ASSESSMENT OF INTEGRATED PAYROLL PERSONNEL PAYMENT SYSTEM ON PERSONNEL COST-FRAUD IN NIGERIA: IMPLICATION ON FISCAL MANAGEMENT.

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Abstract

The issue of payroll fraud in public institutions in Nigeria has demonstrated a huge economic burden, with minimal political will to address it. Interestingly, the level at which this fraud has been evaluated has been inconclusive. Hence, this study investigated the assessment of the Integrated Payroll Personnel Payment System on Personnel Cost-fraud in Nigeria. Adopting the two-stage Least Squares (2SLS) approach for estimating the longitudinal time series data from 1993 to 2023, sourced from the World Bank development indicator, and the Nigeria Bureau of Statistics, was necessary. The result revealed that for every additional employee (lnemployee), personnel cost (lnpersonnelc~t) increases by 2.370815, at 23.7 percent at the 5% significance level since the p-value is less than 0.05. Also, for every additional payroll fraud (lnpayrollfraud) made, the personnel cost (lnpersonnelc~t) goes up by .2073029, which is 2.1 percent at the 5% significance level since the p-value is less than 0.05. While federal government recurrent expenditure (lnGvtRecuxp) reduces personnel cost by .2719514, which is at 27 percent at the 5% significance level since the p-value is less than 0.05. An independent regulatory agency needs to monitor the activities of an integrated Payroll Personnel Payment System with periodic verification to strengthen the system. The need for parliamentary legislation that permits desk officers at the state level, and Periodic verification, is necessary to strengthen the integrated payment system in Nigeria.

Keywords: Integrated System, Personnel, Payroll, Public Sector, & Fraud

Introduction

The incidence of payroll fraud in public institutions in Nigeria has demonstrated huge economic burden with minimal political will to address. Interestingly, the level at which this fraud has been evaluated has been inconclusive. In addition, it is difficult to conclude that the common problem contributing to payroll fraud in the public sector in Nigeria is associated with poor record and management systems, considering the recruitment process over the years.

In contrast, the personnel cost under the public sector system created unreliable personnel records for the federal civil service, with escalating recurrent budgeting and wage bills. However, the need for the Integrated Personnel and Payroll Information System (IPPIS) to check abnormality and regularize the payment of employees, entitlement, and reduce the number of ghost workers under the government payroll became a sufficient condition for public resource management.

Evidence demonstrated that the degenerating state of payroll fraud in Nigeria pushed for Public Service Reform. The bill was to enhance smooth governance and accountability in the country in four cardinal programs described as the four pillars of the National Strategy for Public Service Reform (NSPSR). Studies revealed this 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 and addressing the challenge of human resource and payroll issues at the federal level (Olagunju and Olufemi, 2021).

IPPIS began in 2007 with seven pilot Ministries, Departments, and Agencies (MDAs) and later expanded to cover more than 506 MDAs that captured facial images and fingerprints of government employees. The system's design was to ensure centralized salary payment, facilitate convenient staff remuneration payment with minimal wastage, and facilitate easy storage, updating, and retrieval of personnel records for administrative and pension processing, among other things (Izang, Owolabi, and Odunlade 2022).

Despite, government's adoption of the Integrated Personnel and Payroll Information System (IPPIS) as a key strategy for curtailing fraudulent practices that had characterized employee emoluments in the nation's civil service. Integrated Payroll and Personnel Information Systems (IPPIS) continue to face a few challenges, such as fraudulent practices among the staff of the system, employment of federal workers, unpaid allowances, and several other practices associated with the system. It has become difficult to validate the extent to which the system has substantially reduce the cost of governance alongside the reliable data management for federal government workers in Nigeria.

As such, the dearth of empirical studies providing significant evidence on the effect of Integrated Payroll and Personnel Information Systems (IPPIS) in reducing the cost of governance, fraud in the public sector, and management of public sector payroll was limited by studies, as found in methodology validation and scope. Substantial study evidence admitted that IPPIS had a weak welfare effect on employees in Nigeria. This weakness was considered a fundamental error for most perception studies. Despite all the subsequent reforms and institutional strengthening of the system, evidence from empirical and theoretical studies by (Ogiriki and Atagboro, 2022; Okechukwu, Edward and Ihejirika, 2021; Izevbekhai, Ohonba and Odion, 2019; Izang, Owolabi and Odunlade, 2022; Obara, Nangih and Agba, (2021); among others) revealed very limited discussion on these perspectives. Some of these studies further probe the activities of the Integrated Payroll Personnel Payment System on the impacts of Personnel fraud in Nigeria, which no recent studies have adopted a robust approach to strengthen some of the arguments made by these studies. Hence, this study had to examine the extent to which the Integrated Payroll Personnel Payment System affects Personnel cost-fraud in Nigeria.

Literature

Personnel cost is conceptualized as the wage bill associated with labour cost. This personnel cost includes salaries, employer's social security costs, excluding Payments for agency workers and wages of persons or people employed in an organization, institution, agency, or even the public and organized private sector. Studies maintain that personnel cost consists of direct remuneration and ancillary personnel costs for employees. For many, all compensation costs incurred by an employer in connection with the employment of applicable personnel, or under contract to a party including all payroll and benefits, but excluding (i) any Share-Based Compensation and (ii) severance costs (other than for Seconded Personnel) but not limited to benefit, travel, lodging, meals, and office and computing supplies account for personnel cost.

Interestingly, personnel costs have remained a vital cost component for both the public and private sector, the Non-government organizations, and many ventures as reflected usually in budget planning, payroll systems, and policy frameworks of public and private sectors globally. The use

of technology to track and control expenditures through several platforms have been adopted through a well identified model to address frauds within the process.
As such, an Integrated Payroll Personnel Payment System in Nigeria, most commonly referred to as Integrated Payroll and Personnel Information System (IPPIS), was introduced on the basis that it significantly affects personnel costs. The assumption is that centralizing payroll management, eliminating ghost workers, and reducing fraudulent practices will effectively lead to substantial savings for the government by minimizing unnecessary salary disbursements across federal ministries, departments, and agencies (MDAs). This computerized biometric system is designed to enhance the effectiveness and efficiency in the storage of personnel records and administration of monthly payroll in a way that provides confidence in employee emolument cost and budgeting (Agbeje and Taye, 2021).

According to Agbeje and Taye (2021), the government captures all the staff data, allowing direct salary payment into the bank account of workers. This controlled biometric system was part of the Federal Government's effort to reduce the level of recurrent expenditures, in particular, personnel cost, which represents more than fifty 50% of the recurrent expenditure. Studies have demonstrated that they could enhance public sector accountability and management from different perspectives. For example, Haruna et al. (2015) examined the integrated personnel payroll and information system (IPPIS) panacea for ghost worker syndrome in the Nigerian public service. Adopting a survey design and descriptive analysis revealed that ghost worker syndrome is imminent in the public service in Kogi State, Nigeria, which could be addressed through an integrated personnel payroll and information system (IPPIS). This one could see agreeing with Agboola (2018) that strategies adopted by the Integrated Personnel and Payroll Information System address ghost worker syndrome in the Nigerian public Sector.

Similarly, adopting Binary logistic regression analysis, Farajimakin and Anichebe (2019) revealed that the implementation of IPPIS had a weak positive relationship with employee welfare, but it was statistically significant in addressing the ghost workers syndrome at the federal, state, and local government levels. Whereas Izevbekhai, Ohonba, and Odion (2019) maintained the Integrated Personnel and Payroll Information System program had a significant effect on payroll fraud in the Nigerian civil service. Adopting a cross-sectional design and multivariate analysis demonstrated that the system had a significant effect on the recurrent expenditure of the Government in Nigeria despite its weakness. Similarly, Musa, Yau, Hussaini, and Ayem-Fella (2020) investigated the effect of IPPIS implementation on governance and civil servants in Nigeria and adopted the Logistic regression analysis to demonstrate that the IPPIS implementation had a significant and positive effect on governance and civil servants in Nigeria though was yet to show how the system reduces the cost of governance.

Chima and Folorunsho (2020) explored the extent to which IPPIS, as an e-governance tool, reduces corruption in the Nigerian public service through a qualitative approach across Africa and Nigeria. Their findings revealed that most countries supported the application of IPPIS in all MDAs, but argued that the system could be more effective if proper records of employees were entered into the IPPIS platform. Etale and Pouzigha (2020) revealed that the effect of electronic payment systems on payroll fraud prevention in selected Ministries in Bayelsa State, using Multiple regression analysis, shared similar findings that all the electronic payment systems have a significant effect on payroll fraud prevention.

In contrast, Kaoje, et al (2020) reveal a significant moderate positive relationship between IPPIS, Transparency, and Accountability. The major argument was that there was a need to strengthen the internal control mechanism of IPPIS to continuously detect and block any loopholes that would give room for fraud, which the system has yet to control. However, Samuel, Zahraddeen, and Mariamu (2021) stressed that IPPIS remains a panacea for eliminating the ghost workers problem in Nigeria. Adopting a non-survey research design revealed that the introduction of IPPIS in

Nigeria has helped to check abnormality and regularize the payment of employees' entitlements, and helped to reduce the number of ghost workers in the government payroll. Again, Okechukwu, Edward, and Ihejirika (2021) demonstrated how the integrated personnel payroll information system (IPPIS) eliminates ghost worker syndrome in the Nigerian Public Service using secondary data and multivariate analysis, arguing that the integrated personnel payroll information system uncover many ghost workers who have been on the payroll of the Federal Government. The study further shows that IPPIS broadened employment opportunities, reduced corruption in the public service, and reduced personnel costs, but was constrained by the lack of a reliable and comprehensive database for the public service, change management issues, and institutional resistance. Similarly, Akwu, Unanam, and Okon (2021) argued that there have been some fraudulent practices in the Nigerian Public Sector which have been manifested in ghost workers, payroll fraud, and inconsistencies in the payment of salaries to federal civil servants attributed to technical hitches, thus creating some level of trust deficit on the system.

Udejinta (2022) ascertained that the perception of staff about IPPIS and whether corrupt practices had been eliminated from the payroll system has continued to generate unresolved debate. Adopting a Survey research design and multivariate analysis, findings revealed that substantial responses indicated that IPPIS has yet to eliminate sharp practices in the payroll system based on the level of salary uncertainty at the end of every month, which has a long-term time to address. Whereas, Izang, Owolabi, and Odunlade (2022) demonstrated how the system provides timely, relevant, and reliable financial data, encouraging fiscal discipline, assisting resource allocation, and increasing operational efficiency and fiscal transparency. Using a historical approach, Godwin (2022) questioned truly, if the introduction of an integrated personnel payroll information system (IPPIS) has successfully eradicated ghost workers from the payroll in Nigeria's public service, considering how unregulated the system is. However, the evidence revealed deployment of an Integrated Personnel and Payroll Management System (IPPIS) to a great extent reduced the incentive, capacity, and opportunity of fraudulent individuals to perpetrate payroll fraud at all levels. However, the staff of the system has very poor training to manage the platform, which has led to the exclusion of major MDAs at all levels.

Adi and Cletus (2022) investigated the impact of the Integrated Personnel Payroll and Information System (IPPIS) on the job performance of non-academic staff at Federal University, Wukari, Taraba State, Nigeria. Adopting descriptive analysis revealed the use of IPPIS to detect illegal transfer of service, reactivation of appointments, and inflation of contracts. The system shows a way of eliminating corrupt and sharp practices by non-academic staff, and this enhances their productivity. Whereas Olowu (2022) found that IPPIS had been able to mitigate problems associated with the salary payment of public servants, the irregularities that characterized the IPPIS implementation had hampered salary administration improvement in Nigeria. Hamza, Usman, and Ahmad (2023) assessed the effectiveness of the implementation of the Integrated Personnel Payroll and Information System (IPPIS) in Gombe. However, adopting a survey research design and chisquare analytical tool found that the implementation of IPPIS helps in reducing payroll fraud and corruption, ensuring the safety and integrity of civil servants, and helps the government in planning and budgeting, thereby bringing efficiency and transparency in the management of personnel costs.

Interestingly, considering the evidence provided by these studies, substantial studies agree that IPPIS impacts public sector management, fraud control, and the cost of governance in Nigeria.
However, no study reviewed adopted a methodological approach that could address the issues of instrumental variables and endogeneity problems to strengthen some of the arguments made by other studies. It is difficult to show the extent to which payroll fraud and gross domestic product per capita may have improved if the system had reduced ghost workers in Nigeria. These interactions create a huge gap that was silent across most of the studies in Nigeria. The weakness of most of the methodologies adopted created another gap, especially in areas of descriptive analysis, and a simple ordinary least squares estimation method, as could be found in Adi and Cletus (2022), Olowu (2022), Izang, Owolabi, and Odunlade (2022), Etale and Pouzigha (2020), among others. This study provided a methodological approach on data evidence for regime changes' effects in Nigeria on public sector management of personnel cost fraud in Nigeria.

Methodology

The theoretical framework of this study draws from the Structural-functional theory. The theory is referred to as functionalism theory, postulated by Herbert Spencer (1820–1903). The theory, which sees society as a structure with interrelated parts designed to meet the institutional, systemic, biological, and social needs of the individuals in that society, is similar to the human body. The theory argues that just as the various body organs work together to keep the body functioning, the parts of society work together to keep society functioning.

The parts of society that Spencer referred to were the social institutions, or patterns of beliefs and behaviors focused on meeting social needs, such as government, education, family, healthcare, religion, and the economy. Structural-functionalism in this study sees civil service as an integrated system of interrelation among the various parts as a means of maintaining the smooth functioning of the whole to achieve good and purposeful governance. Although this theory cannot adequately explain social change, it explains that the interrelated parts of government, civil servants, payment of salaries/wages, recruitment, and many integrated structures as part of institutions, or patterns of a system focused on meeting public sector needs, as in the case of IPPIS.

The structural functionalism theory provides a model that explains the input and output functions of an integrated system designed to eliminate fraud in a system. In presenting a model that could estimate the assessment of the Integrated Payroll Personnel Payment System on Personnel Cost in Nigeria. The study adopted the two-stage Least Squares (2SLS) approach known as the instrumental variable method. This approach became necessary due to its theoretical benefit of obtaining consistent and unbiased estimates of regression coefficients when faced with endogeneity issues, where an independent variable is correlated with the error term. Evidence from other studies has demonstrated this methodological approach remains consistent and unbiased in estimating the degree of effects on outcome as drawn from studies by Ikepre and Aronu (2024), and Yunniningsih, Taufiq, Wuryani, Hidayat (2019). In estimating the assessment of the Integrated Payroll Personnel Payment System on Personnel Costs-fraud in Nigeria, as follows from 1993 to 2023. The selection of the sample period was based on data availability, as the variables were necessary because of fiscal discipline and public sector management evaluation, the choice of instrumental variables, and the variable that measured perception of corruption in Nigeria. Interestingly, the variables adopted had a connection with the theory but remained silent in all the studies reviewed. This was further demonstrated as an econometric model depicted as follows;

$$personnelCost = \alpha_0 + \delta_1 lnemployee_{it} + \delta_2 lnpayrollfraud_{it} + \delta_3 lnfedTRev_{it} + \delta_4 lnGovRcxp_{it} + \delta_5 CPI_{it} + \delta_6 gdp\_gr_{it} + \epsilon_1 \quad \text{.....1}$$

Where *employees*, *payroll fraud*, *fedTRev*, GovRcxp, Corruption (CPI), and *gdpgr* are endogenous variables

$$\widehat{lnempoyee} = \phi_0 + \phi_1 lnemployee_{it} + \phi_2 lnpayrollfraud_{it} + \phi_3 lnfedTRev_{it} + \phi_4 lnGovRcxp_{it} + \phi_5 CPI_{it} + \phi_6 gdp\_gr_{it} + \nu_1 \quad \text{.....2}$$

Where (employee =registered staff) obtained the instrumental variable

$$personnelCost_{it} = \alpha_0 + \Delta_1 \widehat{lnemployee}_{it} + \Delta_2 lnpayrollfraud_{it} + \Delta_3 lnfedTRev_{it} + \Delta_4 lnGovRcxp_{it} + \Delta_5 CPI_{it} + \Delta_6 gdp\_gr_{it} + \nu_1 \quad \text{.....3}$$

Where "v" is a composite error term that is uncorrelated with the employees, payroll fraud, fedTRev, GovRcxp, Corruption (CPI), and gdp_gr.

Data collected for this study were from the World Bank Development Indicators and the National Bureau of Statistics from 1993 to 2023.

Discussion of Results

The study examined the descriptive statistics of the variables to investigate the data characteristics and nature of the variables. The essence here is to examine whether the variables vary their value sufficiently. In line with this, the study examines the mean, standard deviation, and minimum and maximum values of the model variables. Therefore, the study presents the descriptive statistics of the model variables as shown in Table 4.1 below:

Table 4.1: Summary Statistics of the Variables

Variable |	Obs	Mean	Std. Dev.	Min	Max
lnpersonne~t |	31	.4437724	.4658113	-.1053605	1.607436
lngvtrecuxp |	31	6.935641	1.180429	4.499588	8.337729
lnpayrollf~d |	31	11.10277	.4618061	9.740969	11.66693
lnemployee |	31	12.69429	.2735465	12.28224	13.48701
lnno_regis~f |	31	12.40827	.403852	11.87678	13.46311
gdpgr |	31	4.115778	3.789707	-2.035119	15.32916

Source: author's computation 2025

The descriptive statistics results shown in Table 4.1 indicate that all the variables show sufficient variations in their mean, standard deviation values, and their associated minimum and maximum values. Table 4.1 further reveals that the overall number of observations for the study (N) is 31 (that is, from 1993 to 2023 for each of the six(6) indicators. The average score for personnel cost is about 0.4437724. For government recurrent expenditure, the average score of 6.935641. The payroll fraud has an average score of 11.12077, while the employee has an average score of 12.40827. The average score for several registered employees is about 12.40827, and the GDP growth rate has an average rate of 4.115778.

Table 4.2: The summary of the unit root test for ADF is as seen in the table.

	Level form			First Difference			
Variable	ADF t-Statistics	Critical value	p-value	ADF t-Statistics	Critical Values	p-value	Lag Values
GDPgr	-2.875	-3.716 -2.986 -2.624	0.0484	-4.170	-4.352 -3.588* -3.233	0.0050	1
GvtRecuxp	-1.525	-3.716 -2.986 -2.624	0.5213	-4.809	-4.352 -3.588* -3.233	0.0046	1
PersonnelCost	2.262	-3.716 -2.986 -2.624	0.9989	-5.479	-4.352 -3.588* -3.233	0.0000	1
Payrollfraud	-1.588	-3.716 -2.986 -2.624	0.4898	-4.573	-4.352 -3.588* -3.233	0.0011	1
No_registeredstaff	-1.725	-3.716 -2.986 -2.624	0.9982	-3.720	-4.352 -3.588* -3.233	0.0001	1
employee	2.218	-3.716 -2.986 -2.624	0.9989	-4.097	-4.352 -3.588* -3.233	0.0000	1
FedTRevenu	0.617	-3.716 -2.986 -2.624	0.9880	-3.845	-4.352 -3.588* -3.233	0.0004	1
Corruption	-1.707	-3.736 -2.994 -2.628	0.4274	-3.813	-4.380 -3.600 -3.240	0.0014	1

Source: author's computation 2025

A unit root test was carried out on the dataset to avoid running a spurious regression and to ascertain the degree of stationarity of the variables under study. The Augmented Dickey–Fuller (ADF) unit root test was employed to do this. The ADF test for the absence of a unit root in a time series is the null hypothesis data sample (non-stationary). Where the ADF statistics value is larger than one is the critical value of the selected significance level, then the null-hypothesis of nonstationarity is not sustained. This was interpreted either with the t-statistic or the p-value, as all the variables were stationary on the condition that the ADF t-statistic in absolute terms was greater than the ADF 5% critical value at first difference. This was also validated with the p-value being less than or equal to 0.05, as in the above result.

Table 4.3: Two-Stage Least Squares (2SLS) approach Result of Integrated Payroll Personnel Payment System on Personnel Cost-fraud in Nigeria

lnpersonnelc~t	Coef.	Std. Err.	z	P>|z|
lnemployee	2.067546	.2396945	8.63	0.000
lnpayrollfraud	.1613843	.0682068	2.37	0.018
lnFedTRevenu	.1152715	.0741229	1.56	0.120
lnGvtRecuxp	-.2719514	.0609294	-4.46	0.000
Corruption	.0835094	.0800872	1.04	0.297
gdpgr	-.003177	.0080909	-0.39	0.695
_cons	-26.83129	3.239336	-8.28	0.000

Instrumented: lnemployee

Instruments: lnPayrollfraud lnFedTRevenu lnGvtRecuxp Corruption GDPgr

Source: author's computation 2025

Table 4.3 illustrates the two-stage Least Squares (2SLS) approach applied to the Integrated Payroll Personnel Payment System, specifically examining personnel cost-fraud in Nigeria. The results demonstrate that not all variables were substantially significant at a 5% level. However, the choice of this approach was based on the use of instrumental variables to address issues like endogeneity bias. As such, the outcome of this result allows us to make the inference that for every additional employee (lnemployee), personnel cost (lnpersonnelc~t) increases by 2.370815, which is at 23.7 percent. This variable is at the 5% significance level since the p-value is less than 0.05.

Similarly, for every additional payroll fraud (lnpayrollfraud) made, the personnel cost (lnpersonnelc~t) goes up by .2073029, which is 2.1 percent. As such, payroll fraud has continued to increase the personnel cost in Nigeria. That is, each time payroll fraud rises in the system, the personnel cost (lnpersonnelc~t) rises at 5 percent at the 5% significance level since the p-value is less than 0.05. While, in contrast, federal government recurrent expenditure (lnGvtRecuxp) reduces personnel cost by .2719514, which is at 27 percent at the 5% significance level since the p-value, is less than 0.05. The implication of these findings clearly, demonstrates how the number of public federal civil servants has continued to increase, personnel cost in Nigeria, even when public recruitment in the past few years in Nigeria has remained selective among politicians.

Evidence from studies revealed that the public sector, by design, absolves many workers, especially in the education sector, health sector, and security sector, yet these sectors have continuously been neglected at the federal level. Employment seems to have been more in the banking sector, the telecom sector, and the energy sector, with minimal contribution to the real sectors, unlike the education and health sectors, which should employ more personnel. Musbahu and Lawal (2022) presented a plausible argument regarding the influence of employees on personnel costs, despite their study's limitations.

Also, one interesting finding from this study reveals that payroll fraud could have been responsible for the personnel cost in Nigeria, but the integrated payment system may have helped boost government recurrent expenditure through the registration process. This is supported by Akwu, Unanam, and Okon's (2021) argument that the Integrated Payroll Personnel Information System (IPPIS) is a mechanism to eliminate ghost workers, reduce wage bills, and ensure regular payment of salaries in Nigeria. Similarly, Zakari (2022) demonstrated that the Integrated Payroll and Personnel Information System (IPPIS) has facilitated human resources planning, thereby preventing payroll fraud in the Budget Office of the Federation. The study also revealed that the Integrated Payroll and Personnel Information System (IPPIS) has blocked loopholes in the manipulation of personnel records in the Budget Office of the Federation, despite its reduction in payroll fraud in the budget office of the federation in Nigeria.

Table 4.4: Test of Endogeneity

Test of Endogeneity					
Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	F(1,21)	Prob > F
lnemployee	0.9853	0.9810	0.8842	160.283	0.0000

Source: author's computation 2025

Table 4.4 illustrates the results of the endogeneity analysis. This post-estimation test was necessary to determine whether the Two-Stage Least Squares (2SLS) method we employed was necessary by testing if our regressors were endogenous. The null hypothesis states that all our variables are exogenous. Considering this, we can use the p-values from these tests to accept or reject this hypothesis. In this case, both tests have p-values of less than 0.01, leading us to reject the null hypothesis and conclude that our structural equation indeed suffered from endogeneity, confirming that a 2SLS regression was the appropriate choice.

Table 4.5: First-stage regression summary statistics

Minimum eigenvalue statistic = 160.283

Critical Values — # of endogenous regressors: 1

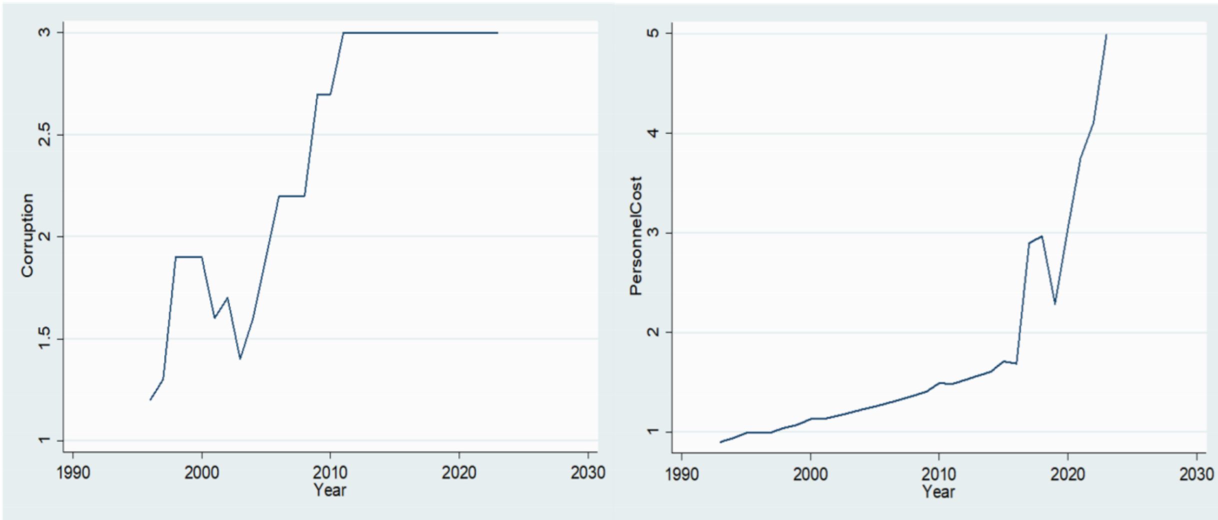
Ho: Instruments are weak — # of excluded instruments: 1

	5%	10%	20%	30%
2SLS relative bias	(not available)			
	10%	**15%**	**20%**	**25%**
2SLS Size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML Size of nominal 5% Wald test	16.38	8.96	6.66	5.53

Source: author's computation 2025

Table 4.5 presents the first-stage regression summary statistics to illustrate the weakness of the variable. Interestingly, the minimum eigenvalue statistics of 160.283 exceed the critical values at various percentages of 5%, 10%, 20%, and 30%. Therefore, in this case, we conclude that the variables are not weak.

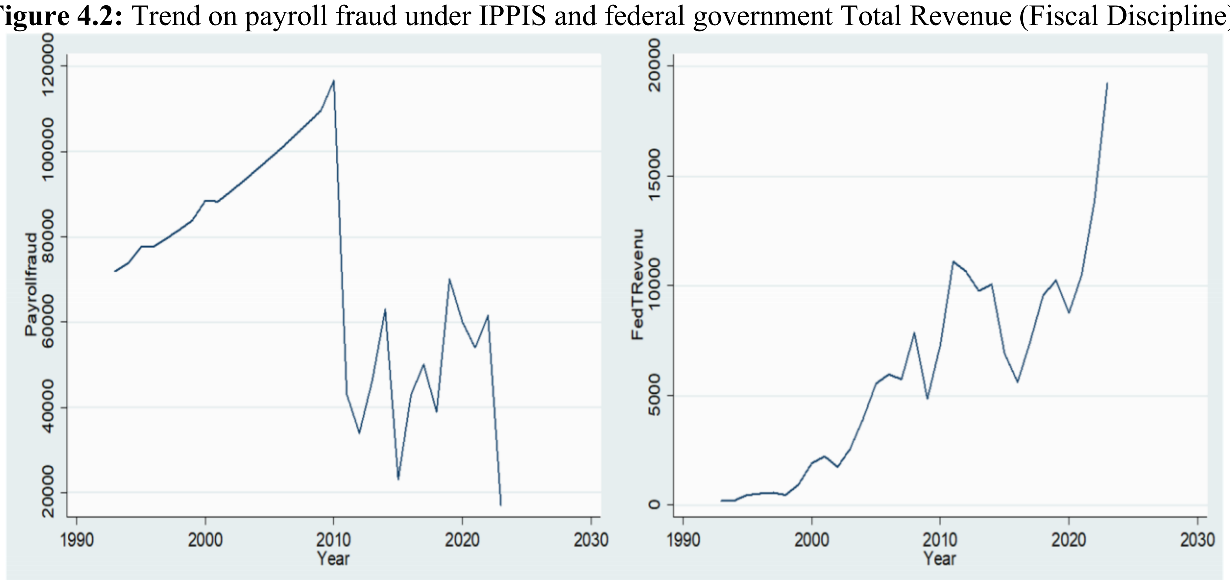
Figure 4.1: Trend on Corruption and Personnel Cost of Federal Government Employees



Source: author's computation 2025

Figure 4.1 demonstrates the corruption and personnel cost in Nigeria, which has continued to be continuously trend upward since 2007. Interestingly, the personnel cost seems to have been trending upward till 2019 to 2020 when many federal government agencies were captured into the integrated payment system, but spiked again from 2021 beyond records which may have been attributed to the system failure, as cited by a few studies, but continued to generate trust deficit on the platform.

Figure 4.2: Trend on payroll fraud under IPPIS and federal government Total Revenue (Fiscal Discipline)



Source: author's computation 2025

Figure 4.2 demonstrates that payment fraud continued to trend downward, especially from 2010 to 2023, while the federal government's total revenue. This included both oil and non-oil revenue, which kept rising in Nigeria. This demonstrated a huge impact on federal government revenue, which translates to fiscal discipline. Data evidence points to how this was earlier unstable but has remained upward since 2017. This demonstrates the level of improvement made in Nigeria in the past few years as integrating the personnel records had impact on employment at the real sector as it had huge impact on the economy. However, the country remained unprogressive with rising unemployment despite this level of improvement.

Table 4.6: Zivot-Andrew's test for structural break point of Integrated Personnel Payroll and Information System (IPPIS) on personnel cost in Nigeria.

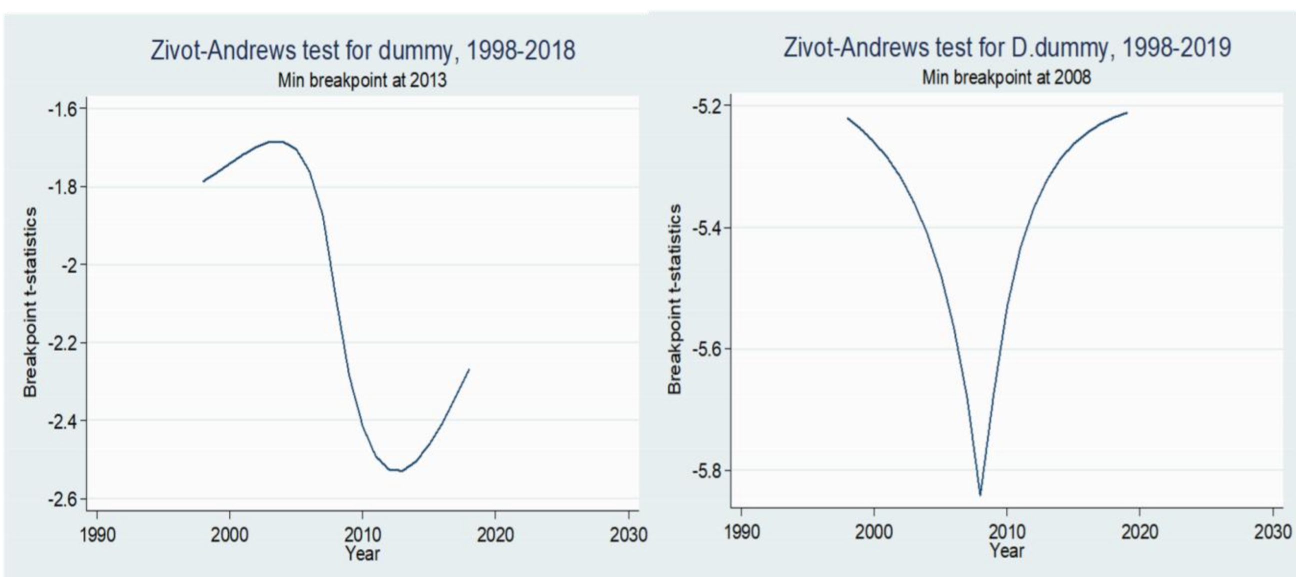
	Level at 2013 (obs 21)		First Difference at 2008 (obs 16)	
variable	Min. tstatistic	Critical Values	Min. t-statistic	Critical Values
Dummy	-2.529	-4.93 -4.42 -4.11	-5.841	-4.93* -4.42 -4.11

Source: author's computation 2025

Table 4.6 illustrates the results from the Z-A (1992) test on a dummy variable featuring a structural break point, which indicates that the breakpoint is in 2008. Since the t-stat (-2.529) falls below the critical values, it further demonstrates that the variable is non-stationary. Consequently, the need to take the first difference resulted in -5.841. This value is well above the critical values, indicating stationarity, though the breakpoint has now shifted from 2013 to 2008. This result demonstrates that the unexpected, abrupt change or shift in the global financial crisis of 2007/2008 affected government revenue. This was a major impact that forced the implementation of the Integrated Personnel Payroll and Information System (IPPIS) on personnel cost fraud in Nigeria, considering how the global financial crisis of 2008 had a significant impact on the Nigerian economy, particularly on the stock market, leading to a loss of capital assets and investments. The Integrated Personnel Payroll and Information System (IPPIS) was launched in 2007. One could infer that these unanticipated shocks can cause significant changes in the budget at that time, as the result suggests that the test statistic of 5.841 exceeds the 95 percent critical value of 4.42. Based on this evidence, the study rejects the null hypothesis, which posits that there is no structural break point. These findings imply that there is a structural breakpoint of the Integrated Personnel Payroll and Information System (IPPIS) on personnel cost fraud in Nigeria in 2008 and 2013, as shown in Table 4.6 and Figure 4.3.

Policy changes do have a significant effect, either directly or indirectly, and this could have been one of such. Nigeria has been battling with real sector employment in recent times, but the Integrated Personnel Payroll and Information System (IPPIS) could have been strengthened to open up real sector employment, as this will reduce the spike in unemployment in Nigeria. Creating a system that allows a better recruitment process to replace those who may have retired or exited could influence living standards. The need for a public sector and organized private sector personnel recruitment in this digital age may have a huge implication on institutions in Nigeria, as Nigeria has not fully tapped into the abundant human resource deposit; rather this resource have been utilized by many developing countries while the country continue to record a downward slope of public sector productivity.

Fig 4.3: z-Andrew's Break Trend



Source: author's computation 2025 **Conclusion**

This study investigated the assessment of the Integrated Payroll Personnel Payment System on Personnel Costs-fraud in Nigeria as follows from 1993 to 2023 using secondary data from the World Bank development indicator, and the Nigeria Bureau of Statistics. The Methodological approach of the two-stage Least Squares (2SLS) approach and the Zivot-Andrew's test for structural break point was employed. Findings revealed that for every additional employee (lnemployee), personnel cost (lnpersonnelc~t) increases by 23.7 percent at the 5% significance level with a p-value is less than 0.05. In addition to payroll fraud (lnpayrollfraud) that made, the personnel cost (lnpersonnelc~t) goes up by 2.1 percent. The result again revealed that federal government recurrent expenditure (lnGvtRecuxp) reduces personnel cost by .2719514, which is at 27 percent at the 5% significance level since the p-value, is less than 0.05. Hence, not all the variables were significant at a 5 percent level but clear findings demonstrates that as, payroll fraud has continued to increase, the personnel cost in Nigeria. That was also in payroll fraud and federal fiscal discipline. The outcome of this study aligns with Herbert Spencer's theory of Structuralfunctional theory, called the functionalism theory (1898), which provides for institutional integration for management and fiscal policy of government, such that it eliminates waste or fraud in governance. The IPPIS model, no doubt, was designed to eliminate fraud in the government system, but perhaps was not independent, which could have been part of the failure, as Akwu, Unanam, and Okon (2021); Zakari (2022); and Udejinta (2022) argued that the perception of IPPIS staff was associated with corrupt practices continued to generate debate. Hence, there is a need to investigate how the system operates, was necessary if transparency on governance was to be sustained. Nigeria is facing institutional failure; as such, consistent engagement in the processes of the activities of IPPIS should be prioritized. Democratization has become a tool of public policy in most developed countries. Nigeria operates below optimal when it comes to public engagement from heads of ministries, departments, and agencies, with little or no regard for public opinion, despite being funded through citizens' taxes. Institutions function through people; hence, the need for training of people working in IPPIS is fundamental for sectoral diversification, considering the peculiarity across sectors regarding replacement, retirement, and employment. An independent regulatory agency needs to monitor the activities of an integrated Payroll Personnel Payment System with periodic verification to strengthen the system. The need for parliamentary legislation that permits desk officers at the state level, and Periodic verification, is necessary to strengthen the integrated payment system in Nigeria.

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