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## **IMPACT OF INFORMATION TECHNOLOGY ON AUDIT QUALITY IN OYO STATE-OWNED TERTIARY INSTITUTIONS**

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### **ABSTRACT**

*Regardless of the size of a company and year in the industry in which it operates, maintaining accurate records of critical financial data is essential to its sustained success. With accurate financial information and timely reporting, stakeholders and decision-makers can make better company decisions, address concerns early on, and establish the groundwork for long-term success. This study therefore examined the impact of information technology on audit quality in Oyo State-owned tertiary institutions. The adopted Ex-post facto research design and descriptive statistics, Ordinary Least Squares (OLS) multiple regression estimation was used. The study used secondary data on Hardware Quality (HQ), Application Software (AS), Telecommunication (TN), and Networking (NG) used by Oyo State-owned tertiary institutions from 2016 to 2021. Findings revealed that Hardware Quality, Application Software (AS), and Networking (NG) are positively related to audit quality. The statistics showed that telecommunication latency affects audit quality. It was recommended among others that Audit quality in tertiary institutions should be improved to guide against fraudulent activities and the audit departments of higher education institutions must make greater use of information technology.*

**Keywords:** *Audit Quality, Information Technology*

## **Introduction**

The introduction of Information Technology (IT) has improved the quality of audit practice. The level of audit quality is determined by technical proficiency in the use of information technology in financial data processing. The deployment of IT infrastructures enables the rapid advancement of scientific and technical capabilities that have captivated the world. According to Boutheina and Hiyam (2020), includes automated methods of originating, processing, storing, and transmitting data. Information Technology plays a vital role in institution creation, customer service, and commercial market rivalry. The effect of information technology on financial and accounting systems has had a substantial impact on the internal control process in the company. Yet, this needed the involvement of IT in the audit job. As a result, electronic auditing has become popular.

According to Tysiac (2022), a digital mentality is a new way of thinking about how we complete and achieve our tasks. It is more than just digitizing a manual task. It encourages us to think about how technology may help us plan and carry out audits. The use of technology, digital platforms, and data analytics in audits refers to the use of software that enables practitioners to explore massive datasets in previously unimaginable ways. Auditors can conduct risk assessments more effectively, design more appropriate processes, and investigate anomalies that could have gone undetected if the audit relied on sampling rather than a complete study of information obtained using the program's information. Technology has transformed the way audit data is stored, retrieved, and used.

This new strategy has resulted in significant changes in the audit movement to meet their aims. Apart from the economic importance of computers, other IT-related issues influence the profession and audit process (Meihami, 2021). In the context of this study, information technology refers to the use of hardware, software, communications, and network technology, as well as the combinations of these technologies that auditors use to deliver quality audits. It is crucial to remember that, despite its numerous benefits, technology is not intended to replace humans in auditing. The human qualities of evaluation, analysis, and judgment are essential components of the audit process, and the use of technology can enable audit employees to focus on those higher-level abilities rather than being bogged down by repetitive, regular chores. Similar to how a calculator enables math students to answer more difficult problems by removing long division or multiplication computations, technology enables auditors to focus their attention where it is most needed. Auditing has been used as a tool for monitoring activity

with the responsibility to management for assessing the effectiveness of public fund control procedures in schools that are responsible for other functional managerial activities that work hand in hand in schools and deal with public funds that may be exploited or used extravagantly at times. Audit quality has arisen as a major issue for auditors, regulators, and users of financial information. Most previous audit studies looked into audit quality in various ways.

Audit quality, according to Shubita (2021), is the auditor's ability to track large errors and reduce the rate of inconsistency in accounting information; the essential components that increase the likelihood that quality audits are performed consistently are referred to as "audit quality," and are included in the term. After decades of audit quality research, no one can agree on what audit quality is necessary (Saddam Hussein, MosabSaleh, JinyuJinyu, and Ahmed (2022); Rahman, Meah, and Chaudhory (2019); and Knechel, 2022). According to Oluyinka, Adeleke, and Deborah (2021), audit quality is defined as the audit team's performance in the overall quality control system, audit planning and execution, and audit reporting (2021).

The implementation of information technology influences audit quality, according to Meihami's (2021) research findings and viewpoints. Although countless studies on similar subjects and in other countries have been conducted, no researcher in Nigeria, particularly in higher institutions, has yet to do this study. As a result, the goal of this study was to look at the impact of information technology on audit quality in Oyo State-owned tertiary institutions.

### **Statement of Problem**

The management of a business wants to be kept up to date on the organization's day-to-day operations. Every Management is keenly interested in the human, financial, materials, and maintenance divisions. The Internal Audit Department is more involved in completing the necessary updates. An assessment includes ensuring that financial audits are free of fraud and errors, carrying out substantive and compliance audit tests under managerial and organizational policies, personnel audit, asset safeguarding, cost-cutting audit, adequate reporting, and other necessary and professional advice. All of this must be done in real-time with unquestionable accuracy, which necessitates the engagement of information technology. Management and the government may be concerned about the high costs of start and implementation, staff training, and service maintenance associated with integrating IT into the institutions' systems and curriculum. In addition, lackadaisical attitude or lack of interest on the part of personnel, mistakes in input, network breakdown, and other hard challenges may be of concern to institution management regarding the adoption of IT into their institutional audit procedures.

As a result, the purpose of this research is to look at the impact of information technology on audit quality in Oyo State-owned tertiary institutions.

### **Objectives of the Study**

The general objective of the study was to examine the impact of information technology on audit quality in Oyo State-owned tertiary institutions. However, the specific objectives are:

1. To determine Hardware quality impact on audit quality in Oyo State-owned tertiary institutions.
2. To assess application software impact on audit quality in Oyo State-owned tertiary institutions.
3. To examine telecommunication impact on audit quality in Oyo State-owned tertiary institutions.
4. To determine networking impact on audit quality in Oyo State-owned tertiary institutions.

### **Research Questions**

The study was guided by the following research questions:

1. What is the impact of Hardware quality on audit quality in Oyo State-owned tertiary institutions?
2. What is the impact of application software on audit quality in Oyo State-owned tertiary institutions?
3. What is the impact of telecommunication on audit quality in Oyo State-owned tertiary institutions?
4. What is the impact of networking on audit quality in Oyo State-owned tertiary institutions?

### **Research Hypotheses**

The following null hypotheses have been developed to achieve the research objectives:

- Ho1: There is no significant impact between hardware quality on audit quality in Oyo State-owned tertiary institutions.
- Ho2: There is no significant impact between application software on audit quality in Oyo State-owned tertiary institutions.
- Ho3: There is no significant impact between telecommunication on audit quality in Oyo State-owned tertiary institutions.

Ho4: There is no significant impact between networking on audit quality in Oyo State-owned tertiary institutions.

## **Conceptual Framework**

### **Audit Quality**

Audit Quality refers to the essential aspects that contribute to an environment in which quality audits are done regularly. Auditors are responsible for carrying out quality audits. Yet, audit quality is best accomplished in an environment where actors in the financial reporting supply chain assist each other and engage appropriately. Recognizing misstatements and inconsistencies in financial accounts is what audit quality entails (Alwardat, 2019). Audits ensure that financial statements are truthful and accurate in all material ways. It adhered to GAAP. The duty to make sound judgments is defined as quality. It entails ensuring that the audit is carried out accurately. Audit quality is concerned with how auditors' independence, honesty, and objectivity impact the integrity of financial statements (Baah and Fogarty, 2018). Auditing, according to the business, is a continuous process that discovers difficulties influencing audit performance, analyzes situations, develops solutions, and monitors and improves performance.

Audit quality is defined by Iliemena, Rachael, and Okolocha (2019) as the market-assessed joint possibility that a given auditor would both (a) discover and (b) reveal a violation in the client's accounting system. The definition emphasizes two critical aspects of audit quality: (1) the audit firm's competency, which influences the possibility of identifying a misstatement, and (2) the auditor's independence and objectivity, which define what the auditor will do if a mistake is identified.

### **Information Technology**

Information Technology is the use of computers, storage, networking, and other physical equipment, infrastructure, and procedures to generate, process, store, secure, and communicate all types of electronic data, which includes internal audit software, payroll audit application software, and others. Internal audit software is a digital tool that internal auditors and compliance officials use to conduct walkthrough inspections and data analysis. It aids in the identification of flaws, inefficiencies, and noncompliance in company operations to execute necessary remedial actions.

## **Theoretical Review**

### **Theory of Inspired Confidence**

"The need for audit services is the direct result of the engagement of outside stakeholders (third parties) in the economy," according to Limperg's theory of inspired confidence (Hayes et al., 2005). As a result, because the information provided by management to stakeholders may be prejudiced, an audit of this information is required. To guarantee that businesses function effectively, executives have resorted to the study of organizational behaviour to assist and enhance the working conditions of their staff. Organizational behaviour studies examine how employees behave in the workplace to better anticipate and control their level of motivation. When using organizational behaviour data, however, several context aspects must be considered.

### **Contingency Theory**

The contingency theory, often known as the situational approach to management theory, asserts that situational circumstances can influence the interactions between dependent and independent variables in the workplace, affecting employee behaviour, motivation, and effectiveness. Success in assessing organizational data and enhancing employee motivation is dependent on the organization's unique contingency variables. The contingency theory emphasizes that using organizational behaviour data to benefit workers and create a productive work environment requires a personalised approach. Numerous people contributed to the development of contingency theory, each undertaking their unique research that helped create the theory. Burns and Stalker, for example, established two types of organizational structures (organic and mechanistic) and two environmental categories (stable and dynamic). Lorsch and Lawrence claimed that organizations work in either simple or complex contexts, with more complex environments adopting higher degrees of differentiation and integration; while John Woodward examined different forms of technology and how they might impact an organization. Fred Fiedler stated that aligning a leader's approach to conditions in which the leader has authority and influence leads to effective leadership and workplace progress.

### **Empirical Review**

Afsay, Tahriri and Rezaee (2023) in their research on factors that enhance and hinder the use of IT in Audit randomly sampled 88 studies from developed and developing countries considering the type of technology used, the firm size, and the year of publication. The data obtained were analysed based on manpower and organisational viewpoints. Their findings revealed that from a manpower's point of view: facilitator circumstances, perceived utility,

and comprehension of ease of use are the most crucial elements in IT acceptance. On the other hand, cost-benefit analysis, industry competitive pressure, organizational preparation, and task-task matching are all important elements of IT uptake by an organization. The study assessed the factors that supported the use of IT in Audit while the advantages of using IT in Audit were overlooked considering the technological trend in all spheres worldwide.

Vukovic, Jaksic, and Tica (2023) examined the usage and influence of IT on Audit in Serbia. Questionnaires were administered with 110 responses. The data generated were analysed using the Partial Least Square Modelling Method. Their findings revealed that Audit Quality in Serbia is considerably, favourably influenced by changes in audit users' perception, and changes in auditors' and auditors' professional profiles because of IT. Changes in audit regulations as a result of the uptake of IT have no substantial influence on audit quality in Serbia. Keeping in mind that digitalization is both a problem and an opportunity for audit. In my own opinion, IT will always have a positive and significant effect which is the a priori expectation of audit quality in timeliness, thoroughness, and accuracy. Though it may be a threat to auditors considering the advantages, it is a worthy venture.

Persson-Holmes and Lynagsten (2020), in their study on IT in auditing: A descriptive study about IT-tool usage, IT knowledge, and the future digital environment for auditors opined that the audit sector is undergoing a digital transition, with auditors of varying expertise levels routinely employing various IT-tools. It is nearly difficult to conduct an audit with satisfactory findings without the use of IT tools. As a result, pressure is placed on audit companies, both the four largest auditing firms: Ernst & Young, PricewaterhouseCoopers, KPMG, and Deloitte (Big 4) and smaller auditing firms (non-big 4) to stay ahead or at least up to date in terms of digital creation, implementation, and use of IT-tools to avoid falling behind rivals. Training audit team members on various Information Technology systems (IT) will be critical so that auditors can use new technologies and improve audit quality. This study adds to practical information by mapping out and detailing how and where IT tools auditors spend their time. This was accomplished using an online questionnaire and interview sessions, which revealed that auditors utilize seven different types of software, with spreadsheet software being one of the most often used IT tools. Auditors often utilize software that they are acquainted with, and they are resistant to new software. The survey also raises the question of whether the adoption and usage of new technology are as ubiquitous as auditing companies believe. Furthermore, there is still a general shortage of IT skills among auditors, and students interested in a career in auditing would have to take responsibility for their IT knowledge



expansion, in addition to educators providing additional IT courses for students studying Business administration. The study was only limited to the audit companies, both Big 4 and Non-Big 4, while institutions, other business entities, and establishments where audits are relevant and productive were left out.

Tiberius and Hirth (2019) in their research work effect of digitalization on auditing submitted that both possibilities and problems are presented by the economy's continuous digitalization for the auditing profession, which necessitates adaptation on the part of both auditors and their clients. This research investigates changes in auditing methods anticipated by German auditing professionals during the next five to ten years against the backdrop of current technical breakthroughs in big data analytics, Artificial Intelligence (AI), and blockchain technology. It discusses the public's opinion of auditing, the connection between auditors and clients, rules, organizational and operational changes for auditing companies, and the auditing profession's profile. With new technology, they will likely alter. As part of a Delphi research in Germany that was done over two rounds, experts were polled. The findings indicate that no significant changes are anticipated within the specified period. The yearly audit will develop more and more. The German economy was focused on considering only the exploration of IT by audit firms while the other sectors of the economy, for example, educational institutes where audit is essential, and paramount were left out of the study.

Eulerich, Masli, Pickerd, and Wood, (2019) examined the effect of audit technology on audit task outcomes. In the conduct of the study, individual auditors and chief audit executives were investigated to harvest their opinions on technologically based auditing techniques (TBATs). Surveys and interviews were conducted with them. TBATs are seen favourably by auditors. A one percent increase in the usage of TBATs is specifically related to doing 18.5 percent more audits, identifying 10.8 percent more risk factors, making 12.3 percent more recommendations, and cutting the number of audit days by 13.5 percent. TBATs are seen as expensive by CAEs. An increase of 15.5 percent in the size of the internal audit department is related to a one-standard-deviation rise in the utilization of TBATs. The last reason TBATs aren't utilized more frequently, according to CAE interviews, is that it's hard to quantify their advantages, see those benefits promptly, and hire auditors.

The benefit of an IT-driven audit, in the long run, should be more emphasized rather than looking at the disadvantages as it relates to costs and auditors' readiness. The study only worked on individual auditors and the chief audit executives to generate their findings, other stakeholders and users of audit reports were left out.



### Research Methodology

This study made use of the Ex-post facto research design which identifies events that have already occurred or conditions that are already present and then collects data to investigate a possible relationship between these factors and subsequent characteristics or behaviours of Hardware Quality (HQ), Application Software (AS), Telecommunication (TN) and Networking (NG) used by Oyo State-owned tertiary institutions from 2014 -2018. The Ordinary Least Square regression analysis was used to estimate the results.

### Model Specification

The model for this study is represented as follows:

$$AQ = f(HQ, AP, TN, NG)$$

In mathematical form, the model is stated as:

$$AQ_{it} = \beta_0 + \beta_1HQ_{it} + \beta_2AP_{it} + \beta_3TN_{it} + \beta_4NG_{it} + \varepsilon_{it} \dots\dots\dots \text{eqn 1}$$

IT was proxied by

Hardware Quality (HQ),

Application Software (AS)

Telecommunication (TN)

Networking (NG)

i = Cross Sectional Variable

t = Time Series Variable

$\varepsilon$  = Error term

$\beta_0$  = Model Intercept

$\beta_0 - \beta_4$  = Regression Coefficient of the Explanatory variables

Apriori Expectation =  $\beta_0 > 0$ .

$\beta_1, \beta_2, \beta_3, \beta_4 > 0$

### Decision Rule

In making the decision, the p-value was used. For the p-value approach, the researcher obtained a p-value using the computed test statistic and the two-tailed test. The null hypothesis (Ho) is rejected in favour of the alternative hypothesis (H<sub>1</sub>) if p-value  $\leq 0.05$ .

**Results and Interpretations Descriptive Results**

**Table 1: Descriptive Statistics**

<b>Variables</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
HQ	-.5500	.09001	.011125	.0520100
AS	.0001	1.0000	.930818	.2745658
TN	5.8867	7.6608	7.010225	.4272806
NG	1.1137	2.7613	1.916505	.2549582

**Source: Author’s Computation, 2023**

Table 1 illustrates the mean Hardware Quality (HQ), Application Software (AS), Telecommunication (TN), and Networking (NG). The table above illustrates the series' standard deviation Hardware Quality (HQ), Application Software (AS), Telecommunication (TN) and Networking (NG) are .0520100, .2745658, .4272806, and .2549582, respectively. The minimum Hardware Quality (HQ), Application Software (AS), Telecommunication (TN) and Networking (NG) are -.5500, .0001, 5.8867, and 1.1137, while the maximum values are .09001, 1.0000, 7.6608, and 2.7613.

**Table 2: Empirical Result of Ordinary Least Square Method**

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-stat.</b>	<b>Sig. Value</b>
(Constant)	-.004	.078	-.048	.962
HQ	.045	.013	1.982	.049
AS	.022	.009	1.304	.194
TN	-.056	.012	-4.574	.000
NG	.035	.045	1.888	.050

**Source: SPSS version 24.0**

Table 2 displays the independent variable Ordinary Least Squares (OLS) coefficients. The results showed that the p values of HQ, AS, and NG coefficients are statistically significant at 5 percent level of significance, except for the TN, which is not. This means that a 1% increase in Hardware Quality, Application Software (AS), and Networking (NG) will boost audit quality by 4.5%, 2.2%, and 3.5% correspondingly over time. Table 2 shows that the p values of telecommunication coefficients are negative and significant at the 5% level. This shows that a

1% increase in telecommunication of an organization will affect audit quality by a 3.5% fall in Networking in Nigeria over time.

**Table 3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.194a	.075	.064	.0200032	.075	3.4025	4	154	.000

**Source: Author’s Computation, 2023**

Table 3 shows that the adjusted coefficient of determination (R<sup>2</sup>) offers a better explanation of audit quality variations. The value of 6.4% shows that the explanatory variables (HQ, AS, TN, and NG) can jointly explain about 6% of the audit quality, while other variables not captured in the model account for the rest. The F-statistics p-value 0.001 suggests the model is well-fitted, constructed, and integrated. Ordinary Least Squares confirm as the likelihood value is 0.01 percent. The analysis contradicts the null hypothesis and concludes that Hardware software influences audit quality.

**Conclusion**

This study examined the impact of Information Technology on audit quality in Oyo State-owned tertiary institutions. This study tested hypotheses based on reviewed literature. Statistically, Hardware Quality, Application Software (AS), and Networking (NG) are positively related to audit quality. The statistics showed that telecommunication latency affects audit quality. This study gives empirical evidence for the literature reviewed understudy.

**Recommendations**

The following recommendations were made:

1. Both on-the-job and off-the-job training in Information Technology should be provided for audit staff in tertiary institutions.
2. Audit quality in tertiary institutions should be improved to guide against fraudulent activities.
3. Audit quality processes in tertiary institutions should be strengthened with appropriate Information Technology to avoid any break in the process.

4. The government cum management of the tertiary institutions should endeavour to provide the appropriate facilities and capabilities for auditors to access the means of Information Technology to use them in auditing and keep abreast of the global development in this field.
5. There is the need to use the means and methods of Information Technology and modern electronic systems, in addition to the tools and techniques of electronic auditing in the audit process, because of their impact in increasing the efficiency and effectiveness of the audit processes by reducing the time and effort spent in the audit.
6. There is a need to expand the use of Information Technology in tertiary institutions' audit departments.

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