NATIONAL BOARD FOR TECHNICAL EDUCATION
NIGERIAN JOURNAL OF TECHNICAL EDUCATION
Volume 22 Nos. 1 2024
ISSN No. 2992-3522

CLOUD ACCOUNTING AND FIRM PERFORMANCE OF SELECTED MANUFACTURING FIRMS IN NIGERIA

Dr. Ezenwafor, Emmanuel C.
Department of Accountancy
Federal Polytechnic, Oko
Mail: emmancee2004@gmail.com

Dr. Okereoti Chinedu U.
Department of Accountancy
Nnamdi Azikiwe University, Awka
Mail: nattyhoodz@yahoo.com

Abstract

The study examined the relationship between cloud accounting and firm performance of selected manufacturing firms in Nigeria. The specific objective was to examine the extent to which user adoption of cloud accounting; cloud accounting cost reduction and cloud accounting efficiency affect the profit margin of manufacturing firms in Nigeria. This research employed descriptive research design. Simple percentage analysis, mean and the frequency distribution were used in the descriptive analysis of the data while the hypothesis formulated were tested using Spearman Correlation Test at 5% level of significance. The findings indicated that the user adoption of Cloud accounting significantly and positively affects the profit margin of manufacturing firms in Nigeria ($p<0.05$); cloud accounting cost reduction significantly and positively affects the profit margin of manufacturing firms in Nigeria ($p<0.05$); The study recommended that manufacturing firms should encourage comprehensive training programs for employees to enhance their understanding and proficiency in using cloud accounting systems by means of workshops, online courses, and continuous support to ensure a smooth transition and optimal utilization of the cloud accounting tools.

Keywords: Cloud accounting, Firm performance and Profit margin

INTRODUCTION

All facets of contemporary accounting are impacted by cloud accounting, which has been implemented in step with the quickly advancing technological landscape. Accounting can no longer be done solely on a desktop computer due to the growth of internet business dealings and the impact of cloud computing on industry practices. In contrast to its predecessors, traditional accounting involved the use of accounting books, files, documents, etc., which required stores and physical space to be stored and were frequently subject to natural disasters over time. With the evolution of cloud accounting, nearly all the information and comprehensive financial transactions can be warehoused from anywhere (freshbooks 2023). Accounting professionals are reexamining their firm's models to accommodate these new performance and expectation levels as cloud accounting advances and customer expectations shift. The Internet of Things led to the evolution of cloud accounting, a subset of electronic computing. According to Effiong, Udoayang, and Davies (2020), cloud accounting processing is made to address accounting-related issues like errors, delays, and data validation. People will be free to focus on their core competencies and not have to worry about the administrative responsibilities of running their businesses (Tahmina, 2017). Recent developments in accounting technology have significantly improved the field's capacity to support clients (Rao, Jyotsna, and Sivani, 2017).

Johnson (2019) asserts that as cloud accounting becomes more widespread, cloud accounting software ought to have a bigger influence on regular business operations faster in order to meet customer expectations. Despite a plethora of development initiatives and financial reforms, Nigeria has not been able to experience industrial growth. 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). One estimate states that the manufacturing sector has contributed little more than 4% of Nigeria's GDP, underperforming expectations. Consequently, productivity in the manufacturing sector has declined (Ayayi, 2012). With cloud-based software, employees can access the cloud from their own devices, negating the need for a company to set up individual desktop computers with software. Remote teams or branches have access to the same financial records and critical data, including accounts receivable and finance teams. Having everyone in agreement always

results in savings of time and money. When your data is stored on the cloud, you can view your financial situation as it is right now. This will assist you in making well-informed decisions regarding your company's financial future. To obtain accounting data reports, you would need to page through pages of information if you were using a traditional accounting method.

As businesses progressively rely on on-demand IT for everything from accounting software to fully functional IaaS, PaaS, and SaaS answers, the cloud remains a vital resource across a range of industries. The following statistics provide insight into the current state of the cloud market: Approximately 94% of all business workloads are processed by enterprises via the cloud. Seventy-five percent of those are used in Software-as-a-Service (SaaS) environments. The global market for cloud computing is expected to reach $623.3 billion by the end of 2022. That amount is expected to surpass $800 billion by 2025. By the end of 2022, end users will have spent about $397,5 billion on cloud services. This amount was approximately $332,033 billion in 2021. More than 92% of businesses use multiple clouds. The average company's cloud service costs account for about one-third of its IT expenditures. Sixty-one percent of the global cloud computing market is in North America. By the end of 2022, more than 48% of businesses intend to migrate the majority of their apps to the cloud. Ninety-five percent of new workloads will be deployed on cloud-native platforms by businesses by 2025. These figures unequivocally demonstrate that in the upcoming year(s), the cloud will be crucial to IT. Let's examine the trends in cloud computing that you should watch out for in 2023. One of the most common issues is the lack of qualified staff to manage the cloud accounting systems of these manufacturing companies. Other issues include the lack of academic curricula, training programs, and other initiatives that inform the public and students about the well-known advantages of cloud accounting in postsecondary education. Manufacturing businesses must reduce expenses as it has a bearing on their performance because they consider cloud accounting to be a costly procedure that is not worthwhile. At the conclusion of this study, the following goals are intended to be accomplished.

1. To examine the extent to which user adoption of Cloud accounting affects the profit margin of manufacturing firms.
2. To determine the degree to which cloud accounting cost reduction affect

the profit margin of manufacturing firms in Nigeria.

LITERATURE REVIEW

Cloud Accounting

In contrast to utilizing local servers or personal computers, cloud accounting is a technique that involves carrying out accounting operations on an online platform (Gray & Debreceny, 2014). It prioritizes automatic updates, real-time collaboration, and accessibility. The main benefit of cloud accounting is that it makes financial data instantly accessible from any location with an internet connection. The practice of gaining access to accounting software and data via a web application is known as cloud accounting, according to Nielsen (2022). The data is saved on a remote server, and the program is available only through subscription. Unlike the conventional accounting architecture, which requires software to be purchased and installed on a local server or workstation. Client login credentials are used to restrict access to cloud accounting applications and data, not the actual location of the information records. According to Buyya et al., this streamlines data interchange by doing away with the need for data to be physically moved between pcs\.. According to (2009), cloud accounting is a hypothetical set of services that can be accessed from anywhere using a mobile device with internet access. These services are delivered through a parallel, customized configuration of virtualized PCs that are networked and can be gradually supplied and displayed as a computing asset, or group of assets bound together, as limited. Furthermore, cloud accounting is described 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 organization" by the National Institute of Standards and Technology (NIST). According to Chinyao, Yahsueh, and Mingchang (2011), "cloud accounting innovation" refers to the combination of web-based IT applications and the hardware and software used in server farms to provide these services. Christauskas and Miseviciene (2012) draw comparisons between cloud accounting and commonplace resources shared by multiple clients, such as email, office software, and enterprise resource planning (ERP) systems. Diskiene, Galiniene, and Marcinskas (2008) list interest-based administration selection, asset coalition, broad access to arrange, speedy adaptability, dexterity, and high flexibility as strengths of cloud accounting. Confidentiality is also

mentioned. The process of storing, processing, and utilizing data stored on multiple-site computers connected via the Internet is also referred to as "cloud accounting.". This suggests that users can access their data from any location with an Internet connection and can take advantage of the massive capacity of computer downtime to fulfill their requests without having to pay large sums of money. 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).

Empirical Review

Nworie, and Okafor (2023), ascertained how firm size and firm capital turnover have affected the adoption of computerized accounting system (CAS) among the production firms listed in Nigeria. In this study, *Ex Post Facto* research design was used. Cross-section fixed regression estimation showed that firm size and firm capital turnover have a positive and significant effect on the adoption of CAS. Imeokparia and Okere (2022) study explored the fascinating connection between the financial outcomes of manufacturing businesses in Nigeria and the expenses related to cloud accounting. Six manufacturing companies were randomly selected to participate in the study, which used an ex post facto research approach and panel data analyses of public financial statements and accounts of manufacturing firms traded on the Nigerian Stock Exchange over a significant nine-year period (2009-2018). The complex Random Effects regression technique was used in the investigation to analyze the data. The study's startling conclusions showed that maintenance expenses had a major detrimental impact on the chosen Nigerian manufacturing companies' return on equity. According to the study, a mere 1% increase in maintenance expenses would result in a significant 0 percent decrease in return on equity. These results highlighted the crucial connection between cloud accounting expenses and manufacturing sector organizational performance. The study also highlighted the possibility that manufacturing companies' performance could be hampered by the expenses of cloud accounting. Ezuwore-Obodoekwe, Okoye, and Obinabo (2020) investigated how cloud accounting affected the performance of the Nigerian banking sector, using annual data from 2008 to 2017 and adopting the Ordinary Least Square (OLS) technique. The study's findings show that the profit after taxes of Nigeria's banking sector is significantly impacted by private cloud computing. The community cloud also affects the earnings of Nigeria's banking industry after taxes. The impact of cloud accounting on the harmonization of cost structures of manufacturing-oriented companies listed on the Nigerian Stock Exchange was examined by Effiong,

Udoayang, and Davies (2020). The study compared cloud costs to manufacturing firms' cost structures in order to assess the viability of cloud accounting in manufacturing settings. We employed the least squares random effect technique to generate the estimated model. The cost of the power bill, maintenance, the network, and the building itself were all calculated using the server's purchase price as a starting point. The cost of the network and server had a detrimental impact on direct expenses. 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. The cost of the server, the network, and the building had a negative impact on direct expenses, but the cost of maintenance and electricity had a positive one. Indirect expenses showed a positive correlation with costs related to servers and infrastructure, while costs related to networks, maintenance, and electricity showed an unfavorable correlation. Matarneh, Al-Tahat, Ali, and Jwaifel (2019) analyzed the effect of cloud accounting on competitive advantage of industrial enterprises in Jordan. Methodologies that were both descriptive and analytical were employed to achieve the study's goals. The multi-linear correlation test was also employed, and the investigation produced several conclusions. By applying its combined dimensions (quality, cost, flexibility, and differentiation), Jordanian industrial companies can gain a competitive advantage through the provision of information technology infrastructure, software to users, communications, user-friendly applications, flexibility in performing various tasks, and cost savings and reductions. Osama (2018) stated that in light of the digital economy and the use of cloud accounting, it was imperative that Jordanian public shareholding enterprises striving for leadership strengthen their regulatory tools. These internal audit technologies required the internal auditor to have a unique blend of intellectual capital in order to stay up with the information economy's evolution and the data generated by cloud accounting. The internal auditor must also demonstrate the leadership qualities necessary to stay up to date on data and innovations and to carry out his job efficiently. In order to explain the critical nature of the internal auditor's possession of the concept of leadership—that is, the ability to observe, think critically, and apply sophisticated reasoning necessary for interpreting and making connections between the observations and phenomena that arise within the organization when cloud accounting mechanisms are used—the current study examined the literature on this

profession. Obasan, Olabowale Taiwo Kuola, Aanu Joseph (2022) ascertained how cloud accounting has affected manufacturing firms in Nigeria an Twinstar Industries. The survey was carried out among about 261 employees of a manufacturing company in Ogun State, Nigeria. To date, 261 questionnaires have been given to Ogun state's Twinstar Industries Limited employees. The two hundred and twenty-nine that were recovered represented an 87.7% response rate. The Analysis of Variance statistical method was used to examine the dataset. It demonstrated how cloud-based accounting significantly affects the operations and policies of manufacturing firms. In order to help policymakers better understand and be able to put appropriate strategies into place to reduce potentially harmful factors and enhance current trends in their development, it was suggested that they receive insights. Apete and Ezeala (2023) conducted research to find out if cost accounting data affects business entities' valuation in any way. The study concentrated on small and medium-sized businesses that are present in the state of Anambra. Four key officers in each of the SMEs that were sampled for the study were given questionnaires, which were used to collect primary data from them. The study utilized a table to present the data it had collected, and the Z test was used to evaluate its hypotheses. The analyses' findings supported the idea that cost accounting data significantly affects a company's value. As a result, our study advised all corporate entities to implement a strong cost accounting system to provide management with cost accounting data that will support strategic decision-making. Once more, a small business that cannot afford a sophisticated cost accounting system could have a specialty department devoted to providing high-quality cost accounting information for the costs in order to make the best decision and reduce firm costs. Chude and Chude's (2022) study looked at how oil and gas companies in Port-Harcourt, Nigeria performed organizationally as a result of using computerized accounting systems (CAS). Using Cronbach's alpha, the instrument's dependability was assessed. The hypotheses were tested using simple linear regression. The findings demonstrated that the use of accounting software has a major positive impact on productivity, cost control, and accountability in oil and gas companies. Based on this, the study suggests that in order to secure financial data and avoid data loss, it be stored using electronic media and other alternative channels (like cloud computing frameworks).

METHODOLOGY

In order to gather a variety of participant perspectives on the research topic, this study used a descriptive survey research design. When a researcher wants to efficiently collect opinions and viewpoints from the target population while guaranteeing a cost-effective data collection process, a survey research design is especially appropriate. Therefore, the survey design is appropriate for this study, which investigates the connection between cloud accounting and the business performance of particular Nigerian manufacturing companies. 560 full-time accounting and finance employees from Nigeria's top 50 manufacturing companies make up the study's population. Drawn from the top 50 manufacturing companies in Nigeria, this group represents a sizable and pertinent target population. The incorporation of accounting and finance personnel guarantees that the research gathers insights from experts in particular roles crucial to cloud accounting operations and financial administration in the manufacturing industry.

Taro-Yamane (1964) formula for sample size was used to determine the sample size of the study. The computation is as follows:

$n =$

Where:

n - Sample size

N - Population size

e - The level of precision, sometimes called sampling error, is the range in which the true value of the population is estimated to be.

1 - Constant

Therefore;

Substituting the values in the formula where e = 7% we have:

n =

n = 149.5726

Approximately, n = 150

Questionnaires were distributed online to the 150 sampled respondents.

Method of Data Collection

Data were collection through questionnaires distributed to the respondents.

Source of Data Analyses

The hypotheses formulated were tested using Spearman Correlation Test at 5% level of significance. The choice of this data analysis technique is to compare the mean responses of the respondents. The test was conducted at a 5% level of significance.

Decision Rule

Accepting or rejecting the null hypothesis is contingent upon the p-value obtained from statistical test. In statistical hypothesis testing, if the calculated p-value is greater than the significance level of 0.05, it is considered

evidence to accept the null hypothesis. On the other hand, if the p-value is less than or equal to 0.05, the alternate hypothesis is accepted.

DATA PRESENTATION AND ANALYSIS

Table 1 Presentation of Response Rate

Distributed questionnaires	Fully completed and returned questionnaires	Invalid questionnaires	Unreturned questionnaire
150	112 (75.17%)	21 (14.09%)	16 (10.74%)

Source: Field Survey, 2024

Table 4.1 presents the response rate for the distributed questionnaires in the study. Out of the 150 questionnaires distributed, 112 were fully completed and returned, representing a response rate of 75.17%. Additionally, 21 questionnaires (14.09%) were deemed invalid, suggesting incomplete or improperly filled responses, while 16 questionnaires (10.74%) remained unreturned.

Test of Hypotheses

Hypothesis One

H01: User adoption of Cloud accounting does not significantly affect the profit margin of manufacturing firms in Nigeria.

Table 1: Result of Spearman Correlation for Test of Hypothesis I

			User adoption of Cloud accounting	Firm Profit Margin
Spearman's rho	User adoption of Cloud accounting	Correlation Coefficient	1.000	.589
		Sig. (2-tailed)	.	.000
		N	112	112
	Firm Profit Margin	Correlation Coefficient	.589	1.000
		Sig. (2-tailed)	.000	.
		N	112	112

Source; Researcher's computation, 2024 using SPSS V. 22

The results of the Spearman Correlation Test for Hypothesis 1 indicate a statistically significant positive correlation between user adoption of Cloud accounting and the profit margin of manufacturing firms in Nigeria. The correlation coefficient of 0.589 suggests a moderate to strong positive relationship. With a p-value of 0.000 (significant at the 0.05 level), the null hypothesis (H01), which posited that user adoption of Cloud

accounting does not significantly affect the profit margin of manufacturing firms, is rejected.

Therefore, the findings suggests that as the level of user adoption of Cloud accounting increases, there is a concurrent positive effect on the profit margin of manufacturing firms in the context of the study. The alternate hypothesis was therefore accepted that User adoption of Cloud accounting significantly and positively affects the profit margin of manufacturing firms in Nigeria ($p<0.05$).

Hypothesis Two

H_{02}: Cloud accounting cost reduction does not significantly affect the profit margin of manufacturing firms in Nigeria.

Table 2: Result of Spearman Correlation for Test of Hypothesis II

			Cloud accounting cost reduction	Firm Profit Margin
Spearman's rho	Cloud accounting cost reduction	Correlation Coefficient	1.000	.643
		Sig. (2-tailed)	.	.000
		N	112	112
	Firm Profit Margin	Correlation Coefficient	.643	1.000
		Sig. (2-tailed)	.000	.
		N	112	112

Source; Researcher's computation, 2024 using SPSS V. 22

The results of the Spearman Correlation Test for Hypothesis 2 reveal a statistically significant positive correlation between cloud accounting cost reduction and the profit margin of manufacturing firms in Nigeria. The correlation coefficient of 0.643 indicates a moderate to strong positive relationship. With a p-value of 0.000 (significant at the 0.05 level), the null hypothesis (H02), which suggested that cloud accounting cost reduction does not significantly affect the profit margin of manufacturing firms, is rejected. The finding implies that as cloud accounting cost reduction increases, there is a corresponding positive effect on the profit margin of manufacturing firms. The alternate hypothesis was accepted there is a significant negative impact of cloud accounting cost reduction on the profit margin of manufacturing firms in Nigeria ($p<0.05$).

Discussion

According to the study, Nigerian manufacturing companies' profit margin is positively impacted by their users' adoption of cloud accounting. This finding implies that when manufacturing firms in Nigeria actively embrace and utilize cloud accounting systems,

it contributes positively to their profit margins. This may be due to a number of things, including improved decision-making based on timely and accurate information, real-time access to financial data, and enhanced efficiency in financial processes. This outcome agrees with that of Haslinda, Mohd, and Norhaiza (2017) as well as Ezuwore-Obodoekwe, Okoye, and Obinabo (2020).

Conclusion

To conclude, the research indicates that implementing cloud accounting solutions in manufacturing firms in Nigeria leads to cost reduction, which in turn positively impacts profit margins. This relationship can be attributed to factors like reduced IT infrastructure expenses, lower maintenance costs, and efficient use of resources. Similar findings were also observed in studies conducted by Haslinda, Mohd, Norhaiza (2017), and Effiong, Udoayang, Davies (2020).

In light of these results, it is recommended that manufacturing firms in Nigeria focus on encouraging comprehensive training programs for their employees. These programs can enhance their understanding and proficiency in using cloud accounting systems through workshops, online courses, and continuous support. It is essential to prioritize user adoption, cost reduction, and efficiency in cloud accounting as these factors significantly contribute to improving the overall financial performance of manufacturing firms in Nigeria.

REFERENCES

Barney, J. (2011). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.

Caglio, A., & Ditillo, A. (2012). Opening the black box of management accounting information exchanges in buyer–supplier relationships. *Management Accounting Research, 23*(2), 61-78.

Davis, F. D. (2012). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

DiMaggio, P. J., & Powell, W. W. (2000). The iron cage revisited institutional isomorphism and collective rationality in organizational fields. In *Economics meets sociology in strategic management* (pp. 143-166). Emerald Group Publishing Limited.

Dinh, T., & Corbitt, B. (2016). Exploring the role of cloud computing adoption in SMEs: A socio-technical systems theory perspective. *International Journal of Information Management, 36*(5), 830-840.

Drury, C. (2017). *Management accounting for business decisions*. London: International Thomson Business Press.

Fiedler, F. E. (2014). A contingency model of leadership effectiveness. *Advances in Experimental Social Psychology, 1*, 149-190.

Flynn, B. B., Schroeder, R. G., & Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage. *Decision sciences*, *26*(5), 659-691.

FreeAgent. (2024). Cloud Accounting. Retrieved January 11, 2024, from https://www.freeagent.com/en/glossary/cloud-accounting/#:~:text=Definition%20of%20cloud%20accounting,called%20'desktop%20accounting%20systems'.

FreshBooks. (2023, August 18). Cloud Accounting: What It Is, How It Works And Its Benefits. FreshBooks. https://www.freshbooks.com/hub/accounting/cloud-accounting-software#:~:text=Cloud%20accounting%20is%20a%20system,and%20tailored%20to%20company%20growth.

Gordon, L. A., & Miller, D. (2015). A contingency framework for the design of accounting information systems. *Accounting, Organizations and Society, 1*(1), 59-69.

Gray, G. L., & Debreceny, R. S. (2014). A taxonomy to guide research on the application of data mining to fraud detection in financial statement audits. *International Journal of Accounting Information Systems*, *15*(4), 357-380.

Gupta, D. E. E. P. A. K., & Jain, M. (2017). Impact of cloud accounting on business performance. *International Research Journal of Commerce, Arts and Science*, *8*(12), 321-329.

Jaiswal, R., & Jaiswal, K. S. (2019). Conceptual Framework of Cloud Accounting. *Indian Journal of Accounting (IJA)*, *51*(1), 122-124.

McCue, I. (2021). Cloud Accounting Basics: What It Is & Reasons to Use. Retrieved January 11, 2024, from https://www.netsuite.com/portal/resource/articles/accounting/cloud-accounting.shtml.

Mell, P., & Grance, T. (2011). The NIST definition of cloud computing. *National Institute of Standards and Technology, 53*(6), 50.

Obasan, O., & Kuola, A. (2022). Effect Of Cloud-Based Accounting on Manufacturing Firms in Nigeria a study of Twinstar Industries Ltd., Ogun State. *Fane-Fane International Multi-Disciplinary Journal*, *6*(2, DEC.), 93-104.

O'Leary, D. E. (2011). Cloud computing and standardization: One size fits all? *International Journal of Accounting Information Systems, 12*(2), 91-97.

Oyedijo, A. D., & Akande, O. O. (2012). Information technology in accounting: Challenges and prospects. *International Journal of Business and Social Science, 3*(19).

Rogers, E. M. (2012). Diffusion of innovations (5th ed.). New York: Free Press.

Sori, Z. M. (2009). Accounting information systems (AIS) and knowledge management: A case study. *American Journal of Scientific Research*, (4), 36-44.

Spathis, C., & Constantinides, S. (2010). The usefulness of ERP systems for effective management. *Industrial Management & Data Systems, 104*(9), 794-808.

Tiruneh, A. T., & Cocchiara, F. K. (2018). The Impact of Cloud Computing on Manufacturing: A Case Study of Ethiopia. Journal of Manufacturing Science and Engineering. https://doi.org/10.1115/1.4040932

Vasarhelyi, M. A., Kogan, A., & Tuttle, B. M. (2015). Big data in accounting: An overview. *Accounting Horizons*, *29*(2), 381-396.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2015). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.