforms, organizations can eliminate substantial expenditures associated with maintaining physical servers, software installations, and system upgrades. This cost efficiency translates into

improved profitability and returns on investment. Furthermore, cloud accounting enhances the accuracy and timeliness of financial reports, enabling management to make informed strategic decisions that improve organizational performance (Okere, 2022). Cloud accounting enhances operational performance by reducing IT costs, enabling real-time reporting, improving service delivery, and boosting customer satisfaction (Hendricks et al., 2021; Rogers, 2019). Digital transformation has shown positive effects on bank efficiency, with larger institutions benefiting most from scale (Higgins et al., 2019; Smith & Raley, 2021). Real-time visibility into financial information enables timely decision-making, efficient cash flow monitoring, and improved productivity through automation (Deloitte, 2023). Cloud accounting adoption improves organizational performance through enhanced collaboration, faster access to financial information, and improved decision-making capabilities (Akpan et al., 2023; Akai et al., 2023). Their studies emphasized the strategic role of cloud technology in achieving organizational growth and sustainability.

#### ***Cloud accounting and customer satisfaction***

Cloud accounting practices have been shown to significantly enhance customer satisfaction by improving service delivery, data accessibility and transparency in financial reporting (Okere, 2022). The integration of cloud-based solutions into accounting transforms traditional practices and enables businesses to offer better, more responsive services to their customers. Cloud platforms provide customers with continuous access to accurate financial information, fostering transparency and trust (Hendricks & Mwapwele, 2024). This level of transparency builds trust and allows customers to make more informed decisions (PwC, 2023). According to Xero (2023), customers benefit from having 24/7 access to financial information, which improves their experience and satisfaction. Customers are more satisfied when they feel their financial concerns are being addressed promptly and effectively.

#### ***Cloud accounting and internal processes***

Cloud accounting practices are increasingly recognized for their positive impact on operational efficiency in businesses, particularly in the financial and accounting sectors (Ighosewe et al., 2025). Automation of processes such as invoicing, payroll and tax calculations reduces manual workload and error rates, enabling staff to focus on strategic activities (Deloitte, 2023). Real-time deposit updates improve service speed, data integrity, and liquidity management for financial institutions (Xero, 2023). By integrating cloud accounting with their banking systems, businesses and financial institutions can gain better insights into their cash flow. They can track when deposits are made, how funds are allocated, and forecast future liquidity needs. This helps organizations optimize working capital, ensuring they have sufficient funds to meet operational requirements and minimize liquidity risks. It was observed that virtualized transaction reporting and self-service transaction reporting positively influence productivity and profitability (Salam et al., 2021; Okoye, 2021; Ozondu et al., 2024).

#### ***Cloud accounting and employees' productivity***

Cloud tools require employees to develop additional skills in analytics, cybersecurity, and digital collaboration to leverage system capabilities (Nguyen et al., 2020). Upskilling improves employee adaptability, job performance, and contribution to strategic decision-making (Deloitte, 2023; Xero, 2023). Adewumi et al. (2025) reported that cloud accounting systems significantly improve workforce productivity by streamlining accounting operations and enabling remote work. In modern organizations, particularly financial institutions, cloud accounting empowers employees with digital tools that enhance effectiveness, innovation, and overall job performance. Dania (2026) observed that technology-enabled accounting systems improve employee productivity by providing employees with timely information and reducing time spent on administrative activities. Ozondu et al. (2024) showed that virtualized transaction reporting and self-service transaction reporting positively influence productivity and profitability.

#### ***Theoretical Framework: Technology Acceptance Model (TAM)***

This theory was developed by Fred Davis in 1989. TAM replaces many of TRA's attitude measures with two technology acceptance measures: ease of use and usefulness. The assumptions of the theory, according to Davies (1989), is that an individual's intention towards using a new system is jointly determined by perceived usefulness, the users' subjective probability that using a specific application system will increase his or her job performance and efficiency and perceived ease of use (PEOU). Accordingly, perceived ease of use also directly predicts usage. TAM models might be useful within and across organizations for evaluating applications or technologies, or for comparing user groups or applications. Empirical studies on TAM have been conducted since its inception. Compared with its competing models, TAM is believed to be more predictive and robust. Despite the plethora of literature on TAM, critics argue that empirical tests have so far produced mixed and inconclusive results, with results varying considerably in terms of statistical significance, direction, and magnitude. Although they are not uncommon in the social sciences, where human behavior is difficult and complex to explain, the mixed findings not only undermine the precision of TAM but also complicate efforts by IT practitioners and academicians to identify the antecedents of user acceptance behavior.

**METHODOLOGY**

The study employed a survey research design, deemed appropriate for eliciting informed opinions from knowledgeable individuals and providing comprehensive insights into the relationship between cloud accounting adoption and operational performance among commercial banks in Nigeria. Given that cloud accounting remains a relatively innovation in a developing economy like Nigeria, where empirical data on the subject are limited, qualitative insights were quantified to enable statistical analysis and generalization. The accessible population comprised account officers, ICT personnel, and management staff from selected commercial banks. The study encompassed 10 commercial banks: Access Bank Plc, Ecobank, Fidelity Bank Plc, First Bank of Nigeria, First City Monument Bank, Guaranty Trust Bank, Sterling Bank Plc, Union Bank, United Bank for Africa, and Zenith Bank Plc. The total study population consisted of 240 employees drawn from these institutions. Using Yamane’s (1967) formula at a 5% precision level, the sample size was determined to be 150 respondents. The participants were selected through purposive and convenience sampling, based on their familiarity with cloud-based systems and their ability to provide informed, relevant responses. Of the 150 questionnaires administered, 132 were completed and returned correctly, resulting in a high response rate and ensuring the reliability of the collected data. Primary data were obtained through a structured questionnaire divided into two sections. The first section gathered demographic information, while the second section contained items measuring both dependent and independent variables using a five-point Likert scale ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*. Participation in the survey was voluntary, and confidentiality of responses was strictly maintained. To ensure instrument validity, the questionnaire was reviewed by the research supervisor, who confirmed that the items aligned with the study’s objectives.

**Table 1: Reliability Statistics**

Cronbach’s Alpha	N of items
.871	4

**Source:** Researcher’s computation 2026

Reliability of the instrument was assessed using Cronbach’s Alpha, which yielded a coefficient of 0.87, indicating high internal consistency, in line with Tavakol and Dennick (2011), who suggest that alpha values between 0.70 and 0.95 indicate acceptable reliability. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 23.0. The study employed Simple Regression Analysis to determine the causal effect of the independent variable (cloud accounting) on the dependent variables: Financial Effectiveness (FE), Customer Satisfaction (CS), Internal Processes (IP), and Employee Productivity (EP).

The functional and econometric forms of the regression models were specified as follows:

$$\begin{aligned}
 FE &= \beta_0 + \beta_1 CA + e_i \dots\dots\dots 1 \\
 CS &= \beta_0 + \beta_1 CA + e_i \dots\dots\dots 2 \\
 IP &= \beta_0 + \beta_1 CA + e_i \dots\dots\dots 3 \\
 EP &= \beta_0 + \beta_1 CA + e_i \dots\dots\dots 4
 \end{aligned}$$

Where:

- CA = Cloud Accounting
- $\beta_0$  = constant term,
- $\beta_1$  = regression coefficient, and
- $e_i$  = error term representing unobserved variables

**RESULT AND DISCUSSIONS**

The descriptive results reveal that cloud accounting practices significantly influence the performance dimensions of listed commercial banks in Nigeria, with all items recorded mean scores above the criterion mean of 2.5, (Financial Effectiveness mean of 3.32; Customer Satisfaction mean of 2.51; Internal Operational Processes mean of 3.38 and Employee Productivity grand mean of 3.40) signifying that cloud accounting positively affects operational performance of listed commercial banks in Nigeria. The standard deviation values ranged from 0.75 to 0.86, indicating relatively low variability in respondents’ responses. Since all the values are below 1.0, the responses were closely clustered around their respective mean scores, suggesting a high degree of consensus among respondents. This implies that the participants shared similar perceptions regarding the effect of the studied variable on financial effectiveness, customer satisfaction, internal processes, and employee productivity, thereby enhancing the credibility and reliability of the descriptive results.

**Table 2: Descriptive statistics**

ITEM	Mean	Std. Dev.	Decision
CS	3.12	0.75	Agree
FE	3.32	0.81	Agree
CS	2.51	0.86	Agree
IP	3.38	0.77	Agree
EP	3.40	0.80	Agree

**Source:** Researcher's computation 2026

**Table 3: Correlation Matrix**

	CA	FE	CS	IP	EP
CA	1.000000	0.755112	-0.084994	0.190296	0.094679
FE	0.755112	1.000000	-0.089380	0.086854	0.049705
CS	-0.084994	-0.089380	1.000000	0.409967	0.102491
IP	0.190296	0.086854	0.409967	1.000000	0.348336
EP	0.094679	0.049705	0.102491	0.348336	1.000000

**Source:** Researcher's computation 2026

The correlation coefficients measure the degree and direction of linear association between the study variables. All coefficients are below 0.80, indicating no severe multicollinearity and supporting the suitability of the variables for regression analysis. The absence of excessively high correlations confirms that the variables can be jointly included in the regression models without concern for multicollinearity, thereby justifying their use in subsequent regression analyses.

The regression result indicates that cloud accounting practices have a positive and significant effect on financial effectiveness. The coefficient value of 0.795 implies that a one-unit increase in the independent variable leads to a 79.5% increase in financial effectiveness, holding other factors constant. The t-statistics of 16.098 demonstrate a strong relationship between the variables. Furthermore, the p-value of 0.000, which is less than the 0.05 significance level, confirms that the effect is statistically significant.

The R<sup>2</sup> value of 0.612 indicates that approximately 61.2% of the variation in financial effectiveness is explained by the model, while the remaining 38.8% is attributable to other factors not included in the study. The adjusted R<sup>2</sup> of 0.601 confirms the model's robustness. This outcome suggests that cloud accounting enables banks to reduce operational and information technology infrastructure costs, improve the speed of financial reporting, and enhance data accessibility. The findings align with Chen and Roberts (2021), who emphasized the positive impact of cloud-based financial analytics on bank performance. In the Nigerian banking environment, where competition among Deposit Money Banks (DMBs) continues to intensify and digital transformation has become a strategic necessity, cloud accounting offers institutions the opportunity to streamline financial operations and improve profitability.

The coefficient of 0.567 suggests a positive relationship between cloud accounting and Customer Satisfaction. Specifically, a one-unit increase in the independent variable is associated with a 56.7% increase in Customer Satisfaction with a 30.711 t-statistic. The reported p-value of 0.286 is greater than the 0.05 significance level. This implies that the effect is not statistically significant. The R<sup>2</sup> value of 0.456 indicates that the model explains 45.6% of the variation in Customer Satisfaction, while 54.4% is explained by other factors. This finding implies that although cloud accounting improves internal financial management

functions, its direct influence on customers' perceptions and experiences is limited. Customer satisfaction within the Nigerian banking industry is largely shaped by factors such as service reliability, transaction speed, network availability, responsiveness to complaints, and personalized banking services. Consequently, customers may not directly perceive improvements from cloud-based accounting systems, as these technologies operate predominantly within banks' internal financial management frameworks. The outcome contrasts with the Harvard Business School (2020) findings, which stressed aligning technological systems with customer-centric service delivery.

**Table 4: Regression Analysis**

Variables	FE	CS	IP	EP
Constant	0.511	1.543	0.522	1.122
Coefficient	0.795	0.567	0.805	0.905
Std Error	0.048	0.034	0.044	0.094
T-Statistics	16.098	30.711	18.098	16.018
R2	0.612	0.456	0.817	0.836
Adjusted R2	0.601	0.442	0.815	0.831
P-Value	0.000	0.286	0.000	0.000

**Source:** Researcher's computation 2026

The coefficient value of 0.805 indicates that cloud accounting practices positively influence Operational Efficiency. A one-unit increase in the independent variable results in an estimated 80.5% increase in Operational Efficiency. The t-statistics of 18.098 signifies a strong effect. The p-value of 0.000 is below the 0.05 threshold, confirming that the relationship is statistically significant. The high R<sup>2</sup> values across the models suggest that the independent variable explains a substantial proportion of the variation in organizational performance indicators. The finding aligns with contemporary evidence that cloud-based accounting systems contribute to operational excellence by promoting transparency, governance and accuracy in financial reporting processes (Ighosewe et al., 2025). This finding supports the Technology Acceptance Model, which emphasizes organizations' ability to adapt and reconfigure technological resources to respond effectively to changing business environments. Similarly, Kharub and Sharma (2019) affirmed that cloud-based automation reduces manual errors and enhances operational efficiency.

The regression coefficient of 0.905 shows a positive effect of the independent variable on Employee Productivity. This means that a one-unit increase in the independent variable leads to an estimated 90.5% increase in Employee Productivity. The t-statistics of 16.018 indicate a strong relationship. The p-value of 0.000 is less than 0.05, showing that the effect is statistically significant. The R<sup>2</sup> value of 0.836 implies that 83.6% of the variation in Employee Productivity is explained by the model, while only 16.4% is due to other factors. The adjusted R<sup>2</sup> value of 0.831 further demonstrates the model's reliability. This result indicates that cloud-based accounting systems reduce repetitive manual tasks, improve employee collaboration, and support faster completion of accounting functions. The findings are consistent with recent studies, which established that automation technologies improve workforce productivity by enabling employees to focus on higher-value activities such as financial analysis, strategic planning, and decision support rather than routine bookkeeping tasks (Adewumi et al., 2025)

## CONCLUSION

This study examined the impact of cloud accounting practices on the operational performance of listed commercial banks in Nigeria, focusing on four key dimensions: financial effectiveness, customer satisfaction, internal processes, and employee productivity. The study revealed that cloud accounting practices have a statistically significant and positive effect on financial effectiveness, internal operational efficiency, and employee productivity. These findings indicate that adopting cloud-based accounting systems enables banks to streamline financial operations, improve data accuracy, enhance real-time decision-

making, and reduce operational costs. However, the relationship between cloud accounting and customer satisfaction was found to be statistically insignificant. This suggests that while cloud accounting improves internal efficiency, its benefits may not directly translate to customer-facing outcomes unless integrated with customer relationship management and service delivery systems. Overall, the study concludes that cloud accounting represents a transformative tool for Nigeria's banking sector, offering strategic advantages in efficiency, transparency, and resource optimization. Its successful implementation depends on robust technological infrastructure, management support, and employee readiness to adapt to digital accounting environments.

Against the foregoing backdrop, the study recommends that banks deepen their adoption of cloud-based financial management systems to optimize resource utilization, reduce IT infrastructure costs, and enhance the accuracy and timeliness of financial reporting. Management should also prioritize investments in data analytics features within cloud platforms to support strategic financial planning. In addition, banks should integrate cloud accounting systems with customer relationship management (CRM) tools to improve service delivery and transparency. Continuous feedback mechanisms should be implemented to ensure that technology-driven efficiency is matched with improved customer experience and responsiveness. Therefore, we recommend that management strengthen internal process automation and data integration through advanced cloud platforms. Regular audits and performance evaluations should be conducted to ensure that cloud systems are aligned with operational goals and compliance requirements. Finally, banks should organize continuous professional training and capacity-building programs to help employees maximize the use of cloud accounting tools. Furthermore, management should adopt incentive-based strategies to encourage staff to embrace digital transformation and innovation in their daily operations.

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