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EFFECT OF FORENSIC ACCOUNTING AND INVESTIGATIVE TECHNIQUES ON WHITE COLLAR FRAUD IN THE NIGERIAN CIVIL SERVICE

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Abstract

This study is primarily aimed at determining if the application of forensic accounting and investigative techniques can detect and prevent white collar fraud in the Nigerian civil service. To achieve this, the study used Cochran Sample Size Determination Formula to administer 300 copies of questionnaire on auditors, accountants, staff of code of conduct bureau and bankers in the Nigerian civil service. Descriptive and inferential statistics (mean, standard deviation, correlation and multiple regressions) from SPSS 22 test outcome were employed to analyze the data collected. The result from the analysis revealed that the introduction of TSA and IPPIS have contributed immensely to detecting and preventing white collar fraud in the Nigerian civil service. This was evident from the significant p-value of 0.000 and a positive coefficient of 0.401 and 0.607 in respect of white-collar fraud against the independent variables namely TSA and IPPIS. Consequently, the study concluded that the implementation of TSA, and IPPIS have aided to a large extent in the detection and prevention of white-collar fraud in the Nigerian civil service. Based on the findings, it is recommended that TSA and IPPIS should be holistically, vigorously, transparently and impartially implemented at all tiers of government.

Introduction

One of the greatest challenges bedeviling the public sector of Nigeria is financial fraud. This is willfully committed through misappropriation and outright embezzlement of public funds, by top civil servants and political appointees in government ministries and parastatals. Financial corruption in Nigeria is as old as her

independence. Evidently, the first military coup in Nigeria which took place six years after her independence in 1966 was triggered by gross corruption in the public sector. Ever since, corruption has been growing like a well fed and favoured baby in Nigeria. Despite her political independence in 1960, Nigeria has not experienced moral and financial independence from the claws and grip of corruption, and this is perhaps, due to the individuals involved in the dirty game. Regrettably, efforts of internal and external auditors seem to be inappropriate, as the monstrous players in the dirty game have neither been adequately exposed nor deterred. Apparently, like the skeletons concealed by the frightening veil of a shrine, some individuals involved in financial frauds in Nigeria have never been overtly revealed by traditional internal checks/controls and annual audits and government special fiscal measures and policies over the years.

However, recent postulations by scholars seem to insinuate that the adoption and implementation of some stern forensic accounting and investigation techniques such as treasury single account (TSA) and integrated personnel and payroll information system (IPPIS) by the Federal Government of Nigeria is changing the narrative in the public sector of Nigeria. Nevertheless, the concern is the argument in the media and the political domain that the success level is insignificant, and that these forensic weapons are selectively applied against the middle class and political opponents in the civil/public service. The argument is that the adoption and implementation of TSA and IPPIS have not satisfactorily apprehended the giant masquerades of corruption in government ministries and parastatals in Nigeria. This study is therefore, tailored to interrogate the level of success recorded in the adoption and application of BVN, TSA and IPPIS in the detection and prevention of white-collar frauds in the Nigerian civil/public service.

Statement of the Problem: Despite the existence of internal checks and controls, and annual conduct of statutory audit in the Nigerian Civil Service, financial fraud is still on the increase. The proactive introduction and implementation of some stern forensic accounting and investigative technique such as TSA and IPPIS by the Federal Government of Nigeria to detect and prevent fraud, to allay the fear of the public in the 21st Century have been severally called to question by scholars and some stakeholders. The agitation is that, despite the perceived potency of these forensic techniques, the implementers (CCB and other relevant law enforcement agencies) are partially selective. There is a growing perception that the top influential civil servants and political appointees who wear the giant masquerades of fraud in government ministries / departments and agencies and parastatals have not been transparently and satisfactorily investigated and exposed. Sadly, the anti-graft agencies in Nigeria seem to have been practically paralyzed by the political and economic power and influence of the top category of perpetrators (Modugu & Anyaduba, 2013). Drawing from the white-collar crime theory of Edward Sutherland, this study is motivated to interrogatively examine the level of success and the effect of the forensic accounting and investigative techniques on white collar fraud perpetrated by top civil servants and political appointees in the Nigerian public sector.

Objectives of the Study*:* The general objective of this study is to find out if the application of forensic techniques can detect and prevent white collar fraud in the Nigerian civil service. The specific objectives are:

- To find out if the adoption of Treasury Single Account significantly detects and prevents white collar.
- To find out if the adoption of Integrated Personnel and Payroll Information System significantly detects and prevents white collar fraud in the Nigerian civil service.

Research Questions: The questions of this study are:

1. To what extent does the adoption of Treasury Single Account detect and prevent white collar fraud in the Nigerian civil service?
2. To what extent does the adoption of independent Integrated Personnel and Payroll Information System detect and prevent white collar fraud in the Nigerian civil service?

Research Hypotheses: This study was guided by the following null hypotheses:

Ho$_1$: The adoption of Treasury Single Account has not significantly detected and prevented white collar fraud in the Nigerian civil service.

Ho$_2$: The adoption of Integrated Personnel and Payroll Information System has not significantly detected and prevented white collar fraud in the Nigerian civil service.

Significance of the Study: This study was motivated to reveal the potency of forensic audit techniques in the detection and prevention of white-collar fraud, and would therefore, inspire the Federal Government, Code of Conduct Bureau, Economic and Financial Crimes Commission and Independent Corrupt Practices Commission to painstakingly apply and enforce relevant forensic techniques to discover and prevent white collar fraud in the Nigerian civil service. Unarguably, this study would help check and reduce financial fraud committed by top civil servants and politicians in the Nigerian civil service, and would ultimately safeguard public funds for relevant economic projects.

Conceptual Framework:

The keywords and fundamental building blocks connecting and explaining the variables and questions of this study are chronologically and logically articulated below:

Forensic Accounting and Investigative Techniques: In the words of Manning (2002), forensic accounting is an amalgamation of accounting, auditing and investigative techniques in resolving civil and criminal financial disputes and litigation. It is the professional deployment of financial and investigative skills, ability and mentality to examine financial misstatements and misconducts, to determine the involvement of individuals within the rules of evidence (Arokiasamy & Cristal, 2009; Erin & Ogundele, 2016; Ojukwu, Ubi, Olugbemi & Emefiele, 2020). Contextually, forensic accounting can be succinctly described as the professional and skillful application of specialized techniques to comprehensively examine suspected financial misconducts within the conduct of rules of evidence. Accordingly, Suleiman & Othman (2021) described it as an investigative technique used for evidence gathering and fraud detection to support litigation in the court of law.

White-Collar Fraud: Firstly, fraud is a deliberate and premeditated non-violent act by individuals to access unmerited and undue benefits and advantages, through alteration, distortion, falsification and suppression of financial information in an organization, due to financial indiscipline, greed and undue family and peer pressure (Erin & Ogundele, 2016; Federal Bureau of Investigation, 2018). Fraud is perpetrated at all levels, and by

individuals irrespective of class, rank and position, especially in the civil service (Uniamikogbo, 2019). Fraud perpetrated by top civil servants and political appointees in Nigerian public sector seems to have reached a crescendo, and appears to be difficult to detect and prevent, due to the influence, power and social status of some personalities involved. Most of the fraud recorded in the Nigerian public sector were perpetrated by very Senior Accountants, Directors, Permanent Secretaries, Commissioners, Ministers, Legislators, Executive Governors, etc. who are highly respected and influential in the society and place of work. This was the observation of Sutherland in 1939, who lamentingly called fraud committed by influential people as "white collar fraud". Sutherland (1949) observed and remarked in his generation that, only about 2 percent of persons convicted and committed to correction centres annually belonged to the upper class. This according to him was largely due to their financial and social status, which seems to protect them from the blind laws of the society they belong. White collar fraud, according to Dada & Jimoh (2020) is a global hazard, and is becoming a norm in the public sectors of developing countries, particularly in Nigeria.

Emergence of Stern Forensic Accounting Techniques in Nigeria: The rationale and approach of forensic accounting and investigation was long practiced before it was formally recognized and adopted in accounting, auditing and fraud investigation. Its practice, according to Josh (2003), dates back to the Egyptian civilization, and its advocacy by an economist called Kutilya centuries ago. In agreement, Crumbley (2001) documented that a kind of forensic services were rendered by a young Scottish accountant as far back as 1817 and 1824 to aid court decisions and rulings. However, forensic accounting was first coined, published and recognized by Peloubet in 1946. Its procedures and practice were formally put in place in the 1980s when it recorded major academic studies and publication (Anuolam, 2016). This implies that forensic accounting and investigation is as old as history, but its practice recorded little attention in earlier generations, and is relatively new in developing countries like Nigeria (Uniamikogbo, Adeusi & Amu (2019). Its practice in Nigeria was necessitated by an increasing need to reduce the increasing fraudulent cases and widening audit expectation gap in the country, because Suleiman & Othman (2021) adduced that the Nigerian public sector experiences corruption on a daily basis, and her level of corruption is internationally known. The perceived rise in corruption in the Nigerian public sector can be equally attributed to the inability of conventional auditing and investigative tools to expose and prevent perpetrators, which viewing from Sutherland's white-collar fraud concept can be assumed to have been partly caused by the class of individuals involved. This, emphatically has prompted the Federal Government of Nigeria to introduce some stern forensic and investigative measures, such as TSA and IPPIS to check corruption in the country, but the seemingly rhetoric question is, to what extent have these measures checked and exposed the major perpetrators of fraud in her public sector?

a) Treasury Single Account: This is an international financial policy, practiced by both developed and developing nations (Pattanayak & Fainboim, 2010). It is a unified structure of government bank accounts that amalgamates government cash receipts for optimum deployment (Yusuf & Chiejina, 2015). It is a network of subsidiary accounts

interconnected to a single account where balances of government transactions realized in subsidiary accounts are closed and transferred into a federal account (Chukwu, 2015). It can be described as a global forensic fraud preventive accounting measure, coordinated and institutionally rooted in Central Banks of nations, to aggregate and incorporate the financial flows of Ministries, Departments and Agencies (MDAs), to check the financial involvements of top civil servants and political appointees in the public sector of nations (Eme & Chukwurah, 2015; Adebisi & Okike, 2016; Ahmed-Gamgum & Ahmed, 2018). Historically, the TSA banking system in Nigeria was adopted in 2009, partially implemented in 2012 and fully implemented and enforced in 2015 by the Federal Government to increase government revenue and eradicate embezzlement and misappropriation of public fund (Odia & Odia, 2016; Ogoun & Odogu, 2020). The TSA programme, according to Odewole (2016), Kanu (2016), Bashir (2016) and Adetula, Adegbenjo, Owolabi, Achugamonu & Ojeka (2017) is capable of blocking financial leakages and ensuring transparency and accountability, and has indeed improved the revenue profile of the Federal Government. Nevertheless, this study seeks to fathom the proportion of top civil servants and political appointees the TSA scheme has checked and apprehended, given the exponential increase in financial corruption in the public sector of Nigeria.

b)   Integrated Personnel and Payroll Information System: This is an electronic accounting system that deploys information and communication technology to computerize and integrate human resource into the management information system of government of nations, to prevent payroll fraud. It is a public service reform strategy designed to electronically compute and process monthly basic pay, bonuses, arrears, national housing fund and pension contributions of civil and public servants, to enhance the effectiveness and efficiency of payroll administration in the public sector. IPPIS as it were, is a forensic strategy designed to store, update and manage vital information and records of government workers, for effective budgeting, reporting and administration of human resources. Historically, the IPPIS programme was conceived in 2006 and implemented in the Nigerian public sector in phases (Abdusalam, Kabir, & Sani, 2020).

The first phase was a pilot scheme that was implemented in seven MDAs, namely: Education, Federal Ministry of Transportation, Federal Ministry of Finance, Federal Ministry of Information, Budget Office of the Federation, Ministry of Foreign Affairs and National Planning Commission, in April, 2007. The outcome of the pilot scheme revealed that 22,000 out of 55,000 staff enrolled for the scheme were non-existing staff. Consequently, a second phase was initiated to incorporate additional eleven MDAs into the scheme in July, 2009. The outcome of the second phase was still positive in payroll cost saving (reduction), which necessitated the decision and approval of IPPIS (service-wide) implementation in all MDAs of the Federation, in December, 2010. This was effectively implemented in September, 2011 with special accounting software called "oracle". As at April, 2018, the IPPIS had been successfully implemented in 490 MDAs including the Paramilitary Agencies and the Nigeria Police Force. Drawing from the observations of Aganga (2011) and Ibanichuka & Sawyer (2019), the adoption of IPPIS seems to have cleansed the payroll and minimized the recurrent expenditure of the Federal Government of

Nigeria, but the question is, has it satisfactorily exposed and prevented white collar criminals in the Nigerian public sector?
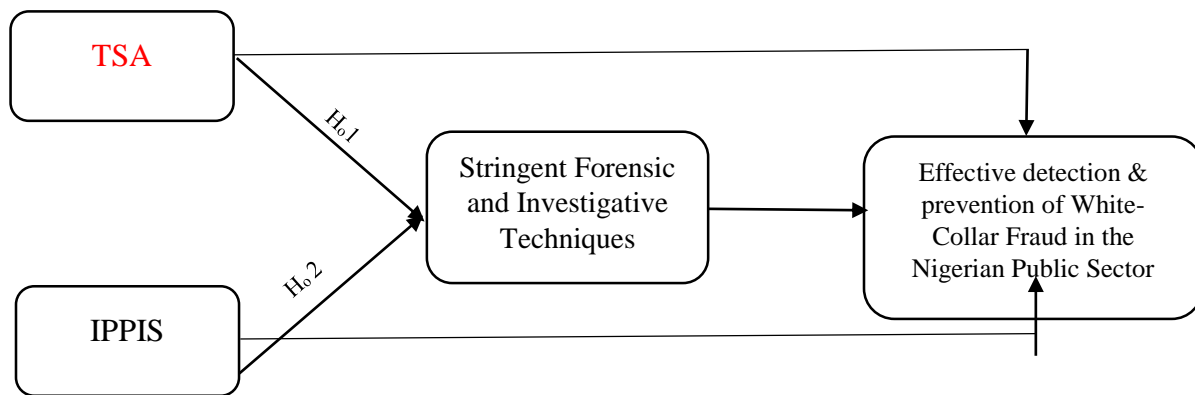
Fig. 1: Effect of Forensic and Investigative Techniques on White Collar Fraud

Fig. 1 conceptually assumes that, despite the observation of Anuolam, Onyema & Ussim (2016) that, perpetrators of white collar fraud use sophisticated and complex apparatus and transactions to conceal and make their activities untraceable, the deployment of stringent forensic and investigative techniques, such as BVN, TSA and IPPIS effectively detect and prevent white collar fraud perpetrated by top civil servants and political appointees in Nigeria.

Theoretical Framework

This study is underpinned by the White-Collar Crime Theory propounded by a sociologist called Edward Sutherland in 1939. It was formally presented and documented by the proponent in 1949, at a symposium organized by the American Sociological Society to prove a relationship between money, social status and possibility of conviction for a white-collar crime, compared to more visible blue-collar street crimes. This theory argues that prosecutors and judges are more lenient on white collar criminals as opposed to blue collar street criminals, because white collar criminals are educated,

intelligent, influential and wealthy, as they have unrestricted and uncensored access to large sums of money in their places of work.

This is a revolutionary theory that contests the inappropriate modalities often applied when dealing with similar crime perpetrated by people of unequal social status. The proponent of the theory noted in his time that, less than two percent of persons committed to correctional centres in a year belonged to the upper class. Therefore, this theory emotionally and pessimistically posits that, operators and law enforcement agencies like Deposit Money Banks, CBN, EFCC, ICPC, CCB, etc. are discriminatory in the deployment and implementation of TSA and IPPIS, and that the executive and judiciary are equally not fair in enforcing and interpreting the law against white collar criminals in Nigeria.

Empirical Review

Extant empirical studies from 2017 to date reveal a significant positive relationship between forensic accounting and investigative techniques and fraud. For example, Aigienohuwa, Okoye & Uniamikogbo (2017) surveyed the effectiveness of forensic accounting and

fraud mitigation in the Nigerian banking industry, and discovered that the application of forensic accounting and investigative techniques improve internal audit control, because the SPSS results on questionnaire responses revealed that forensic accounting reduces fraud. Similarly, Bassey (2018) used a survey research design to investigate the effect of forensic accounting on the management of fraud in microfinance institutions in Cross River State, and found from regression (OLS) outcomes on primary and secondary that the deployment of forensic investigative techniques reduces fraud. Anyaduba, Adeusi and Amu (2019) also adopted a survey research design to study forensic audit and fraud detection and prevention in the Nigerian banking sector. The OLS analysis on data generated from responses to structured questionnaire revealed that forensic accounting and investigative techniques significantly reduce fraud in deposit money banks in Nigeria.

Related studies carried in 2020 still suggested a strong positive relationship between forensic accounting and investigative techniques and fraud detection and prevention. For example, Okoye, Adeniyi & Igbojindu (2020) adopted a cross-sectional survey design to ascertain the effect of forensic accounting investigation on financial fraud in Nigerian deposit money banks, and found from 135 questionnaire respondents in Owerri, Imo State that forensic accounting and investigative techniques significantly detect financial fraud in deposit money banks in Nigeria. In the same vein, Dada & Jimoh (2020) embarked on a survey study on forensic accounting and financial crime in the Nigerian public sector. They used questionnaire and oral interview to obtain primary data from selected civil servants, and the linear regression results showed that forensic accounting is an anti-financial crime

strategy that instills financial prudence and sanity. These generally suggest that forensic accounting and investigative techniques can effective check and reduce fraud.

Specifically, related journal articles on the selected dimensions of forensic accounting and investigative techniques namely: IPPIS and TSA similarly suggest a positive relationship with fraud. Firstly, the empirical work of Ibanichuka & Sawyer (2019) disclosed that the deployment of IPPIS significantly prevented double hiring and reduced payroll fraud, which unarguably is committed by top civil servants and political appointees. This was the finding from descriptive and ordinary least square statistical results of their study on IPPIS and government recurrent expenditure in Nigeria, using primary and secondary data from 30 questionnaire respondents and annual reports from Bayelsa State of Nigeria. This was confirmed by Abdusalam, Kabir & Sani (2020) who conducted a cross sectional survey research on IPPIS and transparency in government payroll administration in Nigerian civil service, and found a significant positive relationship between IPPIS and recurrent expenditure of government.

This was drawn from SPSS descriptive and inferential statistical test, on 100 questionnaire responses from treasury and Federal pay office staff in Sokoto and Kebbi States. Finally, Abdulrahman, Abdulrasheed & Sirajo (2021) adduced that the implementation of TSA has contributed immensely to minimizing fraud perpetration, and has significantly blocked revenue leakages and consolidated government cash balances in Nigeria. This was evident from the significant p-value of 0.032 and a positive coefficient of 0.103 in respect of fraud perpetration against the independent variable (TSA). The finding was realized from descriptive and inferential statistics obtain

from questionnaire responses of a sample of 252 staff of selected Federal MDAs in Sokoto State. Although, none of the related empirical studies reviewed mentioned white-collar fraud, the findings collectively suggest that the selected forensic accounting and investigative techniques of this study are capable of checking and preventing senior civil servants and top political appointees, who perpetrate white-collar fraud.

Methodology

This study adopted survey research design, and obtained primary data through questionnaire from a large multiple unknown population made up of accountants and auditors in the Nigerian civil service, as well as staff of code of conduct bureau and deposit money banks in Nigeria. Samples were judgmentally determined, using the Cochran Sample Size Formula, as follows:

$n_o = (z^2)(p)(q) / e^2$

e = 100 - 95 = 0.05; p = 1/4 = 0.25; q = 1- 0.25 = 0.75; z (table) value of 96% level of confidence = 1.96

$n_o = (1.96)^2 (0.25) (0.75) / (0.05)^2$

= 3.8416 x 0.25 x 0.75 / 0.0025

= 0.7203 / 0.0025

= 288.12 **(300 *Approximately*)**

The formula was applied with the assumption that the questionnaire would be administered on one-fifth of the sub-populations, at a desired level of precision (confidence) of 96%. The sample sizes of the sub-populations of the study were judgmentally decided in the ratio of 2:1:1:1, because there are more accountants in the Nigerian civil service than auditors, staff of code of conduct bureau and deposit money banks in Nigeria.

Table 1: Sampling Methods and Sample Sizes of Sub-Populations

S/N	Sub-Population	Computation of Sub-Samples	Sample Size
1	Auditors	2/5 x 300	120
2	Accountants	1/5 x 300	60
3	Staff of CCB	1/5 x 300	60
4	Bankers	1/5 x 300	60
Total			**300**

Source: Author's Computation (2022)

The questionnaire was divided into two parts: Section A for respondents' socio-demographic data/information and Section B for respondents' opinion on the content/variables of the study. Section B contained 27 questionnaire items designed in the 4-Point Likert Scale format of: strongly agreed, agreed, no opinion, disagreed and strongly disagree.15 items were designed to solicit opinions for the dependent variable, while the rest 12 items were designed to address the three independent variables of the study. This study conducted a ***content validity test*** to measure/ascertain the extent by which the research instrument used accurately represented the concepts and variables of this study (Heale & Twycross, 2015).

The questionnaire was therefore, reviewed and vetted by one accounting lecturer, a staff of code of conduct bureau and one banker in Nigeria. The research instrument of this study was subjected to ***reliability test*** to determine its quality, stability and consistency in the measurement of the effect forensic audit techniques on white collar fraud. Five percent (5%) of the total copies of the questionnaire of this study (15) were pre-tested on a different set of auditors, accountants, bankers and code of

conduct bureau in Nigeria, and the outcome of the pre-study survey was subjected to *Cronbach Alpha Internal Consistency Test*, at a benchmark of 0.700 (Bernstein & Nunnally 1994). The outcome of the test showed 0.75 and 0.82 values for the independent and independent variables, which implied that the research instrument of this study was reliable.

The variables, equation and ***model of this study*** are abbreviated, stated and specified below:

$WCF = f(TSA_1 + IPPIS)$

$WCF = \beta_0 + \beta_1 TSA_1 + \beta_2 IPPIS_2 + \mu_i$

Where:

WCF = White Collar Fraud (the dependent variable);

TSA = Treasury Single Account (independent variable$_1$);

IPPS = Integrated Personnel Payroll Information System (independent variable$_2$);

μ_i = Error term.

β_0 = the intercept, which is a constant that defines where the linear trend line intercepts the Y axis;

$\beta_1 ... \beta_n$ = the coefficient, that represents the rate of change in the dependent variable as a function of changes in the independent variables.

The Likert-scale qualitative data obtained from respondents were coded and converted to quantitative ratio data for regression. Every opinion obtained from respondents was numerically ranked and coded (from 1 to 5), and regressed with SPSS Windows 22 data analysis tool, and the results were presented in tables for interpretation and analysis.

Data Presentation, Analysis and Discussion of Findings

This study distributed 300 copies and retrieved 251 copies of questionnaire. The number of copies retrieved represents 84% of total copies distributed.

Table 2: Response to Questionnaire Administered

Category of Respondents	Copies Administered	Copies Received	% of Success
Auditors	60	52	
Accountants	120	103	
Staff of CCB	60	57	**84%**
Bankers	60	39	
Total	**300**	**251**	

Source: Authors' Field Survey (2022)

Test of Relationship between the Dependent and Independent Variables

The relationship between WCF (the dependent variable), and TSA and IPPIS (the independent variables) were tested with SPPS Version 22, and the correlation result is shown in Table 3.

Table 3: Correlation Result

Dependent Variable	Independent Variables	
WCF	TSA	IPPIS
Pearson Correlation Coefficient	0.401	0.607
Sig. (p-value)	0.000	0.000
N	250	250

Source: Authors' Computation from SPSS Version 22 (2022)

Table 3 shows a positive, and statistically significant (r=0.00; p < 0.05) relationship between TSA, IPPIS and WCF at a 0.05% level of significance. This implies that the more effective TSA and IPPIS are, the higher reduction of chances of fraud perpetration by top civil servants and politicians in the Nigerian civil service.

Effect of TSA and IPPIS on White Collar Fraud

The effect of the stringent forensic accounting and investigative techniques (TSA and IPPIS) on White Collar Fraud was adjudged based on the significance value of f-statistics, from the ANOVA results of SPSS Version 22.

Table 4: Analysis of Variance (ANOVA) Results of TSA and IPPIS as Predictors of WCF

Model	Sum of Squares	df	Mean Square	F	Sig. (p-value)
1 Regression	3864.766	3	1288.255	141.772	0.000
Residual	2235.350	246	9.087		
Total	6100.116	249			

Source: Authors' Computation from SPSS Version 22 (2022)
a.   Dependent Variable: White collar Fraud.
b.   Predictors: (Constant), TSA and IPPIS.

From the result in Table 4, the significance value of f-statistics is small (0.000) and less than the predetermined alpha value of 0.05. This indicates that the deployment of TSA and IPPIS reduces WCF (white collar fraud in the Nigerian civil service), as further indicated by the significant p-value.

Test of Hypotheses

The two null hypotheses of this study were tested with coded opinions of respondents, with a **decision rule** to: *(a) Reject Ho, if P value is < 0.05, (b) Accept Ho, if P value > 0.05.*

Table 5: Multiple Regression Results of TSA and IPPIS as Predictors of WCF

Model	Standardized Coefficients	t-value	Sig. (p-value)
	Beta		
(Constant)		-3.108	0.002
TSA	0.470	11.970	0.000
IPPIS	0.660	16.883	0.000
R	0.796		
R^2	0.634		
Adjusted R^2	0.629		

Source: Authors' Computation from SPSS Version 22 (2022)

The multiple regression results in Table 5 further indicate that TSA and IPPIS are positively related to WCF in Nigerian civil service. Testing the hypotheses at 0.05 level of significant, the p-values of TSA and IPPIS (0.000) both all less than the chosen alpha value of 0.05, which implies that the deployment of the selected forensic accounting and investigative techniques significantly affect and check the negative activities of white-collar fraud perpetrators in the Nigerian civil service.

In conclusion, since the P values of TSA and IPPIS (0.000 and 0.000) are all less than the chosen alpha value of 0.005, this study rejects the two null hypotheses for the alternates, and states that:

- The adoption of TSA has significantly detected and prevented white collar fraud in the Nigerian civil service; and
- The adoption of IPPIS has significantly detected and prevented white collar fraud   in the Nigerian Civil service.

Discussion of Findings

The decision on hypothesis one confirms the empirical findings of Abdulrahman, et al. (2021), which says that the introduction of TSA has immensely minimized fraud perpetration, revenue leakages and consolidated government cash balances in the country. The rejection of hypothesis two is also in agreement with the findings of Kaoje, et al. (2020) which established a significant positive relationship between IPPIS and transparency and accountability. Summarily, the findings of this study indicate that the application of forensic accounting and investigative techniques (TSA and IPPIS) significantly check and detect white collar fraud in the Nigerian civil service, and that, as government adopt and implement more forensic accounting and investigative techniques, more fraudulent activities are detected and prevented.

This is in tangent with the assertion of Dada & Jimoh (2020) who submitted that the forensic accounting is an anti-financial crime strategy that instills financial prudence and sanity. It further supports the position of Aigienohuwa, et al. (2017) who found that the application of forensic accounting and investigative techniques improve internal audit control and therefore, facilitate fraud detection and restrain its practice in Nigeria. The findings of this study equally uphold the submissions of Effiong, Oro, Ogar, Imong, Jacob & Rim (2017) who adduced that, TSA, IPPIS and similar forensic accounting techniques positively and significantly facilitate fraud detection and prevention, and therefore, impact the performance of public interest entities. Above all, the findings of this study apparently disprove the white-collar theory of Edward Sutherland, given the substantial empirical evidence from extant studies, and the decision on the hypotheses of this study.

Conclusion and Recommendations

Drawing from the findings of this study which significantly agree with prior findings, this study succinctly concludes that the implementation of the selected forensic accounting and investigative techniques (TSA and IPPIS) have largely aided the detection and prevention of white-collar fraud in the Nigerian civil service. Against this backdrop, this study recommends that:

a) Regulatory bodies should massively enlighten and encourage MDAs at the State and Local Government levels on the necessity of TSA.

b) Government should secure as soon as possible the appropriate statutory and legislative backing and support to facilitate the relevant regulatory environment, to drive the effective implementation of TSA by the Federal, State and Local Government.

c) The IPPIS programme should be holistically, vigorously, transparently and impartially implemented all at all tiers of government.

d) Corrupt officers, irrespective of rank and position found guilty of any fraudulent offences should be sanctioned so as to serve as deterrent to others.

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APPENDIX

Questionnaire on the Effect of Forensic Accounting and Investigate Techniques on White Collar Fraud in the Nigerian Civil Service

Instruction: Tick in the appropriate space
Section A
Educational Qualification: O' Level ---
OND/ND ---   HND/B.Sc.---   M.Sc./M.BA/ M.Ed --- Ph.D.---
Age: 18-30---   31- 40--- 41 years and above ---

Section B

SA= Strongly Agree; A= Agree; D= Disagree; SD= Strongly Disagree

S/N	Items	SA	A	D	SD
	White Collar Fraud (Dependent Variable)				
1	BVN prevents imposters from having access to the accounts of dead staff				
2	BVN limits fraudsters from opening credit card account using name and date of birth of reputed individual to enable them run up charges without payments.				
3	BVN reduces the rate at which foreign exchange regulations are breached through impersonation.				
4	Introduction of Treasury Single Account (TSA) aid in the effective monitoring and evaluation of financial activities in my Ministry/Department/ Agency.				
5	Introduction of the TSA prevents over-invoicing and under-invoicing my Ministry/Department/ Agency.				
6	Introduction of the TSA avert inflation of prices of goods and services in my Ministry/Department/ Agency.				
7	IPPIS do not properly update the records of resigned, terminated or demised employee.				

8	Adoption of IPPIS helps to prevent payroll frauds.				
9	IPP1S improves government payroll report by curbing ghost workers syndrome				
	Application of Bank Verification Number (BVN) (Independent)				
1	Application of BVN is effective than the traditional systems that rely on password, personal identification number, and smartcards				
2	Biometric such as signature, face, finger print have been effectively used by used by bank				
3	Eleven (11) digits have been used to checkmate my bank account.				
4	A special pin is used by my bank to check my account number.				
	Adoption of Treasury Single Account (TSA) (Independent Variable)				
5	My Ministry/Department/ Agency does not maintain a fragmented banking system with commercial banks.				
6	My Ministry/Department/ Agency does not maintain a personal bank account.				
7	My Ministry/Department/ Agency's account is linked to the Treasury Single Account (TSA) maintained by the Central Bank of Nigeria.				
8	My Ministry/Department/ Agency accesses its account balance in real-time.				
	Adoption of Independent Integrated Personnel and Payroll Information System (IPPIS) (Independent Variable)				
9	Adoption of IPPIS helps in consistent staff screening.				
10	IPPIS helps in the Government in the planning and budgeting.				
11	IPPIS has broadened employment opportunities.				
12	Implementation of IPPIS enhance the confidence in payroll costs.				