

DIGITAL ACCOUNTING SYSTEM AND FRAUD MITIGATION IN FEDERAL PUBLIC ENTERPRISES IN RIVERS STATE, NIGERIA

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ABSTRACT

The study examined digital accounting system and fraud mitigation in federal public enterprises in Rivers state, Nigeria. The specific objectives among others were; evaluate the effect of government integrated financial management information system (GIFMIS) on payroll fraud (PF). Determine the effect of treasury single account (TSA) on payroll fraud (PF). Investigate the relationship between integrated payroll on personnel information system (IPPIS) and payroll fraud (PF). Evaluate the effect of government integrated financial management information system (GIFMIS) on embezzlement of funds (EF). This study adopted correlational survey research design. The population is fifteen (15) federal public enterprises in Rivers State, Nigeria. The instrument for this study was questionnaires. The research questions were analyzed using Mean and Standard Deviation in the distributive statistics tables. The formulated hypotheses will be tested using the simple regression analysis with the aid of the SPSS platform. The findings of the study were that there is significant relationship between in between government integrated financial management information system and payroll fraud in Nigeria public enterprises. There is a significant relationship between in treasury single account and payroll fraud in Nigeria public enterprises. There is no significant relationship between in treasury single account and payroll fraud in Nigeria public enterprises. There is significant relationship between in government integrated financial management information system and embezzlement of funds in Nigeria public enterprises. Thus the recommendations among others are; staff should be trained with regards to the growing trend in ICT in order to be able to effectively utilize the IPPIS frameworks. Ministries, public enterprises and parastatals should regularly monitor their top administrative and management activities and prosecute any officer(s) found embezzling public funds and make the head of account unit answerable for any such misappropriation. Again, training Bureaus of the federal civil service should be empowered to train accountants to specialize in forensic auditing. Upon completion of their studies, these accountants should be deployed to man all the Ministries, Departments, and Agencies government integrated financial management information system to continuous mitigating fraud in the public service. State and Local governments across the nation should endeavour to adopt the operation of single treasury account for effective and efficient management of public finance especially in the areas of fraud control and accurate accounting.

Keys: Digital Accounting System, fraud mitigation, government integrated financial management information system (GIFMIS), payroll fraud (PF), integrated payroll on personnel information system (IPPIS), embezzlement of funds (EF) and treasury single account (TSA).

INTRODUCTION

Public sector is rested with the responsibilities of implementing government budgets through spending huge amount of money daily, weekly, monthly and yearly for the providing essential services (Mukoro, 2020). Public sector organisations in Nigeria have documented a wide range of serious frauds and white-collar crimes over the years, which includes ghost workers, financial embezzlements, misappropriation of funds and public resources, and more. The aforementioned problems result from the fraudulence accounting system (Schuppan, 2021). Fraud is regarded as

an irregularity or a deception. It is a means where an individual illegally enriches himself or herself (Aguolu, 2002).

Public organizations lost many of their important assets as a result of fraud related problems. Many cases of corporate collapse in the Nigerian business environment; whether in the public or private sectors are caused by fraudulent government officials or workers. In most cases, fraud is a product of poor internal control systems in organizations. The mitigation of fraud can be effected if there is an efficient and effective internal control system, which can be applied to nip any fraudulent practice in organizations in the bud (Ama, 2020). Fraud is often defined as wrongful or criminal deception intended to result in financial or personal gain. The impact of fraud ranges from financial loss to declines in organizational performance, credibility, and public confidence. As a result, risk management strategies and internal control systems should be implemented, monitored, and modified as necessary by management and governing bodies.

Fraud can be seen as the intentional misrepresentation, concealment or omission of the truth for the purpose of deception or manipulation to the financial detriment of an individual or an organization which also include embezzlement, theft or any attempt to steal or unlawfully obtain or misuse the asset of the bank (Mahdi & Zhila, 2018). There is a general consensus amongst criminologists that fraud is caused by three elements (Gold, 2021). For any fraud to occur, there must be a "will to commit" the fraud, and if the "opportunity to commit" is available, then there will be an "exit or escape route" from relevant sections or institutions that are against fraud or related deviant behaviour. Fraudulent acts include but are not limited to the following: Embezzlement (e.g. theft of cash, using procurement card or accounts payable systems to purchase personal items, diversion of funds), forgery or alteration of documents (e.g. intentional misuse of accounting principles, manipulation of financial records), fraudulent financial reporting, misappropriation. Others are acceptance of bribery, authorization or receipt of payment for goods not received or services not performed (e.g. payments to fictitious employees or vendors and payroll of ghost workers etc.

In Nigeria, factors that have driven fraud and corruption in public sector include political patronage, lack of transparency and accountability, monitoring and auditing of government works and services, low level of professionalism of the bureaucracy, and a weak separation between the civil society and politics. Fraud and corruption in public sector is a serious problem in Nigeria and due to the use of traditional paper-based purchasing systems, there is a potential to avoid the rule of law for securing contracts. There are instances where contracts and tenders are awarded because of an abuse of power and political interference, government officials are also involved indirectly and use their official power for their own private benefits. Members of political parties are also involved and have manipulated public procurement process for their own ends. Fraud and corruption has not only permeated the government of Nigeria; it has attacked the entire nation (Usman, 2020).

Historically, although, there have been fraud and corruption in Nigeria right from the onset, the phenomenon became institutionalized under General Ibrahim Babangida military regime. In view of this, Ogundiya (2018), argued that during the Babangida regime, fraud and corruption was raised to a level of state policy and allegation of corrupt practices were treated with utmost levity thereby destroying all the efforts of the previous administration.

Chief Olusegun Obasanjo laid the foundation of his civilian administration on the belief that fraud and corruption would be eliminated in Nigeria. He signed the anti-fraud and corruption bill into law. He established the Independent Corrupt Practices Commission (ICPC) and Economic and Financial Crime Commission (EFCC) (Usman, 2020).

However, fraud and corruption has continued to grow unabated. Some studies revealed that Nigeria lost between \$4 billion and \$8 billion per year to fraud and corruption during the eight years of Obasanjo's administration (Human Right Watch, 2007). Also, the 2023 Fraud and corruption Perception Index (CPI) released by the Transparency International revealed that the country was

rated 121 out of 180 countries surveyed. On the scale of 10.0, Nigeria scored 1.6 in 1999; 1.2 in 2000; 1.0 in 2001; 1.6 in 2002; 1.4 in 2003; 1.6 in 2004; 1.9 in 2005; 2.2 in 2006; 2.2 in 2007; 2.7 in 2008; 2.4 in 2009; 1.4 in 2010; 2.5 in 2011; 2.8 in 2012; 3.3 in 2013; 4.1 in 2014 and 4.5 in 2015 (TI, 2015). Furthermore, Ogundiya (2018), argued that the experience of the Fourth Republic indicated that fraud and corruption has become a norm. Therefore, it is no longer news that the back covers of our newspaper are always inundated with news about political and bureaucratic fraud and corruption. Oni (2022), puts it that a survey of literature reveals that from 1999 to 2007, in Nigeria, not less than 25 speakers, 10 deputy speakers, 5 Governors, 10 deputy Governors and two senate presidents were impeached while president Olusegun Obasanjo and his vice, Atiku Abubakar also survived several impeachment moves. All the three arms of government and other state institutions are immersed in fraud and corruption. For example, fraud and corruption creates serious setback in the nation's Assembly in the Fourth Republic.

Chief Evans Enwerem, Chuba Okadigbo and Adolphos Nwabara were all impeached on grounds of fraud and corruption (Ogundiya, 2018). Senator Chuba Okadigbo found out among other things that he was involved in the inflation of the street light project to the tune of 173 million Naira; Okadigbo also authorized the payment of 372 million naira to furnish his residence with a sum estimated above 25 million naira and equally installed and commissioned a 100KVA generating set of the Senate President residence at an inflated amount of 15 million Naira (Ogundiya, 2018).

More recently, during former President Goodluck Jonathan (2010-2015), President Mohammed Buhari (2015-2023) administrations fraud and corruption was so rampant with impunity among the government ministries and officials. In 2022, Nigeria's rank improved from 143rd to the 136th position on Transparency International's Fraud and corruption Perceptions Index (Chima, 2022). In late 2012, Nigeria's then central bank governor Lamido Sanusi informed President Goodluck Jonathan that the state oil company, NNPC had failed to remit US\$20 billion of oil revenues, which it owed the country. Jonathan however dismissed the claim and replaced Sanusi for his mismanagement of the central bank's budget. A Senate committee also found Sanusi's account to be lacking in substance (Tim, 2015).

After the conclusion of the NNPC's account Audit, it was announced in January 2015 that NNPC's non-remitted revenue is actually US\$1.48 billion, which it needs to refund back to the Government (NNPC Audit Report, 2015). Upon release of both the PwC and Deloitte report by the government at the eve of its exit, it was however determined that truly close to \$20 billion was indeed missing or misappropriated or spent without appropriation. In addition to these, the government of Goodluck Jonathan had several running scandals including the BMW Purchase by his Aviation Minister, \$250 million plus security contracts to militants in the Niger Delta, massive fraud and corruption and kickbacks in the Ministry of Petroleum, Malibu Oil International Scandal, and several scandals involving the Petroleum Ministry including accusations of sweetheart deals with select fronts and business people to divert public wealth. In the dying days of Goodluck Jonathan's administration, the Central Bank Scandal of cash tripping of mutilated notes also broke out, where it was revealed that in a 4 days period, 8 billion naira was stolen directly by low level workers in the CBN. This revelation excluded a crime that is suspected to have gone on for years and went undetected until revealed by whistleblower. The Central Bank claim the heist undermined its monetary policy (Punch Newspaper, October, 2015).

New Allegations of fraud and corruption have since begun to emerge since the departure of President Jonathan on May 29, 2015 including: 1. \$2.2 billion illegally withdrawn from Excess Crude Oil Accounts of which \$1bn supposedly approved by President Jonathan to fund his reelection campaign without the knowledge of the National Economic Council made up of State Governors and the President & Vice President (Punch News, 2015). NEITI discovered \$11.6 bn was missing from Nigeria LNG Company Dividend Payment. 60 million barrels of oil valued at \$13.7bn was stolen under the watch of the national oil giant, Nigerian National Petroleum Corporation from 2021 to 2018 (Punch News, 2015). NEIT indicates losses due to crude swaps due to subsidy and domestic crude

allocation from 2019 to 2018 indicated that \$11.63bn had been paid to the NNPC but that "there is no evidence of the money being remitted to the federation account".

Diversion of 60% of \$1bn foreign loans obtained from the Chinese by the Ministry of Finance Massive scam in weapons and defense procurements, and misuse of 3 trillion naira defense budget since 2011 under the guise of fighting Boko Haram Diversion of \$2.2 million vaccination medicine fund, by Ministry of Health Diversion of Ebola fight fund up to 1.9bn naira NIMASA Fraud under investigation by EFCC, inclusive of accusation of funding PDP and buying a small piece of land for 13 billion Naira (Tim, 2015)

Ministry of Finance led by Okonjo Iweala hurried payment of \$2.2 million to health ministry contractor in disputed invoices NDDC scams and multifarious scams including 2.7-billion-naira worth of contracts that does not confirm to Public Procurement Act Police Service Commission Scam investigated by ICPC that revealed misappropriation of over 150 million naira related to election related trainings. ICPC made refund recommendations, but many analysts indicated prosecution was more appropriate (EFCC, 2015 and Usman, 2015). Even the 2024 Nigeria Senate Committing probing on Niger Delta Development Commission (NDDC) that revealed many billions embezzled through various fraudulence means and corrupt practices.

To this end, it could be argued that most rampant manifestations of fraud and corruption in Nigeria recently include the inflation of contracts in return for huge kickbacks, which has also grown in its proportion, fraud and falsifications of accounts and official records in the public service, forgery or falsifications of vital documents (including educational qualifications, to gain important offices), especially by aspiring politicians and public servants, the ghost worker syndrome, examination malpractices in educational institutions, bribery, extortion and perversion of justices, especially among the police and judiciary, and of course, the various crimes against the state in the private sector, sometimes by multinational firms operating in the country, in such areas as tax evasion, Over invoicing of goods, foreign exchange swindling, hoarding and smuggling (Usman, 2015).

The frequent reports of fraudulent practices in Nigeria justify the application of digital accounting in the public sector. The establishment of Independent Corrupt Practices and other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) saddled with the responsibilities of fighting and curbing the menace of corruption, frauds and fraudulent practices have not really performed their duties to the expectation of Nigerians and observers in the international communities. Civil servants and political leaders are busy embezzling public funds, laundering and engaging in sharp corrupt practices without fears of getting caught. Thus, digital accounting system is aimed at mitigating, detecting and preventing public fraud and other corrupt practices. Hence, the study is focused on examining digital accounting system and fraud mitigation in Nigeria public enterprises.

Statement of Problem

Over the years, fraud mitigation has been difficult to handle at all tiers of government and has negative effect on economic development. The problem is so entrenched and harmful in the Nigerian bureaucracy that the nation is losing billions Oseloka, (2016). All government enterprises are faced with the problem of large number of ghost workers (payroll fraud), and other financial crimes.

Similarly, government owned enterprises are mostly associated with mismanagement and misappropriation or diseconomy of funds meant to be used in the provision of public goods (Dinapoli, 2007). This is especially as most of those at the helms of affairs in these government owned enterprises ascend to their positions as a reward for political support. These managers mostly take their reign in those positions as a time to reap bountifully and continuously defraud the treasury. This is usually at the expense of the citizens. Hence, service delivery or performance is always at its lowest and fraud mitigation is doubtful. Thus, digital accounting system is aimed at mitigating, detecting and preventing public fraud and other corrupt practices in Nigeria public enterprises.

In an attempt to address this problem, prior empirical studies (Emeh & Obi, 2020; Enofe, et al, 2015) report that effectiveness of audit and fraud prevention, the presence of audit can reduce the

occurrence of fraud. These studies mainly concentrated on the use of audit detecting or investigating financial crimes or frauds in various sectors / industries especially in the deposit money banks, while a hand full on payroll fraud and integrated payroll and personnel system. These studies above, to the best of the researcher’s knowledge cannot make a general conclusion on digital accounting and fraud mitigation in public enterprises,

Thus, to fill the existing content gap in empirical literature this study concentrates on digital accounting system and fraud mitigation in Nigeria public enterprises. Also, the study utilize Nigeria government digital accounting dimensions of government integrated financial management information system (GIFMIS), treasury single account (TSA) and integrated payroll and personnel system (IPPIS) and measures of payroll fraud and embezzlement of fund that have not been wholistically used by other studies. The study also, introduced 'Organizational size as a moderating variable of the study. Hence the study seeks to investigate digital accounting system and fraud mitigation in Nigeria public enterprises.

Conceptual Framework

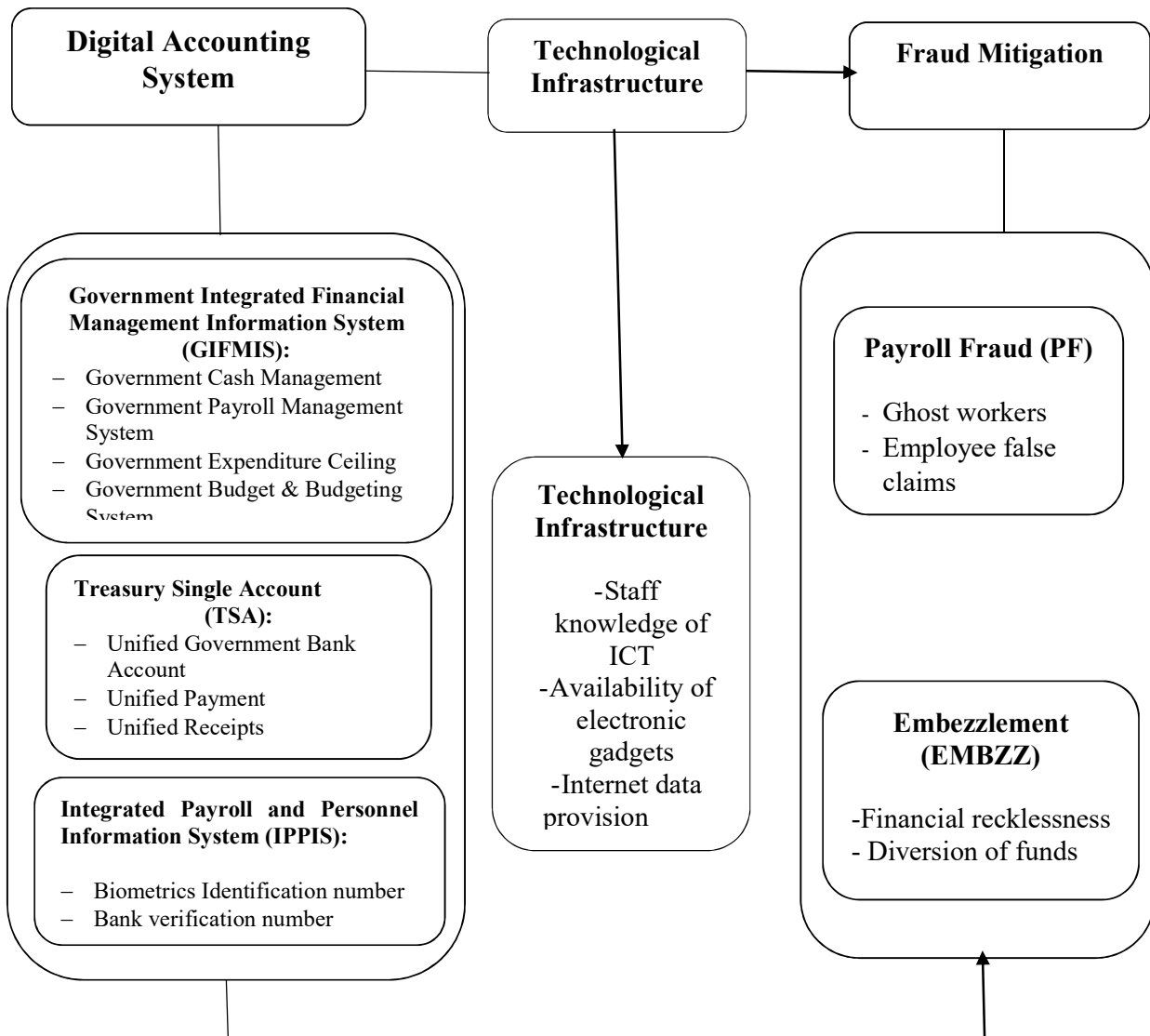


Figure 1.1 Conceptual Framework Model

Sources of conceptualization: Ogundiya (2018), Evrim (2017), Mahdi & Zhila, (2018). Adeniji 2004 and Institute of chartered Accountant Nigeria ICAN 2016, researcher's input, 2024.

Hypotheses of the Study

The general aim and objectives of this study is to examine digital accounting system and fraud mitigation in federal public enterprises in Rivers state, Nigeria. Specifically, the study attended to answer the following hypotheses.

- Ho₁: There is no significant relationship between government integrated financial management information system (GIFMIS) and payroll fraud (PF).
- Ho₂: There is no significant between treasury single account (TSA) and payroll fraud (PF).
- Ho₃: There is no significant relationship between Integrated Payroll and Personnel Information System (IPPIS) and payroll fraud (PF).
- Ho₄: There is no significant relationship between government integrated financial management information system (GIFMIS) and Embezzlement of Funds (EF).
- Ho₅: There is no significant relationship between treasury single account (TSA) and embezzlement of funds (EF).
- Ho₆: There is no significant relationship between integrated payroll and personnel information System (IPPIS) and embezzlement of funds (EF).
- Ho₇: Technological infrastructure does not have moderate influence in the relationship between digital accounting system and fraud mitigation in Nigeria public enterprises.

Government Digital Accounting

According to Fawaz et al (2023), the term "digital accounting" describes the practice of performing all accounting operations electronically rather than on paper that is manual. It describes how financial data is formed, represented, and transferred in an electronic format. For several reasons, including speed and accuracy, automatic financial report preparation, and backup data maintenance, digital accounting is better than manual accounting (Kalbasi, 2007). One of the most significant initiatives of the Nigerian Federal Government is digital accounting, which aims to replace the manual file system that is plagued with corruption, inefficiencies, and inaccurate personnel counts for projects involving the country's public service. Digitalization is the process of transferring material and activities from offline to online environments using computer-based networks, particularly the Internet (Bharadwaj et al., 2020). (Fichman et al., 2022). Digitalization is advantageous to many organisations.

Dimensions of the Predictor Variable

Government Integrated Financial Information System (GIFMIS)

In government operations, GIFMIS refers to the computerization of public financial management processes, from budget preparation and execution to accounting and reporting, with the help of an integrated system for the purpose of financial management (Lianzuala & Khawlhing, 2018). According to Diamond and Khemani (20016) in Chene (2021), a well-designed Integrated Financial Management Information System (IFMIS) is a management tool that provides a wide range of non-financial and financial information. Bhatia (2020), defines IFMIS as an information system that integrates budget preparation, budget execution, accounting, financial management and reporting activities for effective financial management. Integrated financial system involves computerization of public expenditure management processes including budget formulation, budget execution, and accounting with the help of a fully integrated system for financial management of the line ministries (LMs) and other spending agencies (DFID, 2003). This is a system in which Financial Management System (FMIS) and other Public Financial System (PFM) information systems (e.g. FIRMIS/Payroll, Procurement) share the same central database to record and report all daily financial transactions, offering reliable consolidated results for decision support, performance monitoring and web publishing. In Nigeria we have GIFMIS which is aimed at improving the acquisition, allocation,

utilization and conservation of public financial resources using automated and integrated, effective, efficient and economic information system.

Treasury Single Account (TSA)

Kanu (2016), views TSA as one of the financial policies implemented by the federal government of Nigeria to integrate all revenues and treasuries from all ministries, departments and agencies and extra ministerial departments in the country where all the collections are paid into money depositing banks trailed to a single account at the apex bank of the nation (CBN).

Treasury Single Account is a form of public accounting in which all government revenue, expenditure and profits are paid into a single account, traditionally operated by the country's central bank and all payments made through that account (Okereke et al, 2017). The primary purpose is to ensure accountability of government revenue, enhance transparency and prevent abuse of public funds. It is hoped that maintaining a Treasury Single Account will help ensure proper cash management by removing idle funds that are usually left to numerous commercial banks and reinforcing the reporting of profit collection and payment (Adeolu, 2015).

Oti, et al (2016), defined treasury single account as a public accounting system under which all government income, receipts and revenue are collected into on singles account, and payment as well and it is usually maintained by the country's central bank. The major aim is to reduce corruption, ensure proper cash management, eliminate idle fund and enhance reconciliation of revenue collection and payment. TSA is a unified structure of government bank accounts enabling optimal utilization and consolidation of cash resources, through these linked bank accounts, government transacts all its payments and receipts, and gets a view of its consolidated cash position at any given time.

For better consolidation of cash balances, Treasury Single Account (TSA) implementation has commenced in various federal government Ministries, Department and Agencies (MDAs) in other to facilitate efficient payment mechanism, ensure absolute, real-time information on government cash resources, prepare reliable and accurate cash flow forecasts, and optimize the cost of government operations. Under TSA, the cash balances is rolled-up to a single account, instead of the use of multiple bank account, payments from all spending units are controlled by TSA. Treasury single account is a multiple accounts rolled up to a single account, not just a single bank account, it is therefore a unified structure of government bank accounts that gives a consolidated view of government cash resources. It could be one account or a set of linked accounts.

Integrated Payroll and Personnel Information System (IPPIS)

IPPIS is a product of the government initiated to turnaround the dwindling performance of the public and civil service. In 1999 after the Nigeria's return to democratic rule, the Federal Government carried out a Public Service Reform (PSR) study and the result was the development of the National Strategy for Public Service Reform (NSPSR) in 2003 (Mede, 2016). The strategy was to be implemented through four cardinal programmes known as the four (4) pillars of NSPSR. One of the pillars, precisely pillar 3 was aimed at "implementing a public financial management reform to achieve strategic, efficient and effective mobilization, allocation and use of public resources, fiscal discipline, transparency, integrity and accountability through timely reporting". Accordingly, in order to achieve pillar 3, the Economic Reform and Governance Project of which the government Integrated Financial Management Information System /GIFFMIS) and Integrated Personal and Payroll Information System (IPPIS) (Taiwo, 2015), These are digital based programme aimed at Public Financial Management (PFM) and the Human Resource and Payroll issues at the federal level respectively. Thus, IPPIS is a form of identity system management aimed at providing a centralized database to support personal planning and decision making, automated storage of personnel records to aid staff enrolment, and monitoring against budgeting and prevention of wastages and leakages based on factual personnel records and information (www.oagf.gov.ng/IPPIS). Essentially, IPPIS

captures facial images, finger prints of 'government employees, and store in a digitalized data based library which can be accessed with authorization anywhere.

The Integrated Payroll and Personnel Information System (IPPIS) according to Enakirerhi and Temile (2017), as cited in Onukelobi 2019, is one of the Federal government strategic implementation to digitalize the manual based and files system marred with corruption, inefficiency and inaccuracy of the number of personnel in the civil service of Nigeria. In the same vein, Okoye et al (2017), defined IPPIS as a child of circumstance emanating from government's series of public financial management systems and their challenges. It was in a bid to oversee and control government spending that led to creation of reform strategies one of which is IPPIS. According to the World Bank (2010), "The purpose of IPPIS was to procure and implement and integrate solution that would improve the effectiveness and efficiency in transaction services, enhance the confidence in payroll costs and budgeting and greatly improve management reporting and information". The reform actually focused on a minimum set of serious or critical reforms issues across the board that would later provide a platform for subsequent reforms. One of the critical components was the ability to manage services of the establishment and Payroll within the context of public service productivity and constraints of government revenues, priorities and budget.

Computerization

Office computerisation system according to Igbinoba (2015) is the process of applying modern machines and technology to improve information management as well as the overall performance of an organisation. Computerisation system consist of applications designed to help the daily work of the administration of an organisation and her office managers. Electronic resource is the term used to describe the electronic information resources available from a computer desktop, the information resources which are available in the electronic form, the content of these sources varies from bibliographic or factual to full text.

As Lewis (2016) stated, office computerisation system are configuration of networked computer hardware and software. A variety of office computerisation system are now applied to business and communication functions that used to be performed manually or in multiple locations of a company, such as preparing written communications and strategic planning. In addition, functions that once required coordinating the expertise of outside specialists in typesetting, printing or electronic recording can now be integrated into the everyday work of an organisation, saving both time and money. Type of functions integrated by computerisation system includes like electronic publishing; electronic communication; electronic collaboration; image processing and office management. A computerisation system makes office work more efficient and increases productivity.

Fraud Mitigation

Fraud as it is have different meaning to different people, therefore they tend to define it based of the circumstances, situations, observation, conclusion, organisation culture, academic view, legal perceptions personal experience and so on. Eseoghene (2010) defined fraud as an intentional act of deception that is aimed at getting an undue advantage at the expense of individual or organization loosing properties or some lawful rights. Black's law dictionary (2004) posited that fraud is the misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment. In the broadcast sense, fraud can encompass any crime for crime for gain uses deception as its principle modus operators. Consequently, fraud includes any intention or deliberate act that deprives another person of his/her property or money by guile, deception, or other unfair means. Fraud can be committed either internally by employees, managers, officers, or owners of the company, or externally by customers, vendors, and other related parties. Association of Certified Fraud Examiners [ACFE] (2018) defines fraud as "any illegal acts characterized by deceit, concealment, or violation of trust. These acts are not dependent upon the application of threat of violence or of physical force. Frauds are perpetrated by individuals and organisations to obtain money; or to secure personal or business advantage. Institute of Chartered

Accountant of Nigeria [ICAN] (2006) noted that fraud consists of both the use of deception to obtain an unjust or illegal financial gain and intentional misrepresentation of fact, affecting the financial statement by the one or more persons among management or third party. Ruin (2021) also noted that fraud is collectively or individually committed with an intention to deriving undue advantages, avoiding obligation and therefore making another party to suffer both financial and non-financial loss.

The American Institute of Public Accountants (AICPA) (2002) defines fraud as "a broad legal concept that is distinguished from error depending on whether action is intentional or unintentional" they broke fraud down into different element and concluded that fraud can only be evident if the elements are present. These elements are as follows: A representation; that is material; which is false; it is intentionally or recklessly so; which is believed by a person; and acted upon by that person; the person suffer damage. Archibong (1992) sees fraud as a predator mined and well planned tried process or device usually undertaken by a person or group of persons, with the sole objective of cheating other persons or organization, to gain illegal advantage, be it monetary or otherwise which could not have acceded in the absence of such deceitful act.

Payroll Fraud

Pay rolling is the process which an organization passes through to pay its employees. It deals with records relating to the employees' salaries, deductions bonuses and income (Murray, 2017). Rietsema (2018), described payroll as a means or process by which an employee is paid by the organization for the services rendered. According to Ovaga & Eme (2020), Government pay rolling is defined as the listing of all the people who are employed by the Government council, showing the actual amount to be paid each worker at the end of every month. Therefore, before any person is pay rolled in the local government, he or she must be a bonafide worker of the council. Pay rolling is the process of listing the names of people employed in an organization, showing the amount of money to be paid to each of them (Hornby, 2001:857). Pay rolling therefore can be seen as an exercise that is carried out in any establishment where there are workers employed by an employer's). It is done both in the private and government organization provided there are employees.

Payroll unit is a section in finance department headed by the Treasurer of the council. In order to make sure that employees are paid on monthly basis, attendance time sheet and overtime sheets where applicable, are submitted by the various departments and units to the payroll unit before the end of every month. These sheets will be compiled by the payroll officer and will be properly scrutinized by the internal auditor (IA). The Unit should ensure that workers' salaries are prepared on time to ensure prompt payment. To achieve this, the unit should design a system of recording and computing that will ensure payment of correct amounts to authorized employees at due time as well as against unauthorized payment to fictitious persons. It must ensure that all computations are made in accordance with the financial memoranda (FM) approved by commissioner for government and other rules and regulations guiding pay rolling in the government system. The payroll unit should build necessary data on every employee for accurate information in processing his earning The payroll unit should ensure that no employee is either under-paid or over-paid at the end of the month.

Embezzlement

Embezzlement refers to a form of white-collar crime in which a person or entity misappropriates the assets entrusted to them. In this type of fraud, the embezzler attains the assets lawfully and has the right to possess them, but the assets are then used for unintended purposes (Anuolam et al, 2016). According to Okoye and Akenbor O. (2021), embezzlement refers to the crime of misappropriating for personal use resources entrusted to a person's care. The difference between embezzlement and stealing is that embezzlement is done from the inside, and involves stealing resources that one was hired to handle or protect. Embezzlement is a common problem, and it can

have serious negative effects on the businesses that fall victim to it. Balogun, and Olukowade (2015), embezzlement is defined as the misappropriation of property or funds legally entrusted to someone in their formal position as an agent or guardian. Everyone wants to believe that the people they hire are good employees who can be trusted to perform their responsibilities with integrity. Yet, research shows that embezzlement may arise even among the most well-trained, hardworking and trusted employees in an organization.¹ The scope of corruption and fraud in international aid projects, especially, is frequently underestimated, and may include fraud in the form of inflated or fictitious invoices, padded travel expenses and diversion of project assets to private use.

According to Izedonmi and Ibadin, (2018), embezzlement is the act of withholding assets for the purpose of conversion of such assets, by one or more persons to whom the assets were entrusted, either to be held or to be used for specific purposes. Embezzlement is a type of financial fraud. For example, a lawyer might embezzle funds from the trust accounts of their clients; a financial advisor might embezzle the funds of investors; and a husband or a wife might embezzle funds from a bank account jointly held with the spouse.

Digital accounting system and Fraud Mitigation

Payroll Internal control comprises of actions or steps adopted by an organization in order to protect its payroll data (Dewitt, 2006). The essence of the control and procedure is to prevent employees from having access to organizational payroll information that could aid the opportunities of payroll fraud on the organization. Scholar practitioners have come up with several suggestions on effective payroll control mechanisms that can be applied in organizations to prevent or check the occurrence of the various payroll frauds discussed above, with the goal of preventing the incidence of the fraud. To stem the fraud associated with falsified wages, it may be good for the organization to adopt some crucial and key procedures. The introduction of stricter access code system for all employees which will require unique pass codes from the employee would prove useful.

Also, it is necessary to adopt a work place practice which requires that compensation by way of bonuses must be approved by the organizations executive. In order to check the incidence of falsified wages, it is important for the organization to carry out periodic check of employees in charge of workers payroll; see that all cheques must be approved by the executive and ensure that the responsibility of wage modification is assigned to certain individuals whose records should be reviewed from time to time by the management. To forestall the challenges of time sheet fraud, it is suggested that the organization should introduce electronic time sheet entering system by employees and also ensure that all time sheets and overtime must be approved by the management. The problem of ghost worker can also be solved by carrying out periodic payroll audits which would require all staff to be present in person to receive pay cheques after proper identification. To deal with the problem associated with the misclassification of employees, it is advised that an organization should effectively carryout periodic audit of it employees, draft correct employee job descriptions an train management staff on the legal implication of properly defining employees' job description (Fullerton, 2018). Accordingly, with adequate internal control measures in place, payroll fraud in the local government will be detected and prevented before it occurs.

Numerous third world and developing countries are perplexed with either falsification of records or high falsification of records index perception due to weak public regulatory system of financial management. Thus many a time's manual accounting system has shown passive and disinterested attitude towards financial crimes fighting and have failed to inform the public with the needed guarantee and professionalism of their preparedness to stand up to payroll frauds, embezzlement falsification of records, bribery, money laundering, etc The Nigerian Economy has been attributed traditional problem of financial crime that hindered has hindered the economic growth and development of the nation. According to EFCC (2004), financial crimes such as bribery, bankruptcy, security fraud, embezzlement, among others, have taken the centre stage in both private and public financial discourse and is assuming a position of preeminence.

Hence is of utmost believe that since the traditional auditing can't properly laid down guidelines to control and prevent financial crimes, digital accounting system can be used in prosecuting and or controlling financial crimes in corporate enterprises especially deposit money banks in Nigeria. Digital accounting system is field of specialization that has to do with provision of information that is meant to be used as evidence of internal control and especially for legal purposes, (Cole, 2021). The persons practicing in this field (i.e. forensic accountants) investigate and documents financial crimes and white-collar crimes.

Theoretical Framework

White Collar Crime Theory:

Sutherland, 1949 cited in Michael (2004), defined white collar crime as crime committed by a person of respectable and high social status in the course of his occupation stating that white collar crime are crimes committed respectable and of high-status staff in his place of work. White collar criminals are intelligent, opportunists, affluent and educated individuals who believed they can take advantage of circumstances to accumulate financial gain. Civil servant are highly educated and Fraudulent financial activities are illicit activities committed with the purpose of acquiring riches either individually, in group or organized manner thereby violating existing legislation or accounting policies governing the economic activities and administration of the organization. Hence, digital accounting and forensic accounting is needed to fast track these highly educated fraudulent staff of banks. via relating effectively with litigation of money laundering crimes, litigation of fraudulent loans, adjudication of diversion of financial investment crimes and adjudication of financial statements crimes.

Sutherland noted that in his time, less than 2 percent of the persons committed to Prison in a year belong to the upper class. He tried to establish a relationship between money, social status, and the likelihood of going to jail for a white-collar crime with a more visible, typical crime. He tried to separate and define the difference between the blue collar street crimes like burglary, theft, rape, arson and vandalism which are often blamed on psychological, associational and structural factor with white collar crimes committed by criminals who are opportunists who overtime learn that they can take advantage of their circumstances to accumulate financial gains. These criminals are educated, intelligent, affluent individuals who can get a job which allows them unfettered and unmonitored access to often large sum of money. White collar crimes include such illegal acts which are characterize by deceit, concealment, or violation of trust and which are not dependent on the application of physical force or violence. This study will be anchored on white collar crime. More common crimes, securities and financial statement fraud, diversion of investment and mortgage frauds, money laundering and tax evasion, also constitute white collar crime.

Reasons for Anchoring on White Collar Crime Theory

Thus the study is based on white collar crime theory stating that white collar crime are crimes committed respectable and of high status staff in the place of work. White collar criminals are intelligent, opportunists, affluent and educated individuals who believed they can take advantage of circumstances to accumulate financial gain. Civil servants mostly involue in fraudulent act in Nigeria history are highly educated, intelligent, socially and politically affluence individuals who can get a jobs or contracts which allows them unfettered and unmonitored access to often large sum of money. Fraudulent financial activities are illicit activities committed with the purpose of acquiring riches either individually, in group or organized manner thereby violating existing legislation or accounting policies governing the economic activities and administration of the organization. Hence, digital accounting is needed to fast track these highly educated fraudulent staff of the Nigeria civil service via relating effectively with litigation of money laundering crimes, litigation of payroll fraud, adjudication of embezzlement and diversion of funds and adjudication of financial statements crimes. And the intermediating variable is financial audit report.

White collar crime comprises or is in line with triangle and diamond fraud theories, where; Fraud = f(Pressure, Opportunity, Rationalization, Capability). Most white-collar crimes are committed public enterprises. In many instances, the person committing the white-collar crimes is a trusted acquaintance or senior staff that possesses all pressure, opportunity, rationale and capability and they appear to be innocent while taking advantage of the relationship they have with the enterprises. White collar crimes occur over the course of weeks, months or years. It usually takes some time to establish a relationship of trust and then to carry out the act. Plus, if the white-collar crimes go undetected, the criminal can take advantage of the victim for a long time before being found out, as is sometimes the case when senior civil servants embezzle funds from public enterprise where digital accounting does not exist or is not effective and we hear it in the dailies and various news mediums. The amount of money lost due to white collar crimes amounts to hundreds of billions of dollars per year in Nigeria.

Empirical Review

Eddy (2024), appraised the effect of electronic accounting in the corporate performance of an organization. (a study of abbot resources Enugu)". The objective of this study includes the following: to identify the effect of electronic accounting on the account receivables of an organization, to examine the extent to which electronic accounting have impact on account payables of an organization. For a successful completion of this research work, the researcher made use of both primary and secondary methods of data collection for information gathering. Primary data were collected through questionnaire administration, oral interview, and personal observations. Secondary data were collected through periodicals and journals, textbooks and lecture note books, and also the Internet. The data collected were presented in tables and analyzed with simple percentage while the hypotheses stated were tested with chi square. The researcher found out that electronic accounting has significant effect on the account receivables of an organization, electronic accounting has impact on financial reporting of an organization. In conclusion, Electronic accounting has impact on account payables of an organization to a very great extent, Electronic accounting has impact on financial reporting of an organization. The researcher recommends that Managers of organizations should critically study the diverse accounting policies and apply them in their decision making processes as they aid managerial decision making in organizations, Organizations should not ignore the use of accounting policies because of the costs involved in using these tools due to the fact that the costs involved in the use of these tools quantify their benefits.

Sunday et al (2019), examines the effect of the implementation TSA, IPPIS and FMIS on fraud in Public Interest Entities in Nigeria. The theoretical structure of the work anchored on the Meta Theory Model, Circumvention Innovation Theory and Public Finance management theory which highlight the relationship between computerized innovations in government establishments and fraud management. The descriptive research design was employed, and questionnaire administered on respondents randomly selected from the studied Ministries. The linear regression model was employed in establishing the relationship between variables. Results of the statistical test reveal that TSA, IPPIS, and IFMIS have positive and significant relationship with Fraud and fraud management as well as jointly impact the performances of Public Interest Entities. Based on findings of the study, it was recommended among others that IPPIS be fully implemented to address the ghost workers syndrome in Public Interest Entities and that public officers be technologically trained to effectively utilize TSA, IPPIS and IFMIS platforms.

Paul et al (2019), informed the advent of digital integrated personnel and payroll information systems of most African countries. The introduction of the electronic financial governance system in the public sector of the African economies was immensely clouded with several shortcomings. It is because of this, that this paper attempts to examine the effectiveness, identify the challenges and the mitigating factors put in place to cushion the effects of the challenges using IPPIS or IPPD as the case might be. Using three African countries, namely, Kenya, Ghana and Nigeria, the paper found via views articulated from journal articles, newspapers and a few published works that IPPIS

or IPPD has achieved some level of success in term of accuracy, timeliness, reliability in personnel and financial data generation and processing. These helped in weeding out ghost workers, resulting in huge financial savings for the government. Notwithstanding, pockets of challenges were found, namely, lack of Oracle-based training and retraining and arbitrary posting of IPPIS staff, inability to carry out data cleansing exercise before migrating them to the digital devices, failure to introduce any relevant modules that could cover some personnel and payroll activities like staff retirement and termination of appointment. To avert these troubles, some mitigating strategies like improved version and Oracle-based system of the IPPIS or IPPD were developed. Also, there is an existing policy in some of the countries stipulating that IPPIS staff can only be posted after three years on the desk and should only be moved to a similar desk in MDAs where IPPIS is operational. The paper recommends, among others, that no technology is perfect, therefore, there is a need for continuous improvement and upgrades in the digital facilities for managing public finance to stay ahead of the challenges. Again, data cleansing exercise should be thoroughly carried out before they are migrated from paper to digital devices.

Benjamin, et al (2020), examined the effect of Treasury Single Account (TSA) implementation on the financial performance of commercial banks in Nigeria. The study employed expo-facto survey research design and seven big commercial banks in Nigeria. First Bank of Nigeria, Zenith Bank, Access Bank, UBA, Union Bank, Diamond Bank and Fidelity Bank were judgmentally sampled for this study. Secondary data were gathered through CBN statistical bulletin from 2020 to 2017 (that is two years before and two years after implementation of TSA). Customers deposit was used as proxy for independent variable (Treasury Single Account), while profit after tax, return on equity and return on assets are proxies for dependent variable (financial performance). The data collected were analyzed using comparable mean, while research hypotheses were tested using Simple regression analysis. The findings obtained from the statistical testing of the hypotheses of this study show that customers' deposit has a significant effect on profit after tax, return on assets and return on equity of commercial banks in Nigeria. The study recommends that Government should create enabling grounds for commercial banks to operate and be profitable to enable investors to have confidence on the economy because banks drive every economy. Commercial banks should increase their customer deposit by engaging in aggressive marketing strategy that will attract private individuals and businesses in order to increase the volume of their liquidity. Merger and acquisition should be encouraged in order to increase the capital base of banks and to make them strong and viable. Also, banks should avoid over-reliance on government deposits and focus more on other banking activities as well as investments that would help in enhancing their performance.

Ogbonna, and Friday (2018), examines the Impact of Government Integrated Financial Management Information System (GIFMIS) on Economic Development of Nigeria. Secondary data was collected from the Budget Office of the Federation, Office of the Accountant- General of the Federation, National Bureau of Statistic and United Nation Development Programme and analyzed with the use of statistical package for social science (SPSS) and t-test to test the significant difference in independent and dependent variables. The empirical findings revealed among other things, that GIFMIS have impacted positively on Nigeria's economic development. It was concluded from the study that GIFMIS adopted by Federal Government of Nigeria (FGN) has impacted positively on its economic development through the budgeting and budgetary system, payroll management system, cash management reforms, expenditure ceiling for MDA's in Nigeria within the time under review. The study recommends, among others, that the government should strengthen GIFMIS module and cover other area of interest in the national budget to achieve more on human capital development, investment in critical infrastructures, gross domestic product, and per capita income. The savings of over N126 billion from the implementation of GIFMIS could be channeled to human capital development like education, health etc or investment in critical infrastructure like roads, port etc or diversify the economy. Therefore GIFMIS is a good platform and effective and efficient strategy in the management of government finances. It reduces incidences of government borrowing, provides holistic financial information and minimizes fraud in Nigeria.

METHODOLOGY

This study adopted correlational survey research design. The population is fifteen (15) federal public enterprises in Rivers State, Nigeria. The unit of respondents for the study consist of top administrative / management staff and middle administrative / management staffs that are knowledgeable and competent in fifteen (15) conveniently selected federal public enterprise in Rivers state. At the time of this research, the population of the entire staff above in these public sector organizations were one hundred and sixty-seven (127). (Source: Research Data, 2024). The sample size of this study is ninety-six (96). This number is derived by the application or use of Taro Yamane formula for sample size determination. The instrument for this study was questionnaires. The research questions were analyzed using Mean and Standard Deviation in the distributive statistics tables. A criterion means of 3.0 is set as a guideline for accepting and rejecting option. The criterion mean is calculated as follows: $5+4+3+2+1/5 = 3.0$. Fixing the criterion mean at 3.0 implies that for any item to be accepted, it must score a minimum mean value of 3.0 or above, while anything less than 3.0 is rejected. The formulated hypotheses will be tested using the simple regression analysis with the aid of the SPSS platform.

Model Specification

According to Freedman (2021), regression analysis is concerned with the study of how one or more variables affect changes in another variable.

Thus, the formula for regression: $\psi = a_0 + bx + e.....1$

- Where:
- ψ = index of outcome variable
 - a = constant term for the independent variables
 - b = index of predictor variable
 - x = coefficients
 - e = error level

In functional form, our hypotheses model are:

HO₁: PF = f(GIFMIS)..... (i)

Where:

- PF = Payroll Fraud
- GIFMIS = Government Integrated Financial Management Information System

HO₂: EMBZZ= f(GIFMIS)..... (ii)

Where:

- EMBEZZ = Embezzlement
- GIFMIS = Government Integrated Financial Management Information System

HO₃: PF = f(TSA)..... (iii)

Where:

- PF = Payroll Fraud
- TSA = Treasury Single Account

HO₄: EMBZZ = f(TSA)..... (iv)

Where:

- EMBEZZ = Embezzlement
- TSA = Treasury Single Account

HO₅: PF = f(IPPIS)..... (v)

Where:

- PF = Payroll Fraud
- IPPIS = Integrated Payroll and Personnel Information System

HO₆: EMBEZZ = f(IPPIS)..... (vi)

Where:

- EMBEZZ = Embezzlement
- IPPIS = Integrated Payroll and Personnel Information System

Where:

- FMSZ = Firm Size
DAS = Digital Accounting System
FM = Fraud Mitigation

Decision Rule

1. Rejecting Null Hypothesis

When the F-ratio (F) > 1.960, and the Significant/P-value (Sig) < 0.05
The null hypothesis is rejected and the alternate hypothesis is accepted.

2. Retaining Null Hypothesis

When the F-ratio (F) < 1.960, and the Significant/P-value (Sig) > 0.05
The null hypothesis is retained and the alternate hypothesis is rejected.

Data Presentation and Analysis

Table 1: Questionnaire Distribution to Respondents and Retrieval

Questionnaire Copies	Frequency	Percentage %
Administered	96	100
Returned	87	91
Bad / incorrectly filled copies/ non-returned	9	9

Source: Survey Data, 2024.

Prior to table 4.1 above, ninety-six (96) copies of the questionnaire were distributed among the respondents which consisted of top administrative/management staff and middle administrative management staff of the fifteen selected public enterprise in Nigeria. Eighty-seven (87) copies were retrieved which amount to 91%; while nine (9) copies went bad, not returned or incorrectly filled which amount to 9%.

Univariate Descriptive Analysis and Result Interpretations

The analysis of research questions was based on descriptive statistics showing the mean and standard deviation of respondents to items, using a criterion mean of 3 as stated in chapter three in method of data analysis above.

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Deviation	Statistic	Statistic
					Statistic		
GIFMIS	197	1.400	5.000	3.85685	.939238	2.773	7.343
TSA	197	1.800	5.000	3.57360	.803890	2.379	6.871
IPPIS	197	2.200	5.000	3.70660	.602552	2.458	8.355
PF	197	2.400	4.800	3.79289	.452826	2.446	4.224
EMBZZ	197	2.000	4.800	3.87513	.547388	3.524	6.038
CS	197	2.400	4.800	3.79289	.554527	3.291	5.532
Valid N (listwise)	197						

Source: Researcher's SPSS (v.24) computation Result, 2024

To answer the research question one, result from table 4.6 above shows a mean response of 3.85685, 3.57360 and 3.70660 for government integrated financial management information system (GIFMIS), treasury single account (TSA) and integrated payroll and personnel information system (IPPIS) which are above criterion mean of 3 indicating that large percentage of the respondents agreed to the items. The standard deviation for GIFMIS, TSA and IPPIS were 0.939238, 0.803890 and 0.602552 respectively, indicating that there was homogeneity or unity of

response. Also, the normalcy test of Skewness and Kurtosis calculated mean values, which is a measure of the departure of a distribution from symmetry above, for four study dimensions' GIFMIS, TSA and IPPIS show a positive skewness value that is greater than 1. This indicates that the four study dimensions are normally distributed. The Kurtosis result, which measures the extent of flatness or peakedness of a distribution in relative terms to a normal distribution, confirms that GIFMIS, TSA and IPPIS are normally distributed and are not platykurtic (not having negative values/flattened curved) as their kurtosis coefficient is more than 3.0.

On the other hand, the two measures of the criterion variable of the study, payroll fraud (PF) and Embezzlement (EMBZZ) have calculated average values 3.79289 and 3.87513 respectively. The maximum and minimum values of PF and EMBZZ were 2.400 and 4.800, respectively. On the other hand, the standard deviation values of 0.79289 and 0.554527 signify that the data deviates from the mean values of the two study measures, indicating that there was homogeneity or unity of response.

Bivariate Analysis and Results Interpretations

Test of Hypotheses

Hypothesis one: Ho₁: There is no significant relationship between government integrated financial management information system (GIFMIS) and payroll fraud (PF).

Model 1: The first hypothesis test model; the relationship between payroll fraud and government integrated financial management information system: $PF_{it} = a_0 + b_1(\text{GIFMIS})_{it} + e (.05)$

Table 3 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.024	.689		23.247	.000
	GIFMIS	.509	.041	.860	5.214	.032

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.7b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 0.860, produced a t-value of 5.214 which is significant at P (0.032) less than the chosen alpha of (0.05). The result is significant thus; the null hypothesis is rejected (P-Value < 0.05). Hence, there is significant relationship between government integrated financial management information system and payroll fraud.

Hypothesis Two: Ho₂: There is no significant between treasury single account (TSA) and payroll fraud (PF).

Model 2: The second hypothesis test model; the relationship between treasury single account and payroll fraud. $TSA_{it} = a_0 + b_1(\text{PF})_{it} + e (.05)$

Table 4 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.564	.744		22.253	.000
	TSA	.326	.048	.739	2.548	.004

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.8b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 0.739, produced a t-value of .004 which is significant at P (0.004) less than the chosen alpha of (0.05). The result is significant thus; the null hypothesis is rejected (P-Value < 0.05). Hence, there is a significant relationship between treasury single account and payroll fraud in public enterprise in Nigeria.

Hypothesis Three: Ho₃: There is no significant relationship between integrated payroll and personnel information system (IPPIS) and payroll fraud (PF).

Model 3: The third hypothesis test model; the relationship between Integrated Payroll and Personnel Information System and payroll fraud: $IPPIS_{it} = a_0 + b_1(PF)_{it} + e (.05)$

Table 5 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.118	.902		11.214	.000
	IPPIS	.395	.058	.760	5.321	0.584

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.9b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 0.760, produced a t-value of 5.321 which is significant at P (0.584) greater than the chosen alpha of (0.05). The result is not significant thus; the null hypothesis is accepted (P-Value > 0.05). Hence, there is no significant relationship between in integrated payroll and personnel information system and payroll fraud in public enterprise in Nigeria.

Hypothesis four: Ho₄: There is no significant relationship between government integrated financial management information system (GIFMIS) and Embezzlement of Funds (EF).

Model 4: The four hypothesis test model; the relationship between government integrated financial management information system and Embezzlement of Funds: $GIFMIS_{it} = a_0 + b_1(EF)_{it} + e (.05)$

Table 6 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(CONSTANT)	12.474	1.341		9.305	.000
	GIFMIS	.234	.084	.890	2.778	.011

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.11b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 0.890, produced a t-value of 2.778 which is significant at P (0.011) less than the chosen alpha of (0.05). The result is significant thus; the null hypothesis is rejected (P-Value < 0.05). Hence, there is a significant relationship between government integrated financial management information system and Embezzlement of Funds in public enterprise in Nigeria.

Hypothesis five: Ho₅: There is no significant relationship between treasury single account (TSA) and Embezzlement of Funds (EF).

Model 5: The five hypothesis test model; the relationship between treasury single account and Embezzlement of Funds: $TSA_{it} = a_0 + b_1(EF)_{it} + e (.05)$

Table 7 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	55.783	.702		27.477	.000
	TSA	.709	.542	.764 ^a	3.304	.020

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.12b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 55.783, produced a t-value of 304 which is significant at P (0.020) less than the chosen alpha of (0.05). The result is significant thus; the null hypothesis is rejected (P-Value < 0.05). Hence, there is a significant relationship between treasury single account and Embezzlement of Funds in public enterprise in Nigeria.

Hypothesis six: Ho₆: There is no significant relationship between integrated Payroll and Personnel Information System (IPPIS) and Embezzlement of Funds (EF).

Model 6: The sixth hypothesis test model; the relationship between integrated Payroll and Personnel Information System and Embezzlement of Funds: $IPPIS_{it} = a_0 + b_1(EF)_{it} + e$ (.05)

Table 8 Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.042	.759		21.140	.000
	IPPIS	.708	.549	.711	2.156	.877

Source: Researcher's SPSS (v.24) computation Result, 2024

The above 4.13b coefficient table shows a Beta (β) value (same as correlation coefficient, R) of 0.711, produced a t-value of .158 which is not significant at P (0.877) great than the chosen alpha of (0.05). The result is insignificant thus; the null hypothesis is accepted (P-Value > 0.05). Hence, there is negative and insignificant relationship between integrated Payroll and Personnel Information System and Embezzlement of Funds in public enterprise in Nigeria.

Hypothesis seven: Ho₇: Organizational size does not have moderate influence in the relationship between digital accounting system and fraud mitigation in Nigeria public enterprises.

4.5 Analysis on the Moderating Variable in Partial Correlation Matrix

Table 9 Partial Correlations

Control Variables			DA	FM
TI	DA	Correlation	1.000	.702
		Significance (2-tailed)	.	.003
		Df	0	8
	FM	Correlation	.702	1.000
		Significance (2-tailed)	.003	.
		Df	8	0

Source: Researcher's Statistical Result from SPSS V.23, 2024.

From the output of the partial correlation explains that, technological infrastructure bears a significant influence on the relationship between digital accounting system and fraud mitigation in Nigeria public enterprises. The correlation coefficient of 0.702 means that, Organizational size positively influences the interplay of digital accounting system and fraud mitigation as depicted by the probability level of 0.003 which is higher than the chosen alpha level of 0.05, thus leading to the rejection of the null hypothesis and accepting the alternative hypothesis. Hence, there is a significant influence of Organizational size in the relationship between digital accounting system and fraud mitigation in Nigeria

Summary Results Findings

Table 10 Summary Computation of Hypotheses Results

Hypotheses	Coefficient	Std. Error	T-Stat	P-Value	Statistical Decision	Result
H0 ₁	0.860	.689	5.214	0.032	Significant	Rejected H0 ₁
H0 ₂	0.739	.048	.548	.004	Significant	Rejected H0 ₂
H0 ₃	0.760	.058	5.321	.584	Not Significant	Accepted H0 ₃
H0 ₄	0.890	.084	2.778	.011	Significant	Rejected H0 ₄
H0 ₅	0.764	.542	3.304	.020	Significant	Rejected H0 ₅

H0 ₆	0.505	.549	2.156	.877	Not Significant	Accepted H0 ₆
H07				.003	Significant	Rejected H07

Source: Researcher's Computation, 2024

CONCLUSION

Accounting plays an important role of recording and managing funds in any public organization in the most suitable way. But the prominence of fraudulent accounting practices in Nigerian public sector have necessitates the use of digital accounting in government organizations. In Nigeria, the Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices and Other Related Offences Commission (ICPC) were established to combat and limit the corruption threat, especially diversion of government funds. Still, Top civil administrative and management staff are busy embezzling public funds, laundering money and engaging in sharp corrupt practices without fear of getting caught. Thus, the need for digitalizing government accounting system, aimed at mitigating, detecting, and preventing public sector officer's fraud and other corrupt practices.

1. There is significant relationship between in between government integrated financial management information system and payroll fraud in Nigeria public enterprises.
2. There is a significant relationship between in treasury single account and payroll fraud in Nigeria public enterprises.
3. There is no significant relationship between in treasury single account and payroll fraud in Nigeria public enterprises.
4. There is significant relationship between in government integrated financial management information system and embezzlement of funds in Nigeria public enterprises.
5. There is significant relationship between treasury single account and embezzlement of funds in Nigeria public enterprises.
6. There is no significant relationship between in integrated payroll and personnel information system and embezzlement of funds in Nigeria public enterprises.
7. There is significant influence of technological infrastructure in the relationship digital accounting system and fraud mitigation in Nigeria public enterprises.

RECOMMENDATIONS

Though government integrated financial management information system has contributed significantly to payroll fraud mitigation. There is necessity for the of Nigerian government to be proactive in the combat against fraud in its civil service. Staff should be trained with regards to the growing trend in ICT in order to be able to effectively utilize the IPPIS frameworks. Ministries, public enterprises and parastatals should regularly monitor their top administrative and management activities and prosecute any officer(s) found embezzling public funds and make the head of account unit answerable for any such misappropriation. Again, training Bureaus of the federal civil service should be empowered to train accountants to specialize in forensic auditing. Upon completion of their studies, these accountants should be deployed to man all the Ministries, Departments, and Agencies government integrated financial management information system to continuous mitigating fraud in the public service. State and Local governments across the nation should endeavour to adopt the operation of single treasury account for effective and efficient management of public finance especially in the areas of fraud control and accurate accounting. The Economic and Financial Crime Commission (EFCC) should be fortified financially and technologically for effective lope holes in digital accounting strategies. The anti-graft agency should also add forensic accountants for professional detection of evidences which will assist litigation in the court of law.

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APPENDIX B QUESTIONNAIRE ITEMS

SECTION B

Please tick (✓) where applicable to you.

Response Options	Response key	Scale/Weight
Strongly Agree	SA	5
Agree	A	4
Undecided	U	3
Disagree	D	2
Strongly Disagree	SD	1

S/N	GOVERNMENT INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM (GIFMIS)	SA	A	U	D	SD
1	GIFMIS is an effective mechanisms for internal monitoring and control of cash management and financial assets.					
2	The application of GIFMIS have improved the (inventories management) procurement, allocation, utilization and conservation of public financial resources.					
3	GIFMIS can effectively function as litigation support service for forensic audit investigation.					
4	GIFMIS effectively controls and monitor capital and expenditure ceiling.					
5	GIFMIS improved the level of public administrators / directors / managers accountability.					
6	GIFMIS can easily detected payroll and budgetary fraudulent activities.					

S/N	TREASURY SINGLE ACCOUNT (TSA)	SA	A	U	D	SD
7	TSA sharing the same central daily financial transactions database of records have reduced white collar crimes.					
8	TSA has reduced financial manipulations on cash payment and receipt of government.					
9	TSA records serve as a primary base for forensic audit investigation.					
10	TSA effectively reduces the level of public administrators / directors / manager's embezzlement.					
11	TSA is an effective mechanisms for internal monitoring and control of government cash management and financial instruments.					
12	TSA prepare reliable and accurate cash flow forecasts.					

S/N	INTEGRATED PAYROLL AND PERSONNEL INFORMATION SYSTEM (IPPIS)	SA	A	U	D	SD
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13	IPPIS have reduced human resources and payroll issues.					
14	Biometrics identification number has reduced the level of ghost workers in civil service.					
15	Public Financial Management (PFM)					
16	Bank verification number have reduced fraudulent transactions.					
17	Payroll costs and budgeting and greatly improve management reporting and information					
18	Reduction or elimination of corrupt and sharp practice					

S/N	PAYROLL FRAUD (PF)	SA	A	U	D	SD
19	There have continuous incidents of payroll fraud in this organization.					
20	External auditors have detected payroll fraud activities in this organization.					
21	Forensic audit investigation have detected payroll fraud activities.					
22	GIFMIS have detected falsification of accounts and payroll records.					
23	Bribery and corruption is high in this organization.					
24	IPPIS have detected payroll fraud activities in this organization.					

S/N	EMBEZZLEMENT OF FUNDS (EF)	SA	A	U	D	SD
25	There have been cases of falsification of records in this organization.					
26	There has been cases of adjudication on diversion of financial investment.					
27	The government organization internal control system weak.					
28	GIFMIS is capable of minimize managers tendencies to record fictitious assets by increasing assets and increasing their equity.					
29	IPPIS have detected embezzlement of funds activities in this organization.					
30	Bribery and corruption is high in this organization.					

S/N	INFRASTRUCTURAL TECHNOLOGY	SA	A	U	D	SD
31	Electronic gadgets are provided to officials for effective administration of government digital accounting.					

32	There is availability of internet service or data allowance to staff directly involved.					
33	The personnel are employed and adequately trained by professionals.					
34	The staff are fully knowledgeable and competent in government digital accounting systems.					
35	Audit department are effectively trained and knowledge of GIMS					
36	Is the network and database functional has it aimed/supposed.					