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Cloud Accounting and Performance of Listed Manufacturing Firms in Nigeria

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Abstract

In the age of globalisation, the need to access information becomes a requirement. Processing of data in the cloud permits access to such data restricted only by access credentials independently of location and time. The cloud accounting model aids in the success as well as the management of cost. Furthermore, cloud accounting is gaining attraction because of the inadequacies of traditional accounting approaches. The researchers studied the effect of cloud accounting on the performance of listed manufacturing enterprises in Nigeria using both primary and secondary data. The research evaluated a random sample of 10 manufacturing firms and discovered that cloud accounting and cloud accounting costs had a significant impact on the performance of publicly listed manufacturing companies. The report advised that corporate initiatives be implemented to lower cloud accounting costs and that accounting regulations be developed to align different cloud accounting cost components with the cost structure of manufacturing enterprises.

***Keywords**: Cloud computing; Cloud service; Cloud adoption; Firm performance; Returns on asset*

***JEL Classification**: M12; M14; M41*

Bulut Muhasebesi ve Seçilmiş Nijerya İmalat Sanayi Firmalarının Performansı

Özet

Küreselleşme çağında, bilgiye dünyanın her yerinden ve her zaman erişme ihtiyacı bir zorunluluk haline gelmiştir. Verilerin bulutta işlenmesi, bu tür verilere konum ve zamandan bağımsız olarak yalnızca kimlik bilgileriyle kısıtlanan erişime izin vermektedir. Bir bulut muhasebe modelinin benimsenmesi, maliyet yönetiminin yanı sıra başarıya da yardımcı olmaktadır. Ayrıca, geleneksel muhasebe yaklaşımlarının yetersizlikleri nedeniyle bulut muhasebesi ilgi görmektedir. Bu çalışma, bulut muhasebesinin Nijerya'daki listelenen üretim işletmelerinin performansı üzerindeki etkisini hem birincil hem de ikincil verileri kullanarak incelemektedir. Araştırma, 10 imalat firmasının tesadüfi bir örneğini değerlendirmektedir ve bulut muhasebesi ve bulut muhasebesi maliyetlerinin halka açık imalat sanayi firmalarının performansı üzerinde önemli bir etkiye sahip olduğunu göstermektedir. Çalışma, bulut muhasebesi maliyetlerini düşürmek için kurumsal inisiyatiflerin uygulanmasını ve farklı bulut muhasebesi maliyet bileşenlerinin imalat sanayi işletmelerinin maliyet yapısı ile uyumlu hale getirilmesi için muhasebe düzenlemelerinin geliştirilmesini tavsiye etmektedir.

***Anahtar Kelimeler**: Bulut bilişim; Bulut hizmeti; Bulut benimseme; Firma performansı; Varlık getiri oranı*

***JEL Sınıflandırması**: M12; M14; M41*

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1. Introduction

A company's capacity to change with the times is crucial to its success in today's competitive market. New economic possibilities, as well as investment in and adoption of emerging technology, will be crucial to achieving this goal. The automation of accounting processes had begun in the 1950s (Matei, 2015). With the introduction of internet-based business transactions, accounting cannot be restricted to a desktop computer or office server (Effiong, Udoayang and Davies, 2020). Almost all data and detailed financial activities may now be accessible from anywhere, thanks to the advent of cloud accounting. Accounting principles and procedures have evolved swiftly in the contemporary business world, and although global economic norms have mostly stayed stable, technological improvements such as the introduction of cloud accounting have accelerated.

Accounting is a fast-growing multidisciplinary field, owing largely to technological advancements. As cloud accounting advances, customer expectations are changing, and accountants are rethinking their organisational models to cover these new levels of performance and expectations. Cloud accounting is a subset of electronic computing that evolved as a result of the Internet of Things. Cloud accounting processing is designed to handle accounting-related concerns such as mistakes, delays, and data validation (Effiong, Udoayang and Davies, 2020). Individuals will be excluded from the administrative burdens of their businesses and allowed to concentrate on their core areas (Tahmina, 2017). Recent advancements in accounting technology have considerably boosted the ability of the profession to assist consumers (Rao, Jyotsna and Sivani, 2017).

According to Johnson (2019), cloud accounting software should have a stronger impact on their usual company operations more quickly in order to keep up with customer expectations as cloud accounting becomes more common. Nigeria has failed to achieve industrial growth despite a flood of development programmes and financial reforms. Given the industrial sector's low contribution to GDP, several governments' attempts and changes in response to the issues it confronts have mostly failed (Ewetan and Ike, 2014). According to one assessment, the manufacturing sector has performed below expectations, providing just over 4% of Nigeria's Gross Domestic Product (GDP). As a consequence, the manufacturing industry's productivity has decreased (Ayayi, 2012).

Several industrial firms in Nigeria have suffered a decline in productivity and job creation over the previous decade as a consequence of decreased energy generation, extensive smuggling of foreign goods into the country, the acceptance of free trade, and the advent of globalisation. A comprehensive analysis of the various factors contributing to Nigeria's manufacturing sector underperformance identifies, among other things, massive imported finished goods, a scarcity of government funding, and other constraints on capital and output utilization in the manufacturing sector of the economy (Tomola, Adebisi and Olawale, 2012).

Moreover, in the age of globalisation and the performance of transnational access of current financial information from anywhere in the world and at any time

becomes a requirement. Processing of data on expenses, revenues, sales, and corporate finance in the cloud permits access to such data restricted only by access credentials independently of location and time (Wyslocka and Jelonek, 2015). The adoption of a cloud accounting model aids in reducing the expenses of a new company (Wyslocka and Jelonek, 2015).

Additionally, Udeh (2020) results suggested that cloud accounting is gaining traction as a consequence of the inadequacies of traditional accounting approaches. Researchers such as Effiong, Udoayang and Stanley (2020); Egiyi and Udeh (2020) have conducted research on cloud accounting, cloud accounting costs, and companies listed on the Nigerian Stock Exchange, as well as the performance of banks in Nigeria over the years, while others, such as Owolabi and Izang (2020) and Gherman, Molociniuc, and Grosu (2021) among others, have concentrated exclusively on the impact of cloud accounting on performance. According to Effiong, Udoayang, and Stanley (2020), although server, network, and facility charges all had a negative effect on direct costs, maintenance and power costs had a positive influence. While power, maintenance, and network costs correlated negatively with indirect costs, server and facility costs correlated positively with indirect costs. The aforementioned research works highlight empirical gaps that serve as the impetus for this work. These gaps include the following:

i. The works consulted so far have concentrated on the influence of cloud accounting on the financial performance of publicly traded industrial businesses in Nigeria.

ii. Several studies did not attempt to examine the effect of cloud accounting costs on the financial performance of publicly traded manufacturing entities in Nigeria.

This study sought to establish a generally accepted basis for evaluating cloud accounting, cloud accounting cost, and performance of publicly traded manufacturing firms in Nigeria, taking into account the limitations of the variables used to measure cloud accounting and the cloud accounting cost evaluation method.

2. Literature Review

2.1. Cloud Accounting

Cloud accounting is an application of the cloud accounting idea in the accounting sector. The distinction between cloud accounting and cloud computing is that while cloud computing refers to the delivery of computing administrations such as software, information, and shared assets via personal computers and other devices over a network (typically the internet), cloud accounting refers to the entry of accounting software and information via the internet (Suarta, Suwintana, and Sudiadnyani, 2022). End users use cloud-based apps through a web browser or a variety of different applications, while the software and data are stored on typically third-party servers (Rajpoot and Pandey, 2022).

According to Nielsen (2022), cloud accounting is the process of accessing accounting software and data over a web application. The programme is available on a subscription basis, and the data is saved on a remote server. In contrast to the

traditional accounting architecture, which needs the purchase and installation of software on either a workstation or a neighbourhood server. Access to cloud accounting applications and data is restricted using client login credentials rather than the physical location of the information records. This simplifies data interchange by removing the requirement for data to be physically transported between PCs. According to Buyya et al. (2009), cloud accounting is a hypothetical collection of administrations that are accessible from any location via a cell phone with web connectivity, and are provided via a parallel and adapted arrangement of virtualized PCs that are interconnected and can be gradually provided and exhibited as a computing asset, or collection of assets bound together, as constrained. Additionally, the National Institute of Standards and Technology (NIST) defined cloud accounting as "a model that enables perpetual, convenient, on-demand access to a shared system based on configurable computing assets that is effectively accessible via a base administration effort or a base interaction with the specialist organisation."

Cloud accounting innovation, as defined by Chinyao, Yahsueh, and Mingchang (2011), comprises both web-based information technology applications and the hardware and software employed in server farms to supply these administrations. Christauskas and Miseviciene (2012) compare cloud accounting to email, office software, and enterprise resource planning (ERP) systems, as well as ubiquitous assets shared by several clients. According to Diskiene, Galiniene and Marcinskas (2008), cloud accounting's strengths include interest-based administration selection, wide access to arrange, asset coalition, quick adaptability, dexterity, and high flexibility, as well as confidentiality.

Cloud accounting is also the term used to describe the process of storing, processing, and using data kept on multiple-site computers connected through the Internet. This implies that users of this data may leverage the enormous capacity of computer downtime to meet their requests without making large financial expenditures, and they can access their data from any place with an Internet connection. Financial data accessibility from any place and at any time has evolved into a vital demand. Internet-based data processing on costs, revenues, sales, and corporate finance enables controlled access via independent access to location and time (Wyslocka and Jelonek, 2019).

It is critical to get a thorough grasp of cloud accounting before trying to explain it. The phrase "cloud computing" or "cloud system" refers to the on-demand supply of computer services that do not need active monitoring by service clients. Through the internet, it provides hardware and software services. Through the cloud's application service provider, services such as data and software may be accessed remotely and at any time through the internet or other networking devices. According to Buyya et al. (2008), cloud computing is a distributed and parallel system made up of a collection of connected and virtualized computers that are dynamically offered and shown as one or more unified computing resources in accordance with service-level agreements.

According to NIST, "it is a model for ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with little management effort or interaction from service providers" (Mell and Grance, 2011). Cloud accounting was developed as a consequence of cloud computing's growth. The cloud computing technology that enables cloud accounting is called cloud computing. Regrettably, cloud accounting lacks a defined term. Additionally, 'online accounting' is used to refer to it. It contains all of the features and services available via accounting software installed on the client's own computer but is hosted on the Common Service Provider's servers (CSP).

Rather than installing software on the client's PC, the client may do the same function through cloud services. Ping and Xuefeng (2011) describe cloud accounting as the process of using cloud computing and the internet to develop a virtual accounting information system. Thus, cloud computing in conjunction with accounting is referred to as cloud accounting". The business sector pioneered cloud accounting with the launching of NetSuite, the world's first web-hosted accounting software system. QuickBooks, FreshBooks, Wave, Xero, and Zoho are just a handful of the widely used cloud accounting software applications.

2.2. Financial and Non-Financial Performance

While performance is often described as a business's potential to provide noteworthy outputs or outcomes at the end of an accounting year (Bénet, Deville, Raes, and Valette-Florence, 2022), the financial performance indicator is a useful tool for tracking a business's development. It is a set of quantitative and quantifiable measurements used by organisations to track their performance over time. Financial performance is the accounting of accomplishments, which over time reflects advantageous circumstances (Liu, Kim, Lee, and Yoo) (2022). The goals of performance assessment are to extract critical information about the flow of finances, the use of company funds, their effectiveness, and quality. Additionally, managers may make reasonable judgments based on their perception of the performance of the organisation (Crous, Battisti and Leonidou, 2021).

A firm's progress toward its strategic and operational objectives may be measured using financial performance indicators, which also allow the organization to be compared to others in its industry. According to Ebrahim, Abdullah, and Faudziah (2014), the most often used financial performance indicators are the gross profit margin, return on capital used, return on assets, net profit margin, and earnings per share.

This is another key metric for analysing or evaluating a business's growth. Non-financial performance indicators include an organization's reputation, turnover of its employees, competitiveness, market share, and client retention. It often includes information about the company's customer contacts, employee morale, operations, quality, cycle time, and supply chain. Non-financial metrics, according to Crous, Battisti, and Leonidou (2021), offer four significant advantages over financial data-based measurements. The first is a more direct link to the organization's long-term

strategy. Financial evaluation techniques are often geared around annual or short-term performance according to accounting standards (Vincent and Zakkariy, 2021). They do not include progress toward fulfilling or exceeding customer expectations, as well as other objectives outside financial gain that may be of critical importance to the company's long-term success and competitive standing.

Examples of such strategic aims include the creation of new products and the building of organizational capacities, both of which may have negative effects on short-term financial performance. According to Mushafiq, Sindhu, and Sohail (2021), businesses may communicate goals and incentivize managers to address long-term strategy by supplementing accounting metrics with non-financial data on strategic success and execution of strategic plans.

Second, those who favour traditional accounting point out that "intangible assets" such as intellectual capital and customer loyalty are often more important to a company's success than the "physical assets" that are traditionally included in financial statements. While it might be difficult to put a dollar amount on a company's intangible assets, there may be indirect quantitative metrics that can be gleaned from non-financial data. However, managers may be tempted to ignore these intangible assets in favour of more financially rewarding options if performance is evaluated only in monetary terms.

Finally yet importantly, measures should be selected according to their "noise" generation and their ability to communicate data regarding management activities. The term "noise" is used to characterize variations in a performance indicator that are outside the control of the management or organization, such as economic swings or randomness (good or bad). Managers must be aware of the extent to which their efforts contribute to success in order to exert the greatest possible impact on results. Many non-financial metrics may help managers perform better by offering a more exact appraisal of their activities than accounting indicators, which are more vulnerable to external noise. Additionally, this minimises the risk that manager’s face when making pay decisions (Omran, Khallaf, Gleason, and Tahat, 2021).

While non-financial indicators are becoming more important for decision-making and performance assessment, firms should avoid simply duplicating the statistics of other enterprises. The metrics used must align with the company's strategy, value drivers, organisational goals, and competitive environment (Nguyen, Ntim and Malagila, 2020). Additionally, firms should keep in mind that performance measurement selection is a dynamic process; although some metrics may be appropriate today, the system must be regularly reassessed as plans and competitive situations change (Pham, 2020).

2.3. Theoretical Review

This research employed innovation diffusion theory and system theory to analyze the influence of cloud accounting, cloud accounting costs, and cloud accounting performance on listed manufacturing businesses in Nigeria. Both theories suggest causes for accounting technology adoption (Yau-Yeung, Yigitbasioglu and Green, 2020). Diffusion theory has established that innovations that provide advantages

are compatible with current practices and beliefs, are simple, potentially treatable, and observable will spread more widely and swiftly than innovations that lack these features (Hamundu, Husin, Baharudin and Khaleel, 2020).

This study employs a system theory approach due to the organization's reliance on the globe for data sources and also for yield recognition. As a consequence, they should develop systems for responding to natural constraints (Wicaksono, Kartikasary and Salma, 2020). In essence, a corporation cannot exist without engaging with its internal and external surroundings, all the more so when adopting new technologies such as cloud accounting (Chikere and Nwoka, 2015).

2.4. Empirical Review

Ezuwore-Obodoekwe, Okoye, and Obinabo (2020) investigated the impact of cloud accounting on the performance of the Nigerian banking sector, using annual data from 2008 to 2017 and adopting the Ordinary Least Squares (OLS) technique. The study's results reveal that private cloud computing has a significant influence on the profit after tax of the Nigerian banking industry. Additionally, the community cloud has an influence on the Nigerian banking sector's revenues after taxes.

Effiong, Udoayang, and Davies (2020) investigated the effect of cloud accounting on the harmonization of cost structures of manufacturing-oriented enterprises listed on the Nigerian Stock Exchange. The paper examined the practicality of cloud accounting in manufacturing enterprises by a comparison of cloud expenditures to manufacturing firms' cost structures. In order to create the estimated model, we used the least squares random effect technique. The price of the server was used as a starting point to calculate the costs of the power bill, maintenance, the network, and the building itself. There was a negative influence on direct expenditure from the price of the server, the network, and the building, but a favourable effect from the price of maintenance and electricity. Costs associated with servers and infrastructure were favourably connected with indirect expenses, whereas those associated with electricity, maintenance, and networks were adversely correlated.

Matarneh, Al-Tahat, Ali, and Jwaifel (2019) studied the effect of cloud accounting on the competitive advantage of Jordanian industrial enterprises. To meet the study's objectives, both descriptive and analytical methodologies were used. Additionally, the multi-linear correlation test was used, and the inquiry yielded a number of conclusions. (Providing information technology infrastructure, providing software to users, providing communications, providing user-friendly applications, flexibility in performing various tasks, saving and reducing costs) in achieving a competitive advantage in Jordanian industrial companies through the application of its combined dimensions (Quality, cost, flexibility, and differentiation).

Osama (2018) said that it was critical for Jordanian public shareholding enterprises aiming to leadership to strengthen their regulatory tools in light of the digital economy and the adoption of cloud accounting. To keep up with the evolution of the information economy and the data created by cloud accounting, these internal audit technologies necessitated that the internal auditor possesses a distinctive element of intellectual capital. Additionally, the internal auditor must exhibit the

leadership skills essential to stay current on innovations and data and to execute his work effectively. Thus, the current study analyzed the literature on this profession to attempt to explain the critical nature of the internal auditor's possession of the concept of leadership, which is the capacity for observation, critical ability, and sophisticated thinking required for interpreting and connecting the phenomena and observations that occur within the organization when cloud accounting mechanisms are used.

3. Methodology

The study employed a survey research design and an ex-post facto approach. Primary data and the first aim were collected via a survey, whereas secondary data and the second objective were collected via an ex-post facto research approach. 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. The pre-test includes descriptive tests, correlation and the Hausman test.

The study drew on primary data sources. Primary data was gathered to examine the impact of cloud accounting on listed manufacturing businesses in Nigeria, as well as the cost and performance of cloud accounting. This information was gathered through the use of a standardized questionnaire which ethics committee approval was obtained from Bells University of Technology. Primary data collection takes place in Ogun State, where ten manufacturing businesses are picked for convenience. Dangote Cement Plc, Lafarge Cement Plc, Nestle Plc, Unilever Plc, WAMCO Nigeria Plc, Cadbury Nigeria Plc, Dangote Sugar Refinery Plc, Honeywell Flour Mill Plc, Flour Mills of Nigeria Plc, and Dangote Flour Mill Plc are among these companies. From these ten (10) businesses, 100 replies were expected. As a result, ten responses from each of these ten companies comprised the study's hundred sample sizes. The relationship between cloud accounting, cloud accounting cost and performance of listed manufacturing firms in Nigeria can be represented implicitly as:

Model One

NFP= *f* (SA, SAP, DAP)

Nonfinancial performance= F (Standardization of Accounting, Simplification of Accounting Process, Documentation of Accounting Process)

The econometric model is given as

$$NFP= \beta_0+ \beta_1SA + \beta_2SAP + \beta_3DAP+ \mu \quad (1)$$

Model Two

FP= *f* (MC)

The econometric model is given as

$$FP_{it}= \beta_0+ \beta_1MC_{it} + \beta_2FS_{it} + \beta_3FA_{it} + \mu_{it} \quad (2)$$

Financial performance= f (maintenance cost, firm size, firm age)

Where,

NFP = Non-Financial Performance,

FP= Financial Performance,

SA = Standardization of Accounting,

SAP = Simplification of Accounting Process,

DAP= Documentation of Accounting Process,

MC= Maintenance Cost,

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 Performance	Returns on asset (ROA): profit after tax/Total Assets * 100	Okere et al (2019)
Non-Financial Performance	Business value and competitive advantages	Kariyawasam (2019)
Cloud accounting	i. standardization of accounting ii. simplification of accounting process iii. Documentation of accounting process.	Kariyawasam (2019)
Cloud accounting cost	Server Maintenance Cost	Effiong, Udoayang, and Davies (2020)
Control variables		
i. Firm size	Natural logarithm of total asset	Eluyela et al (2018)
ii. Firm age	Duration of firm existence	Akintimehin et al (2019)

4. Data Presentation and Analysis

4.1. Descriptive Analysis

From the results obtained, the standard deviation value (890.4698) indicates a low return on assets among the firms. Kurtosis value (12.3757) is higher than 3.0, which suggests that there were few manufacturing firms with a high return on asset, the majority of them had a low return on asset. Maintenance cost (MC) averaged ₦7.6 billion but had the lowest and highest values of ₦42.4 billion and ₦0.62 billion respectively. The standard deviation value (9.2751) is high, and it suggests low

maintenance costs among the firms investigated. Kurtosis value (7.3325) is higher than 3.0. This indicates there is no presence of outlier values. As such, few firms were involved in maintenance costs. It is found from Table 2 that firm size averaged ₦0.452 billion. The highest and lowest values of firm size for the firms are ₦5.336 billion and ₦0.022 billion. The standard deviation value is 0.8504, which is high, and it indicates low firm size among the firms investigated. Kurtosis statistic (21.6325) is higher than 3.0, and thus there are outlier values. This indicates that few of the firms have high firm size.

Table 2. Summary Statistics of Data Series

	ROA	MC	FS	FA
Mean	502.8862	7.6470	0.4520	56.6000
Maximum	4932.000	42.4003	5.3363	140.0000
Minimum	550.0000	0.6263	0.0227	11.0000
Std. Dev.	890.4698	9.2751	0.8504	33.2080
Skewness	2.7599	2.0909	4.0705	1.2004
Kurtosis	12.3757	7.3325	21.6325	3.7251
Observations	100	100	100	100

Source: Author's Computation (2021)

Firm age averaged 56.6 (57) years. The highest and lowest firm ages are 140 years and 11 years. The standard deviation value is 33.2080, which is high, and it indicates that most of the firms are the year in manufacturing. Kurtosis statistic (1.2004) is lower than 3.0, and thus there are no outlier values.

Table 3: Demographic Statistics

Variables	Categories	Frequency	Percentage (%)
Gender	Male	57	57
	Female	43	43
	Total	100	100
Position/Rank (Management)	Top	34	34
	Middle	41	41
	Lower	25	25
	Total	100	100
Highest Educational Qualification	OND/ NCE	0	0
	HND	63	63
	B.Sc.	37	37
	Masters	0	0
	PhD	0	0
	Total	100	100
Years of Experience	1-5 years	17	17
	6-10 years	53	53
	11-15 years	30	30
	Above 15 years	0	0
	Total	100	100

Source: Author's Computation (2021)

Table 3 summarizes the demographic information about the respondents for this study. It can be found that there are fifty-seven (57%) male and forty-three female respondents (43%). Based on the position/rank (management) category, twenty-five (25%) are lower-level managers; forty-one (41%) are middle-level managers, and thirty-four (34%) are top-level managers. The demography information also shows that thirty-seven (37%) of the respondents have B.Sc.; sixty-three (63%) have HND. Among the respondents, Also, the table reveals that seventeen of the respondents (17%) have spent between 1-5 years at work; fifty-three (53%) have spent between 6-10years, and thirty (30%) have spent between 11 and 15 years.

4.2. Analysis of Research Questions

4.2.1. Analysis of Research Question One

Table 4. The Impact of Cloud Accounting on The Non-financial Performance

		Frequency				
S/N	Questions	SA	A	D	SD	X
1	Standardization of accounting leads to improvement of business value.	40	26	17	17	2.89
2	Simplification of the accounting process has an effect on the attainment of competitive advantage.	20	27	23	30	2.37
3	Documentation of the accounting process helps to outperform rivals.	56	17	10	17	3.12
4	Ease of replication has an impact on productivity improvement of manufacturing firms.	23	47	17	13	2.80
5	Ease of communication and training has an effect on reducing labour turnover of manufacturing firms.	46	30	17	7	3.15

Source: Author's Computation (2021)

The table above demonstrates that the vast majority of responders concur with the posed question. The mean values found are 2.89, 2.37, 3.12, 2.80, and 3.15, all of which exceed 2.0 on a 4.0-point scale. This demonstrates that cloud accounting has an effect on manufacturing businesses in Nigeria's non-financial performance.

Table 5. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.865[a]	0.749	0.746	0.35856	0.479
[a] Predictors: (Constant), Cloud Accounting					
[b] Dependent Variable: Business Value, competitive advantage, outperform rivals, productivity improvement					

Source: Author's Computation (2021)

Table 6. OLS Regression Results (Dependent Variable)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.363	0.873		5.29	0.000
	Cloud Accounting	0.519	0.030	0.865	17.09	0.000
[a] Business Value, competitive advantage, outperform rivals, productivity improvement						

Source: Author's Computation (2021)

Table 7. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.560	1	37.560	292.144	0.000[b]
	Residual	12.600	98	0.129		
	Total	50.160	99			
[a] Predictors: (Constant), Cloud Accounting						
[b] Dependent Variable: Business Value, competitive advantage, outperform rivals, productivity improvement						

Source: Author's Computation (2021)

The r-squared statistics (raw and adjusted r-squared) and coefficients of determination are presented in Table 5. (R). R-squared is 0.749 (74.9%), whereas the adjusted r-squared is 0.746. (74.6 per cent). These findings indicate that cloud accounting accounted for 74% of all changes in corporate value, competitive advantage, the outperformance of competitors, and productivity increase. The coefficient (R) is 0.865 (86.5 per cent), indicating that the anticipated and actual values of company value, competitive advantage, outperforming rivals, and productivity is 87 per cent linked. As a result, the calculated model has a high degree of fit. The impact of cloud accounting on manufacturing businesses' non-financial performance is shown in Table 6. The coefficient for cloud accounting is 0.519, and the p-value is significant at the 5% level. This demonstrates that cloud accounting practices have a substantial beneficial effect on the non-financial performance of Nigerian manufacturing businesses. The f-test, also known as analysis of variance (ANOVA), is used to determine the regression coefficients in Table 7. The f-value is 292.144, with a p-value of 0.005 at the 5% level of significance. This demonstrates that the model was specified correctly.

4.2.2 Analysis of Research Question Two

Table 8. The Effect of Cloud Accounting Cost on The Financial Performance

Variables	ROA	MC	FS	FA
ROA	1	0.6310	0.1157	0.2059
MC	0.6310	1	0.3651	0.2064
FS	0.1157	0.3651	1	0.0517
FA	0.2059	0.2064	0.0517	1

Source: Author's Computation (2021)

Table 8 summarized the relationship between return on asset, maintenance cost, firm size and firm age. This analysis is conducted to examine the presence of multiple correlations among the data series. A correlation coefficient in Table 8 above the indicated presence of multiple correlations (Wisdom, Lawrence, Akindele and Muideen, 2018). From the coefficients obtained, the return on the asset has a positive relationship (0.6310) with manufacturing cost; a positive relationship (0.1157) with firm size; and a positive relationship (0.2059) with firm age. Maintenance cost has a positive (0.3651) with firm size; and a positive (0.2064) relationship with firm age. Lastly, firm size has a positive (0.0517) relationship with firm age. These results showed that the model estimated is free from multiple correlations.

4.2.3. Hausman Test

Table 9 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	26.8719	1	0.0000

Source: Author's Computation (2021)

Testing at a 5% level of significance, the null hypothesis does not hold. Hence, the study concludes that it is not appropriate to estimate the random effect model.

Table 10. Pooled OLS Regression

Dependent Variable: ROA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.8678	0.0828	10.4755	0.0000
MC	0.0696	0.0012	57.2674	0.0000
FS	-0.1405	0.0084	-16.6732	0.0000
FA	0.0028	0.0012	2.3812	0.0192
R-squared	0.9722	Mean dependent var		-0.5574
Adjusted R-squared	0.9714	S.D. dependent var		7.1778
S.E. of regression	1.0102	Sum squared resid		97.9594
F-statistic	1120.729	Durbin-Watson stat		1.9561
Prob(F-statistic)	0.0000			

Source: Author's Computation (2021)

Using the panel's least square regression approach, the authors determined the effect of maintenance expenses, company size, and firm age on the return on assets of ten publicly traded manufacturing businesses in Nigeria. The F-statistic probability is 0.0000, indicating that the model is significant and has a high degree of goodness of fit. Additionally, the R-Squared value is 0.9722 (97.22 per cent), but the corrected R-Squared value is 0.9714. (97.14 per cent). These results suggest that the independent factors account for 97 per cent of the variance in the dependent variable (return on asset) (maintenance cost, firm size and firm age). Durbin Watson coefficient of 1.9561 indicates that the reported results are not affected by serial autocorrelation.

The maintenance cost coefficient is 0.069 with a P-value of 0.0000, which is statistically significant at the 5% level. This indicates that maintenance costs have a favourable and considerable influence on the return on assets of Nigerian listed manufacturing businesses. The company size coefficient is -0.1405, with a P-value of 0.0000 indicating it is statistically significant at the 5% level. This indicates that company size has a considerable negative effect on the return on assets of listed manufacturing enterprises in Nigeria. The coefficient for a firm age is 0.002, and the P-value is 0.0192, which is statistically significant at the 5% level. This demonstrates that company age has a favourable and significant effect on the return on assets of Nigeria's listed industrial businesses.

The findings of this study indicate that cloud accounting has an effect on manufacturing businesses in Nigeria's non-financial performance. This implies that businesses that properly use cloud accounting will increase their company value, get a competitive edge, outperform competitors, enhance their productivity, and reduce labour turnover. This finding is consistent with Ezuwore-Obodoekwe, Okoye, and Obinabo's (2020) finding that cloud accounting substantially adds to the financial performance of Nigerian banks.

The panel regression study reveals that maintenance costs have a positive and substantial effect on the return on assets of Nigeria's publicly traded industrial businesses. This implies that if maintenance costs are well controlled, businesses' return on assets will rise. This finding is consistent with Owolabi and Izang's (2020) finding that SMEs should use cloud accounting technology. This improves the quality and performance of their financial reporting. Additionally, Effiong, Udoayang, and Davies (2020) observed that cloud accounting has a major impact on the cost structure of manufacturing businesses and that cloud expenses should be included in manufacturing firms' cost structures.

Additionally, the findings indicate that the age of the business has a favourable effect on the return on assets. As a result, older businesses with a stronger reputation are more likely to have a better return on an asset than newer businesses. Additionally, it is discovered that company size has a negative and considerable effect on the return on assets of Nigerian listed manufacturing businesses.

5. Conclusion and Recommendations

In conclusion, the paper asserts that cloud accounting is a critical instrument for enhancing the non–financial performance of Nigeria's publicly traded industrial businesses. Additionally, cloud accounting costs are a useful instrument for improving the financial performance of Nigeria's publicly traded industrial businesses. Thus, this study found that cloud accounting and cloud accounting costs have a substantial influence on the performance of Nigeria's publicly traded industrial businesses. It is critical to expanding the usage of cloud accounting among Nigeria's publicly traded industrial businesses in order to enhance both financial and non-financial performance.

The following recommendations are reached:

i. It is important that the costs associated with cloud accounting be clearly identified and included in the financial statements of manufacturing companies before they use cloud accounting.

ii. Accounting regulations should be created to reconcile the different components of cloud accounting cost to the cost structure of manufacturing enterprises, and corporate strategies should be implemented to lower the cost of cloud accounting.

iii. Management accountants need to be taught to utilize cloud accounting systems, and cloud accounting has to be integrated with management accounting functions.

iv. Strategies should be adopted to reduce maintenance costs.

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