

Digitalization and Fraud: The Nigerian Public Sector Perspective

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ABSTRACT: The public sector in Nigeria has encountered numerous issues and challenges related to fraud and performance management. Effectively managing fraud is a key factor in determining the growth or decline of a nation. Fraud is a persistent issue that affects the world at large, however digitalization has been proven to be a great tool used in curbing fraud from government activities. Therefore, this study examines the impact digitalization has on fraud in the Nigerian public sector.

The study explored descriptive survey research design with population of the study consisting four hundred and fifty (450) personnels from different government parastatals and the convenience sampling method was adopted in choosing the one hundred (100) sample size used in the study. Primary data was obtained by the administration of questionnaires to various respondents. Both descriptive and inferential analyses were conducted in testing the formulated hypothesis at 5% level of significance.

The null hypotheses were rejected as it was found that digitalization has a significant effect on fraud measured by Payroll Fraud (PAF) (Adj. $R^2 = 0.257$; $F_{(4,94)} = 25.039$; $p=0.000$) and Asset Misappropriation (ASM) (Adj. $R^2 = 0.247$; $F_{(4,94)} = 24.011$; $p=0.000$).

In conclusion, findings revealed that in Nigeria, the effect of digitalization on fraud is significant in the public sector. Therefore, the public sector workers as well as the policy makers should work together to ensure that digital facilities are effectively and actively used as a tool for tackling fraud in all government operations. By doing this, the economic and financial state of Nigeria would be greatly improved and this extends to the citizens as well.

KEYWORDS: Fraud management, Digitalization, Public sector parastatals, Payroll Fraud Blockchain Technology, Asset misappropriation

1.0 INTRODUCTION

Fraud has become one of the most feasible and underestimated threats to the development and growth of the Nigerian public sector. Fraud is a global problem that affects businesses, particularly in nations that are experiencing financial difficulties. Every major economic statistic is impacted by this complicated issue (Burzinji et al., 2022). Nigeria is considered a developing country according to World Bank which explains why fraud has become a norm in the Nigerian sectors, especially in the public sector. Western governments have been able to develop means of combatting the occurrence of fraud, but Nigeria is still behind in discovering how best to tackle fraud particularly in its public sector. This is because fraud has a way of undermining the government's ability to deliver adequate services and achieve intended goals because money and services are diverted away from those who need them, and the services end up being delivered in a substandard way.

According to Ismail Alhassan (2020), The Niger Delta Development Commission (NDDC), the Ministry of Education, the over N2.6 billion school feeding scandals in Federal Government owned schools, and the Economic and Financial Crimes Commission (EFCC) chairman's own scandal, which led to his dismissal from the position, are the most recent significant financial scandals that occurred in 2020 (The Punch, 2020). This goes to show that this menace has eaten deep into the economy as well as the Nigerian sectors, which gives rise to the introduction of digitalization in curbing fraudulent activities in the Nigerian public sector. The objective of civic service is to provide services, and those services should be tailored towards the demands of the populace (Shittu, 2020). Therefore, in public service provision digital data can be applied to the development of society and to address issues pertaining to the actualization of the Sustainable Development Goals (SDGs), among other issues. As a result, it can stimulate innovation and raise productivity while also assisting in the improvement of economic and social results. Platform infrastructure can facilitate more efficient networking, exchanges of information, connections, and transactions (UNCTD, 2020:5)

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Digitalization is set to revolutionize fiscal policy by changing the way governments gather, process, share, and utilize information. By leveraging digital technology, the availability of more and higher-quality information can enhance policy design for taxation and spending, as well as improve systems for managing these areas. This includes advancements in tax administration and compliance, the delivery of public services, the management of social programs, and overall public financial management. According to Chinedu Ofoma (2021), Digitalization has a significant impact on governance since it has made it possible to drive governance processes to provide the best outcomes in a more comprehensive and effective way. Additionally, it is essential and deliberate to public service in order to fulfill citizens' expectations for high-quality service delivery in the present day.

2.0 LITERATURE REVIEW

This research includes theoretical and methodological contributions together with current knowledge, including significant findings. This chapter reveals or highlights the scholarly literature as well as periodicals, online resources, and other textual literature documents related to the topic Digitalization and Fraud in the Nigerian Public Sector. Essentially, all pertinent literature both historical and contemporary will be used to track its beginnings, development, and present state. This section offers an overview of relevant research on the importance of digitalization in averting and reducing fraud among public sector organizations in Nigeria.

2.1 Conceptual Review

Fraud Prevention and Reduction

Fraud is a persistent issue that affects the world at large. Most often, fraud is simply defined as a dishonesty intended for private advantage or disadvantage at the expense of another party. Fraud as a criminal act involves all of the numerous tactics that human ingenuity may invent to give one individual an edge over another by deception. There is no clear definition of fraud because it involves all forms of sneaky, crafty and unfair techniques used to trick someone. Fraud is typically done for financial benefit, although that's not always the case; it can also be done for other strategic goals, like enhancing one's reputation. Fraud fundamentally entails using deception to illicitly obtain private advantage or cause a disadvantage to someone else through dishonest methods. Furthermore, the Association of Certified Fraud Examiners (1999) defines it as an intentional misappropriation, misapplication, or use of organizational resources or assets for personal benefit.

Digitalization

Governance is being significantly impacted by digitalization since it has made it possible to drive governance processes to provide the best outcomes more robustly and effectively. Governance is essential and tactical to public sector services in order to satisfy citizens' expectations for high-quality service delivery in the modern day. The majority of the discourse around digitalization and development has focused on the extent to which nations worldwide possess reasonably priced access to diverse digital instruments and how they are utilized (UNCTD, 2020). Digitalization, as a concept, denotes the practice of using digital technologies to alter many aspects of human life, organizations, industries, and society at large. It involves the integration of digital tools, data, and technologies into existing processes and systems to boost efficiency, productivity, and innovation. The Nigerian public sector is changing as a result of digitalization, bringing in a new era of greater accessibility, efficiency, and openness.

Before the institution of digital inventions in the Nigerian public sector, the delivery system was poor, branded by corruption, inefficiency, and extreme social interaction. Magbadelo (2020) asserted that a lack of service in Nigeria's public sector is a sign of red tape in the necessary approval processing. In Nigeria, working in the public sector is synonymous with incompetence, dishonesty, and subpar service. Nigerians have high expectations for public services, one of which is to receive almost cutting-edge services with minimal human interaction, rendering citizen presence in public offices nearly superfluous. According to Ahmed in Egugbo (2020), service delivery implies that a contractual relationship exists between residents and civic services, obligating the latter to provide services to the former in a way that is most pleasing to the former in terms of service, excellence, ease, relevance, and communiqué.

Block-chain Technology

The main causes of Nigeria's government financial operations' lack of credibility are centralization, account manipulation, and a lack of confidence among the Nigerian citizens and government representatives. Block-chain technology is a decentralized system of distributed ledger that enables the transactions to be documentation of a network of computers in a clear, secure, and immutable way. Nigerian public sector transparency, accountability, and fraud prevention could be greatly improved by blockchain technology, which is frequently heralded as a revolutionary innovation. In a world where financial misbehavior and corruption have made it difficult to use public resources effectively, blockchain proves to be a potent weapon for reducing fraud and promoting improved governance. As this technology advances, academics have emphasized its likelihood in fundamentally

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reshaping the socio-economic backdrop (Angelis and Ribeiro da Silva, 2019; Casino et al., 2019; McCallig et al., 2019; Zouina and Outtai, 2019).

Open Data Portal

The key components of democracy is open governance through dynamic citizen contribution and openness from leaders in government actions. An effective way to achieve open government is by ensuring the ease of assessment of government data by the public, ensuring citizens have the freedom to obtain government information. An open data portal is a centralized web-based platform that functions as a clearinghouse for data sets that are transparently and easily accessible to the public.

The Economic Commission for Africa (2017) described open government data as "any government-produced or government-commissioned data that are freely available and publicly accessible." Also, Janssen & Helbig (2015) and Jetzet (2016) in a more detailed manner noted that this type of multidimensional data provides important information for the nation's socioeconomic and technical development. Therefore, putting in place an open data portal is a systemic strategy to fostering accountability, transparency, and active citizen engagement in the fight against fraud in the Nigerian public sector rather than just a technological one. Strong governance procedures, a dedication to transparency, and constant work to take advantage of new opportunities and challenges are all necessary.

2.2 Theoretical Review

Definitions of key concepts based on theories related to fraud and digitalization, such as the Fraud Diamond theory, Diffusion of Innovation theory and Technology Acceptance Model. This research work relies on understanding and integrating these theories.

Fraud Diamond Theory: To effectively combat fraud, it is crucial to comprehend not only its occurrence but also its mechanisms and motivations. The Fraud Triangle, initially formulated by criminologist Donald R. Cressey several decades ago, has evolved into the Fraud Diamond theory. Wolf and Hermanson (2004) propose this expanded model, arguing that it offers a more comprehensive understanding of the factors contributing to fraud compared to the triangle. They expand on Cressey's three-factor theory by including a fourth variable, termed capacity. The term "capabilities" refers to the attributes, skills, or positional power that the fraudster needs to carry out his crime. The fraud theory Diamond provides an improved understanding of the components of fraud. The hypothesis extends the fraud triangle's three element theory by include a fourth variable, capability. Many scams, according to Wolf and Hermanson, would not have occurred if the correct individual had not been able to perform the specifics of the scheme.

The Fraud Diamond Theory has gained traction because of its applicability and simplicity, despite its criticisms. The four-factor framework offers an organized method for determining and evaluating the risk of fraud in businesses. Because of its simplicity, practitioners and stakeholders who might not have specialist knowledge in fraud detection and prevention can nevertheless use it. Guffey, D.M., & Stephen, R.J. (2017) express that organizations can identify critical risk variables that may give rise to fraudulent behavior by using the Fraud Diamond Theory. Organizations can reduce fraud risks by putting specific preventive measures in place that address pressure, opportunity, rationalization, and capability. By taking a proactive stance, companies can resolve vulnerabilities before they become serious fraud events.

Diffusion of Innovation Theory

The Model of Diffusion of Innovation (DOI) underscores the importance of new attributes of novel technology in determining adoption (Lee, Kim & Ahn, 2011). Everett Rogers' seminal work from 1962 remains the most prominent in the field, despite extensive research on innovation dissemination. The theory surveys how innovative technologies and ideas blowout in a social arrangement, identifying critical issues that impact their acceptance and dispersion across societies or organizations. In the context of fraud and digitalization in the Nigerian public sector, the Diffusion of Innovation Theory provides insights into how the adoption of digital technologies may influence the prevalence of fraud.

The theory assumes that individuals and groups vary in their willingness to adopt new innovations. This assumption is based on the observation that people have different levels of comfort with change and novelty. Innovators and early users tend to be extra receptive to experimenting with new ideas, whereas the majority and laggards often exhibit greater resistance to change. According to Valente, T. W. (1995), the Diffusion of Innovation Theory assumes that certain communication channels are more effective in spreading innovations than others. It posits that interpersonal networks, mass media, and social media platforms play crucial roles in disseminating information about new ideas and technologies to potential adopters.

Greenhalgh, T., et al (2004) expresses that the Diffusion of Innovation Theory presents a somewhat linear and deterministic view of the diffusion process, overlooking the complexities and nonlinearities inherent in real-world adoption dynamics. Critics suggest that the theory assumes homogeneity among adopters, overlooking individual differences, social contexts, and cultural factors that may influence adoption decisions. In reality, adopters may vary widely in terms of their values, preferences, beliefs, and access to resources.

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In the work of Dearing, J. W., & Cox, J. G. (2018), supporters argue that the Diffusion of Innovation Theory offers a powerful outline for predicting and understanding the adoption and diffusion of innovations across various contexts and domains. By identifying key factors that influence adoption decisions, the theory helps researchers and practitioners anticipate how innovations will spread over time. The theory has gained wide application in diverse fields such as marketing, public health, technology adoption, and organizational change management. Researchers and practitioners use the theory to develop strategies for encouraging the adoption of new services, practices, ideas and products.

Theoretical Framework

In this study, the Fraud Diamond Theory, Technology Acceptance Model (TAM), and Diffusion of Innovation Theory provide complementary theoretical frameworks for examining the connection between digitalization and fraud within the Nigerian public sector. The Fraud Diamond Theory forms the basis for accepting the factors that impact on fraud. In the context of digitalization in the Nigerian public sector, pressures may arise from economic challenges, while opportunities and capabilities are influenced by the adoption of digital technologies. Rationalization may be shaped by individuals' perceptions of the impact of digitalization on their roles and responsibilities. TAM focuses on users' attitudes toward technology adoption. In the context of digitalization and fraud, TAM helps to understand how the effortlessness of use and supposed usefulness of digital technologies influence their acceptance. If employees perceive digitalization as user-friendly and beneficial, they are more likely to adopt it willingly, reducing resistance that may contribute to fraud vulnerabilities.

The Diffusion of Innovation Theory brings insights into the stages of adoption, adopter categories, and communication dynamics. It helps to categorize users into innovators, early adopters, etc. Understanding these categories is crucial for tailoring communication strategies and addressing concerns at each stage of digitalization. The theory also highlights the impact of social systems and cultural aspects on the acceptance process as it unfolds.

In summary, integrating the Fraud Diamond, Diffusion of Innovation and Technology Acceptance Model Theories, and offers a holistic framework for comprehending the intricate dynamics between digitalization and fraud within the Nigerian public sector.. This integration allows organizations to address the multifaceted aspects of technology adoption, user acceptance, and cultural considerations to effectively prevent and mitigate fraud risks during the digital transformation journey.

2.3 Empirical Review

An empirical review of the Treasury Single Account and strategies for the detection and prevention of fraud in the public sector was carried out by Liman, Erunke, and Yakubu (2019). According to the study, e-governance can actually be used to identify and stop revenue collection fraud. The report claims that manual control methods were unable to identify or stop fraud within the service before the introduction of e-governance. The systems were unable to identify the numerous holes in the system, which allowed tax officials to take advantage of them and use public funds for their own benefit. However, fraud detection was made simple and subsequently prevented by mean streaming income collection on information and communication technology platforms.

Micah and Moses investigated whether eliminating ghost workers from the payroll in Nigeria's public sector could be attained through the application of an integrated personnel payroll information system (IPPIS). The technique of historical investigation was used. Based on the findings, it was determined that the incentive, capacity, and opportunity for fraudulent individuals to commit payroll fraud at all levels had been significantly decreased by the deployment and execution of the Integrated Personnel and Payroll Management System (IPPIS). In order to reduce fraud as regards in Nigeria, it is advised that MDAs at all levels log into the IPPIS portal in accordance with the Federal Government's public sector reform plan.

In the study of Afolabi, Ibem, Aduwo and Tunji-Olayemi (2022) who examined grey public areas in public procurement processes using a survey research design, findings revealed that the identified grey areas of procurement processes need to be digitalized and the use of E-procurement technologies should be encouraged so as to completely eradicate corrupt procurement tendencies. The study employed the use of primary data through questionnaire distributed to construction stakeholders with knowledge in E-procurement processes within the six geopolitical zones in Nigeria. Multistage sampling technique was used to select 759 samples from the population of the study.

Shenkoya (2023) describes the effect of corruption in all levels of Nigerian government as an endemic problem impeding the nation's ability to meet UN sustainable development goals and good governance delivery. Using mixed method approach to examine countries in Sub-Saharan Africa, findings revealed that digitalization is a certified tool in the fight against fraud and the improvement of accountable governance. However, to support this innovation, current technological infrastructure such as high speed internet, adequate power supply and harmonized system of storage which rarely exist must be strengthened.

Dobrovolska and Rozhkova (2024) further explored the interconnection between Corruption Perception Index (CPI), the National Cyber Security Index (NCSI) and Information and Communication Technology (ICT) development index in 138 countries as at 2023.

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Results revealed an uneven development of cyber security and ICT and an average level of global corruption. Correlation analysis revealed that between CPI and ICT, digital technology can help reduce fraud. The study further confirmed the importance of investing in digital infrastructure as a means to increase transparency while encouraging reforms in some countries.

Block chain and machine learning are ground-breaking approaches to fraud prevention and detection (Bello, Idemudia & Iyelolu, 2024). In their studies on integrating machine learning and block chain for real time fraud detection and prevention, findings revealed that while block chain provides a decentralized way to ensure data integrity, immutability and transparency thereby allowing for audit, unsupervised machine learning techniques are instrumental in discovering new fraud patterns without having to label data. They recommended that the use of both block chain and machine learning enhanced data security, reliability and more advanced compliance leading to a strong financial ecosystem devoid of fraudulent activities.

Raghavendra and Sheethal (2024) explored various digital transformations and how they advance sustainable business practices using case study analysis and systematic review of literature. Findings revealed that the use of digital technologies such as Green Organizational Learning (GOL) strengthens human capital and improves efficiency and compliance. Despite the initial cost of digitalization, the study recommended viewing it as a form of sustainable investment that will enhance resilience, fraud prevention and support green innovation.

Odia (2016) investigates the connection between Nigerian corruption and e-governance. The analysis concluded that, in light of the growing economic difficulties made worse by the disappearance of funds from the distributable pool account, which is being exacerbated by changes in the price of crude oil on the global market and inefficient government expenditure that is manifested in unfinished or abandoned projects throughout the federation's states. According to the report, e-governance can lessen corruption in the public sector, foster financial prudence and discipline, and eliminate leaks and wastes.

Oyadonghan & Ogoun (2017) conducted research on the Misappropriation of finance in the public sector of Nigeria with concentrating on the part of the internal auditor. They utilized structured questionnaires and conducted oral interviews, employing a survey design to gather primary data from audits. The study involved staff members from specific state ministries, and test of hypotheses was carried out using the least square regression analysis. Researchers discovered that internal audit has an obligation to identify and stop money embezzlement in the public sector based on their study and in-person interviews. Similarly, it was found that internal auditors within the State Civil Service lack independence, thereby restricting their capacity to report cases of financial embezzlement to the legislative branch for appropriate action.

According to Nwozor, Ake, Oladipo and Ayanrinde (2022) in their study on the nature of digital transformation in the Nigerian Public sector and the fight against corruption using mixed method approach. Data was derived from interviews and secondary data was used alongside. Findings revealed that digitalizing the public sector would likely enhance their activities and further lead to a total elimination of corruption in the long run. It was recommended that the activities of public sector organizations should be digitalized and public institutions whose mandate is to fight against corruption should be strengthened and empowered to do so.

Furthermore, Yusuf (2016) studied the impact of e-governance programs such as TSA on financial fraud rates and the advancement of accountability and transparency in public financial management. The research included data from primary and secondary sources, in which purposive sampling was employed for the 72 respondents that were questioned, chosen from within the state of Bauchi. The study's findings indicate a strong correlation between public financial management and e-governance. According to a study by Ekpo (2020), technologies like blockchain technology and digital identity systems could be utilized to prevent asset misappropriation and promote transparency. The report looks at the role of technology in fighting corruption in Nigeria.

3.0 METHODOLOGY

Descriptive survey research design was utilized in the study to gather opinions from 450 personnel from the Central Bank of Nigeria's banking supervision department, the Federal Inland Revenue Service's revenue department, the Federal Ministry of Health's unit, and Ogun State Internal Revenue Service. The population was carefully selected due to their knowledge of fraud and digitalization's impact. The study was conducted at both federal and state levels.

Non-probability sampling technique and convenience sampling were used to choose participants based on familiarity with digitalization and ease of data collection. Public servants with knowledge of public sector fraud and information and communication technology were chosen. Sample representations included the Central Bank of Nigeria, the Federal Inland Revenue Service, the federal ministry of health, and Ogun State Internal Revenue Service. 100 copies questionnaires were sent to the necessary department in the sampled parastatals. The conclusions drawn from their findings applied to the entire population.

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Operationalization of Variables

The sole aim of this research study was to investigate the impact of digitalization on fraud within the Nigerian public sector. To achieve this, the research employs two variables: digitalization which is the independent variable and fraud; the dependent variable.

The functional relationship are as follows:

$$Y = f(X)$$

Where:

Y= Dependent Variable

X= Independent Variable

Y= Fraud in the Nigerian Public Sector (FNPS)

These can be sub divided into the following:

y₁= Payroll Fraud (PAF)

y₂= Asset Misappropriation (ASM)

X= Digitalization (DIG)

x₁= E-government Services (EGS)

x₂= Government Integrated Financial Management Information System (GIFMIS)

x₃= Open Data Portal (ODP)

x₄= Block Chain Technology (BCT)

Functional Relationship

$$PAF = f(EGS, GIFMIS, ODP, BCT) \dots \dots \dots (\text{Equation 1})$$

$$ASM = f(EGS, GIFMIS, ODP, BCT) \dots \dots \dots (\text{Equation 2})$$

4.0 ANALYSIS AND RESULTS

Testing Hypothesis One (H₀₁)

Research Objective One: Examine the impact of digitalization on the payroll fraud in the Nigerian public sector.

Research Question One: To what extent does digitalization have an effect on the payroll fraud in the Nigerian public sector?

Research Hypothesis One

H₀₁: Digitalization has no significant effect on the payroll fraud in the Nigerian public sector.

Table 4.2.1.1 Regression Results for Hypothesis One

Model One		Coefficients		Coefficients (Standardized)	T	Significance
y ₁ = a ₀ + β ₁ x ₁ + β ₂ x ₂ + β ₃ x ₃ + β ₄ x ₄ + μ		(Unstandardized)		Beta		
	B	Std. Error				
1	(Constant)	1.487	.481		3.092	.003
	EGS	.294	.119	.260	2.468	.015
	GIFMIS	.141	.103	.146	1.361	.177
	ODP	.146	.102	.169	1.438	.154
	BCT	.086	.081	.108	1.056	.294
a. Dependent Variable: Payroll Fraud						
b. R = 0.536		R ² = 0.287	Adj R ² = 0.257	F _(4,94) = 25.039	P Value = 0.000	

Source: Researcher's Study, 2024

**Significant at 5% level (p<0.05).

$$PAF_1 = \beta_0 + \beta_1 EGS_1 + \beta_2 GIFMIS_1 + \beta_3 ODP_1 + \beta_4 BCT_1 + \mu_1 \dots \dots \dots (1)$$

$$PAF_1 = 1.487 + .294 (EGS_1) + .141 (GIFMIS_1) + .146 (ODP_1) + .086 (BCT_1) + \mu_1 \dots \dots \dots (1)$$

Interpretation of Result

The table 4.2.1.1 represents Hypothesis One which is the Regression model One to test the effect of the effect of digitalization on fraud in the Nigerian public sector. The multicollinearity test indicated that the dataset does not exhibit instabilities that could impact the statistical implication of the study.

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The result indicates that e-government services, Government Integrated Financial Management Information System (GIFMIS), open data portal and blockchain technology positively affect payroll fraud. This is shown by the parameters of the coefficient which are $\beta_1 = 0.294$, $\beta_2 = 0.141$, $\beta_3 = 0.146$ and $\beta_4 = 0.086$ respectively.

The coefficient's direction suggests that for every one unit increase in e-government services, there is an expected increase of 0.294 units in payroll fraud. Similarly, a one-unit increase in the GIFMIS is associated with a predicted increase in payroll fraud by 0.141 units. These results indicate that each unit increase in the open data portal corresponds to an increase in payroll fraud by 0.146 units.. Furthermore, a unit rise in blockchain technology amounts to increase in payroll fraud by 0.086.

Testing Hypothesis Two (H_{02})

Research Objective Two: Evaluate the impact of digitalization on asset misappropriation in the Nigerian public sector.

Research Question Two: What is the impact of digitalization on asset misappropriation in the Nigerian public sector?

Research Hypothesis Two

H_{02} : Digitalization does not have significant impact on asset misappropriation in the Nigerian public sector.

Table 4.2.2.1 Regression Results for Hypothesis Two

Model Two $y_2 = a_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4$ + μ		Coefficients (Unstandardized)		Coefficients (Standardized)	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.756	.474		3.705	.000
	EGS	.334	.117	.303	2.849	.005
	GIFMIS	.195	.102	.208	1.920	.058
	ODP	.083	.100	.098	.833	.407
	BCT	.038	.080	.049	.475	.636
a. Dependent Variable: Payroll Fraud						
b. R = 0.527 R ² = 0.278 Adj R ² = 0.247 F(4,94) = 24.011 P Value = 0.000						

Source: Researcher's Study, 2024

**Significant at 5% level ($p < 0.05$).

$$ASM_1 = \beta_0 + \beta_1 EGS_1 + \beta_2 GIFMIS_1 + \beta_3 ODP_1 + \beta_4 BCT_1 + \mu_1 \dots \dots \dots (1)$$

$$ASM_1 = 1.756 + .334 (EGS_1) + .195 (GIFMIS_1) + .083 (ODP_1) + .038 (BCT_1) + \mu_1 \dots \dots \dots (1)$$

Interpretation of Result

The table 4.2.2.1 shows the regression model that tested hypothesis 2 which is the effect of digitalization on asset misappropriation in the Nigerian public sector. Test of multicollinearity test indicated that there are no disturbances in the data set that can disturb the statistical implication of the study.

Result shows that e-government services, GIFMIS, open data portal and blockchain technology positively affect asset misappropriation. This is specified by the factors of the coefficient which are $\beta_1 = .334$, $\beta_2 = .195$, $\beta_3 = .083$, and $\beta_4 = .038$ respectively. The bearing of this coefficient reveals that each one unit increase in e-government services leads to a predicted increase of .334 in asset misappropriation. In addition, a unit increase in government integrated financial management information system (GIFMIS) would lead to an increase in asset misappropriation by a factor of .195. These findings demonstrate that a unit increase in open data portal equals to a decrease in asset misappropriation by a factor of .083. A unit increase in blockchain technology would also lead to an increase in asset misappropriation by a factor of .038

Discussion of Findings

The research findings revealed that the analyzed data clearly demonstrates that digitalization significantly affects the prevention and detection of fraud in the Nigerian public sector. Regression model 1 shows that digitalization has a significant impact on payroll fraud within this sector. It also showed that digitalization is responsible for 25.7% variations in asset misappropriation and the remaining 74.3% is explained by other factors. This signifies those digital measures needs to be put in place and monitored so that it affects payroll fraud only positively.

From regression model 2, it was shown that digitalization has a substantial effect on asset misappropriation in the Nigerian public sector. It showed that within the model context, digitalization is responsible for 24.7% variations in asset diversion while the residual 75.3% is elucidated by other causes that can have an impact on asset misappropriation. This signifies those digital measures needs to be adequately implemented and managed so it affects asset misappropriation only positively.

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Empirical findings emanating from the study are organized according to the hypotheses formulated for the model as shown below:

There is a significant relationship between digitalization and payroll fraud in the Nigerian public sector. ($\beta_1= 0.294$, $\beta_2= 0.141$ $\beta_3= 0.146$, $\beta_4=0.086$ p-value= 0.000)

There is a significant relationship between digitalization and asset misappropriation in the Nigerian public sector. ($\beta_1= 0.334$, $\beta_2= 0.195$ $\beta_3= 0.083$, $\beta_3= 0.038$ p-value= 0.000)

5.0 CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study surveyed the impact of digitalization on fraud prevention and detection within the Nigerian public sector. It also assessed the influence of independent variables, as indicated by the coefficient of determination (R^2), and provided descriptive statistics to understand how each independent variable affects the dependent variables. Based on the empirical findings, conclusions are that digitalization has a substantial impact on the detection and prevention of fraud in the Nigerian public sector.

5.2 Recommendations

Emanating from the findings and conclusion are the following recommendations:

Public sector workers should make sure that there is full acceptance and diligent adoption of these digital measure. This is the sole approach through which digital techniques can function as effective tools for preventing and detecting fraud in the Nigerian public sector.

- i. Policy makers such as the legislative arm of the Nigerian government should ensure that favorable policies are put in place and are effectively should ensure that the digital facilities improve the chance to detect fraud cases in the government. These policies should not just be put in place but also be properly implemented and developed because with a good digital system in place, the overall performance of the government would positively impact the economy as well as the citizens
- ii. Government should ensure that Ministries, Departments and Agencies adopt effective digital measures to affect the fraudulent financial transaction positively, and in doing that they should also reprimand those found guilty of fraudulent activities. This will ensure that fraud in the public sector is minimized.

5.3 Contribution to Knowledge

The following are some knowledge contributions made by this study:

The study explores the effectiveness of digitalization in Nigeria's public sector, using E-government services, GIFMIS, open data portals, and blockchain technology. It also examines fraud prevention and detection measures, such as payroll fraud and asset misappropriation. The research contributes to literature by providing insights for future scholars, academics, and accountants. It also explores hypotheses concerning digitalization, fraud prevention, and detection, encompassing the fraud diamond and diffusion of innovation theories and technology acceptance model.

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