

CLOUD ACCOUNTING COST AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

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Abstract

The research delved into the intriguing relationship between the financial performance of Nigerian manufacturing enterprises and the costs associated with cloud accounting. Employing an ex post facto research approach and utilizing panel data analyses of public financial statements and accounts of manufacturing firms traded on the Nigerian Stock Exchange over a substantial nine-year period (2009-2018), the study randomly selected six manufacturing companies to participate. The investigation employed the sophisticated Random Effects regression technique to analyse the data. The research findings were striking, revealing a significant negative influence of maintenance costs on the return on equity of the chosen manufacturing enterprises in Nigeria. The research observed that even a mere 1% increase in maintenance costs would lead to a noteworthy 0.06% decrease in return on equity. These findings emphasized the critical link between cloud accounting costs and organizational performance in the manufacturing sector. The research further underscored that the costs associated with cloud accounting could pose obstacles to the performance of manufacturing companies. As a result, the study concluded that a successful cost management system is imperative for manufacturing businesses to achieve sustained profitability, highlighting the need for prudent financial strategies in the face of evolving technological advancements in the accounting domain.

Keywords: Cloud Accounting, Cost control, Profitability, Financial performance and Manufacturing firms.

1. INTRODUCTION

The use of Information Communication Technology in every part of administration is one of the features of today's work environment. Information, communication, and electronic technologies have altered the old traditional accounting system as well as the accounting process. To comply with global accounting standards, corporations must strengthen their accounting systems. Electronic computing, often known as cloud accounting, is a product of Information Communication Technology. Cloud accounting processing is presented as a solution to issues such as accounting errors, delays, and validations of accounting data. Cloud accounting aids businesses in increasing efficiency. Data servers, storage space, security awareness, broadband networks, and other virtual desktop facilities will all see an uptick in demand when a cloud data hub is set up, as would "raise the need for technical support, solutions, and consulting service by network providers." (Information Industry Association, 2012). Management choices, such as transitioning to cloud accounting or altering existing procedures, might be affected by a shift in the cost structure. There might be a variety of issues that occur when IT is one of an organization's primary sources of capital expenditures (Sultan, 2013). In comparison to traditional software, cloud application deliver direct and provable economic gains in cost accounting. Cloud computing is projected to have a substantial impact on management accounting functions.

Management accounting functions, according to Lymer and Baldwin (2012), "have inherent interests in the value of work processes and technologies, therefore influencing technology development and



evaluation in areas where work processes and technologies are valued, involves decisions about whether or not to use cloud accounting and how to manage cloud risk when integrating cloud accounting, the interfaces with management processes, the usage of resources, and values requiring cost structure alterations have a direct impact on the job of the management accountant himself. Management accounting tasks, according to Effiong & Baredogu (2015), have expanded beyond financial performance metrics to include non-financial and technical performance in the appraisal of the firm's outlook. These are technologies that have the potential to change the way people work within and between organizations. Firms have long struggled to improve their performance. It's put to use in the business world in the same manner that it's advocated for use in environments where the inhabitants' existence is critically reliant on environmental phenomena like sunshine, rainfall, and humidity. A company's success is limited by the quality of its foundation. It would be a gross understatement to downplay manufacturing's contribution to GDP growth. The foundation of this partnership is the belief that a collection of successful companies will cooperate to foster economic growth. Cloud accounting and the associated expenses provide unique difficulties. From the standpoint of both the company and its customers, the cost structure of cloud accounting may have a considerable impact on product pricing, cost accumulation techniques, and the handling of accounting transactions (Lian, Yen and Wang, 2014). As a consequence, management must exert determined effort in developing and enhancing the policies and procedures of the company in order to boost its financial performance. So, a cloud-based accounting system is essential for boosting precision, accelerating processing times, and decreasing overhead expenses, all of which contribute to maximising profits. The purpose of this research is to ascertain whether or not the usage of a cloud-based accounting system by a subset of manufacturing firms affects their operational financial performance.

Statement of the Problem

Financial and Accounting Outsourcing is expected to rise in the near future, according to the SLASSCOM report 2013. Cloud accounting will develop in tandem with the growth of outsourcing. It is critical to understand the influence of cloud accounting on corporate performance in order to urge businesses to adopt it. This influence will not be limited to a single component of the company. Numerous studies have been done on cloud computing. Cloud computing can assist firm focus on their core business by delegating server maintenance to cloud service provider (Bamaih, 2012). Bamaih conducted research to examine the impact of cloud computing adoption on Malaysia's health industry. The goal of the research was to see what opportunities could be gained by leveraging cloud in medical facilities, the study discovered that by shifting their data to the cloud, health organizations could increase information sharing among themselves. Top management support is necessary for cloud adoption to be successful (Nzoya, 2018). Nzoya investigated the elements that affect Kenyan software development companies' use of cloud computing. According to the survey, organisations' use of cloud computing was influenced by external factors including rising rivalry. Before shifting their system to the cloud, firms were found to address concerns such as cloud resource availability and system performance. The slow adoption of cloud computing may be attributed to a number of factors, including a lack of qualified personnel, a desire by enterprises to maintain the status quo, and a fear of having sensitive data exposed on the public cloud (Kourik, 2011). The three other components of intellectual capital—human capital, relational capital, and structural capital—will expand as a result of cloud accounting, which will improve corporate performance, according to Cleary and Quinn (2016). So, a company that switches to cloud accounting has to evaluate how the new system will affect various aspects of the company. According to Kourik, 2011, Fears of cloud computing being insecure, a lack of skilled personnel in cloud computing technologies, and excessive regulation were among the obstacles to cloud adoption. Therefore, this study investigates the cost and security implications of cloud computing for various organizations in the manufacturing firms, as well as the benefits and risks they face when using cloud services. As a result, the goal of this study is to provide a comprehensive and in-

depth understanding of these issues of cost and insecurity, as well as to contribute to cloud computing research.

The objective of this study is to determine the extent of cloud accounting cost on the financial performance of manufacturing companies in Nigeria. However, the study will be guided by the following research questions;

- i. What does cloud computing have to do with performance?
- ii. What are the major impediments to industrial institutions adopting new technologies?

Based on the problems identified, objectives of this study and research questions, the following hypotheses are formulated for this research:

H_0 : There is no significance relationship between cloud accounting cost and financial performance

H_A : There is a significance relationship between cloud accounting and financial performance

2. LITERATURE REVIEW

The Concept of Cloud Computing and Accounting

Cloud accounting is the application of cloud computing to the field of accounting, where cloud computing refers to the networked distribution of software and shared data from a computer and other devices (Mongan, 2011). Cloud accounting allows users to access accounting applications through a web browser or mobile app, with the software and data stored and transferred to a remote server. This type of service is commonly available through Software as a Service (SaaS) paradigm, where users can execute software applications on cloud infrastructure using any internet-connected device (Kristandl and Quinn, 2012). Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS) are other paradigms of cloud computing that enable users to develop and deploy applications and provision resources through the cloud (Du and Cong, 2010; Marston et al., 2011; Robinson, 2011).

Cloud computing offers several advantages, including reduced IT expenses, increased innovation opportunities, global data and system availability, scalability, and automatic system and software updates (Paul, 2010; Drew, 2012). Smaller businesses can also benefit from cloud computing as it provides access to sophisticated IT infrastructure and software that was previously only available to larger businesses (Paul, 2010; Drew, 2012).

However, there have been concerns about the suitability of cloud computing for accounting and financial purposes, as accounting data is considered essential operational data that may not be suitable for cloud migration (Gill, 2011). Some studies support this notion (Quinn et al., 2014; Strau et al., 2014). On the other hand, proponents of cloud accounting argue that it can improve the flow of information within an organization by formalizing and making accounting data more accessible, thus enhancing decision-making (Young, 2010).

Concept of Financial Performance

The financial performance of a company is important to investors, stakeholders, and the economy as a whole. Returns on investment are important to investors. A successful corporation can provide a higher return to investors. A company's financial performance can boost employee pay by providing high-quality products or services to clients and increasing goodwill in the community in which it operates. A company that performs well can provide higher profits, which can lead to future opportunities, which can create jobs and enhance people's wealth.

A company's capacity to achieve its objectives given its available resources is referred to as its "firm performance." A company's performance may be defined as the outcome of an evaluation or plan based on how well it met its goals and objectives. A company's capacity to generate revenue from its assets via business operations may be inferred from its financial performance. According to Pandey (2005), financial performance is an intangible indicator of a firm's success in extracting value from its core business. Organizational theory and strategic management are used to study a firm's financial performance. The term "financial performance" refers to the performance of a legal body such as a corporation.



Theoretical Review

There are numerous theories that suggest why organizations would adopt cloud computer-based accounting through their management. The following are some of the theories:

Diffusion of Innovation Theory (DOI)

The notion of diffusion of innovation serves as the foundation for the study (DOI). Any "new concept, action, or thing" that is deemed novel is considered innovative (Rogers, 2003). He thinks there are two components that make up an invention. It is initially thought of as the creation of an idea, and then as the transformation of that concept into a company. In an effort to pin down what exactly constitutes innovation, academics have looked to concepts like invention and creative combinations (Schumpeter, 1934). (2003). The key concept in this architecture is perception. As the example demonstrates, internal communication for new enterprise systems requires face-to-face meetings among employees, personal persuasion, emails, and, eventually, a formal business case paper. According to Zhang et al. (2014), despite the advantages of utilising the e-appointment service, it may promote knowledge of patient behaviour, stimulate patients to use the online system, and boost their satisfaction with this service. Examples of external dispersion include Requests for Information (RFI) in the form of newspaper advertising and uploads to a government website, as well as Requests for Proposal (RFP) sent to the qualified bidders.

Stakeholder Theory

The stakeholder theory is a corporate ethics and organisational management theory that examines workplace morals and values. Ian Mitroff initially described it in San Francisco in 1983. Stakeholder theory encompasses all relevant parties, including workers, consumers, suppliers, financiers, communities, governments, political parties, trade organisations, and unions. Hui, Klasa, and Yeung (2012) claim that more conservative accounting procedures are chosen when suppliers and customers have a negotiating advantage. Stakeholders in this situation have a lot to lose if the firm fails, yet they gain very little from the company's success.

Because of their power to affect the company and its stakeholders, even competitors may be considered stakeholders. Stakeholder theory has many common variants, one of which involves identifying and describing a company's specific stakeholders (the normative theory of stakeholder identification) before investigating how management interacts with those stakeholders (Mitroff, 1983). Traditional performance metrics are still valued, despite the fact that stakeholder theory supports stakeholder management (Jones et al. 2018). According to stakeholder theory, a company's goal should be to maximise value for its stakeholders. According to Hui et al. (2012), CEOs must keep the interests of customers, suppliers, workers, communities, and shareholders aligned and moving in the same direction in order for the business to succeed and be sustainable over time.

Empirical Review

According to Khanom (2017), who looked at cloud computing from a theoretical standpoint, "the introduction of accounting software utilising cloud technology, which is one of the major IT advancements over the previous decade, has substantially enhanced the practise of accounting." With the advancement of cloud technology, he believes that "today's ever-changing corporate world is becoming more and more competitive and complex. Onyali (2015) investigated the impact of traditional cloud computing and accounting packages on company performance in a conceptual study. The study reveals the flaws in traditional accounting software and the benefits of using cloud accounting software. Companies must use cloud computing, according to the scholar, if they want to increase their performance.

Bogdan, Juliana, and Laura (2013) compared traditional and cloud accounting in Romanian businesses in their research. The research found that the savings from utilising a cloud computing application are substantial enough to be taken into serious account when selecting an online accounting solution. According to zdoan (2017), the development of start-ups has allowed small and medium-sized businesses (SMEs) to take use of various decision-support tools that were previously only accessible to big and institutional businesses. According to Özdoğan, (2017) as a consequence of this process, startups that actively employ cloud computing, big data analytics, and artificial

intelligence technologies have emerged as a major competitor to the conventional business model and have altered the future function of accounting.

Nnadozie (2013) emphasized the critical role of the internet as a fundamental component for organizations, particularly in the accounting industry in Nigeria. Cloud accounting has become an indispensable part of modern accounting and auditing practices, driven by the advancements in technology solutions for data storage, processing, and reporting.

In a study conducted by Salim (2016) on the adoption of cloud accounting in small and medium-sized enterprises (SMEs) in Australia, data from 203 SMEs was analyzed using robust statistical techniques. The research findings highlighted that the adoption of cloud computing services in SMEs was significantly influenced by various factors. These factors included technological factors such as cost savings, relative advantage, and compatibility; organizational factors such as firm size, top management support, firm innovativeness, and information systems (IS) knowledge; and environmental factors such as market scope and external computing support.

These empirical studies underscore the importance of cloud accounting in the accounting industry, with organizations adopting cloud computing services to enhance their operations and gain competitive advantages. These findings highlight the multifaceted factors that influence the adoption of cloud accounting, including technological, organizational, and environmental factors, which need to be considered in the decision-making process for implementing cloud accounting solutions.

3. METHODOLOGY

The demographic of the study, sampling procedures, sample size, model definition, variable descriptions, data sources, and analytical methods were all described in the paper's methodology.

Research Design

Based on the nature of the study variables, which is the secondary data, the ex post facto method was used in this investigation, this method combines a theoretical framework based on a prior criterion with an empirical procedure based on available facts to obtain the required knowledge. This strategy enabled us to investigate the effects of financial performance on cloud accounting of manufacturing companies in Nigeria from 2009 to 2018.

Data Source

Data was gathered from published financial statements of six manufacturing companies listed in Nigeria stock exchange (ie Nigeria Brewery, Guinness, Unilever, PZ, Lafarge and Honey well). The published financial statement provides annual information on their financial statement at an aggregate level to showcase their performance. Thus, the variables of the study were collected on an annual basis of nine years of each company.

Model Specification

The researcher in this study utilized a model developed by Sunday et al. in 2020, but made adaptations and modifications to suit the specific research context. The model was specified with the following components:

$$ROE = \beta_0 + \beta_1 MC + \beta_2 FS + \beta_3 TC + \mu \quad ()$$

Where: ROE = Return on equity; MC = Maintenance Cost; FS = Firm size; TC = Training Cost; β_0 = Intercept Term; $\beta_1 - \beta_3$ = Coefficients independent variables; μ = Error term

Data Analysis Techniques

To achieve the stated objectives in this work, the fixed-effect analysis, random effect analysis, and the Hausman test method were used in conjunction with the panel data analysis approach. The method of analysis used in this study was ordinary least square (OLS). The t-statistic and F-test analytical methods are utilized in the OLS to examine the significance of the regression findings and the overall regression model, respectively.

4. RESULTS AND DISCUSSION

Descriptive Analysis

The results of the descriptive statistics are reported in Table 4.1 below

Table 4.1: Descriptive Statistics

	ROE	MC	FS	TC
Mean	0.245026	2363684.	8.041785	819993.8
Maximum	0.651595	7000830.	8.789701	2909607.
Minimum	-0.147322	165938.0	7.152159	36396.00
Std. Dev.	0.199442	1894188.	0.407088	756729.8
Skewness	0.349426	1.145294	-0.059187	0.884958
Kurtosis	2.675067	3.579281	2.372342	2.726067
Jarque-Bera	1.212698	11.39733	0.832933	6.548941
Probability	0.545338	0.003350	0.659373	0.037837

Source: Author's Computation (2023) using E-views

Table 4.1 presents various statistical measures for four different variables related to firms: Return on Equity (ROE), Maintenance Cost (MC), Average Firm Size (FS), and Training Cost (TC), over the period from 2009 to 2018.

For ROE, the mean value is 0.25, with a maximum of 0.65 and a minimum of -0.15. The skewness value is 0.35, indicating a slight rightward skew in the distribution. The kurtosis value is 2.68, indicating a mesokurtic distribution. The Jarque-Bera value is 1.21, with a probability value of 0.55, suggesting that the distribution of ROE is normally distributed around its mean at the 5 percent level of significance.

For MC, the mean value is N2,363,684. The maximum and minimum values are N7,000,830 and N165,938, respectively. The skewness value is 1.15, indicating a slight rightward skew in the distribution. The kurtosis value is 3.6, indicating a peaked distribution. However, the Jarque-Bera value is 11.39, with a probability value of 0.003, suggesting that the distribution of MC is not normally distributed.

For FS, the average firm size is approximately 8.04, with a maximum of 8.79 and a minimum of 7.15. The skewness value is -0.06, indicating a slight leftward skew in the distribution. The kurtosis value is 2.37, which is lower than 3, indicating a flat distribution. The Jarque-Bera value is 0.83, with a probability value of 0.66, suggesting that the distribution of firm sizes is normally distributed.


For TC, the mean value is N819,993.8, with a maximum of N2,909,607 and a minimum of N36,396. The skewness value is 0.88, indicating a slight rightward skew in the distribution. The kurtosis value is 2.73, which is approximately 3, indicating a mesokurtic distribution. However, the Jarque-Bera value is 6.55, with a probability value of 0.04, suggesting that the distribution of TC is not normally distributed.

Panel Regression Results

The regression results for the return on equity model are presented as follows:

Table 4.2: Random Effects Model Results

Dependent Variable: ROE				
Regressor	Coefficient	Standard Error	T-Ratio	Probability
LOG(MC)	-0.061487	0.026065	-2.358983	0.0227
FS	-0.250167	0.085627	-2.921576	0.0054
LOG(TC)	0.031172	0.023266	1.339818	0.1870
C	2.731050	0.723692	3.773777	0.0005
R-Squared 0.270			R-Bar-Squared 0.221	
F-Stat. 5.547 [0.003]			Durbin-Watson Stat. 1.192	
Post Estimation Test				
Correlated Random Effects - Hausman Test				



Test Summary	Chi-Square Statistic	Chi-Square d.f.	Probability
Cross-section random	2.614	3	0.455

Source: Author's Computation (2023) using E-views

The results of the Hausman test suggest that the null hypothesis of cross-section random effects cannot be rejected at the 5 percent significance level ($\chi^2=2,614$, $p=0.46$), indicating that the appropriate estimating technique for the data set is the random effects model. The findings from the regression analysis, reported in Table 4.2, reveal that the adjusted R-squared value is approximately 22%. This suggests that around 22% of the systematic variations in return on equity of the selected manufacturing firms can be explained by the independent variables.

The F-statistic ($F(1,293)=5.547$, $p=0.003$) indicates that the regression model is significant at the 1% level, demonstrating a significant linear relationship between return on equity and the set of explanatory variables in the model. Thus, the overall model is deemed significant.

The estimated coefficient of the logarithm of maintenance cost (MC) is negatively signed, with a coefficient of -0.06. The t-value ($t = -2.36$, $p = 0.02$) suggests that maintenance cost is significant at the 5% level. This implies that maintenance cost has a significant negative impact on return on equity of the selected manufacturing firms in Nigeria, with a 1% rise in maintenance cost resulting in a decrease of approximately 0.06% in return on equity. This underscores the significance of the relationship between cloud accounting cost and organizational performance.

However, the coefficient of firm size does not align with its a priori expectation, as it is negatively signed with a coefficient of -0.25. The t-value ($t = -2.92$, $p = 0.005$) indicates that firm size is significant at the 1% level, suggesting that firm size has a significant negative impact on return on equity of the selected manufacturing firms in Nigeria.

On the other hand, the coefficient of the logarithm of training cost (TC) is positive but insignificant at the 5% level ($t = 0.03$, $p = 0.19$), indicating that training cost has a positive but insignificant impact on return on equity of the firms.

Lastly, the intercept term is estimated to be 2.73, and its t-statistic ($t = 3.77$, $p < 0.01$) suggests that it is significant at the 1% level. This implies that without the explanatory variables, the return on equity is approximately 2.73.

5. CONCLUSION AND RECOMMENDATIONS


The aim of this study was to examine the extent of cloud accounting cost on the financial performance of manufacturing companies in Nigeria. The research findings showed that maintenance cost has a negative significant impact on return on equity of the selected manufacturing firms in Nigeria. It was discovered that 1% rise in maintenance cost will cause return on equity to fall by about 0.06%. It follows that there is a significance relationship between cloud accounting cost and organizational performance. The implication is that the organizational performance of the manufacturing firms can be hindered by cost associated with cloud accounting. In other words, the adoption of cloud computing system has an adverse effect on organizational performance. This is because cloud accounting system for the manufacturing firms requires huge maintenance cost which increase the overall cost of operations of the firms. Thus, high maintenance costs hinder the profit performances of firms in the manufacturing sector.

Based on the findings and conclusion, the following recommendations are made;

- There is the need for effective cost control mechanism to enable the manufacturing firms thrive profitability.
- The Federal government and its allies should continue to encourage successful implementation strategies for the continued use of current computer-based accounting technology structured for manufacturing enterprises' financial performance metrics.

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