

Cloud Accounting Adoption and Organizational Performance in Financial Reporting

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Abstract: The use of cloud accounting is motivated by its potential advantages in terms of enhanced efficiency, increased accessibility, and improved cost-effectiveness. As organisations adopt cloud-based accounting systems, there is a growing concern about the implications of this technological change on their organisational performance, especially in relation to financial reporting. This research objective is to provide a comprehensive understanding of how cloud accounting adoption influences organizational performance in financial reporting within the Nigerian context. Specifically, the study evaluates the impact of Cloud Accounting on timeliness of financial reporting of selected firms in Nigeria; examine the effect of IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) on timeliness of financial reporting of selected firms in Nigeria. The study employed an ex-post facto approach and a survey research design. Secondary data used for the first aim were collected via an ex-post facto research approach, whereas Primary data used the second objective were collected via a survey. The cost associated with implementing cloud-based accounting systems, represented by the CAC coefficient, shows an almost negligible impact on FRQ. The analysis reveals that IaaS does not have a statistically significant impact on organizational performance in financial reporting. On the other hand, PaaS has a statistically significant and positive impact on organizational performance in financial reporting. SaaS also demonstrates a statistically significant and positive impact on organizational performance in financial reporting. Organizations that utilize SaaS tend to achieve better timeliness in their financial reporting. The study recommended that Organizations aiming at enhancing their financial reporting timeliness should consider maximizing the use of Platform as a Service (PaaS) and Software as a Service (SaaS). These cloud-based services have shown a significant positive impact on organizational performance in financial reporting.

Keywords: Cloud Accounting, PaaS (Platform as-a-service), SaaS (Software as-a-Service), IaaS (Infrastructure as-a-Service), Organizational Performance, Timeliness

1.0

INTRODUCTION

The use of technology has facilitated the decentralisation of traditional workspaces via the promotion of telecommuting, hence fostering sustainability and ensuring uninterrupted business operations (Jaynob & Shamimul, 2022). The advancements in data and machine learning infrastructures have reached unprecedented levels, leading to the emergence of the industry 4.0 revolution across several domains, particularly in the realm of information systems management (Yoon, 2020). Cloud accounting is widely recognised as an emerging and innovative technology advancement within the realm of corporate operations and accounting (Rindaşu, 2017). Cloud accounting is a term used

to describe the provision of accounting services that are hosted remotely in the cloud, allowing many users to access them from any location. Accounting may be described as the systematic process of quantifying and evaluating the financial performance of a company entity (Jaynob & Shamimul, 2022). The field of accounting has seen notable advancements as a result of the introduction of accounting software. Accountants are able to enhance the efficiency and effectiveness of their work via the use of accounting software, a very valuable instrument in their profession. Rindaşu (2017) highlighted the significant changes that the field of accounting has seen in the age of technology, with a special focus on the emergence of Cloud Computing. In their study, Rikhardsson and Yigitbasioglu (2018) examined the integration of business intelligence and Big Data Analytics within the realm of accounting management.

The advent of cloud computing has brought about significant transformations in several facets of corporate operations, notably in the domains of accounting and financial reporting. The use of cloud-based accounting systems by enterprises has garnered considerable interest owing to its capacity to improve operational efficiency, facilitate data accessibility, and provide cost-effective solutions for financial reporting. Cloud-based accounting solutions have seen widespread adoption on a worldwide scale in recent years, driven by the increasing need for flexible and adaptable financial reporting systems inside organisations (Jaynob & Shamimul, 2022). Cloud accounting solutions provide several benefits, such as instantaneous access to data, less expenses related to IT infrastructure, and improved cooperation among all parties involved. The use of cloud-based financial reporting has significant importance in rising economies such as Nigeria, since firms in these regions are progressively acknowledging the need for modernization and digital transformation. The implementation of cloud accounting solutions is contingent upon many aspects, including technical preparedness, organisational culture, and the legal framework (Ismail & Mohammed, 2021). The aforementioned criteria significantly influence the degree to which organisations adopt cloud-based financial reporting systems. A comprehensive grasp of these drivers is crucial for gaining insight into the intricacies of cloud accounting adoption and its impact on organisational success.

Cloud accounting, as a nascent corporate paradigm, is underpinned by the technological advancements of cloud computing (Jaynob & Shamimul, 2022). Cloud accounting encompasses the provision of various IT-related technologies, including technologies Software as a Service (SaaS), Hardware as a Service (HaaS), Application as a Service (AaaS), and Platform as a Service (PaaS). Software as a Service (SaaS) refers to a software distribution model whereby a cloud provider assumes the responsibility of hosting applications and afterwards offers them to end users through the internet. In this particular approach, an independent software vendor (ISV) has the option to engage in a contractual agreement with a third-party cloud provider for the purpose of hosting the application. Infrastructure as a Service (IaaS) is a solution used by organisations seeking to delegate the management and operation of their data centre and computational assets to a cloud service provider. Infrastructure-as-a-Service (IaaS) providers are responsible for hosting several essential components of infrastructure, including servers, storage systems, networking gear, and virtualization resources. The cloud type under consideration is primarily concerned with offering a comprehensive platform for the creation, testing, and deployment of interfaces, applications, and databases (Akai, Ibok, & Akininnyi, 2023). This technology facilitates the optimisation of development processes

inside organisations, resulting in reduced expenditures on information technology and less reliance on physical hardware and software resources. Network-as-a-Service (NaaS) may be seen as the process of transforming conventional networking into a cloud-based infrastructure. Cloud apps are inherently dispersed and often need substantial network activity to carry out their activities (Nkeiru, 2021 cited in Akai, Ibok, & Akininnyi, 2023). These software programmes function as accounting apps that are installed on users' PCs, but they are processed on servers that provide online services. Users may access these applications using web browsers. In this manner, individuals in the fields of accounting or company ownership are able to actively participate in their financial matters regardless of their physical location, using the Internet as a medium. Accounting is subject to continual evolution due to its dynamic character and ongoing technology advancements. The advent of cloud technology has had a beneficial impact on the discipline of accounting. The advent of cloud computing has ushered in a novel age in the field of accounting, sometimes referred to as cloud accounting. There is a growing trend among individuals to transition from conventional accounting systems to cloud-based accounting systems, driven by the introduction of innovative and sophisticated software (Jaynob & Shamimul, 2022).

1.2 Statement of Problem

Numerous empirical investigations have been conducted to examine the adoption of cloud accounting and its potential effects on organisational performance. An example of a study done by Meltem and Recep (2021) in Turkey revealed that the use of cloud-based accounting practises by organisations resulted in enhanced efficiency and increased correctness of data. The study conducted by Bui et al. (2023) in Vietnam examined the effects of digital transformation and digital leadership on the efficacy of cloud-based accounting, the quality of decision-making, and the performance of firms. The research emphasised the many aspects of cloud accounting's impact on organisations. In the Nigerian context, scholarly investigations, such as the research undertaken by Sunday, Kolawole, and Mayowa (2023), have explored the correlation between cloud accounting and the level of financial reporting quality shown by deposit money banks (DMBs). The results of their study indicate that the use of cloud accounting systems has a favourable impact on the overall quality of financial reporting inside Nigerian Deposit Money Banks (DMBs). In a study conducted by Akai, Ibok, and Akininnyi (2023), the researchers examined the effects of cloud accounting on the quality of financial reports within a specific sample of Nigerian banks. Their findings shed light on the possible advantages of using cloud-based financial reporting systems in improving the overall quality of reporting. In addition, Wisdom (2022) conducted a study to examine the effects of cloud accounting on the operational effectiveness of publicly traded industrial companies in Nigeria. The research yielded valuable findings about the correlation between the use of cloud accounting and enhanced financial performance within the manufacturing industry. The study conducted by Akpan et al. (2023) aimed to evaluate the impact of cloud accounting on the quality of financial information in a sample of Nigerian enterprises. The researchers emphasised the significance of data correctness and reliability in the context of financial reporting.

The current body of research on the adoption of cloud accounting mostly centres on the variables that determine its adoption, the influences on the intention to adopt, and the

early impacts on efficiency and the quality of information. Ismail and Mohammed (2021) conducted a study that explored the factors influencing the intention to use cloud accounting. The authors employed theoretical frameworks such as the Theory of Planned Behaviour (TPB), Diffusion of Innovation (DOI), and Technology Acceptance Model (TAM) to analyse these variables. The study conducted by Meltem and Recep (2021) offers empirical insights pertaining to the implementation of cloud-based accounting practises in Turkey, with a specific focus on the early phases of adoption. Nevertheless, the existing body of research lacks in-depth longitudinal evaluations that effectively monitor the long-term organisational performance in financial reporting subsequent to the implementation of cloud accounting. The existence of this gap has significant importance, considering the wide-ranging consequences that may arise from the advantages of cloud accounting, such as instantaneous data accessibility, collaborative capabilities, and scalability. These ramifications extend beyond the first phase of implementation.

1.3 Objectives of the study

By conducting a longitudinal analysis, this research objective is to provide a comprehensive understanding of how cloud accounting adoption influences organizational performance in financial reporting within the Nigerian context. Specifically, the study;

- i. Evaluate the impact of Cloud Accounting on timeliness of financial reporting of selected firms in Nigeria
- ii. Examine the effect of IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) on timeliness of financial reporting of selected firms in Nigeria.

1.4 Research Question

- i. What is the impact of Cloud Accounting on timeliness of financial reporting of selected firms in Nigeria?
- ii. How does IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) affect timeliness of financial reporting of selected firms in Nigeria?

1.5 Hypothesis

H0₁: Cloud Accounting does not have a significant effect on timeliness of financial reporting of selected firms in Nigeria

H0₂: IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) does not have a significant effect on timeliness of financial reporting of selected firms in Nigeria.

2.0

LITERATURE REVIEW

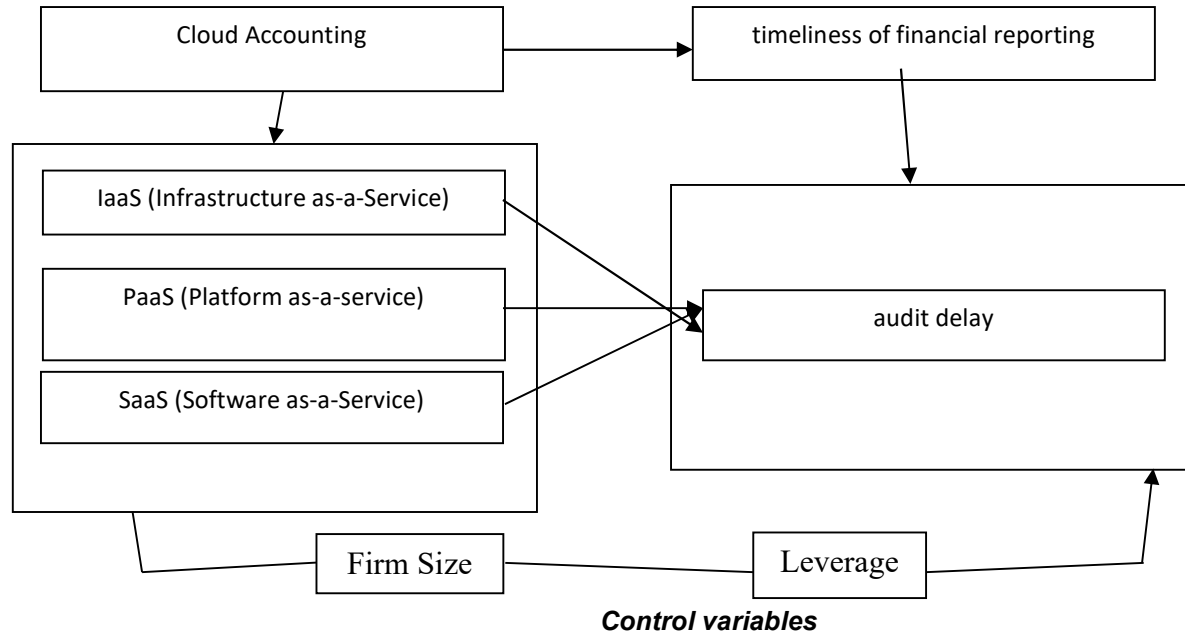
2.1 Conceptual Framework

Conceptual framework for this study shows the cloud accounting adoption influences organizational performance in financial reporting. This framework shows the impact of (IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service)) on timeliness of financial reporting of the selected firms.

Figure 1: Model Schematic Framework

Independent variables

Dependent variables



Source: Researcher computation (2023)

2.1.1 Organisational Performance

Performance is often defined as the capacity of a corporation to provide significant outputs or outcomes within a certain fiscal year (Bénet, Deville, Raes, & Valette-Florence, 2022). The financial performance indicator serves as a valuable instrument for monitoring the progress of a business. Organisations use a collection of quantitative and measurable metrics to monitor and evaluate their performance throughout a span of time. Financial performance refers to the process of assessing achievements in accounting, which, as shown by Liu, Kim, Lee, and Yoo (2022), shows favourable conditions over a period of time.

2.1.2 Financial Reporting Quality

Financial reporting is a means through which a company entity demonstrates its responsibility for its resources, thereby enabling an evaluation of the managers' duties as stewards and their economic decision-making. Financial reporting quality may be defined as the degree of accuracy and reliability with which financial reporting conveys valuable information on a company's performance and anticipated cash flows, hence aiding investors in making informed choices (Shuraki, Pourheidari, & Azizkhani, 2021). The construction of a measuring instrument for financial reporting quality is specified in past literature by considering the basic and increasing qualitative features that contribute to decision usefulness, as outlined in the Exposure Draught (ED) by the International Accounting Standards Board (IASB) in 2008. The primary qualitative qualities, namely relevance and accurate representation, have significant importance since they dictate the substance of financial reporting data. The decision usefulness of financial information may be improved by the presence of boosting qualitative qualities, including understandability, comparability, verifiability, and timeliness. These characteristics are

particularly effective when the underlying qualitative characteristics have already been established. Nevertheless, it is essential to note that the assessment of financial reporting quality cannot be accomplished in isolation, as highlighted by Herath and Albarqi (2017). According to the International Accounting Standards Board (IASB, 2010), there are fundamental qualitative qualities that differentiate financial reporting information that is valuable from information that is not useful or deceptive. Additionally, there are enhancing qualitative characteristics that further separate more useful information from less useful information. The fundamental qualitative criteria include relevance and accurate representation, whilst the increasing qualitative features include verifiability, comparability, understandability, and timeliness. This research employs a timeliness approach in assessing the level of financial reporting quality.

2.1.3 Cloud accounting

Cloud computing is a paradigm that enables users to access programmes and store data from several places. It is characterised by the supply of computer infrastructures and software applications through the internet (Meltem & Recep, 2021). Cloud accounting is a distinct kind of cloud computing that is especially tailored to handle financial data processing (Yau-Yeung et al., 2020). According to Meltem and Recep (2021), empirical evidence indicates that cloud-based Accounting Information Systems (AIS) provide several advantageous functionalities, including enhanced accessibility and sophisticated data processing capabilities, as compared to conventional systems. Government entities worldwide are actively seeking to use technological advancements in order to enhance their provision of services to the public. According to recent research conducted by Meltem and Recep (2021), cloud computing technology has emerged as a prominent instrument in government-provided services, demonstrating the potential to enhance government performance and facilitate the provision of novel services. The proliferation of cloud computing technology has led governments to provide essential services in the form of cloud-based accounting software, which are obligatory for implementation.

2.1.4 Cloud Accounting Adoption

Accounting software has been created to assist companies in maintaining financial stability and organisation, since accounting is a critical factor in determining the success or failure of enterprises, irrespective of their size, type, or objectives (Yoon, 2020). In accordance with Dimitriu and Matei (2015), it is customary for individuals to get accounting software as a tangible product and then install it on their own desktop computers. In contrast, cloud accounting, facilitated by the use of Internet-based software provided by vendors, enables the provision of accounting services on-demand. This approach allows many users to access these services at any time and from any location around the world (Christauskas & Miseviciene, 2012). In recent times, the accounting process and business environment have undergone a significant transformation facilitated by the integration of cloud computing, artificial intelligence (AI), big data analytics, and blockchain technology (Ionescu, 2019; Viriyasitavat & Hoonsoon, 2019; Viriyasitavat et al., 2019; Yoon, 2020). The emergence of cloud accounting may be attributed to the confluence of fundamental concepts of cloud computing with the operational aspects of accounting information systems. The primary purpose of this system is to assist those responsible for making decisions and ensuring the accuracy of information by collecting and retaining financial transactions, as well as transforming pertinent data into meaningful and useful insights (Romney et al., 2012). In a research

conducted by Prichici and Ionescu (2015), the significance of using the cloud accounting system in the financial reporting process was examined. Furthermore, the use of cloud accounting in company enhances the flexibility, visibility, and scope of the inventory management process. In a study conducted by Ionescu (2019) in Ghana, the significance of cloud accounting in the country's business sector was emphasised. The findings revealed that 64% of the participants, who were accountants, possessed a certain level of familiarity with cloud accounting. Furthermore, all participants expressed the belief that cloud accounting has the potential to enhance the existing business landscape. However, it is worth noting that a significant majority of participants, namely 91%, hold the belief that cloud accounting is not without its share of potential concerns. According to a study conducted by Viriyasitavat and Hoonsoon (2019), cloud accounting plays a crucial role in advancing academic environments. The researchers recommend the adoption of cloud computing in educational institutions to facilitate e-education, thereby contributing to the attainment of Millennium Development Goals.

2.1.5 Types of Cloud Accounting Software

i. IaaS (Infrastructure as-a-Service)

The predominant range of services offered by the cloud computing system is Infrastructure as a Service (IaaS). Infrastructure as a Service (IaaS) constitutes the foundational layer inside the overall system architecture (Deepak, Meerpur, & Silky 2017). Infrastructure as a Service (IaaS) is a software deployment paradigm that involves the provision of fundamental computer infrastructure, including servers, software, and network equipment, as an on-demand service. This approach enables the development of platforms and the establishment of application execution. The primary objective of this approach is to circumvent the need for acquiring, maintaining, and overseeing the fundamental hardware and software infrastructure elements.

ii. PaaS (Platform as-a-service)

The subsequent tier of services offered by the cloud system is Platform as a Service (PaaS). The term "platform as-a-service" (PaaS) is used to describe a software deployment strategy in which a computer platform is made available as a service, allowing developers to create and deploy applications as needed. The platform is constructed on the foundation of Infrastructure as a Service (IaaS) and integrates with Software as a Service (SaaS) and Infrastructure as a Service (IaaS). This allows application developers to create and execute their software solutions on a cloud-based platform, eliminating the need to invest in and oversee the underlying hardware and software components, thereby reducing costs and complexity. Within the context of Platform as a Service (PaaS), customers possess the ability to tailor their operations by using the pre-existing infrastructure and platform offered by the service provider (Deepak, Meerpur, & Silky 2017).

iii. SaaS (Software as-a-Service)

The last and highest stratum inside the cloud computing framework is known as Software as a Service (SaaS). Software as-a-Service (SaaS) is a software deployment model that offers consumers access to specialised software programmes over the internet. This model allows users to use the provider's applications, which are hosted on a cloud infrastructure, hence delivering the maximum level of service (Deepak, Meerpur, & Silky 2017). This software is often known as "on demand software" and typically follows a

pricing model based on pay-per-use. This obviates the need of installing and executing the programme on the personal computers of cloud users, hence streamlining the processes of maintenance and support. Software as a Service (SaaS) companies often use a pricing model that involves charging customers a recurring subscription charge for accessing their applications (Jaynob & Shamimul, 2022).

2.2 Theoretical Review

2.2The theory of diffusion of innovation

In his seminal work "The Diffusion of Innovations," Rogers (1983) introduced the concept of innovation, which he described as an idea, practise, or product that is viewed as novel by a person or another unit of adoption. Rogers posits a framework consisting of five criteria that exert influence on the inclination to embrace information technology. According to Salahshour et al. (2018), the spread of innovation is influenced by five key features, including relative advantage, compatibility, complexity, trialability, and observability. These properties are considered to be of utmost importance in the DOI model. However, the current approach fails to take into account the environmental context, unlike the Theory of Environmental Determinism (TOE) which does incorporate this factor (Alkhalil et al., 2017). According to Ahn and Ahn (2020), it is widely thought that these five criteria have a crucial role in facilitating the adoption of new information technologies by organisations. According to Tornatzky and Klein (1982), the variable that has the most significance in uncovering the adoption of information technology in innovation research and its determinants is the nature of relative advantage. The perception of a technology aspect as a significant source of advantages to organisations is referred to as its degree of impact (Bharadwaj & Lal, 2012).

Bharadwaj and Lal (2012) used the concept of relative advantage in their model to address research inquiries pertaining to the assessment of anticipated advantages derived from cloud computing-supported services. The authors raised inquiries regarding the flexibility of organisations in adopting cloud computing solutions, specifically in relation to the speed of business communication, effective coordination between organisations, improved communication with customers, and seamless access to market information. In their study, Oliveira et al. (2014) have identified cost reduction and security concerns as factors that influence the relative benefit of Cloud Computing in the manufacturing and service industry. These two variables aim to ascertain the relative advantages of Cloud Computing in terms of cost reduction and the potential disadvantages associated with security issues. According to Ahn & Ahn (2020), the prevailing belief among organisations is that cloud-based ERP systems offer advantages such as time and cost savings, improved communication, and enhanced interaction with new applications. However, the authors of the article have undertaken an investigation to identify the factors that influence the intention to adopt cloud-based ERP.

2.3 Empirical Review

The research conducted by Sunday, Kolawole, and Mayowa (2023) examined the impact of cloud accounting on the financial reporting attributes of Deposit Money Banks (DMBs). The study included a population of 14 deposit money banks, with a sample size of 10 selected by purposive sampling approach, during a span of 10 years. This research has identified a need for digital media businesses (DMBs) to use cloud accounting technology as a means to enhance their financial reporting quality. This research has reached the conclusion that the use of cloud accounting has a beneficial impact on the financial

reporting attributes of small and medium-sized businesses (SMBs). The study conducted by Bui, Tran, Tu, & Nguyen (2023) examines the mediating role of cloud-based accounting effectiveness (CBAE) and decision-making quality (DMQ) in the relationship between digital transformation and company performance. Furthermore, this study examines the moderating influence of digital leadership on the associations between digital transformation and customer-based brand equity (CBAE), as well as the connections between CBAE and digital marketing quality (DMQ). The model and its assumptions are assessed by the use of partial least squares structural equation modelling (PLS-SEM) on a dataset consisting of survey responses from 252 large-sized Vietnamese enterprises. The conclusions of the research are as follows: There are two key findings in this study. Firstly, it is observed that digital transformation has a beneficial impact on customer-based brand equity (CBAE), which in turn influences digital marketing quality (DMQ) and firm performance. Secondly, the study reveals that when there is strong digital leadership, the impacts of digital transformation on CBAE and the subsequent impact of CBAE on DMQ are further enhanced. The aforementioned results illustrate the potential impact of the interplay between digital transformation and digital leadership on the performance of enterprises operating in developing markets that use cloud accounting.

In their study, Akai, Ibok, and Akininnyi (2023) conducted an investigation into the impact of cloud computing on the overall quality of financial reports within a specific sample of deposit money banks in Nigeria. The proxies used in this study to assess the impact of cloud computing on financial reporting quality were Software as a Service (SaaS) and Infrastructure as a Service (IaaS). The measurement of financial reporting quality (FRQT) was conducted by evaluating the qualitative aspects of financial reports, as outlined in the conceptual framework established by the International Accounting Standards Board (IASB). The study used a survey design as the chosen research methodology due to the utilisation of primary data. The study's population included 450 respondents selected from 10 distinct deposit money banks located in Akwa Ibom State. Nevertheless, it is important to note that the sample size for this particular research was calculated to be 212, using the Taro Yamane method. The primary data were collected using a standardised questionnaire based on the Likert scale, which consisted of five response options. To investigate the causal linkages between the dependent variable and independent factors, as well as to evaluate the specified hypotheses, the research used a rigorous ordinary least squares (OLS) regression analysis. The findings derived from the robust ordinary least squares (OLS) regression analysis indicate that software has a statistically positive, although negligible, impact on the quality of financial reporting. Conversely, infrastructure demonstrates a statistically positive and substantial influence on the quality of financial reporting. Therefore, it was determined that cloud computing had a substantial impact on the financial reporting quality of deposit money institutions in Nigeria.

The study conducted by Akpan, Igbekoyi, Ogungbade, and Osaloni (2023) investigated the impact of cloud accounting on the quality of financial information in a sample of Nigerian enterprises. This study used a cross-sectional survey research approach. The targeted demographic for this study is diverse, including professional accountants, auditors, and information technology professionals from many sectors. This study used Taro Yamane's (1967) assumptions to determine a sample size of 400 respondents for the research. The research focuses on the metropolitan area of Lagos state because to

its significant concentration of commercial operations and its status as the headquarters for several enterprises in Nigeria. Primary data was collected by administering a well-designed questionnaire to the participants. The study instrument underwent testing to assess its reliability and validity. The reliability was evaluated using Cronbach's Alpha test, while the content validity was assessed using a separate test. The acquired data underwent analysis by descriptive and Ordinary Least Square (OLS) regression methods. The study accepted all three hypotheses, as they demonstrated a strong and positive relationship. The findings indicate that the use of cloud accounting techniques has a significant and positive impact on data storage ($r = 0.828$, $P = .001 < .05$), data efficiency ($r = 0.647$, $P = .000 < .05$), and data mining ($r = 0.809$, $P = .001 < .05$). The study's statistical analysis yielded results indicating that the implementation of cloud accounting techniques had a noteworthy impact on improving the quality of financial information.

In their research, Obasan and Kuola (2022) conducted an investigation of the impact of Cloud-Based Accounting on manufacturing companies in Nigeria, specifically focusing on Twinstar Industries Ltd. located in Ogun State. The objective of this research is to investigate the impact of Cloud-Based Accounting on the policies and operations of manufacturing organisations, as well as to analyse the influence of Information Technology on the performance of manufacturing enterprises in Nigeria. The study was carried out inside a manufacturing company located in Ogun state, Nigeria, including a workforce of around 261 employees. A survey consisting of 261 questions was administered to the employees of Twinstar Industries Limited, located in Ogun state. A total of 229 responses were obtained, with a response rate of 87.7%. The dataset underwent analysis via the statistical method known as Analysis of Variance. The study's findings indicate that prompt access to information facilitates a comprehensive understanding of one's company performance and aids in proactive preparation for future market needs. The findings of the study indicate that the use of Cloud-Based Accounting systems has a noteworthy influence on the policies and operations of manufacturing firms.

In a study conducted by Wisdom (2022), the impact of cloud accounting on the operational outcomes of publicly traded manufacturing firms in Nigeria was investigated. The research included a combination of primary and secondary data sources. The study examined a randomly selected sample of ten manufacturing organisations and found that the use of cloud accounting and associated expenses had a significant influence on the operational effectiveness of publicly traded manufacturing enterprises. The research recommended the implementation of corporate efforts to reduce cloud accounting expenses and the development of accounting standards to harmonise various cost components of cloud accounting with the cost structure of manufacturing firms. In their study, Jaynob and Shamimul (2022) provide a comprehensive analysis of the fundamental determinants that influence the implementation of cloud accounting systems in a developing nation such as Bangladesh. The authors propose a conceptual framework to elucidate these aspects. Additionally, the research has also placed emphasis on examining potential barriers to and advantages of using cloud accounting. This report used a theoretical approach by using secondary data sources to conduct a literature review. These sources included prominent online databases such as Google Scholar, Emerald, Web of Science, and ResearchGate. The purpose was to locate research papers, articles, and study materials pertaining to the topic of cloud accounting. The

study's results have significant significance for researchers, policymakers, practitioners, and cloud accounting suppliers, since they may use these findings to develop more effective strategies for adopting cloud accounting.

2.4 Research Problem/Gap in the Literature

The use of cloud accounting technology has seen a growing prevalence in modern corporate settings, presenting a multitude of possible benefits for organisations. The use of cloud accounting is motivated by its potential advantages in terms of enhanced efficiency, increased accessibility, and improved cost-effectiveness. As organisations adopt cloud-based accounting systems, there is a growing concern about the implications of this technological change on their organisational performance, especially in relation to financial reporting (Wisdom, 2022). As the deployment of cloud accounting systems becomes more prevalent across organisations in Nigeria and diverse sectors, there arises a pressing need to comprehend the consequences of this adoption on organisational performance, particularly in the context of financial reporting. Cloud accounting has several potential benefits, including enhanced accessibility, scalability, and data security. However, it also brings out a set of obstacles and uncertainties (Bui et al., 2023; Sunday et al., 2023). Cloud-based accounting solutions provide efficient and secure communication capabilities, as well as the ability to generate standardised reports. Furthermore, it has been noted by Meltem and Recep (2021) that these applications have the ability to generate national and international financial information that is coherent, comparable, and verifiable. Nevertheless, the use of cloud-based accounting practises by organisations with constrained resources has resulted in several dangers and challenges. Factors such as inadequate infrastructure, security issues, insufficiently skilled employees, and the need to align legislative changes with information systems (Karasioğlu & Garip, 2019) are challenges that impact the adoption of cloud-based accounting services by users.

The research conducted by Bui et al. (2023) presents significant empirical findings about the progress of cloud-based accounting efficacy and its influence on organisational performance within the specific setting of Vietnam. Nevertheless, it is essential to do comparable studies inside the Nigerian corporate environment, which has distinct difficulties and possibilities of its own. Furthermore, while several research has examined the subject of financial report quality (Sunday et al., 2023; Akai et al., 2023), there exists a dearth of comprehensive evaluations that evaluate the long-term impact of cloud accounting adoption on the quality of financial reporting. In addition, the existing body of work mostly focuses on analysing the effects of cloud accounting on operational efficiency and the accessibility of data, while giving less attention to its implications for the quality of strategic decision-making and the overall performance of organisations. Furthermore, the existing body of literature primarily focuses on specific geographic regions, namely Turkey, Vietnam, and Bangladesh. However, it overlooks the distinct obstacles and advantages related to the implementation of cloud accounting in economies characterised by diverse regulatory frameworks, such as Nigeria. Despite the growing body of literature on cloud accounting adoption, there remains a need for longitudinal analyses to track the evolution of cloud accounting practices and their sustained impact on organizational performance in financial reporting. This study seeks to address this gap by examining the long-term effects of cloud accounting adoption in Nigerian enterprises.

3.0

METHODOLOGY

The study employed an ex-post facto approach and a survey research design. Secondary data used the first aim were collected via an ex-post facto research approach, whereas Primary data used for the second objective were collected via a survey. To satisfy the test of hypotheses of the study, the study made use of ordinary least square regression to examine the impact of cloud accounting on firm performance in financial reporting quality. The pre-test includes descriptive tests, correlation and the Hausman test. The population consist of all listed firms on the Nigeria Stock exchange as at 2022. Hence, purposive sampling techniques was adopted to sample 20 listed firms from 2010-2022. The year 2010 was used as a base year because, it is the year organisation started tapping into the technological advancement in promoting their organisations. The study also drew on primary data sources. Primary data was gathered to examine the impact of (IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service)) on timeliness of financial reporting of the selected firms. This information was gathered through the use of a standardized questionnaire. Primary data collection takes place in Lagos State. The targeted population of this is heterogeneous as it covers professional accountants, auditors and information technology experts across various fields. This study therefore used the assumptions of Taro Yamane (1967) to adopt the population of 100 respondents for the purpose of this study. The study covers Lagos state metropolis because it is highly dominated with commercial activities and host the head office of most companies in Nigeria.

The model for this study shall be adopted from the study of Wisdom (2022). Hence, below model will be modified to examine the impact cloud accounting adoption on organizational performance in financial reporting;

$$NFP = f(SA, SAP, DAP) \dots\dots\dots (1)$$

The econometric model is given as

$$NFP = \beta_0 + \beta_1 SA + \beta_2 SAP + \beta_3 DAP + \mu \dots\dots\dots (2)$$

Where,

NFP = Non-Financial Performance, SA = Standardization of Accounting, SAP = Simplification of Accounting Process, DAP= Documentation of Accounting Process, β_0 signify constant term, β_1 = represents the coefficient of cloud accounting and μ denotes error terms

The above model was modified in this study as thus;

Objective One;

$$(FRQ - TIM) = f(CA - CAC, FS, FA)$$

$$FRQ_{it} = \beta_0 + \beta_1 CAC_{it} + \beta_2 FS_{it} + \beta_3 FA_{it} + \mu_{it} \dots\dots\dots (3)$$

Objective Two;

$$FRQ = f(CA - IaaS, PaaS, SaaS_{it})$$

$$FRQ_{it} = \beta_0 + \beta_1 IaaS_{it} + \beta_2 PaaS_{it} + \beta_3 SaaS_{it} + \mu_{it} \dots\dots\dots (4)$$

Where,

FRQ = Financial Reporting Quality, TIM = Timeliness, CA= Cloud Accounting, CAC = Cloud Accounting Cost, IaaS = Infrastructure as-a-Service, PaaS = Platform as-a-service, SaaS = Software as-a-Service, FS= Firm Size, FA= Firm Age, β_0 signify constant term, β_1 = represents the coefficient of cloud accounting and μ denotes error terms

Table 1. Measurement of Variables

Variable	Measurement	Source
Financial Reporting Quality	Measured by timeliness of the financial report i.e. the difference between the firm year end and the publication of their annual report	Sunday, Kolawole, & Mayowa (2023)
Cloud accounting Cost	Measured as the Server or IT Maintenance Cost	Effiong, Udoayang, and Davies (2020)
Cloud accounting	i. (IaaS (Infrastructure as-a-Service), ii. PaaS (Platform as-a-service) iii. SaaS (Software as-a-Service)).	Wisdom (2022)
Control variables		
Firm size	Natural logarithm of total asset	Wisdom (2022)
Firm age	Year of firm incorporation till date	Wisdom (2022)

Source: Researcher Computation, 2023

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Descriptive Statistics

The provided descriptive statistics offer valuable insights into four key variables: Financial Reporting Quality (FRQ), Cloud Accounting Cost (CAC), Firm Size (FS), and Firm Age (FA). Financial Reporting Quality (FRQ), which measures the timeliness of financial reporting, is based on 260 observations. The dataset exhibits a wide range, with a minimum value of 31 and a maximum value of 889. The mean (average) FRQ value is approximately 94. The standard deviation of around 71.171 reveals a significant degree of variation in FRQ across observations. Cloud Accounting Cost (CAC) representing the costs associated with cloud accounting, ranges from a minimum cost of 0 (reflecting no cost) to a maximum cost of a remarkably high value, approximately 62,374,335. The mean CAC is around 3.8880 million, signifying the average cost. With a standard deviation of approximately 10.8596 million, CAC exhibits a wide variation in costs. With 260 observations, the variable representing the age of firms (FS) has a range from a minimum size of 6 to a maximum size of 128. The mean Firm age is around 43.05, providing insight into the average firm age. The standard deviation of about 25.953 indicates variability in firm age. The mean Firm size is approximately 7.7478, representing the average size. A standard deviation of around 1.10444 reveals relatively low variability in firm sizes. The skewness of approximately -0.110 suggests a distribution that approximates normality, while the kurtosis of approximately -0.691 indicates a platykurtic distribution with lighter tails than a normal distribution.

4.2 Demographic Statistics

The demographic data provides a comprehensive view of the surveyed population, which is relatively balanced in terms of gender, diverse in educational qualifications, and includes participants from various age groups and professional experience levels. The first demographic variable under consideration is "Gender." In this dataset, we observe a reasonably balanced distribution between female and male participants. Specifically, 40% of the respondents are female, while 60% are male. This gender distribution suggests that the sample is relatively diverse and can potentially provide a well-rounded perspective on the subject matter under investigation. The majority of the participants fall

into the 50-59 years' age group, constituting 57% of the sample. This observation indicates that a significant proportion of the surveyed individuals are in their late middle age or approaching retirement. The age distribution provides a sense of the experience and maturity level of the respondents, which may influence their perspectives and responses. The Education Qualification data reflects a diverse range of educational qualifications among the respondents. The majority, accounting for 55%, possess HND/B.Sc./B.Ed. qualifications, which are typically associated with higher education and specialized knowledge. Nearly half of the participants, constituting 49%, have professional experience in the range of 5-10 years. This indicates a substantial proportion of participants with mid-level experience in their respective fields.

Objective One: Evaluate the impact of Cloud Accounting on timeliness of financial reporting of selected firms in Nigeria

The correlation statistics suggest that there is no significant linear relationship between Financial Reporting Quality (FRQ) and Cloud Accounting Cost (CAC) or between FRQ and Firm Age (FA). However, a positive relationship exists between CAC and FA, indicating that older firms tend to have higher cloud accounting costs. Additionally, Firm Size (FS) shows a positive correlation with CAC and FA, suggesting that larger and older firms tend to incur higher cloud accounting costs and possess larger sizes, respectively. Also, these results showed that the model estimated is free from multiple correlations.

Table 2: impact of Cloud Accounting on timeliness of financial reporting of selected firms in Nigeria.

Correlations

		FRQ	CAC	FA	FS
FRQ	Pearson Correlation	1			
	Sig. (2-tailed)				
CAC	Pearson Correlation	-.022	1		
	Sig. (2-tailed)	.719			
FA	Pearson Correlation	.061	.380**	1	
	Sig. (2-tailed)	.327	.000		
FS	Pearson Correlation	.008	.365**	.281**	1
	Sig. (2-tailed)	.897	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Furthermore, the study conducted Hausman specification test after fixed and random tests were carried out for the model. The essence of Hausman specification test is to choose the more preferred model between the fixed and random effect models. Hausman specification test conducted for the model produced p-value of 0.3412, which is insignificant at 5%. This implies that the variation across entities is assumed to be random and correlated with the independent variables included in the model. As a result of this, the result of the random effect model was considered suitable for the analysis. The regression analysis reveals that the included variables, namely CAC, FA, and FS, are not statistically significant predictors of Financial Reporting Quality (FRQ) measured by Timeliness. The low R-squared values indicate that the model does not explain a substantial portion of the variation in FRQ. In contrast, the constant term's statistical

significance implies that other un-modelled factors play a role in influencing FRQ. The coefficient for CAC, which represents the cost associated with cloud-based accounting systems, is approximately $-7.82E-08$. This tiny coefficient suggests that a one-unit increase in CAC results in an almost negligible decrease in FRQ. However, the t-Statistic is -0.160497 , and the associated p-value is 0.8726 , significantly higher than the conventional significance level (usually set at 0.05). As a result, the analysis does not find a statistically significant relationship between CAC and FRQ. This implies that the cost incurred in implementing cloud accounting systems doesn't significantly impact the timeliness of financial reporting. The coefficient for Firm Age, representing the number of years a firm has been in existence, is 0.161017 . This coefficient implies that a one-unit increase in Firm Age is associated with a modest increase in FRQ. However, similar to CAC, the t-Statistic is 0.628841 , and the p-value is high at 0.5300 . Therefore, the analysis does not detect a statistically significant connection between Firm Age and FRQ. In other words, how long a firm has been in operation does not significantly affect the timeliness of financial reporting. The coefficient for Firm Size, which represents the size of the firm, is 0.524265 . This suggests that a one-unit increase in Firm Size leads to a slight increase in FRQ. However, the t-Statistic is low at 0.094485 , and the p-value is quite high at 0.9248 . Consequently, the analysis does not establish a statistically significant relationship between Firm Size and FRQ. This implies that the size of a firm doesn't have a significant impact on the timeliness of financial reporting. Hence, it can be deduced that Cloud Accounting has insignificant impact on timeliness of financial reporting of selected firms in Nigeria.

Table 3: Random Regression Effect Model

Variable	Aprori Sign	Random Regression Effect Model
CAC	+	$-7.82E-08$ ($4.87E-07$) { 0.8726 }
FA	+	0.161017 (0.256054) { 0.5300 }
FS	+	0.524265 (5.548635) { 0.9248 }
C	+	83.30648 (42.16054) { 0.0492 }
<i>Model Parameters</i>		
R ²		0.001752
Adjusted R ²		-0.009946
F-statistic		0.149801
Prob(F-stat)		0.929755
Durbin-Watson		1.088687

HausmanTest = 0.3412

Source: *Researcher's computation (2023) * sig @ 5%, *() standard error { } p-values.*

Analysing Objective Two:

Table 4: Effect of IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) on timeliness of financial reporting of selected firms in

Nigeria.

S/N	Questions	SA	A	D	N	SD	X
1	The adoption of IaaS (Infrastructure as a Service) has positively impacted organization's performance in financial reporting	38	45	9	6	2	4.11
2	The impact of PaaS (Platform as a Service) adoption on the efficiency and accuracy of organization's financial reporting processes is superb	33	46	8	11	2	3.97
3	The adoption of SaaS (Software as a Service) has influenced the timeliness of financial reporting in organizations	40	31	10	12	7	3.85
4	Cloud accounting technology has improved the efficiency of your organization's financial reporting process, enhanced the security of financial data and positively impacted the quality of financial reporting in your organization	28	42	15	9	6	3.77

Source: Researcher's computation (2023)

The table above demonstrates that the vast majority of responders concur with the posed question. The mean values found are 4.11, 3.97, 3.85, and 3.77 all of which exceed 2.5 on a 5.0-point scale. This demonstrates that IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) have an effect on timeliness of financial reporting of selected firms in Nigeria.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978 ^a	.956	.954	.2211

a. Predictors: (Constant), Software as a Service, Platform as a Service, Infrastructure as a Service

Table 8: ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.015	3	33.672	688.489	.000 ^a
	Residual	4.695	96	.049		
	Total	105.710	99			

a. Predictors: (Constant), Software as a Service, Platform as a Service, Infrastructure as a Service

b. Dependent Variable: organizational performance in financial reporting

Table 9: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.024	.086		11.937	.000
Infrastructure as a Service	-.107	.135	-.137	-.793	.430
Platform as a Service	.365	.071	.473	5.136	.000
Software as a Service	.550	.111	.654	4.960	.000

a. Dependent Variable: organizational performance in financial reporting

The correlation coefficient (R) is approximately 0.978, indicating a strong positive relationship between the predictors (SaaS, PaaS, and IaaS) and organizational performance in financial reporting. The R Square is approximately 0.956, which means that approximately 95.6% of the variability in organizational performance in financial reporting is explained by the included predictors. These statistics collectively suggest that the chosen predictors (SaaS, PaaS, and IaaS) significantly contribute to explaining organizational performance in financial reporting. The F-statistic is 688.489 with an associated p-value (Sig.) of .000. This low p-value suggests that the regression model is statistically significant.

The coefficient for IaaS is -0.107, with a standard error of .135. The t-statistic is -0.793 with a p-value of .430. This suggests that IaaS does not have a statistically significant impact on organizational performance in financial reporting. The coefficient for PaaS is 0.365, with a standard error of .071. The t-statistic is 5.136, and the p-value is .000. This indicates that PaaS has a statistically significant and positive impact on organizational performance in financial reporting. The coefficient for SaaS is 0.550, with a standard error of .111. The t-statistic is 4.960, and the p-value is .000. This reveals that SaaS has a statistically significant and positive impact on organizational performance in financial reporting.

4.3 Discussion of Findings

From the first objective of this study, the coefficient for CAC, which represents the cost associated with cloud-based accounting systems, is approximately -7.82E-08 and the associated p-value is 0.8726, significantly higher than the conventional significance level (usually set at 0.05). As a result, the analysis does not find a statistically significant relationship between CAC and FRQ. This implies that the cost incurred in implementing cloud accounting systems doesn't significantly impact the timeliness of financial reporting. Hence, the hypothesis stating that Cloud Accounting does not have a significant effect on timeliness of financial reporting of selected firms in Nigeria is not rejected. In contrast to this findings, Wisdom (2022) examined impact of cloud accounting on the operational outcomes of publicly traded manufacturing firms in Nigeria. The study examined a randomly selected sample of ten manufacturing organisations and found that the use of cloud accounting and associated expenses had a significant influence on the operational effectiveness of publicly traded manufacturing enterprises. In addition, this study evaluated effect of IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and

SaaS (Software as-a-Service) on timeliness of financial reporting of selected firms in Nigeria. The regression analysis indicates that the inclusion of Software as a Service (SaaS) and Platform as a Service (PaaS) in an organization's service model significantly contributes to better organizational performance in financial reporting. However, Infrastructure as a Service (IaaS) does not appear to have a significant impact. These statistics collectively suggest that (SaaS, PaaS, and IaaS) significantly contribute to explaining organizational performance in financial reporting. Hence, the hypothesis stating that IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-service) and SaaS (Software as-a-Service) does not have a significant effect on timeliness of financial reporting of selected firms in Nigeria is rejected. Similar to this findings, the research conducted by Sunday, Kolawole, and Mayowa (2023) examined the impact of cloud accounting on the financial reporting attributes of Deposit Money Banks (DMBs). This research has reached the conclusion that the use of cloud accounting has a beneficial impact on the financial reporting attributes of small and medium-sized businesses (SMBs). Also, the study conducted by Bui, Tran, Tu, & Nguyen (2023) and Akai, Ibok, and Akininnyi (2023), the findings derived from the robust ordinary least squares (OLS) regression analysis indicate that software has a statistically positive, although negligible, impact on the quality of financial reporting. Conversely, infrastructure demonstrates a statistically positive and substantial influence on the quality of financial reporting.

5.0

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study concludes that various aspects of cloud-based accounting systems and services have distinct impacts on organizational performance in financial reporting, specifically measured by timeliness (FRQ). The cost associated with implementing cloud-based accounting systems, represented by the CAC coefficient, shows an almost negligible impact on FRQ. The analysis does not find a statistically significant relationship between CAC and FRQ. Therefore, it can be concluded that the cost incurred in adopting cloud accounting systems does not significantly affect the timeliness of financial reporting. The analysis reveals that IaaS does not have a statistically significant impact on organizational performance in financial reporting. This means that the use of IaaS doesn't significantly influence the timeliness of financial reporting. On the other hand, PaaS has a statistically significant and positive impact on organizational performance in financial reporting. Organizations that adopt PaaS experience improved timeliness in their financial reporting, which can be crucial for stakeholders. SaaS also demonstrates a statistically significant and positive impact on organizational performance in financial reporting. Organizations that utilize SaaS tend to achieve better timeliness in their financial reporting.

5.2 Recommendations

Based on the above, the study recommends that Organizations aiming to enhance their financial reporting timeliness should consider maximizing the use of Platform as a Service (PaaS) and Software as a Service (SaaS). These cloud-based services have shown a significant positive impact on organizational performance in financial reporting. Also while cloud accounting cost (CAC) was not found to be statistically significant, organizations should still assess the cost-performance trade-off when adopting cloud accounting systems. It's important to balance the cost of implementation with the potential

benefits in financial reporting timeliness. Given the evolving nature of technology and cloud-based services, organizations should continuously monitor their chosen cloud accounting solutions and adapt as needed. Regular assessments of the impact of these services on financial reporting can help organizations stay competitive and meet stakeholders' expectations for timely reporting.

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