© FEB 2026 | IRE Journals | Volume 9 Issue 8 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I8-1714055

Public Sector Financial Reforms Impact on Bank Verification Number Payroll Fraud Prevention and Control in Borno State. A Case Study of Civil Service Commission, Borno State

ARAFAT AHMAD HUSSAIN[1], EMMANUEL YOHANNA[2], YUSUF BABA MALA[3]
[1]*Accounting Department, Kashim Ibrahim University, Maiduguri, Nigeria*
[2]*Office Of the Vice-Chancellor, Kashim Ibrahim University, Maiduguri, Nigeria*
[3]*Bursary Department, Kashim Ibrahim University, Maiduguri, Nigeria*

Abstract- ***The study assesses the impact of public sector financial reforms, looking at Bank Verification Number on payroll fraud prevention and control in Borno State- a case study of the Civil Service Commission, Borno State. Three objectives and three research questions were formulated for the study. The study makes use of data from a sample size of 150 respondents who were selected for the study using simple random sampling techniques. Structured questionnaire was used to collect primary data. Descriptive statistics were used to analyse the data through computing of mean, standard deviation and percentages. In addition, regression analysis was used to establish the relationship between the independent variables and the dependent variable. At the end of the research, it is expected that the effect of biometric identification number on payroll fraud prevention in Civil Service Commission will be known and the effect of Bank Verification Number(BVN) on payroll fraud prevention in Civil Service Commission will be ascertained. Based on the findings of the study it is recommended that training the personnel and payroll staff on the importance of frequent reconciliation of the personnel and payroll records and the use of electronic payments system should be encouraged. Any changes in the personnel database like new staff hires, retired staff, death cases staff, those on Study Leave or transfers of service should be updated promptly in the payroll system.***

Keywords: Financial Reforms, Bank Verification Number, Payroll, Fraud prevention and Control

I. INTRODUCTION

Government at all levels in Nigeria is the biggest employer of labour (Oluwalami (2018). However, this huge workforce is riddled with a lot of challenges amongst which are the problem of ghost workers. According to Oguzierem and Sofiri (2017), ghost workers and payroll fraud refers to all processes of employee impersonations that have salary cost implication on the concerned government. It includes all illegal, unauthorized, unqualified, fictitious and non-existing staff that make salary claims from the government coffers. This implies that cases of underage, overage, backdated employment, inherited employments, unqualified staff and unauthorized staffs even though they report for work daily; are categorized as part of ghost workers and payroll fraud in the public service. In most instances, these fraudulent public officeholders forge the necessary documents and authorizations to add an employee on the payroll.

McCallum and Tyler (2001), in Oguzierem and Sofiri (2017) asserted that apart from traditional ghost workers which are fictitious and non-existing employees added to the payroll by fraudulent payroll managers, there are also the non-apparent ghost workers. These categories of ghost workers' fraud are real staff in the public sector who receive fictitious pay through payroll irregularities. They include staff who receive unearned salaries through false means; for instance, staff who have multiple jobs in the civil service, receive dual or multiple salaries using pseudo names, employees who earn levels of pay or allowances greater than their rank, employees on unauthorized temporary absence or leave of absence but who continued to earn full salary, and employees on transfer or retirement but whose names are in the payroll. The ghost workers' syndrome is not limited to the salary payroll but also to pension payroll as many of the ghost workers enumerated above naturally graduate to the pension scheme while others are added by managers of the pension payroll. The problem was so severe that the pension schemes of many of the

parastatals of the government spent huge resources trying to fish out the culprits and in some cases collapsed under the weight.

Ghost workers are a huge drain on the resources of the country as hundreds of billions of Naira is spent paying salaries and pensions entitlements to non-existent workers and in many cases to individuals who have no reason for collecting such pay other than the fact that they knew somebody who could easily add their name to the payroll. For example, the Ministry of Finance recently revealed that almost 24,000 ghost workers were discovered in the payroll of the Federal Civil Services which saved the government in excess of N2billion Naira in salaries in 2016. This is in addition to the over 60,000 ghost workers weeded out of the Federal Government payroll in 2014. Many reasons have been adduced for the menace of ghost workers in Nigeria and other developing countries of the World (Guardian Newspaper, 20th June, 2018).

Olken and Pande (2012) argue that fraud because of the ghost workers' syndrome is mainly due to inadequate research/information on the phenomena. The problem has become quite pronounced and noticeable considering the present economic realities in the country. With falling prices in crude oil, the major source of income of the country, the government has been known to borrow to pay salaries of workers, many of whom are ghost workers. Whatever the causes of the problem, the point remains that it cannot be allowed to continue. To find a lasting solution to the problem, the Federal and State Governments have over the years instituted several policies many of which have failed to yield the desired result. For example, governments at all levels over the years have embarked on employee verification processes including bio-data capturing, head counts at work desks, bank/worker ID verifications all of which have yielded varying degrees of success but has failed to bring about a lasting solution.

In an effort to curb this, the government in 2006 introduced the Integrated Payroll and Personnel Information System IPPIS to provide a reliable and comprehensive database for the public service to facilitate manpower planning, eliminate record and payroll fraud, facilitate easy storage, update and retrieve personnel records for administrative and pension processes, and facilitate convenient staff remuneration payment with minimal waste and leakage. The project which began as a phased and gradual implementation in 2007 has recorded a lot of success and is seemingly promising to achieve more in the near future. For example, since its inception the magnitude of ghost workers discovered in the federal government payroll have never been recorded in the history of Nigeria. Therefore, the aim of this study is to examine the effectiveness of Bank Verification Number (BVN) in detecting and eliminating ghost workers in the Nigerian Public Service by appraising the Integrated Payroll and Personnel Information System (IPPIS).

Statement of the Problem

For decades, payroll fraud has continued to drain incredible sums of money from the Nigerian public service (CBN, 2016). Infamously known as 'ghost workers', various methods have been employed to check the syndrome, but those behind it continue to find new techniques. At all levels of government - federal and state - there is a renewed fervor to tackle the problem, especially during the President Muhammadu Buhari led administration, the quest for transparency and the economic downturn (Gbemre, 2016). Faustinus (2013) observes that payroll fraud is as old as the public service establishment in Nigeria. The trend has occupied the minds of policy planners as several tons of millions of tax payers funds are spent by government hunting fictitious names that are growing in number and notoriety. Despite claim efforts to flush out these names, the scenario consistently repeats itself.

Payroll fraud is a serious and expensive problem, and one which can pass unnoticed for long periods of time if your company doesn't have the correct procedures in place (Davidson, 2016). Ghost workers who are inserted into the payroll through collusion are usually difficult to expose because those who ought to stop the ghost names from entering the payroll are part of the crime. There is collusion within the system that enhances the operation of payroll fraud (Obinna, 2013).

Those employees that have been retired, dead or on transfer may be kept on the payroll if payroll managers delay in removing the names of individuals who are no longer in service (Lekubu 2013). This means that the workers are paid a salary irrespective of not being present in the office as a staff and did not work and the salaries redirected by the fraudster. This, if not checked, will further create loopholes in the payroll system and in the collection of salaries. With the introduction of the Bank Verification Number (BVN) details, the perpetrators are easily found out. These details are used to identify ghost workers by acting as a check on those collecting multiple salaries and any other irregular entries on the payroll. The BVN can also be used to prevent diversion of salaries to the non-BVN or inactive accounts opened by the perpetrators in order to siphon the government's monies into their private pockets. This study intends to document empirical explanation to the effectiveness of Bank Verification Number (BVN) in detecting and eliminating ghost workers in the Nigerian Public Service as a type/function of fraud.

For a long time, payroll fraud has been difficult to deal with at the federal, state and local government levels. The problem of payroll fraud is now a national crisis and a huge drain on the nation's economy. The problem is so big, harmful and entrenched in the Nigeria bureaucracy that the nation is losing billions of Naira at all tiers of government (Oseloka, 2016). Government of Nigeria does not have the exact number of civil servants, and her budget is always an estimate. This has created some loopholes, whereby some ministries budget more than they require, and use the excess for some other things other than payment of salary and allowances.

Recent records showed that the Borno State Government of Nigeria spends forty percent of its revenue on personnel costs every year at the detriment of other sectors of the economy. The problem of payroll fraud is far more rampant in the public service bureaucracy and less so in the organized private sector. This situation aroused government curiosity to ascertain the actual workforce through various exercises such as biometrics screening and personal verification (Oseloka, 2016). For instance, the recent staff verification exercise by the Borno State Government in 2022 (Borno State Government Bulletin, 2022) has so far revealed that there are schools with staff in secondary and primary levels that are reported to be in the state payroll, whereas these schools are not found in the records of the state ministry of education all due to payroll fraud. Nevertheless, transparency and accountability remain essential in solving payroll fraud challenges and caging the problem. Therefore, effort needs to be made to eliminate payroll fraud in the public sector. Hence, this study contributes to such efforts as it seeks to examine the impact of Bank Verification Number on payroll fraud prevention and control in Borno State.

Objectives of the Study

The objectives of the study are to:

i. assess the effect of biometric identification number on payroll fraud prevention in Civil Service Commission, Borno State.
ii. determine the effect of bank verification number on payroll fraud prevention in Civil Service Commission, Borno State
iii. determine the effect of electronic transfer system on payroll fraud prevention in Civil Service Commission, Borno State

II. LITERATURE REVIEW

Conceptual Issues

Bank Verification Number (BVN)

In this highly interconnected information era, adequate identity management can only be guaranteed using a robust technique such as biometric system (Venkatraman and Delpachitra, 2008). Biometric is derived from the Greek words bio (meaning life) and metro (meaning measurement). Bolle*et al.* (2003) defined biometric as a systematic process of identifying, verifying and validating a person and his/her identity based on physiological or behavioural traits. These traits include fingerprints, finger vein patterns, iris, and voice recognition. Similarly, biometric is an approach that automatically recognizes the measurable physiological and behavioural features of a living person. These characteristics are unique for every individual and cannot be forged or replicated. The nonreplicable nature of biometric verification and authentication system makes it a commonplace in sensitive areas like immigration control, law

enforcement, forensic studies and investigations as well as banking sector (Craven and Eloff, 2015; Capoor, 2006).

Several banks across the globe have adopted biometric technique for effective identity security as well as ease authentication of customers before, during and after banking operations. Among the total banks that utilize biometric techniques in their banking operations as of 2012, Japan has about 15 million customers using biometric authentication for banking transactions. Banks in Mexico, South America, Africa, and the Middle East are also moving towards the use of biometric identification technology because of its ability to offer more security than the personal identification numbers (PINs) and passwords (Hosseini and Mohammadi, 2012). Although biometric as a reliable technology for identity management has thrived in many industries, the rate of its adoption in the banking industry is still low. Hosseini and Mohammadi (2012) further claimed that only 121 banks in the world use biometric technology in their operations as of 2012. Among which 52% are in Asia, 32% in America, 9% in Europe, 6% in Africa, and 1% in Australia.

The purpose of adopting a biometric system into banking sector through BVN scheme is to use biometric information of bank clients as a means of identifying and verifying all individuals that have accounts in any of the Nigerian commercial banks and subsequently authenticate customers' identity at various banking transactions. Though BVN is not 100% perfect, it is currently more effective than using only password and PIN (Ehi, 2015).

However, the Nigerian banking industry has not completely transitioned from traditional methods to a fully biometric system; instead, it employs a hybrid model that integrates both approaches through a two-factor authentication system.

According to Conroy (2017), a two-factor or multifactor authentication system is the most reliable and secure method of preventing identity theft in the banking industry. The two-factor system implemented in the Nigerian banking system captures the customers' fingerprints, facial structures, and signatures together with documents like NEPA bill, ID cards, driving license and voter's card. These modalities are coded into numerical figures known as the Bank Verification Number, which is issued to every bank customer at the end of the biometric enrolment (Bamidele, 2015).

The Bank Verification Number (BVN) is a biometric identification system that gives each bank customer a unique identity across the Nigerian banking industry, forms part of an identity management programme enforced by the CBN which was launched in February 2014, also partly ensuring the effectiveness of Know Your Customer (KYC) principles (CBN, 2014).BVN is the 11digit number you get from the bank after your picture, fingerprints, and signature have been captured electronically and successfully added to the database (Taiwo, 2015).It is refered to as Bank Verification Number because, it's a biometric system exercise adopted by the bank, which uses some of the functions of biometrics, to verify the existing data of customers in the bank in order for a unique number to be issued for curbing corrupt business practices in the financial institution (CBN, 2016). The bank verification number has the following features. They are Biometrics and Eleven Digit Numbers.

Biometrics is a field of science that uses computer technology to identify people based on physical or behavioural characteristics, such as fingerprints or voice scans (Taiwo,2015). Biometrics are gaining widespread use in the business world to make the workplace more secure and efficient (Taiwo, 2015).This number is used to indicate which template should be used for comparison in the bank. If the number is stolen or seen by anyone, it can't be useful for that person because it is best used with BVN platform which only a few and selected people in the banks have access to it. In verification (or authentication) mode the biometric system performs a one-to-one comparison of a captured biometric with a specific template stored in a biometric database to verify the individual is the person they claim to be (CBN, 2014).

Electronic Transfer

The term transfer system can be referred narrowly to e-commerce - a payment for buying and selling goods and services offered through the internet, or broadly to

any type of electronic funds transfer (Cirasino& Garcia, 2008). *Adewuyi & Olatunji, (2021) defined* Electronic transfer refers to the digital movement of funds between bank accounts using electronic communication networks without the need for physical cash or paper instruments. Furthermore, *Central Bank of Nigeria, (2023) defined* Electronic transfer involves the electronic initiation, processing, and settlement of payment instructions that debit one customer's account and credit another's, enabling fast and secure payments in real time or near-real time. It is also defined as a payer's transfer of monetary claim on a party acceptable to the beneficiary (Worku, 2010). Vassiliou (2004) defined electronic payment system as a form of financial exchange which takes place between the buyer and seller facilitated by means of electronic communication.

Humphrey, Kim & Vale (2001) defined e-payment as cash and associated transactions implemented using electronic means. Typically, this involves the use of computer networks such as the internet and digitally stored value system. This system allows bills to be paid directly from bank, and without the use of writing and mailing cheques. Ayodele (2015) defined e-payment as electronic transfer of cash via online transactions for business-to-business (B2B), business-to-consumer (B2C), person-to-person (P2P), and most recently administration-to-consumer (A2C) purposes. A2C payment mode addresses the payment of taxes to the government.

In the Nigeria context, e-payment is the means of effecting payments from one end to another and through the medium of the computer without manual intervention beyond inputting the payment data. It is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button (Agba, 2010). Electronic payment can also be defined as convenient, safe and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the internet, EFT, etc. Electronic payment gives consumers an alternative to paying bills and debt obligations by cash, cheque, money order, etc. Its main purpose is to reduce cash and cheque transactions. The Government of Bayelsa State takes the use and application of computerized accounting e-payment system with high regard because of its usefulness in managing very high personnel cost as well as reduction of fraud in our state payroll.

Payroll Fraud

A payroll is a list of employee's salaries and wages, bonuses, number of withholding allowances and voluntary deductions (Nnanta and Eme, 2013). For this study fraud refers to an act or a course of deception deliberately practiced to gain unlawful or unfair advantage (Payroll dictionary). Adongoi and Victor (2016) defined payroll fraud as a theft of cash from an organization through the payroll process; the culprits could be the employee or a co-employee who is using the employee to commit fraud while taking the fraud proceeds for personal use. Nevertheless, payroll fraud can be defined as an unauthorized removal of employees' emoluments. The following are the notable examples of payroll fraud: ghost employees; false employee's claims; and time theft.

Review of Empirical Studies

Wisdom (2015) examined the impact of BVN on corrupt business practices in Zenith Bank Nigeria Plc. He used a survey research design and the entire staff of Zenith Bank Nigeria Plc. The sample size was determined based on the number of staff who received a copy of the questionnaire. He tested for the reliability of the instrument and used variables such as money laundering and diversion of fund as measures of corrupt business practices. The study also employed the use of regression to analyse the data and the findings indicate that implementation of BVN has a significant impact on the prevention of corrupt business practices in Zenith Bank of Nigeria Plc. The above study failed to indicate the population of the study and the figure for sample size. The study used the word impact but failed to conduct the analysis called before and after (pre and post). The regression used was unique since the study uses an impact to understudy the variables.

Odusina and Fowosire (2017) examined biometric verification numbers and fraud prevention in Nigerian Deposit Money Banks. Structured questionnaire was prepared to get the opinions of both workers and bank customers, their responses were critically analyzed and the study concluded that the introduction of the Biometric Verification Number is an effective tool that

will reduce the incidence of fraud to the barest minimum in Nigeria, and thus the financial institutions and their business partners must continue to seek and develop new solutions to the issue of customer authentication and transaction validation. The above study used Biometric Verification Number and Fraud prevention in Nigerian Deposit Money Banks and noted that fraud was cited as Nigeria's biggest problem both in the public and private sectors and similar studies can also examine this to re-affirm this statement. The study failed to indicate the population of the study and the sample size of the study. The study failed to use appropriate statistical tools adopted in this study.

Oluwalami (2018) examined e-banking fraud prevention and detection in the Nigerian banking sector; particularly the current nature, impacts, contributing factors, and prevention and detection mechanisms of e-banking fraud in Nigerian banking institutions. This study adopts mixed research methods with the aid of descriptive and inferential analysis, which comprised exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) for the quantitative data analysis, whilst thematic analysis was used for the qualitative data analysis. The findings show that the factors contributing to the increase in e-banking fraud in Nigeria include ineffective banking operations, internal control issues, lack of customer awareness and bank staff training and education, inadequate infrastructure, presence of sophisticated technological tools in the hands of fraudsters, negligence of banks' customers concerning their e-banking account devices, lack of compliance with the banking rules and regulations, and ineffective legal procedure and law enforcement. The above study failed to indicate the population of the study and sample size of the study as well as the method of sample size determination. The study also failed to indicate the statistical tool adopted. The study could have used regression to estimate the cause and effect of the relationship between the dependent and independent variables.

Theoretical Framework

This section discusses the theories on which this study is anchored. Theories are used by scholars when performing research studies to form a foundation for the parameters, or boundaries of a study. This study is grounded on Fraud Triangle Theory.

Fraud Preventative Theory

Intentions are the best predictor of any planned behavior and understanding the antecedents of intentions provides practical insights into the behavior (Ajzen & Fishbein 1980). Therefore, Fraud preventative theory was proposed to curb the behavioral intention of any individual to fraud. According to Goosen, Pampallies, Van der Merwe and Mdluli (1999), a bank owes a duty to its customers to keep accurate records of all the transactions effected against the account in question. Thus, a bank statement serves a vital role in meeting the bank's accountability to its clients and is a fundamental aspect of modern banking. Goosen*et al.,* (1999) states that the role of a bank account statement, which is of the utmost importance to a bank, is that it serves as an audit trail showing in detail the various transactions effected against the account. The Pheiffer (1998) defines financial investigations in which, on behalf of law enforcement, financial expertise is used to gather, check, refine the process and analyze financial information. According to Tuffey (2002), financial investigation is the investigation of an individual or corporation through their financial affairs. Willemse (2004) is of the view that financial investigation is the identification and documentation of the movement of money during and after a crime. It establishes the link between where the money comes from, who gets it, when it was received, and where it was stored or deposited. This can provide proof of unlawful activity such as money laundering, racketeering, corruption, and terrorist financing, as well as identify and trace assets for asset forfeiture purposes, in effect addressing the proceeds of unlawful activity.

Fraud Triangle Theory

The fraud triangle theory identifies the key elements that lead perpetrators to commit fraud in any organization. According to Dorminey*et al.* (2010), the origin of the theory dates back to the works of Sutherland, who coined the term "white collar crime"; and that Cressey (1953), one of Sutherland's former students, focused his research on the circumstances that lead individuals to engage in fraudulent and unethical activity; the research later became known as

© FEB 2026 | IRE Journals | Volume 9 Issue 8 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I8-1714055

the fraud triangle theory. The fraud triangle theory consists of three elements that are necessary for theft or fraud to occur: (a) perceived pressure, (b) opportunity and (c) rationalization. Albrecht, Hill, and Albrecht (2006) compared this theory to a fire using the simple explanation that three elements are necessary for a fire to occur: (a) oxygen, (b) fuel and (c) heat. Like fire, fraud is unlikely to exist in the absence of the three elements mentioned in the fraud triangle theory, and the severity of fraud depends on the strength of each element.

In other words, for an individual to make any unethical decision, perceived pressure, an opportunity, and a way to rationalize the behavior must exist.

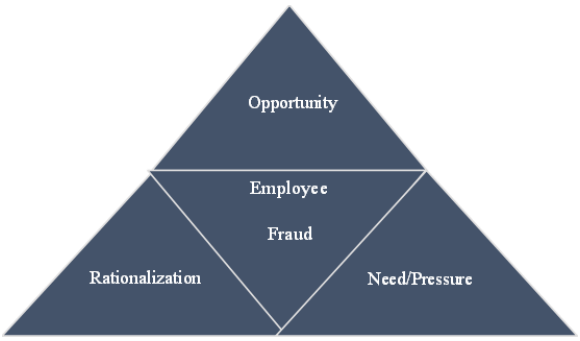

Figure1*:* Conceptual Framework of Fraud Triangle

Source: Ahmed, (2020)

III. METHODOLOGY

The Study Area

Maiduguri also known as "Yerwa" locally is the largest and the oldest city of Borno State in the North-Eastern Nigeria. The city sits along the seasonal Ngadda River which disappears into the firkin swamps in the areas around Lake Chad. Maiduguri was founded in 1907 as a military outpost by the British and has since grown rapidly with a population exceeding one million. The region was home to the Kanem-Borno Empire for centuries. Maiduguri consists of two cities; Yerwa to the west and Maiduguri to the east (Musa, 2014).According to the 2006 census (which was the last census conduted in Nigeria), Maiduguri is estimated to have a population of 1,197,497 (NPC, 2006) constituting Muslins and Christians. Its tribal constituents include Kanuri, Hausa, Shuwa, Bura, Chibok, Marghi and Fulani ethnic group among several other ethnic groups from other parts of Nigeria and neighboring countries like Cameroon, Niger and Chad republics.

Source of Data

The study makes use of data from primary source. Primary source of data is through interviews using the structured questionnaire which were used in collecting information on the impact of Bank Verification Number on payroll fraud prevention and control in Borno State.

Population of the Study

The target population is the subset of a large population that has similar characteristics of which the general conclusion of the study can be drawn (Castillo, 2009). The target population of the study comprised of 841 staff of the Borno State civil service commission (sources from Borno State Yearly bulletin, 2019).

Sample Size and Sampling Techniques

A sample size of 150 respondents was selected for the study using simple random sampling techniques. In relation to sampling techniques, the simple random sampling is used to pick respondents in each of the categories so as to give equal chance for all the population selected for the study. A sample size of one hundred and fifty respondents will be selected from the population, using the Taro Yameni (1968) formula outlined below:

$$n= N\ 1+Ne^2$$

Where n=sample size: N=population; and e=level of significance. For the analysis, a 5% significance level was used. Therefore, if N=841, e = 5%= 0.05, then-

$$n = 841/1+ (841x0.05^{-2})$$

$$= 841/5.6$$

$$= 150$$

Sampling as portrayed by Geteria (2012), is the representation of elements in the population which is formulated by selecting units of the targeted population to be able to have all the fundamentals of the study included.

© FEB 2026 | IRE Journals | Volume 9 Issue 8 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I8-1714055

Method of Data Collection

Structured questionnaires were used to collect primary data. Questionnaires were preferred as it was relatively quick to collect data in a standardized and more objective way.

Method of Data Analysis

According to Marshal and Rossman (1999), data analysis is the process of bringing order, structure and interpretation to the mass of collected data. The data collected were sorted, edited, coded, cleaned and processed using Statistical Package for the Social Sciences. Descriptive statistics were used to analyse the data through computing of mean, standard deviation and percentages. In addition, regression analysis was used to establish the relationship between the independent variables and the dependent variables. Linear Regression is a widely used technique for regression problems. It can be used to predict a dependent variable from independent variables. It searches for a relationship for the dependent variable in the data (training data) for the independent variables.

Presentation of the Main Results

4.1 Hypothesis One

Ho_1: Biometric identification number has no significant effect on payroll fraud prevention.

Table4.1: Paired Sample Statistics.

	Mean	N	Std.Deviation	Std.ErrorMean
Pair1x	3.0000	5	.00000	.00000
Y	3.5160	5	.27080	.12110

Table 4 . 1.1:Paired Sample Test.

	Paired Differences					t	Df	Sig.(2-tailed)
	Mean	Std.Deviation	Std.Error Mean	95%ConfidenceInterval of the Difference				
				Lower	Upper			
Pair1x-y	-.51600	.27080	.12110	-.85224	-.17976	-4.261	4	.013

From table 4.1.1 above, all the questions were statistically significant at 0.05 level of significance, and the mean score is 3.516 as against 3.00 implying they received positive responses. Question 3 has the highest mean indicating that the respondents perceived that the biometric verification numbers will help identify and eliminate ghost workers who are still on the payroll.

Decision: Based on this, the study rejects the null hypothesis and accepts the alternative hypothesis which states that Biometric identification number has significant effect on payroll fraud prevention in the public sector.

4.2 Hypothesis Two

Ho_1: Bank verification number has no significant effect on payroll fraud prevention in the public sector.

Table4.2: Paired Sample Statistics.

	Mean	N	Std.Deviation	Std.ErrorMean
Pair1x	3.0000	5	.00000	.00000
Y	3.5340	5	.30237	.13523

Table 4 . 2.1: Paired Sample Test.

	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std.Error Mean	95%ConfidenceInterval of the Difference				
				Lower	Upper			
Pair1x-y	-.53400	.30237	.13523	-.90945	-.15855	-3.949	4	.017

© FEB 2026 | IRE Journals | Volume 9 Issue 8 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I8-1714055

From table 4.2 above, the mean score is 3.534 as against 3.00 implying the questions received positive responses. Question 6 has the highest mean indicating that the respondents perceived that the bank verification numbers will help to determine the actual work-force in the government or an organization.

Decision: Based on this, the study rejects the null hypothesis and accepts the alternative hypothesis which states that Bank verification number has significant effect on payroll fraud prevention in the public sector.

4.3 Hypothesis Three

H_{o2}: Electronic transfer system has no significant effect on payroll fraud prevention in the public sector.

Table 4.3.: Paired Sample Statistics

	Mean	N	Std.Deviation	Std.ErrorMean
Pair1x	3.0000	5	.00000	.00000
Y	3.5560	5	.23158	.10357

Table 4.3.1: Paired Sample Test

	Paired Differences					T	df	Sig.(2 tailed)
	Mean	Std. Deviation	Std.Error Mean	95%ConfidenceInterval of the Difference				
				Lower	Upper			
Pair1x-y	-.5560	.23158	.10357	-.84355	-.26845	-5.369	4	.006

Table 4.3 above shows a mean of y is 3.556 as against 3.00 indicating that all the questions are statistically significant. Question 13 has the highest mean indicating that the respondents perceived that the slusha accounts used for the diversion of funds or salaries have no electronic transfer system or no BVN at all.

Decision: Based on this, the study rejects the null hypothesis and accepts the alternative hypothesis which states that electronic transfer system has no significant effect on payroll fraud prevention in the public sector.

Discussion of Findings

The purpose of this study was to examine the effect of biometric identification number, bank verification number, and electronic transfer systems on payroll fraud prevention in the public sector. The analysis followed the approach suggested by Marshall and Rossman (1999), who emphasized that data analysis involves bringing order, structure, and meaning to collected data. Consistent with this, the data in the present study were coded, cleaned, and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics (mean, standard deviation, percentages) and linear regression analysis were employed to establish the degree of influence of the independent variables on payroll fraud prevention. The use of linear regression aligns with recent methodological guidance indicating that regression is appropriate for predicting or explaining the influence of independent variables on key outcomes (Adeniyi & Musa, 2022; Chukwuma & Okeke, 2023).

Findings from Table 4.1.1 show that the respondents strongly agreed that biometric identification numbers significantly reduce payroll fraud, with a mean score of 3.516, higher than the decision benchmark of 3.00. Notably, the highest-rated item indicated that biometric verification helps identify and eliminate ghost workers. This finding is consistent with recent studies revealing that biometric systems strengthen transparency and eliminate duplicate or fictitious staff entries in government payrolls (Olayeni, 2021; Ahmed & Gukur, 2022). Biometric identification has been recognized as one of the most effective tools for curbing ghost worker syndrome in developing countries by ensuring that only verifiable individuals receive salaries (World Bank, 2020). Therefore, the study rejects the null hypothesis and concludes that biometric identification numbers significantly promote payroll fraud prevention in the public sector.

Results from Table 4.2 show a mean score of 3.534, indicating strong agreement among respondents that the Bank Verification Number (BVN) plays a crucial role in ensuring payroll integrity. The highest-rated

item suggested that BVN helps determine the actual workforce in government institutions. These findings corroborate recent evidence that BVN enhances accountability and transparency by linking every bank account to a unique biometric identity, thereby preventing the proliferation of multiple accounts used for salary diversion or fraudulent claims (Eze & Igwe, 2021; Central Bank of Nigeria, 2023). Studies also show that the BVN has significantly reduced identity fraud and payroll manipulation in both private and public institutions across Nigeria (Umar & Danlami, 2022). Based on these results, the study rejects the null hypothesis and accepts the alternative hypothesis that the BVN significantly affects payroll fraud prevention. Table 4.3 indicates a mean score of 3.556, confirming that respondents agreed on the importance of electronic transfer systems in mitigating payroll fraud. Respondents particularly agreed that fraudulent slush accounts used for fund diversion often lack BVN linkage or electronic transfer trails. This finding aligns with recent research showing that electronic transfer systems increase transparency, generate digital audit trails, and reduce opportunities for unauthorized cash withdrawals or salary diversions (KPMG Africa Report, 2022; Ojo & Salami, 2023). Electronic payment systems especially those integrated with BVN are recognized for their ability to limit corruption by providing real-time monitoring and traceability of transactions (OECD, 2021). Thus, the null hypothesis is rejected, confirming that electronic transfer systems significantly contribute to payroll fraud prevention in the public sector.

Across the three hypotheses, the findings consistently reveal that digital identity verification systems (biometric ID and BVN) and electronic transfer platforms collectively strengthen payroll accountability. These results reinforce the broader literature emphasizing that digital financial controls are essential tools for combating corruption, enhancing transparency, and improving public sector financial management (World Bank, 2020; Transparency International, 2023). The study demonstrates that the integration of biometric technology with electronic financial systems is not only effective but necessary for reducing payroll leakages, especially in public institutions where ghost worker fraud remains a pervasive challenge.

CONCLUSION

The findings of this study clearly demonstrate that digital verification and electronic payment technologies play a significant and transformative role in preventing payroll fraud in the public sector. The results from the three hypotheses consistently show that biometric identification numbers, the Bank Verification Number (BVN), and electronic transfer systems each exert a strong and positive effect on reducing fraudulent payroll activities.

First, biometric identification systems were found to be effective in eliminating ghost workers by ensuring that only verified individuals are captured on government payrolls. This reinforces recent evidence that biometric technologies enhance transparency and reduce identity-related payroll manipulation. Second, the BVN was shown to strengthen payroll integrity by linking every salary account to a unique biometric identity, thereby preventing multiple account usage and reducing salary diversion schemes. Third, electronic transfer systems were revealed to enhance accountability by providing digital audit trails that reduce the likelihood of unauthorized or fraudulent fund withdrawals.

Overall, the results affirm that the integration of biometric systems, BVN verification, and electronic transfer platforms provides a comprehensive and reliable framework for combating payroll fraud in the public sector. These technologies collectively promote transparency, reduce financial leakages, strengthen internal controls, and support efficient public financial management. The study concludes that adopting and fully implementing these digital anti-fraud mechanisms is essential for enhancing accountability, safeguarding public resources, and improving service delivery in government institutions.

RECOMMENDATIONS

1. Since the findings show that biometric identification significantly reduces the presence of ghost workers, government ministries, departments, and agencies (MDAs) should fully adopt and continuously update biometric enrollment systems. Regular biometric audits and revalidation exercises should be

institutionalized to ensure that only verified employees remain on payrolls. This will further tighten internal controls and minimize opportunities for fraudulent staff inclusion.

2. Given the evidence that the Bank Verification Number helps determine the actual workforce and prevents multiple or fraudulent salary accounts, the government should mandate that all payroll accounts whether for salaries, pensions, or allowances must be linked to employees' BVNs. Compliance checks should be conducted periodically in collaboration with financial institutions to ensure that no account receiving public funds operates without proper BVN authentication.
3. Since electronic transfer systems were shown to significantly curb fund diversion by creating digital audit trails, public institutions should strengthen their use of automated payment platforms. This includes adopting secure, real-time electronic payment systems and eliminating manual cash-based processes. Additionally, integrating these platforms with anti-fraud monitoring tools will enhance transparency, allow for swift detection of suspicious transactions, and improve payroll accountability.

REFERENCES

[1] Acha, I. A., Kanu, C. and Agu, G. A. (2017). Cashless policy in Nigeria: The mechanics, benefits and problems, *Innovative Journal of Economics and Financial Studies*, 1(1), 28-38.

[2] Adeniyi, T., & Musa, H. (2022). *Applied regression methods in social and management sciences. Nigerian Journal of Quantitative Research, 12(1), 101–115.*

[3] Adewale, A. A., Ibidumi, A.S. and Badepo, J.O. (2014). Biometric Enabled E-Banking in Nigeria. Management and Customers Perspective. Journal of Information and Knowledge Management, 4(11).

[4] Adongoi, T. and Victor, E. A. (2016). Corruption in the civil service: A study of payroll fraud in selected Ministries, Departments and Agencies (MDAs) in Bayelsa State, Nigeria, *Research in Humanities and Social Sciences*, 6(3), 53-69.

[5] Ahmed, S., & Gukur, M. (2022). *Biometric technologies and payroll accountability in developing economies. Journal of Public Sector Management, 18(2), 44–59.*

[6] Ajzen, I. and Fishbein, M. (1980). Understanding Attitudes and Predicting Social Behavior.*Englewood Cliffs, NJ: Prentice-Hall.*

[7] Albrecht, W. S., Albrecht, C. C. and dan Albrecht, C. O. (2006). *Fraud Examination*. New York, NY: Thomson Souh-Western.

[8] Bamidele, O. (2015). Bank verification Number as an antidote to bank fraud in Nigeria. Retrieved from https://www.newsbeatportal.com/bank-verification-number-as-antidote -to-bank-fraud-in-Nigeria /?dx-switcher=true.

[9] Bolaji, M. F. (2010). An Examination of E-Banking Fraud Prevention and Detection in Nigerian Banks. De Montfort University.

[10] Bolle, R. M., Connell, J. H., Pankanti, S., Ratha, N. K. and Senior, A. W. (2003), "Guide to Biometrics", Springer, New York.

[11] Capoor, S. (2006), "Biometrics as a Convenience", Security: For Buyers of Products, Systems & Services, 43(12), 48-50.

[12] Central Bank of Nigeria. (2014). *Clarification Circular on Bank Verification Number (BVN) Enrolment.* Retrieved from CBNWebsite:hhtp://www.cenbamk.org/ out/2014/bpsd /clarification%20circular% 20on% 20bvn2.pdf.

[13] Central Bank of Nigeria. (2016). *Further Clarifications on Cash-Less Lagos Project.* Retrieved from CBNwebsite: hless%20lagos%20brief %20for%20website%20revised2.pdf.

[14] Central Bank of Nigeria. (2023). *Bank Verification Number (BVN) and financial integrity report. CBN Publications.*

[15] Chukwuma, O., & Okeke, P. (2023). *Regression analysis as a predictive tool in public administration research. International Journal of Social Science Methods, 9(3), 55–70.*

[16] Conroy, J. (2017). Moving Beyond the Password: Consumers' Views On Authentication. *Aite Group.*

[17] Craven &Eloff, M. (2015). Biometric as an Agent to Reduce Fraud in The Micro Lending

Industry in South Africa. University of South Africa 0003.

[18] Cressey, D. R. (1950). *The Criminal Violation of Financial Trust*. American Sociological Review 15 (6): 738-743.

[19] Davidson, J. (2016). Payroll Fraud and How to Prevent It. Retrieved from www.honeycombpsg.com.

[20] Dorminey J., A. S. Fleming., M. J. Kranacher dan R. A. and Riley, J. (2010). *Beyond The Fraud Triangle: Enhancing Deterrence of Economic Crimes*. The CPA Journal July 2010.

[21] Ehi, E. E. (2015). A Critical Analysis of the Bank Verification Number Project Introduced by the Central Bank Nigeria. *DSC Publication Ltd*.

[22] Emmanuel, O. W. (2015). Computerized accounting system an effective means of keeping accounting records in Ghanaian banks: A case study if the GaRural Bank, *International Journal of Research in Business Studies and Management,* 2(11), 111-141

[23] Ering, S.O. (2011) "Trans-border Crime and its Socio-economic impact onDeveloping Economies" Journal of Sociology and Social Anthropology 2 (2) 738-788.

[24] Eze, M., & Igwe, K. (2021). *BVN implementation and fraud reduction in Nigerian financial institutions. African Journal of Banking and Finance, 7(1), 22–34.*

[25] Goosen, W., Pampallis, A., Van Der Merwe, A. and Mdluli, L. (1999). *Banking in the New*

[26] Hosseini, SS., Mohammadi, S. (2012). Review Banking on Biometric in the World's Banks and Introducing a Biometric Model for Iran's Banking System. *Journal of Basic and Applied Scientific Research*, 2(9), 9152-9160.

[27] Joseph, O. and Richard, I. (2015). Electronic payment system in Nigeria: Its economic benefits and challenges, *Journal of Education and Practice*, 6(16), 56-62.

[28] Kombo, B. (2013). The effects of computerized accounting system on auditing process: A case study of Mtwara District Council (MDC), MSc Accounting and Finance Degree Thesis, University of Mzumbe, 1-87.

[29] KPMG Africa. (2022). *Digital payment systems and fraud risk management in Africa. KPMG Insights Report.*

[30] Kujur, T. and Shah, M. A. (2015) Electronic banking: Impact, risk and security issues, *International Journal of Engineering Management,* 5(5), 207-212.

[31] Lekubu, BK. (2013). Issues of Corruption in South Africa's Municipalities, Tshwanne University of technology, South African Association of Public Administartion and Management (SAAPM).

[32] Mago, S. and Chitokwindo, S. (2014). The Impact of mobile banking on financial Inclusion in Zimbabwe: A case for Masvingo Province, *Mediterranean Journal of Social Sciences*, 5(9), 221-230.

[33] Marshall, C., & Rossman, G. B. (1999). *Designing qualitative research (3rd ed.). Sage Publications.*

[34] Mejabi, F. (2006). The impact of automated accounting systems on payroll preparation in some large organizations, MSc Dissertation of Covenant University, Nigeria, 1-80

[35] Nangih, E. and Davies, D. S. (2017). Biometrics and bank verification number (bvn) technology and ghost worker's identification in rivers state local government areas. *Journal of Harmonized Research in Management*, 3(1) 01-07.

[36] Nnanta, N. E. and Eme, O. I. (2013). An analysis of computerized accounting and payroll system on monthly emolument in Nigeria local government, *International Journal of Accounting Research (IJAR)*, 1(3):67-73.

[37] Obinna, C. (2013). Ghost workers? Who gave the ghost the jobs of the living? Reading Obinna, Wordpress.com.

[38] Odusina, A. O., &Fowosire, R. A. (2017). Information and communication technology: Bank verification number and fraud prevention in Nigerian banking industry. FUO Quarterly Journal of Contemporary Research, 6(1), 1-10.

[39] OECD. (2021). *Digital financial governance and anti-corruption mechanisms. OECD Publishing.*

[40] Oguzierem U. A. and Sofiri, J. (2017). Ghost Workers and Related Payroll Fraud: The Impact

of Unauthorized Employment on Local Government Area (LGAs) & Rural Development Areaa (RDAs) in Bayelsa State, *IIARD International Journal of Economics and Business Management*, 3(8).

[41] Ojo, A., & Salami, F. (2023). *Electronic payment systems and fraud prevention in the Nigerian public sector. Journal of E-Governance and Digital Innovation, 5(2), 33–47.*

[42] Okoro, A. S. (2014). Impact of electronic banking instruments on the intermediation efficiency of the Nigerian economy, *International Journal of Accounting Research,* 1(6), 14-21.

[43] Olayeni, R. (2021). *Biometrics and the elimination of ghost workers in African public services. Public Administration Review Africa, 13(4), 76–89.*

[44] Olijo, I. I. (2018). Newspaper Coverage of Bank Verification Number Enrolment in Nigeria. New Media and Mass Communication, 72.

[45] Olken, B. A. and Pande, R. (2012). Corruption in developing countries, Annual Review of Economics. 4.

[46] Oseloka, H. Obaze (2016). Caging Nigeria's Ghost Workers, The Sun, March 7.

[47] Osisioma B. C ed. (2009). *Handbook on Fraud Management and Forensic Accounting,* Lagos, ANAN. *In Press*.

[48] Pheiffer, M. (1998). Financial Investigations and Criminal Money, Journal of Money Laundering Contro, Institute of Advanced Legal Studies. 2(1): 19-98.

[49] Puneet, B. P. R. and Parashar, N. (2010). Factors Affecting Money Laundering: A Lesson for Developing Countries. Symbiosis Centre for Management and HRD, 3(2), 108-139.

[50] Scovia, M. and Callist, K. (2015). The impact of computerized accounting system on financial reporting in the Ministry of Local Government of Rwanda, *Journal of Emerging Trends in Economics and Management Sciences*, 6(4), 261-265.

[51] Shehu, U. K. (2013). "An Empirical Analysis of the Benefits of Cashless Economy on Nigeria's Economic Development". *Research Journal of Finance and Accounting, 4*(17), 11-16.

[52] Taiwo I (2015). All you need to know about bank verification number. Retrieved January 2019.

[53] Umar, S., & Danlami, A. (2022). *Impact of BVN policy on identity fraud reduction in Nigeria. Journal of Financial Crime Prevention, 11(2), 90–102.*

[54] Venkatraman, S. and Delpachita, I. (2008). "Biometric in banking security: a case study", Information management & Computer Security, 16(4)415-430.

[55] Wisdom, A. (2015). Impact of BVN on corrupt business practices in Zenith Bank Nigeria Plc. International Journal of Business and Management, 2(3), 33–47.

[56] *World Bank. (2020). Biometric identification and public sector reform in developing countries. World Bank Group Report.*

[57] Yaqub, J. O., Bello, H. T., Adenuga, I. A. and Ogundeji, M. O. (2013). The cashless policy in Nigeria: Prospects and challenges, *International Journal of Humanities and social Sciences*, 3(3), 200-212.