Adebayo, Aderemi Olalere; Obisesan, Samuel Oladele; Akinola, Amos Olusola

Article

Influence of information technology on internal control systems in tertiary institutions in Osun State, Nigeria

Malaysian management journal

Provided in Cooperation with:
Universiti Utara Malaysia

Reference: Adebayo, Aderemi Olalere/Obisesan, Samuel Oladele et. al. (2024). Influence of information technology on internal control systems in tertiary institutions in Osun State, Nigeria. In: Malaysian management journal 28 S. 99 - 118. https://e-journal.uum.edu.my/index.php/mmj/article/download/19929/4463/83454. doi:10.32890/mmj2024.28.4.

MALAYSIAN MANAGEMENT JOURNAL
http://e-journal.uum.edu.my/index.php/mmj

How to cite this article:

Adebayo, A. O., Obisesan, S. O., & Akinola, A. O. (2024). Influence of information technology on internal control systems in tertiary institutions in Osun State, Nigeria. *Malaysian Management Journal*, *28*, 99–118. https://doi.org/10.32890/mmj2024.28.4

INFLUENCE OF INFORMATION TECHNOLOGY ON INTERNAL CONTROL SYSTEMS IN TERTIARY INSTITUTIONS IN OSUN STATE, NIGERIA

[1]Aderemi Olalere Adebayo, [2]Samuel Oladele Obisesan & [3]Amos Olusola Akinola
[1&3]Department of Accounting,
[2]Directorate of Audi,
Osun State University, Osogbo, Nigeria

[1]Corresponding author: lereadebayo@gmail.com

Received: 16/5/2023 Revised: 14/12/2023 Accepted: 3/1/2024 Published: 31/7/2024

ABSTRACT

The study examined how information technology affects internal control systems in tertiary institutions in Osun State. Specific goals were to ascertain whether or not information technology has a significant impact on the internal control systems and internal audit processes of tertiary institutions. A survey research design was chosen. A sample size of 100 respondents participated in the study. This study used the stratified sampling method and a regression technique was used for data analysis. The findings showed that internal control systems and internal audit procedures in tertiary institutions in Osun State were highly influenced by information technology with t= 20.02 P< 0.0 and t= 19.049p<0.05, respectively. It was concluded that internal control systems and internal audit procedures at tertiary institutions were

strengthened and improved by information technology. The study has recommended that tertiary institutions adopt information technology in order to improve their internal control frameworks. To keep their staff's necessary skills and knowledge current, the management of tertiary institutions should encourage both on-the-job and off-the-job training in information technology. To stop fraud, internal control mechanisms should be put in place. To establish who will be held accountable for violations, tasks must be digitally separated effectively.

Keywords: Information technology, internal control system, internal audit process, tertiary institution.

INTRODUCTION

According to the Committee of Supporting Organizations of the Treadway Commission (COSO) (1994), internal control is "the mechanism planned, implemented, and maintained by those charged with governance, management, and other personnel to provide fair assurance about the achievement of an entity's objectives in terms of financial reporting reliability, effectiveness, and efficiency of operations,". Benjamin (2001) has defined internal control as "the entire system of financial and other controls established by management in order to conduct the enterprises' business in an orderly and productive manner." Internal control systems can be applied to many aspects of an enterprise, including strategic, financial, operational and compliance, they are the basic component of risk management systems (Financial Reporting Council, 2014). Global fraudulent financial reporting and accounting scandals have made internal control mechanism a topical issue in developed and developing countries (Adeoye and Adeoye, 2014). A company must be able to manage its business in order to optimize its finances and protect its properties, which is why internal controls are so important. Internal controls are not a new concept, but despite their prevalence, there had been a slew of illegal activities in the past and recently. With all of these mechanisms in place, the issues of internal control failures should have been fixed. However, studies in Nigeria (Gbegi & Adebisi, 2015; Alao & Amoo, 2014; Abiola & Oyewole, 2013 and Hamilton & Gabriel, 2012), have shown that some internal control mechanisms are poor, ineffective, or not adhered

to, despite the fact that these structures exist to direct institution on internal control enforcement.

Nigerian universities have recently been engulfed in financial crises as a result of fund mismanagement triggered by either non-compliance with established rules and policies (internal control) developed by various governing councils and regulatory authorities, or simply the lack of such control systems.

Therefore, an institution must put in place an effective internal control system to safeguard its assets against potential losses caused by improper usage, misapplication, and asset falsification. Unegbu and Kida (2011) stressed the significance of establishing a strong internal control system in order to enhance the financial standing of government ministries. There should be guardians of financial resources at Nigerian universities, and the bursars of the universities who oversee various departments for the bursaries. They are entirely responsible for their actions—or lack of actions—in any financial situation because they are the schools' senior officers (Adeniji, 2010). Therefore, it is the responsibility of every institution to guarantee effective and efficient internal control of the University's overall financial system. There have been a number of unreported fraud cases that could be linked to a weak internal control system, as was the case with Cadbury Nigeria Plc in 2007. The widespread instances of annual report fraud in the public sector serve as warning signs that the internal control system must not only be shown to work, but also to perform efficiently (Bakre, 2007).

Asset falsification and financial irresponsibility, two of the reasons for establishing an efficient internal control mechanism, have become a major source of frustration for many Chief Accounting Officers in tertiary institutions in Nigeria for reasons best known to them. The integrity of the respective units of every Nigerian University lies in the effective functioning of the internal control system. This study was aimed at expanding on the previous research by Oladoyin et al. (2006), who found that a lack of proper record keeping caused shortcomings in the education institutions' internal control system. However, Dambatta (2004) claimed that the weakness of the internal audit was due to a lack of independence. In light of these previous findings, the goal of this study is to fill in the existing gap by evaluating

how information technology has an impact on the internal control system and internal audit procedures in tertiary institutions in Osun State, Nigeria.

This study will be of significance to the institutions which have tried to achieve its desired objectives effectively by designing detective control to find errors or irregularities after they have occurred such as the installations of Closed Circuit Television (CCTV). Besides, it can help institutions to identify potential problems which may cause financial losses, substandard academics, fake results and other forms of malpractices and thereby prevent or minimize any future occurrences. Internal control system designed by institutions to motivate an individual or a group towards achievement of desired objectives. The study will benefit members of management by raising concerns over errors, and detect the points of failure in order to prevent their re-emergence.

This paper will contribute to the general body of knowledge in the field, and in formulating policies that would guide the formation and implementation of internal controls in tertiary institutions in Osun State.

LITERATURE REVIEW

Internal Control

The International Organization of Supreme Audit Institutions INTOSA I (2001) has described internal control as a crucial mechanism that is influenced by an entity's management and staff, and is designed to resolve risks and offer reasonable assurance that the task of the entity is being accomplished, the general objectives are being accomplished, and the execution of the task is being done in a timely, ethical, economical, and efficient manner.

The internal control mechanism, according to Dinapoli (2007), is the integration of an organization's activities, strategies, behaviours, policies, and efforts geared towards the rational confidence that the organization can achieve its goals and purpose. This is important in that, it considers all workers in the company to be responsible for

internal control, rather than just senior managers. Employees are more inclined to go the extra mile to ensure that corporate goals are prioritized over personal goals if their contributions are acknowledged and respected as vital to the organization's survival. An internal control system, as defined by COSO (1994), is a procedure set up by the management of an entity to give reasonable assurance about the accomplishment of goals through organizational effectiveness and performance, financial reporting accuracy, and compliance with relevant laws and regulations. Nevertheless, a concept to support this study is derived from the guidelines of the COSO and ISO 31000:2009 (2018) on internal control techniques, in order to reduce and prevent fraud. As a response strategy it could be employed as a tool for fraud prevention (Adebayo et al., 2022). The auditors' audit reports would be considered reliable if the company's internal audit unit performs its duties diligently, taking into account all the relevant laws and regulations, and operating procedures were conducted in the most orderly manner.

Types of Internal Control

According to INTOSAI (2004), an internal control system is a procedure put in place by a company's board of directors, management, and other employees to give equal assurance about the accomplishment of predetermined goals, the effectiveness and quality of operation the veracity of financial statements, and compliance with relevant laws and regulations.

Preventive Control: This is a control method that is meant to deter errors and anomalies from occurring; it is a constructive control that helps in the prevention of loss. Separation of roles, appropriate authorization, adequate paperwork, and physical management of properties are a few examples of preventive controls.

Detective Control: This control is set up to deter errors or abnormalities that might have occurred. In investigation and auditing, examples include reviews, variance assessments and reconciliations.

Physical control: Awoyemi (1989) opined that higher institutions' assets must be kept safe, which is especially critical in the case of valuable assets such as cash, stocks, and valuable properties.

Appropriate safeguards should be in place to protect them; they are the universities' most important and/or valuable properties.

Arithmetic and Accounting Control: This control ensures that the figures from the source documents are accurately measured and registered. On the other hand, the accounting side of the control ensures that transactions are accurately and properly reported in the necessary books of accounts (Arens & James, 1999).

Personnel Control: Human capital, without a doubt, is something that should be valued in every organization. As a result, the right people must be assigned to the right jobs and not the other way around, Piccchiete, (2002). Regardless of the circumstances, organizations must ensure that competency and integrity are not jeopardized. This demonstrates that the competence and honesty of an organization's staff are critical to the internal control system's proper operation.

Authorizations and Approval Control: According to this kind of regulation, the officers in charge of authorization and approval must correctly authorize and approve all transactions affecting the company. This includes following organizational rules and assigning properly specified tasks to the proper personnel.

Management Control: This is the use of budget or management accounting to schedule and control organizational activities, as well as the creation of a functional internal audit unit or department. All organizational activities must have a yearly budget, which must be compared to actual operational or activity results at the end of the year. In order to address the deviations that the comparison would unavoidably reveal, management must take acceptable action (Gupta, 1999).

Organizational Control: This control mandates the inclusion of an organizational chart detailing roles and reporting chains; it is essential for any employee to comprehend their core authority and to whom they should report. To ensure that everyone understands their basic powers and to whom they should report. The structure of organizational structure should define clearly and/or be understandable in order to guarantee that everyone is aware of their roles and reporting lines.

Supervision Control: This control would be exercised by superior officers in the company to keep track of subordinates' activities. If subordinates are to fulfill their duties, it is often important to correct them. In order to assess the degree of conformity with organizational rules, goals, and legal requirements, discover and prevent errors and frauds, and determine whether performance, the economy, and effectiveness are reached, this monitoring must be strengthened at all levels (Hamid, 2004).

Segregation of Duties Control: This control activity guarantees that an individual must not be in charge of all facets of a transaction. This is critical to a successful internal control system. The risk of unintended errors or intentional misappropriation, as well as financial indiscipline, is reduced when more than one person is involved in an event: Authorization, consent, custody, and recording are all functions that are usually separated (Owo, 2003).

This shows that different individuals are given different roles or positions for initiating processing, and recording transactions on their own.

Information Technology (IT)

IT, according to Richard (2003), is a technology that is used to collect, send, store, retrieve, manipulate, and report data used in business operations. The gathering, processing, storage, and delivery of audio, graphical, textual, and numeric information utilizing a micro-electronic-based combination of computers and telecommunication were detailed by the American department of trade and ministry (Lucey, 2003). The integration of emerging technologies has accelerated in recent years. Information technology and telecommunication technologies have therefore increasingly converged to offer us information and communication technology (ICT). The convergence has greatly blurred the boundaries between the computer, internet, digital radio and television, mobile appliance as well as social and business process. For successful decision making in an enterprise, information technology (IT) has introduced one or more dimensions such as speed, accuracy, and increased data volume. Management needs information for decision making and for organizational survival in a highly competitive and dynamic environment. Information technology has

begun to play such key role today that some organizations have to use the data processing and mass storage capabilities of computers to set up their information systems for managerial decision making and control in the context of organizational activities. Information technology is therefore, revolutionizing the global economy in ways never seen before in human history, thanks to its enhanced productivity, storage, computational, and communication capabilities.

Information technology has effectively transformed the planet into a global village in which territoriality is rapidly fading and a global networked economy has arisen. Geographically, existing markets and states are disintegrating in the digital era, and the global economy is reintegrating in a very different form through electronic networks, in which geographically dispersed individuals, communities, and organizations are electronically reassembled in cyberspace. The information economy, knowledge economy, internet economy, network economy, e-business, and so on are some of the terms used to define the technologically interconnected world economy. The use of information technology has changed the way business is conducted, such as switching from manual to digital devices.

The use of information technology in business and social settings has opened up new opportunities for operating and managing companies, as well as for selling goods and services. It has enabled interaction between individuals, groups, and divisions within a corporation, making it a highly adaptable and effective tool which can assist companies, groups and individuals in many ways. Business organizations must consider their resources and make efficient use of it. For example, in the context of sharing information, as well as creating internal and external relations with business partners, clients, and suppliers.

Information Technology and Internal Auditing

In the summer of 1954, the first practical business machine ushered in a technological breakthrough in accounting and auditing. Accounting data was processed, collected, and handled in a better manner thanks to IT. These new digitally structured accounting processes resulted in vastly different audit tracks, if there were any at all (Salehi, 2010). As the computing industry continued to innovate at a rapid pace, the

transition became complex evolution. Other IT-related advances, with the advent of computers into the business sector, have had a major influence on the auditing profession and the way audits are performed.

Information technology has had and continues to have an effect on auditing (Salehi, 2010). New requirements had to be added, which has had an effect on the auditing standards body. Traditional auditing methods used prior to 1954 have developed into the auditing approach used today. For example, audit methods and techniques. The impact of technology on auditing has resulted in the need for a new set of knowledge, skills, and standards that were not required in 1954 to conduct a modern audit. The introduction of computer technology into the accounting system has thrown a wrench into the previously established routine auditing procedures for properly auditing accounting systems (Salehi, 2010). General Electric is credited with creating the first functioning electronic accounting system, the UNIVAC computer, in the summer of 1954. A conference was conducted early in the development of business computers. The article "Using a Computer to Reconcile Inventory Counts to Books," which appeared in the N.A.C.A. Bulletin in June 1956, is a good example of early innovation. In the report, the author, Frank Howell, a member of the US Air Force's (USAF) Auditor General's staff in Washington, D.C., outlined how an organization used a machine to reconcile inventory counts to books. The computer was designed to print out substantial differences between counts and inventory records while also automatically updating the books to the counts in the event of slight discrepancies.

Role of the Internal Control System (ICS) in Tertiary Institutions in Nigeria

The internal control system (ICS) is a necessary mechanism that has been used in all educational institutions. An educational institution must develop a solid internal control system in order to provide quality education, as well as a good and inspiring teaching, learning, and research environment. The system is extremely helpful to managers in institutions, particularly when making decisions. Internal management keeps a business on track to fulfill its targets and accomplish its mission, while also reducing waste. It also ensures the publication of reliable financial data, as financial data is the foundation upon

which management based short- and long-term tactical decisions, as well as forecasting the future with relative precision. Any decision's accuracy, according to Scott (1995), is entirely dependent on the type of data available. It is common knowledge that having timely and reliable financial data assists management in developing successful business policies. The ICS, according to Abdullahi (1997), is not only essential for financial control, but is also the most effective financial management tool. According to Adejola (2009), a successful ICS helps organizations in a number of ways, including protecting date integrity and ensuring accurate and full data processing. A well-established ICS according to Owo (2003), ensures value maximization and loss/cost minimization. Aside from resolving disputes among different officer cadres, the internal management framework aims to ensure that the organization's ethics are upheld by all.

This study has pointed out several causes that make an internal control system and related information technology systems to be weak in tertiary institutions. They are as follows: Management makes an effort to bypass the internal controls that have been set up; inadequate or inappropriate accounting and record-keeping; senior staff resistance to accepting independent oversight; inadequate and thorough audit covering; Understaffing; abnormal job separation, improper and hurried reconciling of significant assets and liabilities, and problems resulting from dysfunctional CCTVs. Weak internal control systems and information technology have a distorting effect on institutional plans, and creates loopholes for other forms of malpractices, such as issuance of fake results, receipts and other academic fraud, thereby resulting in the poor quality of academic activities and exposure of the institution to bad reputation.

Theoretical Framework

Diffusion of Innovation Theory (*DoI*)

Rogers (1995) coined the term DoI to describe how an idea or commodity gains traction and diffuses (or spreads) through a population or social structure over time. It is a concept, a method, or a thing that possesses the following key characteristics of innovation: relative advantage, compatibility, complexity and observability. The

level to which the invention is thought to be superior to the current way of carrying out the identical work is referred to as relative advantage. The theory holds that relative advantage has a favorable effect on behavior and goal. The degree to which implementing an invention is consistent with people's daily activities, existing attitudes, experiences, and wants is referred to as compatibility. Complexity describes how challenging it is to understand and use an invention. Trial capability refers to the degree to which an invention can be evaluated on a small scale before being adopted (or rejected), while observability refers to how apparent an innovation's results are to others (Rogers, 1995).

Technology Acceptance Model (*TAM*)

This hypothesis explains how people embrace and employ technology. According to the concept, customers' decisions regarding when to use new technologies are influenced by the following two specific factors: perceived importance and perceived simplicity (Davis, 1989). The TAM has proved to be a useful theoretical model for understanding and explaining usage behavior in the construction of information systems.

The model's tools have been shown to be of high quality and have produced statistically reliable results in many empirical studies. The TAM's parsimony, on the other hand, has become both a strength and a drawback since it is limited in its ability to explain user behavior. Many authors have added new constructs to the TAM in response to its flaws. Mbogo (2010) utilized the TAM and expanded it to include additional variables such as perceived easy accessibility, perceived cheap cost, perceived security, perceived comfort, perceived pleasure, and perceived support to explore the success variables related to the usage of channel agents. Tobbin (2011) examined consumer behavior toward channel agents adaptation in Ghana by modeling channel agents adaptation and extending TAM and DoI.

Similarly, Bosire (2012) analyzed the specificities of DoI and TAM to pinpoint the elements that led to the success of new technology adoption. The TAM was integrated by Odia (2012) with additional elements like perceived security, comfort, and trust.

Empirical Review

Krishna (2011) wrote on the effect of information technology (IT) on internal auditing. The study looked at the role of IT in the internal audit process and how IT affected the process. The study also highlighted the widespread practice of utilizing information technology (software and hardware) to develop a more regulated environment for the auditing process. The study had employed a survey and research design. The study's conclusions included best practices and guidelines for assessing internal auditing procedures and how information technology influenced internal control (control climate, risk assessment, control operations, information and communication, and monitoring). Information Technology (IT) and Electronic Data Processing (EDP), according to the study, have changed the way business function, improving organizational efficiency and assisting decision-making. It also examined a variety of aspects of IT risks and controls, such as whether the right individuals were managing IT risks at the appropriate level. It showed how technological convergence could affect an organization's internal control system. These and other empirical findings are important to the present study, necessitating the need to build on them by assessing the effect of IT on the internal control systems in Nigerian higher education institutions.

In his article entitled "Impact of Internal Audit Unit on the Effectiveness of Internal Control Systems in Tertiary Education Institutions in Adamawa State, Nigeria," Salihu (2015) examined the influence of internal audit units on the efficacy of internal control systems. His study used a survey study design, and in order to gather primary data, internal audit teams, financial, and administrative personnel from departments in the eight (8) sampled tertiary educational institutions in the State were given copies of the study questionnaires.

The data was analyzed using descriptive statistics and the Chi-square technique. The statistical analysis used the SPSS 15.0 edition. According to the findings of the study, the internal audit units of tertiary educational institutions in Adamawa State were found to be ineffective due to a lack of independence and proper resources, as well as a lack of timely internal audit reporting. The Salihu (2015) study also discovered that the management of the organization did not properly implement the components of an internal control system,

especially in the areas of authorization and approval, supervision, separation of duties, and personnel controls.

In their study titled "evaluation of information technology effects on effective internal control in the university system," Sanusi and Haslinda (2015) examined the effect of IT on the internal control systems of Nigerian universities. A questionnaire was used to gather information from three different universities. Chi-square and descriptive statistics were used to analyze the data and help interpret the findings. The results showed that IT has had a positive effect on the university's internal management system of activities. According to the findings, implementing IT will significantly improve the internal control system of the university in its ability to provide high-quality services.

METHODOLOGY

Survey research design was used in the present study. This was deemed appropriate because it enabled the researcher to obtain the opinion of a representative sample of the target population, without manipulating any variable of interest in the study. The study sample consisted of the 120 employees from three units, internal audit, 18; examination and records unit, 46 and ICT unit 56 of Obafemi Awolowo university, Ile-Ife. Stratified sampling technique was employed to select respondents on the basis of three strata (internal audit, examination and records, ICT units) and it was used because of the heterogeneous nature of the study sample. The functions and qualities of the employees at different units in the tertiary institutions were different. A total of 120 questionnaires were distributed and 100 of these were duly filled in and returned. The data were obtained from the primary source through a well -structured questionnaire using a 5- point Likert scale, ranging from strongly agree (5) to strongly disagree (1), and this questionnaire was administered to the staff of three units within the university. Ordinary least square method was employed for data analysis, because it was used to measure the degree of the influence of the independent variable on the dependent variable.

RESULTS AND DISCUSSIONS

There is no significant relationship between Information Technology and Internal Control System in Tertiary Institutions in Osun State.

The R^2 of 0.804 accounts for approximately 80 percent of the variance in the internal control system, which is considered statistically important. The other variables outside the regression module, which would otherwise be included in the stochastic error word, account for the remaining 20 percent of unexplained variance. Therefore, from the analysis and findings above, it is evident that information technology has had a significant influence on the internal control systems of tertiary institutions in Osun State.

Table 1 and Table 2 show the findings of the present study. The projected regression shows that if information technology increased by 1.65 percent, the internal control system would increase by 1.44 percent. It then means that changes in the information technology variable by 1 percent will directly lead to variations in the internal control system positively by a single percentage. This simply means that both variables have a direct positive relationship. The outcome of this study has corroborated the findings of Krishna (2011), who found that there was a positive effect of IT on the internal control systems in Nigerian higher education institutions.

Table 1

Model Summary

Model	R	R^2	Adj. R^2	S.E
1	0.89a	0.80	0.80	0.30

Note. Author's Computation, 2023.

Table 2

Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	95 % Confidence Interval of B			
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	1.44	0.06		7.22	0.00	1.32	0.56
(Constant) Information Technology	1.65	0.03	0.89	20.02	0.00	0.59	0.71

Information technology has no significant relationship with the internal audit processes in tertiary institutions in Osun State.

The value of R^2 is 0.785, which implies approximately about 79 percent of variation in the internal audit process. This result is due to the strong influence of the explanatory variables. The remaining 21 percent unexplained variation that is not accounted for, which otherwise is included in the stochastic error term. This analysis above reveals that information technology has had significant effect on the internal audit process.

The estimated regression in Table 3 and Table 4 (SAP = 1.55+1.50 IT) shows that the internal audit process will be 1.55 percent if information technology has increased by 1.50 percent. This function can also be better explained as follows, an increase in the technology variable by 1 percent will directly lead to variations in the internal audit processes positively by a single percentage too. This simply implies that both variables have a direct positive relationship. This finding is supported in the study by Sanusi and Haslinda (2015), which found that IT has a positive effect on the system dealing with the internal management activities of the university. Implementing IT will significantly improve the ability of the internal control system of the university to provide high-quality services.

Table 3

Model Summary

Model	R	R^2	Adj.R^2	Std. Error
1	0.89[a]	0.79	0.79	0.24

Table 4

Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval of B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	1.55	.05		11.30	.00	0.46	1.65
Information Technology	1.50	.03	.89	19.05	.00	1.45	1.55

CONCLUSION

Based on the outcome from this study, it has been established that in this age of Information Communication Technology, the internal control of tertiary institutions and their internal audit processes can only be strengthened with the use of information technology, coupled with staff with the required skills in order to ensure that identified weaknesses are adequately controlled and infraction reported appropriately. The findings from this study has revealed that information technology has a significant effect on the internal control system and internal audit processes in tertiary institutions in Osun State. The following are the recommendations in light of the study's findings:

1. Internal controls systems should be improved to guide against fraudulent activities.
2. Tasks need to be digitally divided effectively.
3. There is the need to identify who will be held accountable for violations.
4. It is important for management to offer both on and off-the-job training in information technology for personnel.
5. Internal control processes should be strengthened with appropriate information technology to avoid any disruption in the process.

The present study has a limited scope as it had focused only on one university in Osun state and ignored other tertiary institutions in the country. This may hinder the generalizability of results for other tertiary institutions. Future studies need to consider other tertiary institutions, such as colleges of education, polytechnics, and other universities. There is a need for a comparative analysis to establish how public and private tertiary institutions used IT in relation to internal control systems.

ACKNOWLEDGMENT

The authors received no specific grant from any funding institutions or agencies of government.

REFERENCES

Abdullahi, S. A. (1997). *Financial management in Nigeria* (1st ed.). Ibadan New Nigeria Press, 32-35.

Abiola, I., & Oyewole, A. T. (2013). Impact of internal control system on fraud detection: Nigeria experience, *Journal of Accounting and Finance, 13*(5), 141-152.

Adeniji, A. A. (2010). *Auditing and assurance service, Lago*s. Value Analysis, Lagos State, Nigeria.

Adebayo, A. O., Olagunju, A., & Bankole, O. E. (2022). Fraud risk management and fraud reduction: Evidence from the Nigerian oil and gas sector. *Malaysian Management Journal*, *26*(July), 145-168.

Adeoye M., & Adeoye, E. (2014). Drift of risk assessment on prevention of fraud in banks and financial institutions in Nigeria. *Computing, Information Systems, Development Informatics & Allied Research Journal, 5*(2), 13-28.

Adejola, A. P. (2009). Internal control system appraisal, financial management and control training manual, *Proceedings of the 2009 Mandatory Continuing Professional Education 2*(1), 45-54.

Alao, A. A., & Amoo, A. A. (2014). Enhancing the performance of electricity distribution companies in Nigeria via internal control system. *Research Journal of Finance and Accounting, 5*(22), 197-214.

Arens, A. A., & James, J. K. (1999). Auditing: An integrated approach, Hamel Hempstead, *Prentice-Hall International, 3*(1), 58-62.

Awoyemi, A. A. (1989). *Auditing and investigation.* Lagos: Value Analysis Consultant.

Bakare, M. O. (2007). The unethical practices of accountants and auditors and the comprising stance of professional bodies in the corporate world: Evidence from corporate Nigeria. *Journal of Accounting Forum World, 31*, 277-3-3.

Benjamin, A. (2001). The effect of auditors' internal control opinions on loan decisions. *Journal of Accounting and Public Policy*, *27*, 1-18.

Bosire, H. D. (2012). Accounting information system: The challenge of extending their scope to business and information strategy. *Accounting Horizons, 10*(4), 16-22.

Committee of Sponsoring Organisationof the Treadway Commission (COSO) (1994). *Internal control – integrated framework*. USA: AICPA 157.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly,* (3), 319-339.

Dinapoli, T. P. (2007). *Internal control in New York State government.* United State of America.

Dambatta, S. A. (2004). Enhancing the effectiveness of internal audit at local government level in Kano State. *Bayero International Journal of Accounting Research, 1*(1), 54-65.

Financial Reporting Council (2014). Guidance on risk management, internal control and related financial and business reporting. Governance/guidance on risk-management, internal-control.

Gupta, K. (1999). *Contemporary auditing* (5th ed.). Tata McGraw Hill, New Delhi-India. Hamel Hempstead, Prentice.

Gbegi, D. O., & Adebisi, J. F. (2015). Analysis of fraud detection and prevention strategies in the Nigerian public sector. *Journal of Good Governance and Sustainable Development in Africa, 2*(4), 109-128.

Hamilton, D. I., & Gabriel, J. M. O. (2012). Dimensions of Fraud in Nigeria Quoted firms,' American *Journal of Social and Management Sciences, 3*(3), 112-120.

Hamid K. T. (2004). Internal control system and corporate survival in the Nigerian Banking Industry, M.*Sc. Accounting Thesis, ABU, Zaria. (Unpublished*).

International Organisation of Supreme Audit Institution (INTOSAI). (2001). *Internal control: Providing a foundation for accountability in government.* Vienna.

International Organisation of Supreme Audit Institution (INTOSAI). (2004). *Internal control: Providing a foundation for accountability in government.* Vienna.

Lucey, J. F. (2003). The role of internal audit a prudential perspective. *The Institute of Internal Standards for the Professional Practice of Internal Auditing, 2,* 58-61.

Krishna, M. (2011). The impact of information technology on internal auditing. African *Journal of Business Management 5*(9), 3523-3539.

Mbogo, R. (2010). *Accounting the basis for business decisions* (7th ed.). Irwin Mc Graw Hill Publishers.

Odia, E. (2012). Impact of computerized accounting system on external audit functions. The *University Advanced Research Journal*, *1*(1).

Owo, G. U. (2003). Effective internal control system for fraud prevention and detection. *A paper intended for presentation at the maiden edition of National Conference on Ethical issues in Accounting, BUK (Unpublished).*

Oladoyin, A. M., Taiwo, A. O. & Oladele, P. O> (2006). Challenges and threats to commitment and due process in the management of public funds in Nigeria.

Piccchiete, S. H. K. (2002). The Internal Auditor at Work, New Jersey: John Wiley and Sons.

Richard, R. T. (2003). Failed states, collapsed states, weak states: Causes the indication.

Rogers, E. M. (1995). *Diffusion of innovations* (5th ed.). The Free Press.

Salehi, M. H. (2010). *Internal auditor as a custodian of internal control; A case study of national electric power authorit*y. (NEPA). In Proceedings of the First National Conference on Ethical Issues in Accounting.

Sanusi, F. A, & Haslinda, H. (2015). Evaluation of information technology impact on effective internal control in the university system. *Journal of Economics and a Management Science 2*(4), 31-42.

Scott, G. (1995). *Financial management for improved public management and development.* A paper presented at the 12th Meeting of Experts on the United Nations Programme in Public Administration and Finance, Held in New York.

Salihu, A. M. (2015). Impact of internal audit unit on the effectiveness of internal control system of tertiary educational institutions in Adamawa State, Nigeria. *International Journal of Humanities, Social Sciences and Education, 2*(5), 140-156.

Tobbin, A. (2011). The role of distribution channel agents in promoting innovative activity in small retail businesses: A case study of it adoption. *Service Industries Journal, 10*(4).

Unegbu, A. O. & Kida, M. L. (2011). Effectiveness of internal audit as instrument of improving public sectors management. *Journal of Emerging Trends in Economics and a Management Science 2*(4), 304-309.