

## **INTEGRATED PAYROLL SYSTEM AND GOVERNMENT RECURRENT EXPENDITURE IN NIGERIA**

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### **Abstract:**

*The main aim of this study is to investigate empirically the relationship between integrated payroll system and government recurrent expenditure in Nigeria. Data were collected through primary and secondary sources. The secondary were collected from annual reports of Bayelsa State Government, Nigeria and survey data were obtained from 30 respondents using researcher-designed questionnaire validated by experts and shown to have a reliability coefficient of 0.90. Descriptive and ordinary least square regression statistical techniques were used in analyzing the data with the aid of Statistical package for Social Sciences (SPSS) version 21. The study findings revealed that there exists a positive and strong relationship between integrated payroll system and personnel cost and overhead cost. We conclude that there exists a significant relationship between integrated payroll system and government recurrent expenditure, and recommends that all staff civil servants should be paid through bank and not by cash to prevent double hiring. Payroll presentation for all state civil servants should be centralized in the state treasury. Individual staff records should be centrally and safely kept with relevant accounting packages. The treasury single account policy should be duly implemented even in the local government system. Accounting staff should be trained on e-commerce and accounting system for intelligent and efficient use of accounting software in the ministries. All overhead cost incurred or to be incurred should pass through serious internal control mechanism in the state ministries.*

**Keywords:** *Government Public Expenditure, Integrated Payroll System, Personnel Cost, Public Sector and Government.*

## INTRODUCTION

Over the years Nigerian Government whether military or civilian had engage in expenditure projects aim at stimulating social-political and economic growth as well as development. The expenditure of the Nigerian Government are always categorized into recurrent and capital expenditure. Recurrent expenditure refers to payments made by governments for all purposes except capital costs. It includes personnel costs, payments made on goods and services, social service, health services, provision of educational material as well as interest and subsidies. The recurrent expenditure in Nigeria annual budget over time shows a rise in the recurrent expenditure. In the 2014 budget presented to the joint session of the National Assembly, a total of 2.4 Trillion Naira was budgeted for recurrent expenditure and 1.24 trillion budgeted for the capital expenditure. This puts the recurrent expenditure between 70- 74% of the total budget and only 25 to 30 % of the budget goes to the capital expenditure. Considering the items covered in the recurrent expenditure, which includes payment of salaries, welfare and other overhead and personnel cost, it shows that less than 3% of the population will spend more than 70% of the money that will be generated in Nigeria. There are serious implications of this on an average Nigeria and also to the generation unborn. According to the statistics released by the Ministry of Finance, the data of the recurrent expenditure indicated as follows: 2006 -70.1 % , 2007-64%, 2008-71.4 % , 2009-67%, 2010-64.7 % , 2011-74.4%, 2012- 71.5%, 2013-67.5% and 2014 -74 %.

There are compelling needs to drastically reduce the recurrent expenditure. There is a growing need to streamline the ministries, department and agencies (MDA's) to minimise the high recurrent expenditure which is eating deep into our national solidarity. It is on this premise that the Integrated Payroll and Personnel Information System (IPPIS) was introduced in the Nigerian public sector. Before the adoption of the integrated payroll system (IPS) using Integrated Payroll and Personnel Information System (IPPIS) in Nigeria, warrants for the monthly salaries of Ministries, Departments and Agencies (MDAs) were issued by the Budget Office of the Federation (BOF) to the Accountant General of the Federation (AGF). The warrant which must be signed by the Minister of Finance serves as authority to the Accountant General of the Federation to disburse monies specified from Consolidated Revenue Fund (CRF) for the purpose of carrying on the services of government (Aji, 2013; OAGF, 2011). Upon the receipt of the warrant, the AGF shall issue mandate for cash-backing to the Central Bank of Nigeria (CBN) to credit the individual MDAs account. The MDAs were to prepare their staff payroll and effect the payments to their individual accounts and also responsible to account for the personnel cost given to them (Federal Treasury Circular, 2004).

During that period, payroll accounting was done manually without the aid of computers. Accountants invested a lot of time and energy in keeping track of all employees' data, files and information, calculating monthly salaries, hourly remunerations, bonuses, leaves, benefits, taxes and other deductions. All these were done by keeping numerous files filled with track records for each and every employee (Adrian, 2010). Although there are some MDAs that made use of computer for accounting records, but government still observed gross

inadequacies in the payroll and personnel records in public service. Hence, the Federal Government of Nigeria carried out reformation of the Nigerian public service one of which is the Integrated Payroll and Personnel Information System (IPPIS) (Okonjo-Iweala 2013).

Presently, the personnel costs of the MDAs that have been enrolled into IPPIS are no longer credited into their MDAs accounts; instead their personnel costs are now with the Central Bank of Nigeria (OAGF 2013). The Office of Accountant General of the Federation (OAGF) prepares payroll and generate mandate which will be sent to the CBN, then the staff salaries will now be credited directly from CBN into the employees account (OAGF 2013). The Office of the Accountant General of the Federation took over the responsibility of IPPIS since 2008 and for the fact that the personnel costs are now centralized, it is now easier for the OAGF to monitor fund (OAGF 2013).

The purpose of this reform is to curb fraud and reduce waste in the Nigerian public service. Obaro (2006) asserted that except the public servant staff records are computerized, the fight against ghost workers will achieve limited result. Aganga (2011) also pointed out that the implementation of Integrated Payroll and Personnel information System (IPPIS) was part of the efforts to reduce recurrent expenditure of the government in particular personnel cost, which represents more than 50 percent of recurrent expenditure. Integrated Payroll and Personnel Information System (IPPIS), which is biometric, is a system where the data of every employee of government has to be captured and payment is made directly into their bank account (Obaro, 2006). This study therefore intends to determine the relationship between integrated payroll system (IPS) and government recurrent expenditure. This of course is the crux of the matter.

The remainder of the empirical paper is structured as follow after the introduction. Section two provides the theoretical framework, and review of related literature. Section three dealt with the methodology. Section four analyses the data and discuss the results. Section five wraps it up with conclusion and recommendations.

### **Literature Review**

The primary concern of this chapter is the review of existing related literature to this research work as contained in various publications by previous writers and researchers to provide a logical sequence to link both the previous research efforts to the present, thereby providing a suitable foundation for a systematic and analytical frame work necessary for development of this work.

This study of integrated payroll system and government recurrent expenditure in Nigeria is based on the Equity theory, which suggests that employee perceptions of what they contribute to the organization, what they get in return and how their return-contribution ratio compares to others inside and outside the organization, determine how fair they perceive their employment relationship to be (Adams in Gerhart, 1994). Perceptions of inequity are expected to cause employees to take actions to restore equity. Unfortunately, some such

actions like quitting, lack of cooperation especially in form of fraud may not be helpful to the organization. Cowherd and Levine in Gerhart (1994) added that individuals often compare their pay to that of people higher in the organization structure. If lower level employees feel inequitable treated, they may seek to reduce their effort to achieve equity.

In Government Organizations, Government spending and Taxation are key tools of Fiscal Policy. Government expenditure refers to the recurrent and capital expenditure incurred by the public sector for the absorption and maintenance of its resources (Anyaduba 2013). Recurrent expenditure is the ongoing expenditure of an organization or expenses that occur repeatedly which involve the payment of salaries, travelling expenses and other miscellaneous expenses. It is paid from the Consolidated Revenue Fund (CRF) and no such expenditure may be incurred except on the authority of a warrant duly signed by the Minister of Finance (Ani, 1998:96). This means that salaries are paid from recurrent expenditure of government and they are monitored using Fiscal Policy to avoid over spending. It is used by governments in an attempt to maintain economic growth, high employment and low inflation (Microsoft Encarta Premium 2009).

The policy is based on the theory of British economist John Maynard Keynes also known as Keynesian economics. This theory basically states that governments can influence macroeconomic productivity levels by increasing or decreasing tax level and public spending. It in turn, curbs inflation, increase employment and maintains a healthy value of money (Heakal 2013). According to Weil (2008), Fiscal Policy is said to be tight or contraction when revenue is higher than spending (government budget in surplus) and loose or expansionary when spending is higher than revenue (budget is in deficit).

### **Government Recurrent Expenditure**

Public expenditure can be broadly classified in terms of purpose as capital and recurrent expenditure; Capital expenditure on capital goods and projects that are meant to increase the national output. Recurrent expenditure is a recurring spending on items that are consumed only for a limited period of time. In the case of the government recurrent expenditure includes wages, salaries and expenditure on consumables –stationeries, drugs for health service, bandages and amongst others (Modeba, 2012). Increasing recurrent expenditure remains a challenge to many governments because the government is a major consumer of goods and services in the economy.

Government recurrent expenditure has been seen as a key driver of productivity in the economy, hence encouraging growth in Nigeria. Muthui et al (2013) find results that show that some components of public expenditure have positive and negative impacts on economic growth. He specifically finds out that health, public order, security and education are positively correlated to the wellbeing while defense expenditure is negatively correlated.

Controversially, Simiyu (2015) carried out a study to explain the relationship between the public expenditure and the payroll system in Nigeria using Vector Error Correction Model. In

her study, she found out that there was no causal relationship between public expenditure, overhead cost in Nigeria. According to the Keynesian theories, government expenditure should promote productivity but it has been an impediment just because of the way it is financed and allocated among sectors. Public borrowing and imposition of taxes as a means of financing results to crowding out of private investment and scaring away of potential investors respectively.

### **Personnel Costs**

The current staff strength of the various ministries and agencies of government are over bloated. The government should be able to rationalise the staff and identify those relevant to the organisations they serve. They should also engage in massive retraining of some of the trainable staff members to ensure efficiency and effectiveness. A thorough auditing of the staff strength is needed. Also a careful identification of the ghost workers, those working with fake identity and fake qualifications should be flushed out of the system to provide space for competent and qualified individuals. The civil service is the engine room for policy formation and programme so deserves a high productivity work force. The government can reduce the large wage bill by the adoption of out-sourcing and the use of private sector services and consultancy to tackle some specialised jobs. This would also reduce the various obligations and labour demand. A high productivity civil service will provide an enabling environment for most sectors of the economy to thrive. The issue of good governance, transparency and accountability will also thrive under such condition (Okwchukwu, 2015).

Personnel costs are defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the reference period. Personnel cost is the cost associated with personnel compensation and fringe benefits of employees (i.e., those classified as FTEs which includes both full-time and salaried/hourly employees) contributing to each respective process. Personnel cost should include all of the following costs. Employee Compensation includes salaries and wages, bonuses, overtime and benefits; and fringe benefits include contributions made towards the employees' government retirement fund, workers compensation, insurance plans, savings plans, pension funds/retirement plans, and stock purchase plans. This should also include special allowances, such as relocation expenses and car allowances.

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### **Empirical Studies**

The Government of Rwanda since 2008 developed and implemented an Integrated Personnel and Payroll Information System (IPPIS). This is an in-house developed solution. The IPPIS replaced the legacy payroll system with added functionalities to assist in human resource management. Detailed user manuals and high-level technical documentation were written and modeled using internationally accepted standards.

In 2014 the Government got assistance from the World Bank to improve the system functionality. This requirement was necessary as a result of changes in the operational environment and also changes in the standard Governmental procedures related to human resource management (Rwanda's PFMRS 2013, 2014). Schwalbe (2007) said "Just as Information Technology Projects have poor track record of meeting projects goals, they also have poor record in meeting budget goals. (Adams et al, 1992) replicated the work of Davis (1989) to demonstrate the validity and reliability of his instrument and his measurement scales.

The main problem, with the implementation of the IPPIS being implementation of all modules which include Career Development and Succession Planning, Job Evaluation, Grievance Management, Disciplinary Process Management, Employee Contract Management, Organization Structure and Talent Management which were not initially planned in the initial design.

To address this problem and to ensure the identified requirements are integrated, the Government sort assistance of a consultant to work with MDAs, and developed a detailed requirement analysis which involved all stakeholders, documented all workflows and processes, identified and documented business interfaces with external systems, defined the expected input and output for business processes.

In 1999, the Tanzania's Government through the Public Service Management started implementation of a HR and payroll system. In 2010, a business process review was conducted and presented to stakeholders that additional system development was necessary to improve the system functionality. Upgrading of the Lawson system was carried out under many challenges including lack of donor support that had initially supported development of

the system. Several reviews of the IPPS identified that the system do not meet the basic requirements for managing both HR and Payroll data. The reviews identified weak implementation strategy that made the system centralized at the Ministry of Public Service. Since then, this has changed and the system decentralized in MDAs (PSRP reports 2006, 2007, and 2010). Adopting information systems could be impeded by laws and regulations but also poor system support.

The integrated personnel and payroll information system and integrated financial management and information system have been able to enhance accountability and transparency in the management of government resources. More so, the Ministry of Finance observed in 2013 that the (IPPIS) has enhanced efficient personnel cost, planning and budgeting as personnel cost was based on actual verified aim and not estimates (Idris, Adaja & Audu , 2015).

Uganda has been implementing an integrated payroll and personnel system (IPPS) since 2009. The current Oracle database, licenses and operating system have never been updated since 2009. The system was reviewed in 2015. Results from the review indicate that the system data is incomplete; there are inaccuracies between actual payroll data and the IFMIS system. Human Resource Officers are not aware of actual payments made and whether they tally with the figures computed in the IPPS Payroll. IPPS currently has no alternative Business Continuity & Disaster Recovery Capability; DRS Server has no functional storage as it was taken to replace storage at the production site which had crashed with no replacement as yet, DRS is not connected to the network therefore replication is not working and no back-ups stored in offsite location (Uganda IPPS, 2015).

### **Hypothesis**

This empirical study anchored on two hypotheses stated in the null for as thus;

H<sub>01</sub>: There is no significant relationship between BVN and personal cost in Nigeria.

H<sub>02</sub>: There is no significant relationship between BVN and overhead cost in Nigeria.

### **Methodology**

This section shows the methodology used to evaluate the long run equilibrating relationship and short run dynamics in the variables if any to achieve the set objectives of the study. Descriptive survey and causal comparative research designs were adopted for the study. The researchers designed questionnaire that was validated by experts in accounting, finance and corporate reporting, and its reliability established using cronbach alpha in a test- retest interval of two weeks was used. It gave a reliability coefficient of 0.90 which is considered to be high enough. The instrument was administered on a sample of 30 respondents and in addition to annual reports from Bayelsa State, Nigeria. The data collected were analyzed using descriptive and ordinary least regression statistical techniques with the aid of Statistical Package for Social sciences (SPSS) version 21.0.

### Model Specification

The model specification is based on the theory that integrated payroll system relates to government recurrent expenditure in Nigeria. The study adopted a model specification used by Akenbor & Kiabel (2015) but we made an adjustment. The model specification was formulated in the following functional form as thus:

$$\text{GRE (IPS)} \quad - \quad - \quad - \quad - \quad (1)$$

Introducing mathematical form into the functional form as thus:

$$\text{GRE} = \alpha_0 + \beta_1 \text{IPS} \quad - \quad - \quad - \quad (II)$$

Consequently, adding error term into the mathematical to arrive at econometric model as thus:

$$\text{GRE} = \alpha_0 + \beta_1 \text{IPS} + \mu \quad - \quad - \quad - \quad (III)$$

Where:

- GRE = Government Recurrent Expenditure
- IPS = Integrated Payroll System
- $\beta_1$  = Regression slope
- $\alpha_0$  = Constant
- $\epsilon$  = Error Term

### Results and Discussions

The central research question to be investigated in this section is whether there is significant causal link between integrated payroll system and personnel cost in Bayelsa State, Nigeria.



**Presentation of Data**

**Table 1a.**

**QUESTIONS ON PERCEPTION OF BVN IN BAYELSA STATE.**

		5 strongly agree	4 agree	3 indifferent	2 disagree	1 strongly disagree	Total	Mean
1	There is simplicity and speed in the Ministry banking process	8	16	4	2	-	30	
		40	64	12	4	-	120	4.00
2	Reported cases of scam, impersonation and account hacking are reduced in the ministry	8	14	8	-	-	30	
		40	56	24	-	-	120	4.00
3	Transactions made by employees of the ministry are being tracked across all banks	10	12	2	6	-	30	
		50	48	6	12		116	3.86
4	Illegal banking transactions by employees of the ministry are easily curbed	6	12	10	2	-	30	
		30	48	30	4	-	112	3.37
5	It will address issues of identity theft and reduce employee exposure to fraud	8	18	2	2	-	30	
		40	72	6	4	-	122	4.06
6	The act of money laundering is reduced in the ministry with the introduction of the BVN	10	6	14	-	-	30	
		50	24	42	-	-	116	3.86
7	Standardized efficiency of banking operations will lead to the efficiency of the ministry fund management	8	12	6	4	-	30	
		40	48	18	8	-	114	3.80
8	BVN provides a mean to authenticate transactions without the use of cards using only biometrics features and pin	10	14	4	2	-	30	
		50	56	12	4	-	122	4.06

9	BVN is a means of verification and individuals that have account(s) in any Nigerian bank.	18	10	2	-	-	30	
		90	40	6	-	-	136	4.53
10	BVN is a means of authenticating customers identity at point of transaction	10	16	4	-	-	30	
	Grand score	50	64	12	-	-	126	4.20

### Integrated Payroll System

This section is mainly concerned with examining the level of satisfaction with the Integrated Payroll System in Bayelsa State. This was achieved by analyzing each of the dimensions of integrated payroll system; the integrated payroll system and bank verification number using the five points likert scale.

**Integrated Payroll System:** the data on IPS were obtained using five (5) test items raised in the questionnaire which were rated by the respondents. The result obtained in table 1b below

Table 1b: QUESTIONS ON PERCEPTION OF IPS IN BAYELSA STATE.								
		5 strongly agree	4 agree	3 indifferent	2 disagree	1 strongly disagree	Total	Mean
1	IPS tracts all financial transaction that are related and linked to personnel emolument	12	18	-	-	-	30	
		60	72	-	-	-	132	4.40
2	Accountability and transparency of Government transaction increased with IPS	8	18	2	2	-	30	
		40	72	6	4	-	122	4.06
3	IPS eliminates ghost works in your ministry	14	10	6	-	-	30	
		70	40	18	-	-	128	4.26
4	IPS reduces multiple payments of emolument to a single employee in your ministry	12	18	-	-	-	30	
		60	72	-	-	-	132	4.40
5	IPS facilities easy storage, updating and retrieval of personnel records for administrative process	14	16	-	-	-	30	
		70	64	-	-	-	134	4.46
6	With the introduction of IPS has your ministry made any saving from its recurrent expenditure in terms of personnel cost and overhead	6	14	6	4	-	30	
		30	56	18	8	-	112	3.37

7	IPS has made payments in terms of over-head and salary to be made on-time and more conveniently	2	20	8	-	-	30	
		10	80	24	-	-	114	3.80
8	IPS reduces wastages and financial leakages in government recurrent expenditure in terms of personnel cost management	12	14	2	2	-	30	
		60	56	6	4	-	126	4.20
9	IPS aid in having and preparing accurate and reliable information about the size of personnel in the payroll	16	12	2	-	-	30	
		80	48	6	-	-	134	4.46
10	IPS aid in the reduction of corruption and sharp practices in the ministry	4	16	8	2	-	30	
		20	64	24	4	-	112	3.37

The above table presents the result from the field work collected by means of questionnaire. The table provides the respondents' view of the use of BVN and the Integrated Payroll System as a way of reducing government expenditure and fraud control.

### Recurrent Expenditure in Bayelsa State

This section is devoted to investigate the strength of recurrent expenditure in Bayelsa State. This was achieved by analyzing each of the measures of recurrent expenditure-overhead cost (O-HC) and personnel cost (PC).

The table below is the secondary data on personnel collected from the 29 Ministries, Department and Agencies (MDAs) in Bayelsa State for a period of 10 years (2007-2016) Please Note: the number of Ministries changes from year to year and this is based on what the state Governor feels that is adequate for the state at that particular time.

**Table 2: APPROVED BUDGET FOR THE YEAR 2007, 2008 & 2009**

S/N	NAMES OF MINISTRIES	PERSONNEL COST. 2007	OVERHEAD COST. 2007	PERSONNEL COST. 2008	OVERHEAD COST. 2008	PERSONNEL COST. 2009	OVERHEAD COST.2009
1	MINISTRY OF FINANCE	122,485,314.00	858,671,840.00	1,296,039,391.00	1,549,500,000.00	803,622,282.00	1,547,520,142.00
2	MINISTRY OF BUDGET AND ECONOMIC PLANNING	48,053,637.00	707,840,000.00				
3	MINISTRY OF JUSTICE	105,740,124.00	344,810,000.00	88,074,461.00	288,620,000.00	106,696,368.00	124,227,920.00
4	MINISTRY OF HEALTH	1,987,778,830.00	698,120,600.00	2,654,430,537.00	724,980,120.00	4,329,297,166.00	558,855,480.00

5	MINISTRY OF EDUCATION	5,132,356,225.00	1,823,930,000.00	6,960,705,077.00	1,231,506,623.00	8,110,916,956.00	496,530,316.00
6	MINISTRY OF WORKS	76,941,434.00	59,000,000.00				
7	MINISTRY OF TRANSPORT	68,989,719.00	223,300,000.00	218,032,159.00	67,500,000.00	216,461,904.00	52,361,000.00
8	MINISTRY OF ENVIRONMENT	475,260,041.00	3,409,700,000.00	891,908,692.00	715,500,000.00	1,140,239,749.00	337,665,000.00
9	MINISTRY OF AGRICULTURE	150,967,677.00	44,050,000.00	277,973,333.00	86,400,000.00	305,016,600.00	73,617,760.00
10	MINISTRY OF INFORMATION, CULTURE AND TOURISM	273,800,086.00	83,970,000.00	643,303,557.00	615,750,000.00	589,505,063.00	295,291,840.00
11	MINISTRY OF LANDS AND HOUSING	105,190,682.00	356,100,000.00				
12	MINISTRY OF COMMERCE, INDUSTRY AND TECHNOLOGY	66,754,111.00	89,085,000.00	106,059,500.00	81,000,000.00	126,651,530.00	30,833,200.00
13	MINISTRY OF WOMEN AFFAIRS AND SOCIAL DEVELOPMENT	170,563,038.00	479,020,000.00				
14	MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT	135,094,085.00	104,200,000.00	146,647,070.00	89,100,000.00	168,242,067.00	418,016,520.00
15	MINISTRY OF SPECIAL PROJECTS	25,340,417.00	29,700,000.00				
16	MINISTRY OF PUBLIC UTILITIES AND RURAL DEVELOPMENT	170,634,308.00	1,300,268,000.00				
17	MINISTRY OF TECHNOLOGY AND TECHNICAL DEVELOPMENT	181,839,515.00	360,400,000.00				
18	MINISTRY OF SPECIAL DUTIES						

	CENTRAL SENATORIAL DISTRICT						
19	MINISTRY OF SPECIAL DUTIES EAST SENATORIAL DISTRICT						
20	MINISTRY OF SPECIAL DUTIES WEST SENATORIAL DISTRICT						
21	MINISTRY OF YOUTH DEVELOPMENT						
22	MINISTRY OF MINERAL RESOURCES						
23	MINISTRY OF TOURISM DEVELOPMENT						
24	MINISTRY OF & IJAW AFFAIRS						
25	MINISTRY OF COMMUNITY DEVELOPMENT & CHIEFTAINCY AFFAIRS						
26	SCHOOL TO LAND						
27	MINISTRY OF SPORT DEVELOPMENT						
28	MINISTRY OF POWER						
29	MINISTRY OF WATER RESOURCES			123,153,223.00	675,000,000.00	121,199,491.00	359,859,000.00
	<b>TOTAL</b>	<b>1,280,183,919.00</b>	<b>2,846,793,000.00</b>				

**Data Analysis**

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IPS	23	112.00	136.00	124.0870	7.37263	-.056	.481	-.924	.935
PC	23	112.00	136.00	120.4348	7.26027	.795	.481	-.105	.935
PERSONEL	23	12456000.00	648882579.00	137764377.4348	149035450.59436	2.127	.481	5.525	.935
OVERHEAD	23	1423373.00	855430405.00	127642335.2174	198201196.58061	2.595	.481	7.893	.935
Valid N (listwise)	23								

The above table is the result of the descriptive statistics generated from the analysis; it gives the values of the Integrated Payroll System (IPS) and Personnel Cost Incurred for the period (personnel) and overhead cost incurred for the period (Overhead).

The growth rate of the explanatory variables moved from 112 to 136 implying that both the IPS and the PC have the same degree of effect on the perception of the respondents. There is a growing concern for the case of IPS and POS among the respondent on expenditure reduction in the state.

The same increase in growth rate is also evident on the explained variables of personnel cost which grows from 12,456,000 to 648,882,579 for personnel cost. The implication is that the growth rate of the overhead cost increases faster than that of the personnel cost. This is an indication of the spending interest of the government and value of labor.

Among the IPS and PC, IPS has a greater mean value of 124 to PC of 120; this means IPS has a greater effect on cost reduction and control than PC in the public sector. But in monetary terms, personnel cost has a greater effect on the state expenditure as 137,764,377.4 to overhead cost of 127,642,335.2. A look at the standard deviation tells the most volatile explanatory and explained variables in the model IPS (7.37) is more volatile to change compared with PC (7.2) while overhead cost is more volatile to change (1982) to personnel cost (1490).

The results all normally distributed with a statistical skewness of more than 0.05 except for IPS with -0.056. And a kurtosis of 0.924 for IPS 0.105 of PC, 5.525 from personnel cost and 7.893 of overhead cost.

### 3. Test for Hypothesis and Result

**Table 4.4 Correlations**

		IPS	BVN	PERSONE L	OVERHE AD
IPS	Pearson Correlation	1	-.126	-.103	-.300
	Sig. (2-tailed)		.565	.640	.165
	N	23	23	23	23
BVN	Pearson Correlation	-.126	1	-.176	.053
	Sig. (2-tailed)	.565		.423	.810
	N	23	23	23	23
PERSONE L	Pearson Correlation	-.103	-.176	1	.001
	Sig. (2-tailed)	.640	.423		.997
	N	23	23	23	23
OVERHE AD	Pearson Correlation	-.300	.053	.001	1
	Sig. (2-tailed)	.165	.810	.997	
	N	23	23	23	23

From the correlation table of 4 above the result shows that IPS has a negative correlation with personnel cost at -0.103 at 0.640 significant rate. Since both significant are more than 0.05 their correlation is not strongly significant. Against that of PC to personnel cost is at -0.176 at 0.423 level of significance shows a negative correlation while with overhead had a positive correlation of 0.053 at 0.810 level of significance.

**Table 5 Model Summary a**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin - Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.317 <sub>a</sub>	.100	.010	7.33419	.100	1.116	2	20	.347	1.928

a. Predictors: (Constant), OVERHEAD, PERSONEL

b. Dependent Variable: IPS

The regression summary of IPS to overhead and personnel cost has a R value of 0.317,  $R^2$  value of 0.1 and adjusted  $R^2$  of 0.010 shows that IPS has a 10% influence on an increase in the value of personnel cost and overhead cost in Bayelsa state. This result has a summation of 1.928 which is about 2, implying that there is no auto-correlation in the model and the result is acceptable for further application in their relationship.

**Table 6. ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	120.020	2	60.010	1.116	.347 <sup>b</sup>
	Residual	1075.806	20	53.790		
	Total	1195.826	22			

a. Dependent Variable: IPS

b. Predictors: (Constant), OVERHEAD, PERSONEL

From table 6, the ANOVAs means square for the regression is 60 which is greater than the residual mean square of 53.79 meaning that the variables in the model explain more 50% the behavior of the dependent variable than those excluded in the model.

**Table 7. Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Beta	Lower Bound	Upper Bound	Tolerance
(Constant)	126.209	2.332		54.113	.000	121.344	131.074		
PERSONEL	-5.078	.000	-.103	-.484	.634	.000	.000	1.000	1.000
OVERHEAD	-1.115	.000	-.300	-1.413	.173	.000	.000	1.000	1.000

a. Dependent Variable: IPS

Table 7 above shows that a 1% increase in the use of IPS by the state government will result to 50% reduction in personnel cost and 11% reduction in overhead cost at a 95% confidence interval of 0.00 upper and lower bounds.



**Table 8 Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	121.364	2.380		50.984	.000	116.398	126.329		
PERSONEL	-8.553	.000	-.176	-.799	.434	.000	.000	1.000	1.000
OVERHEAD	1.953	.000	.053	.243	.811	.000	.000	1.000	1.000

a. Dependent Variable: PC

Table 8 is the coefficient of the effect of PC in personnel and overhead cost; a 1% increase in the use of PC will result to 85% reduction in personnel cost at a T value of -0.799 and probability of 0.434 greater than 0.05. Again, a 1% increase in PC will lead to a 1.953 increase in overhead cost at value of 0.243 and probability of 0.811.

However, PC has a positive effect on increase in overhead cost. This is a predisposed disposition because overhead is not a personnel cost and ministries have no use of PC on overhead cost i.e. on the introduction of treasury single account. Before this time with the liability of ministries opening several accounts, overhead cost had been on the high side with several bank charges and over draft interest rates, unnecessary bank accounts leading to transfer of funds to individual accounts from government missing fund arising from change of government and personnel.

### Discussion of Findings

The overall analysis and test of hypothesis show that IPS has a negative relationship with personnel and overhead cost. An improvement in IPS usage and application will reduce both personnel and overhead cost. This is because it will prevent that fraudulent cost element associated with payroll fraud, over invoicing in the state civil service, hence the null hypothesis that IPS has no significant effect on personnel and overhead cost is rejected and the alternative is accepted that IPS has a significant but negative effect on an increase in personnel and overhead cost in the Bayelsa State Civil Service.

Another effect of the study is that of PC on personnel and overhead cost. Although the result showed that it has a negative effect with personnel cost and a positive effect with overhead cost. The implication is that PC prevents double hiring with different organization by state employees. This is capable of reducing personnel cost in Bayelsa State. It is true that at the early age of the state civil service, civil servants were seriously double hiring between ministries, schools, boards and local governments; the introduction of PC had led to a careful

detection of fraudulent act and had tremendously reduced the state personnel cost by 85% as shown.

### **Conclusion and Recommendations**

The research work concludes that:

1. Technology is very important in preventing and reducing cost in the public sector.
2. Electronic accounting and the use of accounting system is step in the right direction for fraud prevention in the public sector.

The researcher wishes to recommend that:

1. All staff civil servant should be paid through bank and not by cash to prevent double hiring.
2. Payroll presentation for all state civil servants should be centralized in the state treasury.
3. Individual staff records should be centrally and safely kept with relevant accounting packages.
4. The treasury single account policy should be duly complemented even in the local government system.
5. Accounting staff should be trained on e-commerce and accounting system for intelligent and efficient use of accounting software in the ministries.
6. All overhead cost incurred or to be incurred should pass through serious internal control mechanism in the state ministries.

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