Impact of Accounting Information System (AIS) Expenditure On Financial Performance of Selected Nigerian Deposit Money Banks (NDMBS) (2007-2022)

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ABSTRACT: *The emerging global economic scenario characterized by advancement in technology has brought about rapid changes in the banking industry. Management of various banking institutions in Nigeria relies heavily on information generated from the AIS employed by the firms. Moreover, quality reports are keys to arrive at an ideal investment and efficient way for reporting company financial reports and take optimal decisions. This study examined the impact of AIS Expenditure on the performance of selected NDMBs. Specifically, the study examined the of effect of Accounting Information System expenditure on net profit, returns on equity and investment of selected NDMBsThe study adopted ex-post facto research design and data was sourced secondarily from the audited annual financial reports of selected NDMBs listed on the Nigerian Exchange Group for the period 2007-2022. The population of the study consisted of fourteen (14) NDMBs and a sample size of seven (7) was arrived at using purposive sampling technique to select banks whose annual report and accounts are readily accessible in the study period. Analytical techniques used in the study consisted of both descriptive and inferential statistics. Descriptive statistics employed includes minimum, maximum, mean and standard deviation while panel regression analysis was used to test the study hypotheses. Result of panel regression revealed that among the variables examined, only Operating expenses (OPEX), was found to be statistically significant in explaining the variation in net profit. The variable exhibited a positive effect on net profit, with a t-value of 2.6643 and a p-value of 0.0347. The overall influence of all tested independent variables Operating Expenses (OPEX), Human Resources Expenses (HREX), Information and Communication Technology Infrastructure (ICTIEX) and Research and Development Expenses (RDEX) on dependent variable on Net Profit was Adj. R-Squared 0.6257. This indicates that a unit increase in AIS expenditure is associated with a corresponding increase in 62.57% in net profit. The study therefore concluded that Accounting Information System expenditure has effect on the performance of Deposit Money Banks in Nigeria. It was therefore recommended that NDMBs should put mechanisms in place to aid further investments in the adoption of Accounting Information System.*

KEYWORDS: accounting information system, financial performance, money deposit banks.

INTRODUCTION

The emerging global economic scenario characterized by advancement in technology has brought about rapid changes in production processes and increased consumer sophistry. These according to (Curtis, 2015) have engendered fierce market competition, unethical skimming activities of producers in their drive to survive unpredictable and complex business dynamics. These have also brought about the crucial roles of accounting information in economics and business discourse especially in relation to administrative effectiveness. Accounting speaks the language of business as it records all transactions of an individual firm or other bodies that can be expressed in monetary terms.

Predicated on the going concept, accounting is the scheme and art of collecting, classifying, summarizing and communicating data of financial nature required to make economic decisions (Abeygunasekera and Fonseka, 2019). Over several numbers of years the performance of accounting has increased right from the single entry system to double entry system. Accounting information as a scientific process is about provision of financial information needed to take decision especially when it comes to acquisition and use of scarce corporate resources as well as the elimination of wastes in the wealth creation chain to maximize profit. Accounting information system as data organized for the special purpose of decision making. Information is considered to represent data or knowledge evaluated for specific use, though information is not the same with data, (Boochhold, 2017).

Accounting Information System (AIS) according to (Borhan and Bader 2018) is a system which provides the vital information for planning, organizing, directing, leading and control on the activities of the organization. It helps administrators to take strategic decisions in the organization. It is an integrated set of physical and human elements that work together in order to facilitate the completion of the operational functions. It is the process of collecting, analyzing and converting data into action. Every organization either small, medium or large organization, profit-making or a social service setup, a public or a private sector undertaking, a manufacturing or a service organization, a local or a global corporation has an accounting information system.

AIS also refers to a system which contains a group of harmonized business, components, and resources which processes, manage, and control the data for producing and carrying the relevant information for decision makers in the organization (Chen and Hirschheim, 2018). Accounting Information System is a connected and homogeneous set of the resources and different components (human, equipments, finance, etc) that interact simultaneously inside a specific framework to work towards the achievement of organizational goals (Marilena, 2019). AIS is a system designed to record accounting transaction and events of a business and account for them in a way that complies with its policies and procedures. AIS carries out its functions with laid down rules, regulations, methods, procedures and techniques. Accounting Information System is a consistent way of organizing, recording, summarizing and reporting financial transactions. The minimum

requirements for an accounting system is that it must provide financial information to management to take decisions, prepare budgets, and grant proposals (McCarthy, 2019).

Furthermore, AIS can be used to translate different dimensions into a common financial dimension. Accounting information uses formalized categories for collecting and reporting information that creates a common language with which members of the organization can communicate. It permits the transmission of information with fewer symbols and this facilitates the coordination between different functions that need to provide input to the decision-making process (Galbraith, 2019). However, accounting information is also an imperfect representation of the underlying decision n problem, since not all aspects involved can be quantified perfectly in financial numbers. It equally help managers to understand their tasks more clearly and reduce uncertainty before making their decisions (Chong, 2016).

Performance in business refers to how well or poorly a business is doing in relation to owners manager set objectives and resources committed. (Flolick 2016), Macey (2019) defined performance of business as the ability of business to meet the required standards, increased market share, improve facilities, ensuring returns of profitability, asset volume, gross earning, total cost reduction and Return on Capital Employed (ROCE) . Similarly, Kashif (2018), Karim and Alawneh (2019) and Firas (2018), also defined business performance as a capability to produce the targeted output satisfying the needs of the interests groups. Also, business performance is a set of management and analytical processes that enables the management of an organization's performance to achieve performance management which include but not limited to Corporate Performance Management (CPM) and enterprise performance management.

The problem of not having or enjoying the full benefits of qualitative accounting information system by business organizations is associated with the inability to process accounting information based on best practices with high quality as a focal point to improve financial performance. Hence, there is a need to assess the AIS being generated from the system whether they satisfy the qualitative characteristics of accounting information system in such a way that it will improve performance of the organisation. In the Nigerian Money Deposit Banks, the accounting information system expenditure has not shown any significant relationship with the financial performance and this has to a great extent constitute some accounting information problem (Fagbemi and Olaoye, 2016). This then make it imperative for this paper to examine the effect of Accounting Information System Expenditure on the financial performance of selected Nigeria Money Deposit Banks. In particular the extent that expenditure, on operation Research and Development, Information and Communication Technology Infrastructure and Human Resource influence bank performance using Net Profit as a surrogate.

LITERATURE REVIEW

Accounting Information System

Accounting Information System is considered a subsystem of Management Information System (MIS). Sutton (2020) defines accounting information system that operates functions of data gathering, processing, categorizing and reporting financial events with the aim of providing relevant information for the purpose of score keeping, attention directing and decision making. Accounting Information System (AIS) combine the study and practice of accounting with the design, implementation, and monitoring of information systems. Such system use modern information technology resources together with the traditional accounting controls and methods to provide users the financial information necessary to manage their organizations. The study of AIS begins with the recognition that information is a business resource. Like the other business resource of raw materials, capital and labour, information is vital to the survival of the contemporary business organization. Every business day, vast quantities of information flow to decision makers and other users to meet a variety of internal needs. In addition, Information flows out from the organization to external users, such as customers, suppliers and stakeholders which have interest in the firm (Zoubi, 2017).

Accounting Information System is considered as a subsystem of Management Information System (MIS) that regards accounting as an information. For the first time in 1996, the American Institute of Certified Public Accountants (AICPA) defines: 'Accounting as the practice of general theories of information in the field of effective economic activities and consist of a major part of the information which is presented in quantitative form''. In the above, accounting is a part of general information system of an economic entity. Moorthy *et al.*, (2018) defines accounting information system as a system that operate functions of data gathering, processing, categorizing and reporting financial events with the aim of providing relevant information for the purpose of score keeping, attention directing and decision making.

Extent literature about accounting information system and how it affects financial performance has been studied by several researchers using different analytical methods.

Agboola *et al* (2020) studied the impact of Accounting Information Systems (AIS) on Financial Performance of Quoted Manufacturing Companies in Nigeria. Secondary data were sourced through annual statement of financial report of manufacturing companies listed on the Nigerian Stock Exchange over a period of 6 years (2013- 2018). A total of five companies were purposively selected because they hold a strong market. They are Nestle Nigeria PLC, Dangote PLC, GlaxoSmithKline Nigeria PLC, Friesland Nigeria PLC, and Cadbury Nigeria PLC. Operating Expenses (OPEX), Cost of Human Resources (CHR), and Research and Development Cost (RDC) were used as proxies for Accounting Information System while Return on Capital Employed was adopted as proxy for Financial Performance. Panel data analysis was adopted with focus on fixed

and random effects techniques on STATA 12. Findings revealed that the level of investment in AIS is justifiable as it positively impacted on the profitability of the selected companies. The result further shows that the adoption of AIS has not altered the basic accounting procedures.

Taibat and Adewoye (2018) studied the effective adoption of the Accounting Information Systems (AIS) among commercial banks in Nigeria and the adoption on their financial performance. The study was carried out in Lekki Peninsula Area of Lagos Sate, Nigeria. Three-quarter of commercial banks in Nigeria branches in this area. 16 commercial banks present in this area of study were examined with 80 respondents randomly selected from each bank. Questionnaires were administered on the respondents in order to know their opinions on the effect of AIS adoption and the level of adoption among these banks. AIS were proxied by Cost. Benefit barriers and risk while commercial bank performance was proxied by Capital Equity (ROCE), Return on Total Asset (ROTA), Net Operating Profit (NOP) and Gross Profit Margin (GPM) data were sourced from financial reports within the recent 10 years post AIS adoption years (2007- 2017) of the selected commercial banks. Cronbach's alpha test was used to measure the stability of measurement tool and also simple linear regression test was also used to test the impact of AIS on bank performance. The study found that commercial banks in Nigeria adopted and use AIS in providing their services to their customers and the level of usage is relatively high. The findings indicated that AIS adoption has a positive significant with all the performance indicators (ROCE, ROTA, GPM and NOP) with α.

Ironkwe and Nwaiwu (2018) examines the effect of accounting information system on financial and non-financial measures of companies in Nigeria. Qualitative and quantitative data of 16 companies were obtained from researchers. Data were obtained from questionnaires and the Nigerian stock exchange (NSE) from 2011 to 2014. Data collected are analysed using multiple linear regression techniques with the aid of statistical package for social science (SPSS). The empirical investigation found that accounting information system exert significant positive effect on financial and non-financial measures indicators of companies in Nigeria.

Financial Performance Metrics
AIS significantly influence banking performance by producing accurate financial statements and sreports, which are critical for decision-making, as they provide a clear understanding of the bank's financial position. Accurate financial reporting is essential for regulatory compliance, and it also helps in building trust with investors and customers. AIS can help in automating many of the manual accounting processes, such as recording transactions, generating reports, and reconciling accounts (Ironkwe and Otti, 2017). Financial performance metrics include quick ratio, current ratio, working capital, gross profit margin, net profit margin, equity multiplier, debt-to-equity ratio, return on equity, return asset, total asset turnover, inventory turnover and operating cash flow

Theoretical Review
Four (4) different theories are relevant in this study namely; contingency theory, conservatism accounting theory, conservatism and earnings quality theory and technological revolutions,

information and growth theory. For the purpose and peculiarity of this study, however, the study intends to anchor the work on contingency theory. Contingency theory suggests that information system should be designed in a flexible manner so as to consider the environment and organizational structure confronting an organization. Information systems also need to be adapting to the specific decisions being considered. In other words, information systems need to be designed within an adaptive framework. Review of accounting information system literature also indicate that most AIS studies have incorporated contingency factors such as organizational structure, business strategy, and environmental condition in their research model but have neglected the influence of IT on AIS design.

Furthermore, few studies that have examined the relationship between AIS design and IT have defined IT in a narrow perspective (Ismail, 2004). Similar to IT researches, these studies viewed IT from the technological perspective only but failed to incorporate other perspectives of IT sophistication such as informational, functional and managerial. (Hunton and Flowers 1997) suggested that a more comprehensive AIS study is needed to explain the relationship between IT and accounting and its subsequent impact on organization in general and accounting/accountants in particular.

METHODOLOGY

Expose facto design was adopted for the study. The design is considered appropriate because the interest of the study is to examine the impact of accounting information system expenditure on the performance of selected Nigerian Deposit Money Banks. The design was chosen because of the nature of the data to be used for this study, which is simply the audited annual report and accounts of selected NDMBs. Justifiably; it is not only being considered as a powerful and strong research instrument, but also most recent and efficient analytical methods in handling econometric data of this nature (Nimalathasan, 2014). The population of the study consisted of fourteen (14) NDMBs registered and listed on the floor of the Nigerian Exchange Group (NXG) as specified on its official website as at December, 2021. Most of these banks have also been in existence over the entire sixteen years (16) years study period (2007-2022).

Model Specification.
The model specified for the study adequately captured all variables and is of good fit. Accounting information system expenditure (proxy using Information and Communication Technology Infrastructure expenditure (ICTIEX), Operating Expenses (OPEX), Human Resources Expenses (CHEX), Research and Development Expenses (RDEX)) on performance (proxy with Net profit (NP), Return on Equity (ROE), and Return on Investment (ROI).

$$NP = \alpha_0 + \eta_0\beta_{it} + \eta_1\beta_1 OPEX_t + \eta_2\beta_2 CHR + \eta_3\beta_3 RDC_{it} + \eta_4\beta_4 ICTI_{it} + \varepsilon_{it.....} \qquad …Eq\ (3.1)$$

Where: AIS – Accounting Information System**,** ICTI–Information and Communication Technology Infrastructure**,** OPEX – Operating Expenses **,** HREX – Human Resources Expenses**,** RDEX – Research and Development Expenses**,** ROI – Return on Investment **,** ROE – Return on Equity**,** NP – Net Profit**,** ε_{it} – Error Term**,** α – Intercept**,** β, η – Coefficient**,** Apriori Expectation β_1 β_2……….. $\beta_n > 1$

RESULTS AND DISCUSSION

Relationship between Accounting Information System expenditure and net profit of selected Nigerian Deposit Money Banks

In order to examine the relationship between Accounting Information System expenditure and net profit of selected Nigerian Deposit Money Banks, both descriptive and inferential statistics are employed.

Descriptive analysis of the study variables:

Table 4.1 below presents the descriptive statistics. As observed, Net profit (NP) has a mean value of (N9.17220billion), minimum value of (N1.40787billion) and maximum value of (N4.30803billion). This shows that the value of Net profit has increased considerably within the study period. The standard deviation of (N9.8955billion) is considerably low and suggests a little deviation from the mean. Operating expenses (OPEX) has maximum and minimum values of (0.1700) and (1073.0) respectively with a mean value of (17.8616). The standard deviation of (101.0) shows a significant deviation from the mean. The variable Human Resources Expenses (HREX) has maximum and minimum value of (0.0300) and (9.2900) respectively with a standard deviation of (1.7361) which shows a significant deviation from the mean value of (1.4086). Research and Development Expenses (RDEX) variable has mean value of (0.058), a maximum value of (0.2800) and a minimum value of (0.0100). The standard deviation of (0.0541) shows significant dispersion from the mean. The other variable Information and Communication Infrastructure (ICTIEX) has a mean value of (0.1373), maximum and minimum value of (0.7000) and (0.0100) respectively. The standard deviation of (0.1216) exhibited significant dispersion from the mean.

Table 4.1 Descriptive Analysis of Variables showing the relationship between Accounting Information System and net profit of selected Nigerian Deposit Money Banks

Variable	Mean	Maximum	Minimum	Std .Dev	Skewnes	Kurtosis	Observation
NP	9172200.	43080349	14078794	9895543.	1.329972	5.420189	112
OPEX	17.86161	1073.000	0.170000	101.0044	10.31485	108.2555	112
HREX	1.408661	9.290000	0.030000	1.736170	3.342692	15.57330	112
RDEX	0.058750	0.280000	0.010000	0.054129	2.211642	8.736051	112
ICTIEX	0.137321	0.700000	0.010000	0.121685	2.311986	10.64064	112

Source: Researcher's Computation, 2022

Pool Regression Analysis of the Relationship between Accounting Information System and net profit of selected Nigerian Deposit Money Banks.

Findings based on the result obtained indicate that R-square = 0.8100, which implies that approximately 81% of the variation in the dependent variable (NP) is caused by the explanatory variables included in the model and remained robust after adjusting for degree of freedom. Moreover, the explanatory variables are jointly significant at 5% level. The general model of the equation is presented in equation 4.2 below:

$$NP=-1.0704+24390.23OPEX-400598.3HREX-16312539.0RDEX--3244191.0ICTI \quad (Eqn \ 4.1)$$

The result implies that one of the four explanatory variables are significant in explaining variation in NP. This is OPEX with a t and p values of (2.6643 and 0.0089). Moreso, three of the variables (HREX, RDEX and ICTIEX) shows no effect on NP, while the other variable (OPEX) exhibit positive effect. A unit increase in OPEX will lead to (0.0089) increase in NP respectively. Furthermore, HREX, RDEX and ICTIEX were found to have negative coefficient of -400598.3, -16312539.0 and -3244191.0 respectively. However the combined regression analysis statistics (Adj. R-squared = 0.6257) shows that there is a significant relationship between accounting information system and net profit of selected Nigerian deposit money banks indicators.

Table 4.2 Pool Regression Analysis of the Relationship between Accounting Information System and net profit of selected Nigerian Deposit Money Banks

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	10704717	1996755.	5.361058	0.0000***
OPEX	24390.23	9154.222	2.664370	0.0089***
HREX	-400598.3	539816.8	-0.742100	0.4597
RDEX	-16312539	17285321	-0.943722	0.3474
ICTIEX	-3244191.	7572439.	-0.428421	0.6692
R-squared = 0.8100	Adj. R-squared = 0.6257		P≤0.05	

Source: Researcher's Computation, 2022

NB: *** Indicates significant at 1% level

       ** Indicates significant at 5% level

       * Indicates significant at 10% level

DISCUSSION

The combined statistics shows that there is a significant relationship between accounting information system and net profit of selected Nigerian deposit money banks indicators. A unit increase in OPEX will lead to (0.0089) increase in NP respectively. This also go in-line with Agboola *et al* (2020)

CONCLUSION AND RECOMMENDATION

Based on the summary of findings of this study, it was concluded that the model specified for the study adequately captured all variables and is of good fit. Accounting information system expenditure (proxy using Information and Communication Technology Infrastructure expenditure (ICTIEX), Operating Expenses (OPEX), Human Resources Expenses (CHEX), Research and Development Expenses (RDEX)) on performance (proxy with Net profit (NP), Return on Equity (ROE), and Return on Investment (ROI).The study concluded Accounting Information System Expenditure such as Operating expenses had significant effect of the Net profit of NDMBs. It is also recommended that NDMBs should put mechanisms in place to aid further investments in the adoption of Accounting Information System

REFERENCES

Abeygunasekera, C., and Fonseka, S. (2019) AIS in Australia: *UTAUT application & cultural implication*. ACIS 2010 Proceedings, 1-12.

Agboola, O.S., Alimi, A.A., Adeoye M.A. & Muhammed, L. S. (2020) Effect of Accounting Information System on Performance of Small business. *International Journals of Academic Research*

Akanbi, T. A., and Adewoye, J. O. (2018) Effects of Accounting Information System Adoption on the Financial Performance of Commercial Bank in Nigeria. *Journal of Accounting & Marketing*. 7 (3) 2168-9601

Anyanwu, E., (2010) Accounting Performance of SMEs and Effect of Accounting Information System: A Conceptual Model. *Global Journal of Management Business Research*: *Account Audit* 17: 1-7.

Boochhold, C., (2017) Implementation of Accounting Information Systems and Quality of Human Resources in Realizing Timeliness of Financial Reporting and Disbursement of BOS Funds. *Academia Open*, 7, 10-21070.

Borhan, C. J., (2018) The complexity and the research area of AIS. *Journal of Entrepreneur Information Management* 19: 9-12.

Chen, M. and Hirschheim (2018) Impact of Accounting Information Systems on Profitability of Small Scale Businesses: A Case of Kampala City in Uganda. *International Journal of Academic Research Management* 3: 185-192.

Chong, A. M. (2016) The Extent of Electronic Accounting Information Systems Ability to Provide Quantitative Indicators of Financial Performance in both Public and Private Universities in Jordan. *International Journal of Academic Research Accounting and Finance Management Science* 7: 97-107.

Curtis, S. G. (2015). The role of AIS research in guiding practice. *International Journal of Accounting Information System* 6: 1-4.

Fagbemi, T. O, Olaoye, J. A. (2016) An Evaluation Of Accounting Information System And Performance Of Small Scale Enterprises In Kwara State, Nigeria. *DBA Africa Management Review* 6: 1-16.

Ferran, C., and Salim, R. (2011) IAC accounting data model: a better data structure for computerized accounting systems. *Review Business Information System* 8: 109-120.

Firas, A. N. (2018). The Impact of the use of Accounting Information Systems on the Quality of Financial Data. *International Business Research.*11 (5), 23-67.

Flolick, F. D. (2016) Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly* 13 (5), 319-340.

Ironkwe, U. I., and Otti, J. O (2016) Accounting Information and Financial Performance of Banks in Nigeria. *Journal of Account and Finance Management* 2 (1) 1-9.

Kashif, B. (2018). Imapact of Accounting Information System on the Financial Performance of Selected FMCG Companies. *Asian Journal of Applied science and Technology*. 2 (3), 8-17.

Karim, A. N., and Alawneh, S. (2019). The impact of investment in information technology on the financial performance of Corporation companies listed on the market Palestine, Najah University. *Journal of Research Humanity* 23 (4), 989-1028.

Moorthy, M. K, Seetharaman, A., Gopalan, M. and San, L. H. (2018). The necessities of paperless accounting system. *American Journal of Scientific Research* 7 (4), 106-18.

Zoubi, A. M. (2017) The Extent of Electronic Accounting Information Systems Ability to Provide Quantitative Indicators of Financial Performance in both Public and Private

Universities in Jordan. *International Journal of Academic Research Accounting And Finance Management Science* 7 (3), 97-107.