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EFFECT OF CLOUD ACCOUNTING COSTS ON FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

[1]Ofurum, Christmas I.D. and [2]Henry Kenedunium Obi
[1]Department of Accountancy, Alex Ekwueme Federal University, Ndufu Alike Ikwo and [2]Department of Accountancy, Nnamdi Azikiwe University, Awka
christmas.ofurum@funai.edu.ng; hk.obi@unizik.edu.ng
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Abstract: The study determined the effect of cloud accounting cost on financial performance of Nigerian deposit banks. Specifically, the study ascertained; the relationship between server maintenance cost and return on assets of Nigerian deposit money banks; the relationship between software acquisition cost and return on assets of Nigerian deposit money banks, and the relationship between cost of training and return on assets of Nigerian deposit money banks. *Ex-Post Facto* research was employed by the study. A sampled of five deposit money banks was used for the study. Data were extracted from the annual accounts of the sampled banks from 2012 to 2022. The data were analyzed and tested with multiple regression analysis via E-view 9.0. The results revealed that server maintenance cost and cost of training have positive effect on financial performance but this effect were not significant while software acquisition cost has negative and insignificant effect on financial performance of deposit money banks in Nigeria. Based on the findings, the study recommended among others that there is a compelling need for the government to enact a law to protect cloud data and ensure its seamless utilization. Reduce the cost of data and accessories this will act as incentive to many organizations to key into the new technology.

Keywords: Cloud Accounting Cost, Financial Performance, Nigerian Deposit Banks, Return on Assets (ROA) Server Maintenance Cost

INTRODUCTION

Since financial records are given in a more orderly manner thanks to advanced cloud accounting software, cloud computing is advantageous to corporate enterprises. Since the development of automated accounting systems has demonstrated to improve overall corporate performance, the adoption of cloud accounting in rising and developing nations have recently presented a significant challenge to scholars (Owolabi & Izang, 2020). Cloud computing is also referred to as Cloud accounting because it involves the collection, analysis and storage of data. It is a type of computing that relies on sharing computing resources rather than having local servers or personal devices to handle applications. In cloud accounting, the word "cloud" is used as a metaphor for "the internet", so the phrase "Cloud Accounting" means an "internet-based Accounting" where different services

such as servers, storage and applications are delivered to an organization's computers and devices through the Internet.

Due to its relative novelty, the concept of cloud accounting has been the subject of few conceptual and empirical studies. According to Gartner Research, every new IT usage moves through different phases from conception to obsolescence. Thus, the peak of inflated expectations leads to the trough of disillusionment which is followed by the slope of enlightenment and the plateau of productivity. Currently, cloud accounting is in the peak phase so you can expect to find lot of hype. However, it is expected to transit into the enlightenment or growth phase shortly. In the words of Rafeq (2011), the top cloud users today are Brazil (27%), India (26%) and USA (23%). Looking at these Countries Economies, the benefits they have derived from cloud services are enormous ranging from value creation, increased Revenue in the economy, saving companies the stress of building and maintaining IT infrastructures so as to concentrate, to mention but a few.

Notwithstanding the recent development of Cloud Accounting, most Nigerian companies and businesses have limited awareness about the subject. The adoption of a cloud accounting model aids in reducing the expenses of a new company (Wyslocka and Jelonek, 2015). Additionally, Udeh (2020) reported 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 Exchange Group, 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. From the reviewed studies, it was discovered that most of the work were using primary data other than the real that proxy cloud accounting cost such as; server maintenance costs, software acquisition cost, cost of training the personnel and likes. To best knowledge of the researcher, it is only the study of Onifade, Shittu, Aminu, and Ajibola (2023) assessed such in Nigeria foods and beverage companies, others conducted their studies via survey design, thereby create methodology gap which this study intend to fill. The study thereby determines the effect of cloud accounting on return on assets of Nigerian deposit money banks.

Literature Review

The National Institute of Standards and Technology (NIST) and Cloud Security Alliance defined Cloud accounting as a classical for enabling convenient, on-demand network access to a shared pool of configurable computing resources (networks servers, storage, application and services) that can be rapidly provisional and released with minimal management effort or services provider interaction. This cloud mode! is composed of five essential characteristics, three services models and four deployment models. Cloud Accounting is one of the biggest technological revolutions to emerge in recent times. It consists of a set of technologies and service models that focus on the internet-based use and delivery of IT applications, processing capability/ storage and memory space. Cloud accounting can generate important economic benefits because on demand resources can be configured, expanded and accessed on the internet quite easily. Next to economic benefits, cloud accounting may also bring security benefits, enterprises, especially small to medium sized ones, may be acquired at a marginal cost, top class technologies which would otherwise be out of their budget range, (DPWP, 2012).

Buyy a R. et al (2009) defined cloud accounting as a type of parallel and distributed system consisting of a collection of interconnected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on service –level agreements. Cloud accounting, as per Gartner (2012) is a type of computing where massively scalable, IT enabled capabilities is provided as a service across the internet to multiple external customers. In a Nutshell, Cloud Accounting means someone else runs your computers and software while you use what they deliver and focus on delivering value. Provide solution that are "in the cloud" as community resources that everyone can use without owing any of them. Everyone pays part of the price, which lowers the total outlay for all.

The better the company's performance the higher the returns that will be obtained by investors, it tells investors about the general well-being of a firm. It is a snapshot of its economic health and the job its management is doing. There are many stakeholders in a company, including trade creditors, bondholders, investors, employees, and management. Each group has its own interest in tracking the financial performance of a company. The financial performance identifies how well a company generates revenues and manages its assets, liabilities, and the financial interests of its stakeholders.

Empirical Studies

Onifade, Shittu, Aminu and Ajibola (2023) ascertained the effect of cloud accounting characteristics on the performance of listed food and beverage companies in Nigeria from 2012–2021. Cloud accounting characteristics were proxied by the Cost of Software (COSW), Cost of Risk (CORSK), and Cost of Training (COTR), while Return on Equity (ROE) and Market Value (MKV) were used to measure performance. The study employed the multiple regression analysis technique. The findings revealed that COSW had a negative and significant effect on ROE and MKV. However, COTR has a positive and significant influence on ROE and MKV. The study concluded that COSW and COTR have a significant effect on the performance of food and beverage companies in Nigeria. Okere (2022) determined the effect of cloud accounting on the performance of listed manufacturing enterprises in Nigeria using both primary and secondary data. 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. Sumini *et al*. (2021) studied cloud accounting: the development of accounting information system in indonesia industry. The article concentrated on the requirements of cloud accounting and the level of development of the accounting information system in Indonesia's Industry. The study's research methodology was qualitative analysis. The opinions of accounting business providers, practitioners, and accountants were gathered through interviews, questionnaires, and focus group discussions. 90% of respondents agreed, according to the findings, that Industry is more digitalized accounting systems represent an evolution of the accounting information system. Egiyi *et al*. (2020) reviewed cloud accounting in Nigeria. A qualitative research design was used to examine how cloud accounting has changed in Nigeria and its significance for accounting procedures. Findings showed that the inefficiency of conventional accounting techniques led to the adoption of cloud accounting. Effiong, Udoayang, and Davies (2020) examined the effect of cloud accounting on the harmonization of cost structures of manufacturing-oriented enterprises listed on the Nigerian Stock Exchange. In order to create the estimated model, they used the least squares random effect technique. 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. Matarneh, Al-Tahat, Ali, and Jwaifel (2019)

determined 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). Mugyenyi (2018) explored on the reception of Cloud Computing Services by Commercial Banks in Uganda for Sustainable Development. The analysis discovered that over the previous 20 years, business banks in Uganda have been steadily growing in terms of the number of branches, their sizes, and their operating activities. High operational costs associated with the purchase and maintenance of IT infrastructure has been brought on by this expansion, which has also necessitated larger rooms to accommodate them. Helpless information storage and the board are also frequently present. Results showed that, when adopted, cloud computing offers the greatest and most cutting-edge solution for solving the problems identified in business banks in this study. Haslinda et al (2017) researched Cloud Computing Adoption in Organizations. The review of prior material on distributed computing has been done in order to identify its key components and how they were operationalized. The three settings—innovation, association, and condition—recommended by the Technology Organization-Environment (TOE) approach are used by the scientists to order the factors affecting distributed computing reception. The results of the analysis showed that these factors have different effects on different research, and that many of these investigations have operationalized the adoption of distributed computing or the double factor rather than actually using the innovation. Al-zoubi (2017) determined the effect of cloud computing on elements of accounting information system; The examination recognizes the effect of Cloud Computing on the Elements of the Accounting Information System spoke to by: Establishment "Bookkeeping Entity.", Financial Operations, Documents, Accounting Books, Financial Reporting, Users, Procedures, Software, and Physical Devices. The examination gathered past writing on distributed computing and data innovation and studies their effect on bookkeeping data frameworks. The examination discovered that Cloud accounting lead to Reducing the size of the venture as far as the structure and the workplaces since they permit property anyplace without the executives' responsibility to a particular area, improving operational execution as far as encouraging the finishing of activities and exact bookkeeping tasks. Van den Bergh (2016) conducted research on how accounting businesses in Cape Town perceived and were aware of cloud computing technology. The study's objective was to ascertain how Cape Town accounting businesses felt and were aware of cloud computing technologies. The results of the poll, which used a survey research approach, showed that corporate managers and accountants are significantly aware of CAS. Regarding how they view CAS, small and medium-sized businesses have different perspectives in several ways. The survey conducted by Strauss, Kristandl and Quinn (2015) in United Kingdom reveals that 25% of the respondents use cloud technology for business systems and because of this proves that cloud technology has speared and assisted finance and management accounting operation. Their survey shown a pattern with non-finance systems being the frequently use of cloud technology with the breakdown of 31% from CRM, 19% of financial accounting and 59% of other business processes. Just under half or 49 percent of respondents said they are "still on the fence" or have no intention, to adopt the technology.

Quite number of studies was conducted on cloud accounting costs and financial performance of corporate entities in across the globe. The study of Akpan, Igbekoyi, Ogungbade and Osaloni (2023) examined the effect of cloud accounting on financial information quality of selected firms in Lagos state metropolis, Nigeria and found positively and significantly influence data storage and data mining. Onifade, Shittu, Aminu and Ajibola (2023) examined the effect of cloud accounting characteristics on the performance of listed food and beverage companies in Nigeria, and findings revealed that COSW had a negative and significant effect on ROE and MKV. However, COTR has a positive and significant influence on ROE and MKV. Okere (2022) studied the effect of cloud accounting on the performance of listed manufacturing enterprises in Nigeria thus discovered that cloud accounting and cloud accounting costs had a significant impact on the performance of publicly listed manufacturing companies. Sumini et al. (2021) study in Indonesia titled Cloud Accounting: The Development of Accounting Information System in Industry and found that that industry 4.0's more digitalized accounting systems represent an evolution of the accounting information system. Egiyi et al. (2020) overview of Cloud Accounting in Nigeria was the subject of research and found that the inefficiency of conventional accounting techniques led to the adoption of cloud accounting. 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. Estimated model, they used the least squares random effect technique. 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 was favourably connected with indirect expenses, whereas those associated with electricity, maintenance, and networks were adversely correlated. Mugyenyi (2018) explored on the reception of Cloud Computing Services by Commercial Banks in Uganda for Sustainable Development. The results showed that, when adopted, cloud computing offers the greatest and most cutting-edge solution for solving the problems identified in business banks in this study. Haslinda et al. (2017) researched on cloud Computing Adoption in Organizations and the results of the analysis showed that these factors have different effects on different research, and that many of these investigations have operationalized the adoption of distributed computing or the double factor rather than actually using the innovation. Al-zoubi (2017) examined the Effect of Cloud Computing on Elements of Accounting Information System. The study discovered that Cloud accounting lead to Reducing the size of the venture as far as the structure and the workplaces since they permit property anyplace without the executives' responsibility to a particular area, improving operational execution as far as encouraging the finishing of activities and exact bookkeeping tasks.

METHODOLOGY

Ex-post fact research design was employed for this study. An *Ex-post Facto* research determines the cause-effect relationship among variables. The population of this study consists of the fifteen (15) deposit money banks quoted on the Nigerian Exchange Group (NGX). The study covered eleven years annual reports and accounts of these banks from 2012 to 2022.

This study purposively select five (5) deposit money banks in Nigeria for the study due to unavailability/ for not disclosed the independent variables for the periods covered.

Source of Data Collection

Data were collected from only secondary sources. The data were extracted from audited annual accounts of the deposit money banks in Nigeria. The data to be extracted include; Cost of training (COT) as the independent variables, while dependent variable is Return on assets (ROA) and Firm size (FSZ) as the control variable.

Model Specification

This study adapted the model of Okere (2023), the econometric model is presented below:

FP= *f* (MC)

The econometric model is given as

$FPit= \beta 0+ \beta_1 MCit + \beta_2 FSit + \beta_3 FAit + \mu it$ (i)

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

Where;

FP= Financial Performance,

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

The modified model specification is shown below:

$ROA_{it}= \beta_0+ \beta_1 COT_{it} + \beta_2 FSZ_{it} + \mu it$ (i)

Where;

ROA = Return on assets

COT = Cost of training

FSZ = Firm size

i = (number of the sampled banks) and t = (number of the years to be covered)

u_{it} = firm-specific error term

β_0 = Constant term

β_1, = Beta Coefficients to be estimated

Method of Data Analysis

The data analyzed using descriptive statistics and inferential statistics generated from E-Views 9.0 statistical software, using 95% confidence interval as in Aiken and West (1991). This study employed the following statistical tools:

Panel data regression technique: this was employed since the data set includes cross-sectional data that is pooled into a panel data set and estimated using panel data regression. Regression analysis predicts the value of a variable based on the value of the other variables and explains the level of significance and effect of changes in the values of variable on the values of the other variables.

Decision Rule

The decision for the hypotheses is to accept the alternative hypotheses if the p-value of the test statistic is less or equal to the alpha and to reject the alternative hypotheses if the p-value of the test statistic is greater than alpha at 5% significance level.

Data Analysis

Table 1: Descriptive Analysis

	ROA	COT	FSZ
Mean	0.010047	377418.2	1.89E+09
Median	0.011288	282400.0	1.38E+09
Maximum	0.014588	804000.0	3.82E+09
Minimum	0.001990	175000.0	1.14E+08
Std. Dev.	0.004040	209290.8	9.83E+08
Skewness	-0.854844	0.877892	0.900622
Kurtosis	2.605630	2.447009	2.385065
Jarque-Bera	1.411006	1.553098	1.660370
Probability	0.493860	0.459991	0.435969
Sum	0.110522	4151600.	2.08E+10
Sum Sq. Dev.	0.000163	4.38E+11	9.66E+18
Observations	11	11	11

Source: E-View output, 2023

Interpretation of Descriptive Statistics

The descriptive statistics in table 1 indicates that the financial performance (ROA) of the sampled bank is 0.010; the maximum of 0.015 with a minimum of 0.001 with a standard deviation of 0.004. The average firm size (FSIZ) from the sampled observations is 1.890; standard deviation of 9.830; a maximum observation of 3.82 with a minimum value of 1.140. The mean of cost of training (COT) is at the average of 377418.2; standard deviation of 209290.8; a maximum observation of 804000.0 with a minimum value of 175000.0.

Table.2: Pearson Correlation Matrix

	ROA	COT	FSZ
ROA	1		
COT	0.58969	1	
FSZ	0.37630	0.69827	1

Source: E-View output, 2023

The Pearson Correlation Matrix in table 2 shows the existence of a positive relationship between COT, and FSZ at a coefficient value of 0.590 and 0.376.

Test of Hypothesis

Ho1: There is no significant effect between cost of training and return on assets of Nigerian deposit money banks.

Table 3 Panel Least Square Regression analysis testing the effect between ROA, COT and FSZ

Dependent Variable: ROA
Method: Least Squares
Date: 10/05/23 Time: 22:49
Sample: 2012 2022
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.006488	0.005033	1.288999	0.2449
COT	1.27E-08	8.61E-09	1.478557	0.1897
FSZ	-1.38E-12	2.48E-12	-0.559495	0.5961

R-squared	0.402704	Mean dependent var	0.010047
Adjusted R-squared	0.084507	S.D. dependent var	0.004040
S.E. of regression	0.084031	Akaike info criterion	-7.886823
Sum squared resid	9.75E-05	Schwarz criterion	-7.705962
Log likelihood	48.37753	Hannan-Quinn criter.	-8.000831
F-statistic	1.011319	Durbin-Watson stat	1.540133
Prob(F-statistic)	0.470532		

Source: E-Views 9.0 Correlation Output, 2023

Interpretation of Regression Result

In Table 3, R-squared and adjusted Squared values were (0.40) and (0.08) respectively. The indicates that all the independent variables jointly explain about 40% of the systematic variations in return on assets of our samples banks over the eleven years periods (2012-2022). Table 4.3 revealed an adjusted R^2 value of 0.40. The adjusted R^2, which represents the coefficient of multiple determinations imply that 40% of the total variation in the dependent variable (ROA) of deposit money banks in Nigeria is jointly explained by the explanatory variables (COT and FSZ). The adjusted R^2 of 40% did not constitute a problem to the study because the F- statistics value of 47.686 with an associated Prob.>F = 0.471 indicates that the model is fit to explain the relationship expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. The value of adjusted R^2 of 40% also shows that 6% of the variation in the dependent variable is explained by other factors not captured in the study model.

Table 3 indicates that cost of training has a positive and insignificant effect on return on assets of deposit money banks in Nigeria. This can be observed from the beta coefficient (β_1) of -1.270 with p value of 0.189 which is not statistically significant at 5% level of significance.

Since the P-value of the test was 0.824 higher than 0.05 (5%)., this study upholds that cost of training has a negative and insignificant effect on return on assets of deposit money banks in Nigeria Thus, alternative hypothesis is Rejected and null hypothesis Accepted.

Discussion and Conclusion

This study determined the effect of cloud accounting cost on financial performance of Nigerian deposit banks. *Ex-Post Facto* research was employed by the study. A sampled of five deposit money banks was used for the study. Data were extracted from the annual accounts of the sampled banks from 2012 to 2022. The data were analyzed and tested with multiple regression analysis via E-view 9.0. The results revealed that cloud accounting

cost (cost of training) was not statistically significant on financial performance of deposit money banks in Nigeria. However, cost of training has positive effect on financial performance. cost of training gives preference to work more efficiently and intelligently and in a smooth and easy way. This result is in line with the studies of; Onifade, Shittu, Aminu and Ajibola (2023) whose findings revealed that COSW had a negative and significant effect on ROE and MKV while COTR has a positive and significant influence on ROE and MKV. And negate the finding of Okere (2022) who discovered that cloud accounting and cloud accounting costs had a significant impact on the performance of publicly listed manufacturing companies.

Based on the findings, the following recommendations were made;

Organizations should be encouraged to invest more in automated accounting and effectively train their accounts staff for better efficiency in financial and other accounting functional reporting. Also, deposit money banks in Nigeria should ensure mechanisms to regulate the cost of training to enjoy the maximum benefit of cloud accounting.

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