

Computer Auditing in Nigeria: History, Challenges and Prospect

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Abstract: This paper examines the principal methods of sophisticated computer auditing and sets out the relationship between computer technology and the effectiveness of audit firm in Nigeria using five (5) manufacturing company such as Nestle Nigeria plc, Seven Up Bottling Company, Cadbury Nigeria plc, Guinness Nigeria plc and Coca-Cola Nigeria plc. The research arose due to inefficiency among audit firms in order to improve the financial accountability of some organization in Nigeria. The main objectives of the study were to establish the relationship and the application of computer technology by audit firms. The researcher used descriptive and analytical research design. Data was collected using primary source. The study revealed that the majority of the audit firms used computer applications (CAATS) in auditing and that if individuals who effectively understand these applications are involved in auditing, the effectiveness of these audit reports would be reflecting a true and fair view of the statement. This implies that more efforts should be attributed to computer auditing because it influences the effectiveness of audit firms to a large extent as compared to other factor. Consequently, recommendations on the firms should ensure that computer audit is engaged to monitor, check and verify audit process. There should be establishment of standard audit committee for effective control of firms' activities through computer audit.

Keywords: Computer Auditing, Computer Application, Challenges, Prospect, Internal Control.

INTRODUCTION

Every public organisation, at the federal, state or local government level, is established with a view to providing social services that would improve the general well being of its citizenry. For a public sector organisation to achieve its objectives, therefore, it requires to put in place effective audit system, which would ensure efficiency, effectiveness and judicious utilization of resources at its disposal. An examination of public organisations that were able to meet these socio-economic needs of the public, as well as, bring about the desired level of economic development, reveals organisations that instituted effective audit system. Likewise, with organisations that have performed poorly (in terms of achieving their objectives of providing effective service geared towards improving the general well being of the citizenry), it is common place to track the problems to organisations that failed to institute effective auditing system. Therefore, it can be said that the survival of every organisation depend on effective audit which ensures the effective, efficient and economical utilisation of scarce resources.

Computer audit is an examination of accounting record and ICT (internal control system) facilities which enables EDI (electronic data interchange) between various units of an organisation.

In other word, Computer audit generally means an audit of a company's computer networks and software, as well as the procedures in place with regard to the use of IT resources.

Internal audit can also therefore be defined as an independent appraisal activity within an organisation, for the review of accounting, financial and other operations including the reliability and integrity of information; compliance with policy, plan, procedures, rules and regulations; safeguarding of assets, ensuring economical and efficient utilization of resources; and accomplishment of established objectives, which serves as a basis for protective and constructive service of the management. Their objective of sound internal control system, controls and procedures and monitors the use of resources in the pursuit of the defined objectives of an organisation. The use of computer audit is gradually on the increase in Nigeria due to computerisation of accounting functions, both in the public and private sector organisations.

The general objective of the study is to investigate the computer auditing in Nigeria: history, challenges and prospect. The broad objective is further broken down into the following specific objectives:

- To establish the application of computer technology by audit firm in Nigeria.
- To establish the relationship between auditing around the computer and through the computer.
- To establish the relationship between application of computer technology and the efficacy of audit firms in Nigeria.

Many organisations have transferred to the use of computers to do their work more effectively and efficiently. Auditing firms now have integrated computer techniques in their operation to improve on their effectiveness in terms of quality of both their auditing firm and audit work. However, some audit firms have not taken up this move so serious. This is because it is not clear whether the investment in computer technology would have any significant effect on audit firm’s core objective of improving the quality of their work. Secondly, there was a contradiction on whether the introduction of computer technology would have any substantial effect of the quality of auditors work.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Theoretical Literature

A computer is an electronic data processing system that performs substantial computations in nanosecond. Including numerous arithmetic or logic operations without intervention by a human operator during the run [1]. Correct implementation and

efficient use of computer within a business can lead to substantial overall savings in time and money. The latter can also lead to greater management awareness of opportunities that would otherwise go un-noticed.

Auditing can also be defined as a systematic and independent examination of data, statements, records, operations and performances (financial or otherwise) of an enterprise for a stated purpose[4]. In any auditing the auditor perceives and recognises the propositions before him for examination, collects evidence, evaluates the same and on this basis formulate his judgement which is communicated through his audit report, internal audit is seen as an element of the System of internal control (SIC) which is usually set up by the management of an organisation as an independent appraisal unit within the responsibility of examining, evaluating, reviewing and reporting results obtained on the operations of the accounting and system of internal control (SIC). The auditor examines the results and determines whether the errors were detected by the client’s system[5].

The computer audit and investigation service establishment has been increased to adequately address the challenges of organisations. The main challenges in the organisation are computer auditing skills and capacity for forensic investigations; hence there is a need for the co-sourcing.

Table-1: Differences between auditing around the computer and auditing through the computer.

	Auditing around the computer	Auditing through the computer
How is it done?	No attempt is made to evaluate the internal processes of the computer. It consist of vouch, support and back-up.	Auditing the computer processing system or data produced by the system to test the programmed controls.
Advantages	<ul style="list-style-type: none"> • Simplicity – does not require computer proficient personnel. • May be more cost effective. 	Sophisticated method and may be the only method if significant parts of the internal controls are embedded in the computer system.
What are the “ideal” conditions for each?	Requires sufficient audit trail of visible evidence.	This method must be used if any one of the following exist: <ul style="list-style-type: none"> • The presence of large volumes of input / output means that direct examination of the record is difficult. • Lack of visible audit trail means that significant parts of the internal controls are embedded in the computer system. • System is complex and includes key parts of the accounting system.
Approaches	By passes the computer (auditing without the computer).	Two main approaches <ol style="list-style-type: none"> 1. Test data 2. Parallel simulation

Furthermore, SAS No. 99 codifies certain fraud detection procedures that relates to clients IT evaluation, for example, auditor are encourage to consider how a client may use computer to commit a fraud. Auditors may use computerized audit application techniques (CAATs) to evaluate fraud risks and identify journal entries and other adjustment to be tested.

The Role of computer Audit on Fraud

Researches in the behavior of man have shown tendencies or traces of criminalities particularly in an attempt to meet the hierarchical desires or needs in life. The pursuing of these desires, lead to different ideas but in most cases in desperation to meet up with the society's expectation. The management of these tendencies there determines the individual in relation to societal norms, the place of internal audit of the organization is to discover and identify the potential sources of fraud in banking and report it to management to bring the situation under the safe control of management[6].

There is this unfounded belief theory that internal audit exist to keep away from contemplating fraud the majority of staff who would ordinarily not indulge in any fraudulent activity so long as they are closely monitored or watched and or supervised.

The Causes of Fraud when Auditng

According to Adewunmi [2], causes of fraud can be categorized into two, which is institutional factor and environmental/societal factor. He further categorized societal factor /environment factor into socio economic lapses/inadequacies.

Institutional Factor Causes Fraud

According to Nwaze [3], the institutional factor or causes are those that can be traced to internal environment of the organization. They are to a great extent factors within the control of the management of the organization. A major institutional cause of fraud is: Poor Management, External factor/Environmental Factors.

Ways to Protect Organization

One of the easiest ways to steal from a company is through expense reimbursements. The Association of Certified Fraud Examiners determined in its 2004 Report to the Nation on Occupational Fraud and Abuse that approximately 22 percent of all fraudulent disbursement schemes investigated involved expense reimbursement fraud. Keeping your organization safe from pilfering employees demands strong controls, tough actions against perpetrators and management leading by example [3].

Safeguards to Protect Fraud

The following are the method of safeguarding an organization from fraud: Maintain a travel reimbursement policy or guidelines, Require original documentation, Initiate a formal review process, Routinely question expenditures, Have all disbursements made in a formal manner.

Computer Audit Risks and Its Impact on Internal Control System

Computer audit is an examination of accounting records and internal control systems using ICT facilities which enables electronic data interchange (EDI) between various units of an organisation[7]. Some of the obvious benefits of computer audit are elimination of paperwork, the reduction of document processing costs, access to more information on a timely basis, and increased accuracy of record keeping. There some drawbacks as well, but the increasing use of computer audit suggests that the benefits outweigh the costs. The implications for auditors are the loss of audit trail resulting from the paperless environment and lack of human intervention resulting in total dependence on the electronic system. These characteristics significantly increase risk, making control assurance the key objective of computer audit. Auditor need to monitor EDI controls throughout the period under audit, for example, through the use of software that allows tagging of transactions to trace their processing.

Internal control objectives are the same under manual systems and computer system; however, their evaluation is different. The auditor must be aware of the differences between the two systems: certain differences may result in reduced controls. Some differences – for example, the centralization of processing – may be a mixed blessing. The characteristics of computer – based systems are such that either new internal control must be implemented or existing ones modified.

METHODOLOGY

Nestle Nigeria plc is located at 22/24 industrial avenue, ilupeju, ikeja, Seven Up Bottling Company is located at 247 Moshood Abiola Way, Ijora, Apapa, Cadbury Nigeria plc is located at lateef jakande road Agidingbi, Ikeja, Guinness Nigeria plc is located at 24, oba Akran, Avenue Ikeja and Coca-Cola Nigeria plc is located at Pemberton place, 16 Gerrard Rd, Ikoyi, Lagos, Nigeria. Lagos state is chosen because it is the commercial centre of Nigeria and has huge number of industry located within.

The population of this research study is based on three manufacturing companies which are Nestle Nigeria plc, Seven Up Bottling Company, Cadbury Nigeria plc, Guinness Nigeria plc and Coca-Cola

Nigeria plc. Due to cost and time constraint a target sample was adopted for this research in order to achieve the purpose of this study. Simple random sampling was used on other employees such as accountants and auditors. Primary data extracted from questionnaire and responses of some audit firms and computer schools was used for this research. The study used descriptive statistics and regression analysis methods of inferential statistics to analyses the formulated hypotheses.

The model for the research work was formulated in form of Y as a function of X, put in mathematical form $Y=f(x)$, Where Y is depending on X As

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$$

Where: Y = Audit Firms Performance; β_0 = Coefficient of the equation;
 $\beta_1, \beta_2, \beta_3$ = Coefficient of variable X_1, X_2 and X_3 ; μ = is the error term
 X_1 = Computer Technology effectiveness; X_2 = Audit Relevance; X_3 = Audit Reliability

RESEARCH HYPOTHESIS 1

H₀: There is no significant influence of computer technology application in Nigeria audit firms.

X_1 = Audit Information Sufficiency

DATA ANALYSIS AND DISCUSSION OF FINDINGS

A total number of one hundred (100) questionnaires were administered to respondents in each of the five different firms (Nestle Nigeria Plc, Seven Up Bottling Company, Cadbury Nigeria Plc, Guinness Nigeria Plc and Coca Cola Nigeria Plc, seventy (70) were returned by the staff of each company while thirty (30) questionnaires from each company were not processed.

TEST OF RESEARCH HYPOTHESES

Having given a careful analysis of the data obtained from the questionnaires distributed among the customers of five companies. The hypotheses earlier formulated in the first chapter of this study are now tested and the results are fully discussed below. In all there are two hypotheses, which are tested, at 0.05 level of significance that corresponds to a 95% confidence level. Therefore, all tables presented are ord. least square regression analysis outputs.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.785 ^a	.616	.613	.79631	.616	185.200	3	346	.000	.041

a. Predictors: (Constant), Computer Technology influence, Computer Technology Effectiveness, Computer Technology Reliability
 b. Dependent Variable: Audit Firms Performance

Source: Field Study 2014

$$Y = 4.054 - 0.396x_1 - 0.443x_2 - 0.076x_3$$

The results of the Regression show that at 5% level of significance, only the coefficients of the intercept and Computer Technology influence, Computer Technology Effectiveness, and Computer Technology Reliability is statistically significant. The analysis of the coefficients of multiple determinations (R^2) which measures the goodness of fit of a model revealed R^2 of about 0.785 which implies that 78.5% of the systematic variations in the Audit Firm Performance are being explained by the variations in Computer Technology influence, Computer Technology Effectiveness, and Computer Technology Reliability.

Also, the Analysis of the T-Statistics (T-TEST) which is expressed as the ratio of estimated parameter to its standard error was used to test for the individual significance of individual estimated parameters. The model is statistically significant given

the F-value computed is 185.200 which is greater than 2.82 from the F-table. The Durbin-Watson statistics revealed 0.041 which is less than the criteria of 2.0 and it can be deduced that there is an evidence of serial correlation between the variables observed for this study.

DECISION

$F_{cal} 185.200 > F_{tab} 2.82$, we therefore reject H_0 and accept H_1 that there is a significant influence of computer technology application in Nigeria audit firms.

Alternatively, the level of significance 0.05 is greater than the significance value 0.000; we therefore reject H_0 and accept H_1 that there is a significant influence of computer technology application in Nigeria audit firms.

RESEARCH HYPOTHESIS 2

H₀: There is no significant relationship between auditing around the computer and through the computer.

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change	
1	.762 ^a	.581	.577	.83218	.581	159.850	3	346	.000	.024

a. Predictors: (Constant), Audit Reliability, Audit Relevance, Audit Sufficiency around Computer
 b. Dependent Variable: Audit Through the Computer

Source: Field Study 2014

The results of the Regression show that at 5% level of significance, only the coefficients of the intercept and Audit Reliability, Audit Relevance, Audit Sufficiency around Computer is statistically significant. The analysis of the coefficients of multiple determinations (R²) which measures the goodness of fit of a model revealed R² of about 0.762 which implies that 76.2% of the systematic variations in the Audit through the Computer are being explained by the variations in Audit Reliability, Audit Relevance, and Audit Sufficiency around Computer.

Also, the Analysis of the T-Statistics (T-TEST) which is expressed as the ratio of estimated parameter to its standard error was used to test for the individual significance of individual estimated parameters. The model is statistically significant given the F-value computed is 159.850 which is greater than

2.82 from the F-table. The Durbin-Watson statistics revealed 0.024 which is less than the criteria of 2.0 and it can be deduced that there is an evidence of serial correlation between the variables observed for this study.

DECISION

F_{cal} 159.850 > F_{tab} 2.82, we therefore reject H₀ and accept H₁ that there is a significant relationship between auditing around the computer and through the computer.

Alternatively, the level of significance 0.05 is greater than the significance value 0.000, we therefore reject H₀ and accept H₁ that there is a significant relationship between auditing around the computer and through the computer.

RESEARCH HYPOTHESIS 3

H₀: There is no significant relationship between application of computer technology and the efficacy of audit.

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change	
1	.785 ^a	.816	.713	.78631	.616	185.200	3	346	.000	2.041

a. Predictors: (Constant), Audit Reliability, Audit Relevance, Audit Sufficiency around Computer
 b. Dependent Variable: Audit Firm Performance

Source: Field Study 2014

$$Y = 5.044 - 0.286x_1 - 0.543x_2 - 0.078x_3$$

The results of the Regression show that at 5% level of significance, only the coefficients of the intercept and Audit Reliability, Audit Relevance, Audit Sufficiency around Computer is statistically significant. The analysis of the coefficients of multiple determinations (R²) which measures the goodness of fit of a model revealed R² of about 0.816 which implies that 81.6% of the systematic variations in the Audit Firm Performance are being explained by the variations in Audit Reliability, Audit Relevance, and Audit Sufficiency around Computer.

Also, the Analysis of the T-Statistics (T-TEST) which is expressed as the ratio of estimated parameter to its standard error was used to test for the individual significance of individual estimated parameters. The model is statistically significant given the F-value computed is 194.300 which is greater than 2.82 from the F-table. The Durbin-Watson statistics revealed 2.049 which is approximately the criteria of 2.0 and it can be deduced that there is an evidence of serial correlation between the variables observed for this study.

DECISION

$F_{cal} 194.300 > F_{tab} 2.82$, we therefore reject H_0 and accept H_1 that there is a significant relationship between application of computer technology and the efficacy of audit.

Alternatively, the level of significance 0.05 is greater than the significance value 0.000; we therefore reject H_0 and accept H_1 that there is a significant relationship between application of computer technology and the efficacy of audit.

CONCLUSION AND RECOMMENDATION

From the data and information collected scientifically tested and analyzed in the course of the research the following conclusions can be deduced from the study that there is a significant influence of computer technology application in Nigeria audit firms and there is a significant relationship between auditing around the computer and through the computer. Also, there is a significant relationship between application of computer technology and the efficacy of audit.

Based on the valid conclusions reached the following recommendations if implemented faithfully would assist in meeting the objectives set for the research. Proper internal audit process should be carrying out continuously in the firms to reduce fraud and financial misrepresentation through computer audit. The firms should ensure that computer audit is engaged to monitor, check and verify audit process. There should be establishment of standard audit committee for effective control of firm's activities through computer audit. The internal auditor should ensure that substantive tests are carrying out using computer audit to verify the accounting records, arithmetic and estimates. The firms should ensure that their accounting policies and practices are in accordance with statutory and regulatory standards.

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