

**SURVEY OF FRAUD PREVENTION AND DETECTION METHODS
IN THE FRAUD CONTROL STRATEGIES ADOPTED IN THE
NIGERIAN PUBLIC SECTOR**

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ABSTRACT

The objective of this research is to examine the specific elements of internal control systems in operation in Nigeria public sector organizations, and to assess the effectiveness of these controls. To achieve this objective, research questions and hypotheses were raised and related literatures to the study were reviewed. The study relied on the perception of skilled respondents who are knowledgeable in the area of study. The population of the study consists of Accountants, Auditors and Chief executives of selected ministries in the Nigerian government and some government agencies providing services related to fraud prevention and deterrence in Nigeria. A sample of 1530 was determined using stratified random sampling technique. The data for the study were mainly generated through primary source. The major instrument for data collection was the questionnaire. The instrument was subjected to both face and content validity by experts. The data generated from this study were analyzed using tables, percentages, mean scores and standard deviation and hypotheses were tested using t-test statistical tool with the aid of SPSS statistical package version 17.0. Incidence of control overrules by top officials can be used as surrogates to measure level of application hence the use of related questions on overrules in the questionnaire to elicit the data used for analysis on the extent of application. The analysis revealed poor application of fraud prevention and detection methods and this has significantly affected fraud control. The researcher recommends that accounting practitioners and managers may wish to invest in these methods in order to prevent the costly incidence of fraud in their organizations.

Keywords: Nigeria, government, fraud, prevention, detection, public sector.

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INTRODUCTION

Fraud has been associated with human organization from recorded history. The eradication of which has remained elusive in almost parts of human society and civilization. It is an act of deception intended for personal gain or to cause a loss to another party.

This research work becomes necessary in this era of fraud perpetration especially in the public sector as it reveals various forms of fraud obtainable, the skills required to discover them and the best approaches to fraud management and control.

A sound ethical business culture and an effective system of internal control are essential elements of an anti-fraud strategy. An effective anti-fraud strategy has four main components: Prevention, Detection, deterrence and response. It is worth bearing in mind that fraud prevention techniques while worth investing in cannot provide 100 percent protection. It is difficult, if not impossible, to remove opportunities for perpetrating fraud. Organizations should ensure that systems are in place that will highlight occurrences of fraud in a timely manner. This is achieved through fraud detection strategy.

Within an organization, fraud deterrence goes hand-in-hand with two important issues: awareness surrounding ethics and the organizations response to the discovery of fraud. When organizations stress the importance of ethical behaviour and sharing responsibility for upholding an ethical culture, it can have a profound effect on deterring fraudulent acts.

Public sector fraud is where criminals seek to exploit government grant and compensating scheme for personal gains. This type of fraud affects tax payers.

In Nigeria fraud is so viral in its operation that the very fabric of the nation has been infected. As the sixth largest oil producer in the world, the country earns enormous wealth from this resource yet in more than thirteen years of democracy, electricity, security, unemployment and poverty situation in the country have become worse. This explains why, from the perspective of citizens' socio-economic wellbeing, the country can be likened to someone living by the seaside, yet washing hands with spittle.

Business practices in Nigeria have been equally marred by incredible waves of fraud, involving misappropriation of funds, cheque forgeries, funds diversion, etc. As in the society at large, frauds has become one of the most intractable problems of modern day business in Nigeria (Hamilton and Odinioha 2012)

Fraud is more pronounced in the government circles. It manifests itself in a few privileged individuals siphoning money meant for the general populace. This is the case with the nearly N1.7 trillion subsidy scam, government agencies connived with private sector in ripping Nigeria off (Ailemen, 2012). Similar anomalies are observed in the operations of Federal Inland Revenue Services where in 2009 there was no documentary evidence to authenticate the payment of the penalties and interests totaling N172, 655 million to the Federation Account. (Orkura 2009).

These and some other financial scams by some Nigerian Government official as reported by EFCC have continued to increase concerns about fraud and reduced public trust in government. What all these tend to expose is that there is a management or operational problem in the Nigeria public sector in the area of financial or accounting control. Thus, one needs not wonder much to see how devastatingly frauds have compromised the administrative competence, performance capacity and general credibility of the public sector. Initial estimates of major projects become little fractions of ultimate costs paid; original cash projections produce less than half of the benefits expected and projects which seemed technically feasible and economically viable, turned to “white elephant” if not abandoned altogether, with serious implications for growth and development.

It is against this background that the researcher intends to determine the extent to which the Nigerian public sector organizations use fraud prevention and detection methods for fraud control

Research questions

- (1) Are fraud prevention and detection methods maximally in use in the Nigerian public sector?
- (2) How effective are these methods in preventing and detecting fraud?

Objective of the Study

This research sets out to examine the specific elements of internal control systems in operation in Nigeria public sector organizations and to assess the effectiveness of those controls. Specifically, the work intends to: (i) determine the extent to which the management of Nigerian public sector organizations uses fraud prevention or detection methods in fraud control. (ii) Assess the effectiveness of controls adopted in the public sector in detecting and preventing fraud.

Research hypotheses (Null)

- (1) Some existing fraud prevention and detection measures are not maximally applied for fraud control in the public sector.
- (2) The controls adopted by the public sector are practically ineffective in detecting and controlling fraud.

The rest of the paper is structured thus; section two reviewed extant literature, section three provides the methodological framework, section four dealt with analysis of and discussion of findings and finally, section five summarized the findings, concluded and stated the implications for the study and made some contributions.

REVIEW OF EXTANT LITERATURE

Fraud management generally deals with control, plan and policy developed by organization in order to reduce the risk of fraud and losses through better fraud control practices. The most common assets at risk are money, property, time and information. Contributing factors that may tempt a person to engage in fraudulent activity include:

- . Weak controls, structure and relationships
- . Inadequate accounting records
- . Inadequate staff supervision
- . Personal and psychological characteristics, background treatment by superior/other employees etc; financial difficulties, excessive personal needs and situational stress.

The personal and professional integrity and ethical values of management and staff determine their preferences and value judgments, which are translated into standard of behaviour.

Everybody involved in the organization among managers and employees has to maintain and demonstrate personal and professional integrity and ethical values and has to comply with the applicable codes of conduct at all times. Unfortunately most frauds usually involve an employee or manager of the victims' organizations (Commercial Angles Newsletter (2001a, b, c).

Fraud Prevention and Detection Methods

Much prior research addressing fraud prevention and detection methods has addressed 'red flags'. For example, Albrecht and Romney (1986) found in a survey of practicing auditors that 31 flags related to internal control were considered better predictors of fraud. The survey contained a list of 87 red flags. Loebbecke and Willingham (1988) offered a model that considers the probability of material financial statement misstatement due to fraud as a function of three factors:

- i. The degree to which those in authority in an entity have reason to commit management fraud;
- ii. The degree to which conditions allow management fraud to be committed; and
- iii. The extent to which those in authority have an attitude or set of ethical value that would facilitate their commission of fraud.

McNamee (1999) introduced risk assessment as a tool to help to detect and deal with fraud in operations of organizations. He emphasized that managers had to take responsibilities to locate fraud. Risk assessment could also be used as a decision making tool to assist managers sort through a number of possibilities and single out those with the greatest payoff. Furthermore, managers could use this technique to identify and prioritize the most likely business processes where potential fraud could occur. McNamee further analyzed the three elements of risk assessment. First risk identification to determine the high-risk areas and its source. Second risk measurement to determine the consequences of the risk and likelihood of its occurrence. Last risk prioritization to determine the appropriate resources to manage the risk.

To commercial Angles' Newsletter (2001c), the best way of preventing fraud was to understand why it happened. Fraudsters generally identify an opportunity for exploiting a weakness in the internal control procedures and then assess whether their potential rewards would outweigh the penalties should they be caught. In addition, the paper introduced the two-stage processes of fraud prevention. First an organization should ensure that potential fraudsters believe they will be caught (fraud deterrence). Introduction and enforcement of new controls would reduce the opportunities for perpetrators. A regular control was effective and normally required little management time or effort. It also emphasized the importance of having strong management and a healthy corporate culture to detect and consequently deter fraud.

Ekechi (1990) stated that measures aimed at fraud prevention include dual control, operational manual, graduated limits of authority, reporting systems, close circuit television,

establishment of inspectorate units, referencing on presentation of document of value, segregation of duties, verification of signatures, detection of passport sized photos, close watch on the lifestyle of staff and coding/decoding and testing of telex messages.

Sabo B. (2003) reviewed some techniques already adopted in Nigeria to mitigate fraud as enacting financial laws and regulations, administration of justice to fraudsters by court and tribunals which he said were all to no avail. Nevertheless he suggested strong and functioning accounting, internal control and audit systems, manned by competent and morally upright staff, improving the standard of living of the general population and empowering them economically. He also suggested computerization of all receipts and payments and restricting access to the computer only to specially assigned staff. Equally he suggested that offices of the Auditors General- at federal, state and local government should be made more functional and be taken out of civil services etc.

Oju (1994) also classified existing systems of control into two, those aimed at prevention and those aimed at detection. Measures aimed at fraud prevention includes dual control, operational manual, graduated limits of authority, lending limits, reporting systems, micro-filming, close circuit television, establishment of inspectorate units, time clock devices, general personnel policies, referencing on presentation of documents of value, segregation of duties, verification of signatures, control of dormant accounts, retention of passport-size photographs, close watch on the lifestyle of staff, and lodging, decoding and testing. Others are the observation of laid down procedures for opening and closing of accounts and the use of periscope camera to photograph persons drawing large sums of money for banking frauds.

In view of the gravity of fraud in our system,(see EFCC report on fraud in Nigeria in table 1. below) management of various organizations have employed different measures suggested by researchers such as establishment of internal control unit, fraud alerts, whistle blowing, red flags, with internal control as the most frequently suggested measure yet fraud has continued in upward trend. This has called the effectiveness of these measures into question. The review of literature also revealed that majority of high level fraud in the public sector are perpetrated by management who are supposed to be the custodians of internal control. The researcher therefore deems it necessary to examine the specific elements of internal control systems in operation in Nigeria public sector organizations and to assess the practical effectiveness of those controls.

TABLE 1: EFCC REPORT ON FRAUD IN NIGERIA (2003-2011)

(a)YEAR	PETITIONS RECEIVED	PETITION UNDER INVESTIGATION	CASES CONCLUDED
2003	401	248	153
2004	658	425	233
2005	1015	628	387
2006	1295	830	465
2007	1640	1166	474
2008	1946	1359	587
2009	2784	2137	647
2010	2601	1930	671
2011	2267	1817	450
TOTAL	14,607	10,540	4067

SOURCE: DEPARTMENT OF DATA AND STATISTICS EFCC ABUJA

Expanding the Scope of Auditing in the Public Sector for Effective Control

In the past, auditing in the public sector serve as a simple administrative procedure comprised mainly of checking accuracy of transactions, pre-payment verification and control, counting assets and reporting on past events to various types of management. But in recent times a combination of forces has led to a revolution in the profession. Government moving towards higher levels of transparency must demonstrate accountability in the use of public money and efficiency in delivery of services. This place budgets and budgetary controls, and other policies and regulations as important tools for public sector audit.

In Nigeria for instance, the financial regulations (FR), financial instructions (FI) and financial memorandum (FM) which guide the financial operations of federal, states and local governments are useful tools. Other tools which aid the audit of public sector are circulars originating from the offices of Accountant General and Auditor General of the federation. Fiscal policies which may be either of specific or general application issued by government from time to time are also important tools.

According to Hani (2011), the role of internal auditing can be identified as involving three main elements; evaluation and improvement of risk management, control and governance process.

Auditors use tools such as financial audits (aided by financial regulations), performance audits (using budget as yard stick) and investigative and advisory services to fulfil each of these roles. The government auditors' role supports the governance responsibilities of oversight, insight and foresight.

Oversight addresses whether government entities are doing what they are supposed to do and serves to detect and deter public sector fraud. Insight assists decision makers by providing an independent assessment of government programmes, policies, operations and results. Foresight identifies trends and emerging challenges.

Internal audit professionals have to comply with national and international standards to be able to identify potential fraud indicators. Structured planning as well as comprehensive supervision and reporting are key elements of their work.

RESEARCH METHODOLOGY

To achieve the objective of this study, a survey research was conducted on Accountants, Auditors and Chief Executives of selected ministries in the Nigerian Government and Auditors and Accountants outside the public sector. Accountants and Auditors outside the public sector were selected as part of the study population on the basis of their involvement in external auditing and other professional services to the public sector through which they gain knowledge on issues concerning the sector. Other members of the population include government agencies providing services related to fraud prevention and deterrence in Nigeria (see appendix 3 for details) . Eighteen states were chosen as the sample for the study to ensure a good representation of the study population (see appendix 2). Structured questionnaires and interview were used for data collection. Secondary data were generated from audit reports and internet facilities.

Out of the 1530 questionnaires administered to the respondents, 1517 were returned. The results are presented in tables and percentages. The research question was analyzed using descriptive statistics, while hypotheses were tested using t-test at the significance level of 5%. The analysis was done using SPSS Statistical package version 17.0. In this research, we are interested in: (i) determining the extent to which the management of Nigerian public sector organizations uses fraud prevention or detection methods in fraud control. (ii) Assessing the effectiveness of controls adopted in the public sector in detecting and preventing fraud, hence the use of this methodological approach.

The decision rule is to accept the null hypothesis (H_0) if the P-value is less than the chosen level of significance (α) which is 5%. Otherwise reject.

Note: For a likert scale, a mean score of 3.0 and above indicates positive response, i.e. agrees. Any statement of mean score below 3.0 is a negative response. Therefore, 3.0 is referred as the test value or cut off point for likert scales.)

ANALYSIS OF DATA

Determining the extent to which the management of Nigerian Public Sector organizations uses fraud prevention and detection methods for fraud control

The data collected were analyzed using descriptive statistics with the aid of SPSS statistical package. The table below represents the total responses from the respondents on the level of application of fraud prevention and detection methods in the Nigerian public sector.

Table 2: Responses to questions on fraud prevention and detection methods in use.

	Fraud Prevention and Detection methods	Very high	High	Average	Low	Very low	Total number	Score	Mean
1	Fraud auditing	0	0	293	672	552	1517	2775	1.8293
2	Fraud vulnerability review	0	0	378	870	269	1517	3143	2.0719
3	Fraud hotline	63	414	232	485	323	1517	3960	2.6104
4	Whistle blowing	65	249	265	491	447	1517	3545	2.3368
5	Operational audit	295	857	57	57	308	1517	5382	3.5478
6	Organizational use of forensic accountants	0	0	266	790	461	1517	2839	1.8715
7	Surveillance equipment	59	322	288	410	438	1517	3705	2.8352
8	Increased role of audit committee	77	438	390	382	230	1517	4301	2.8352
9	Surveillance and electronic correspondence	68	467	222	489	271	1517	4123	2.7179
10	Staff rotation policy	248	734	68	0	467	1517	4847	3.1951
11	Use of security department	23	218	277	411	588	1517	3228	2.1279
12	Employee counseling programme	412	845	28	0	232	1517	5756	3.7943
13	Cash review	143	926	52	0	396	1517	4971	3.2769
14	Inventory observation	129	806	82	0	500	1517	4615	3.0422
15	Bank reconciliation	157	778	69	0	513	1517	4617	3.0432
16	Discovery sampling	57	465	390	463	42	1517	4383	2.8893
17	Data miming	104	472	245	425	271	1517	4264	2.8893
18	Digital analysis	0	0	246	760	511	1517	2769	1.8253
19	Continuous auditing	0	0	370	723	424	1517	2980	1.9644
20	Financial ratios	39	336	251	530	361	1517	3713	2.4476
21	Virus protection	145	786	62	0	524	1517	4579	3.0185
22	Password protection	186	775	43	0	513	1517	4672	3.0798
23	Firewalls	71	480	321	415	230	1517	4298	2.8332
24	Filtering software	0	0	131	993	393	1517	2772	1.8273

SOURCE: Field Survey 2013/2014

A cursory look at the results of the analysis presented on the table above, shows that fraud auditing performed poorly with a mean of 1.8293. Other fraud prevention and detection methods which performed poorly from the analysis include fraud vulnerability review, fraud hotline, whistle blowing, organizational use of forensic accountants, surveillance equipment, increased role of audit committee, surveillance and electronic correspondence, use of security department, discovery sampling, data miming, digital analysis, continuous auditing, financial ratios, firewall and filtering software.

On the other hand, operational audit performed on the average with the mean of 3.5478. others which performed on the average include staff rotation policy, employment counseling, programme, cash review, inventory observation, bank reconciliation, virus protection and password protection. These constitute only 33% of the total responses and show a little effort on the part of the accountants and auditors in the public sector to prevent and detect fraud.

Generally, the level of application of fraud prevention and detection method by the management of the public sector is still very low.

Test of Hypotheses (Null): Some existing fraud prevention and detection measures are not maximally applied for fraud control in the public sector.

Table 3: Analysis of the extent of application of fraud prevention and detection measures by the Nigerian public sector management.

	N	Mean	Standard Deviation	t	P-value	Decision
Fraud auditing	1517	1.8293	.72679	-62.740	.000	Accept H0
Fraud vulnerability review	1517	2.0719	.64932	-55.674	.000	Accept H0
Fraud hotline	1517	2.6104	1.20814	-12.560	.000	Accept H0
Whistle blowing	1517	2.3368	1.18279	.21.837	.000	Accept H0
Operational audit	1517	3.5478	1.36237	15.661	.000	Accept H0
Organizational use of forensic accountants	1517	1.8715	.68045	-64.597	.000	Accept H0
Surveillance equipment	1517	2.4423	1.21778	-17.836	.000	Accept H0
Increased role of audit committee	1517	2.8352	1.15054	-5.579	.000	Accept H0
Surveillance and electronic correspondence	1517	2.7179	1.20225	-9.140	.000	Accept H0
Staff rotation policy	1517	3.1951	1.52729	4.976	.000	Accept H0

Use of security department	1517	2.1279	1.12515	-30.190	.000	Accept H0
Employment counseling programmes	1517	3.7943	1.27484	24.268	.000	Accept H0
Cash review	1517	3.2769	1.39867	7.710	.000	Accept H0
Inventory observation	1517	3.0422	1.47970	1.110	.267	Reject H0
Bank reconciliation	1517	3.0435	1.50967	1.122	.262	Reject H0
Discovery sampling	1517	2.8893	1.06063	-4.067	.000	Accept H0
Data miming	1517	2.8108	1.24311	-5.928	.000	Accept H0
Digital analysis	1517	1.8253	.68469	-66.822	.000	Accept H0
Continuous auditing	1517	1.9644	.72283	-55.802	.000	AcceptH0
Financial ratios	1517	2.4476	1.14948	-18.718	.000	AcceptH0
Virus protection	1517	3.0185	1.51106	.476	.634	Reject H0
Password protection	1517	3.0798	1.53270	2.027	.043	Accept H0
Firewalls	1517	2.8332	1.16479	-5.577	.000	AcceptH0
Filtering software	1517	1.8273	.56196	-81.279	.000	Accept H0

SOURCE: RESEARCHER'S SURVEY 2013/2014

In all aspects of application of fraud prevention and detection methods, p-value is less than 5% except in the cases of inventory observation, Bank reconciliation and virus protection (3 out of 24). We therefore accept the null hypothesis (H0) and conclude that fraud prevention and detection measures meant for fraud control are not maximally applied by the Nigerian public sector management for effective fraud control.

Assessment of the effectiveness of controls adopted in the public sector in detecting or preventing frauds

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Table 4: Responses to questions on internal controls and their effectiveness in fraud control.

	Internal Control	Very high	High	Average	Low	Very low	Total number	Score	Mean
1	Operation of internal Audit Department	58	378	120	453	418	1517	3666	2.4166
2	People intensive internal control with automated content	0	0	145	791	581	1517	2598	1.7126
3	Proper accounting system	74	459	240	356	388	1517	4026	2.6539
4	Adequate verification of accounts	72	507	351	382	205	1517	4410	2.9071
5	Clear organizational structure	304	862	96	0	255	1517	5511	3.6328
6	Segregation of duty	762	472	0	238	45	1517	6219	4.0995
7	Staff Rotation	49	349	343	375	401	1517	3821	2.5188
8	Constant supervision of staff on e- environment	48	379	245	575	270	1517	3911	2.5781
9	Deployment of automated anti-fraud solution with alert functionality	66	343	142	475	491	1517	3569	2.3527
10	Periodic vulnerability assessment penetration testing and information system review	57	240	167	486	567	1517	3285	2.1655
11	Recruitment of skilled and competent staff	460	888	67	0	102	1517	6155	4.0574
12	Management positive attitudes to issues of queries raised	72	400	301	384	360	1517	3991	2.6308
13	Materials and finances allocated for operating the controls	142	109	300	475	491	1517	3487	2.2986
14	Scope of coverage of the control	55	167	242	480	578	1517	3206	2.1133
15	Seriousness attached in enforcing the control	0	20	125	771	601	1517	2598	1.1725

Source: Researcher's survey 2013/2014

The analysis which is presented on the table above shows that operations of internal audit department performed poorly with a mean score of 2.4166 which is below average. Other

aspects of internal control such as people intensive internal control with automated content, proper accounting system, staff rotation constant supervision of staff on e-environment of automated fraud solution with alert functionality, verification of account, all performed below average. Only three items out of fifteen performed on the average.

Moreover, the items used to measure the level of applications of the controls, such as management attitude to issue of queries raised, materials and finances allocated for operating the controls, scope of coverage of the controls and seriousness attached in enforcing the controls all performed poorly with mean value of less than three (3). The only exception is recruitment of skilled and competent staff which has a mean value of 4.0574, just one out of five.

We then conclude that the adopted controls are not effective in detecting and preventing fraud in the public sector.

Test of hypothesis 2 (Null)

The controls in existence are not effective in detecting or preventing frauds

Table 5: Assessing the effectiveness of controls adopted in detecting or preventing incidence of fraud

	N	Mean	Standard deviation	Test (3) value	T	P-value	Decision
Operations of internal audit department	1517	2.4166	1.23405	3	-18.413	.000	Accept H0
People intensive internal control with automated content	1517	1.7126	.62947	3	-79.659	.000	Accept H0
Proper accounting system	1517	2.6539	1.27935	3	-10.536	.000	Accept H0
Adequate verification of account	1517	2.9071	1.14396	3	-3.165	.000	Accept H0
Clear organizational structure	1517	3.6328	1.28172	3	19.230	.000	Accept H0
Segregation of duty	1517	4.0995	1.17807	3	36.352	.000	Accept H0
Staff rotation	1517	2.5188	1.19716	3	-15.656	.000	Accept H0

Constant supervision of staff on e-environment	1517	2.5781	1.13588	3	14.466	.000	Accept HO
Deployment of automated anti-fraud solution with alert functionality	1517	2.3527	1.26092	3	-19.995	.000	Accept HO
Periodic vulnerability assessment penetration testing and information system review	1517	2.1655	1.19516	3	-27.197	.000	Accept HO
Recruitment of skilled and competent staff	1517	4.0574	.97462	3	42.255	.000	Accept HO
Management positive attitudes to issues of queries raised	1517	2.6309	1.23314	3	-11.660	.000	Accept HO
Materials and finances allocated for operating the controls	1517	2.2986	1.25026	3	-21.850	.000	Accept HO
Scope of coverage of the controls	1517	2.1071	1.13678	3	-30.643	.000	Accept HO
Seriousness attached to enforcing the controls	1517	1.7126	0.67008	3	-74.832	.000	Accept HO

The analysis on table 4 above shows that in all aspects of control in the public sector, a p-value of less than 5% is obtained. We therefore accept the null hypothesis (H₀) and concluded that the controls adopted are not effective in detecting and controlling fraud.

SUMMARY OF FINDINGS

The study examined the extent to which public sector management applies fraud prevention and detection methods and their effectiveness on fraud control. The results suggest that 77% of the various aspects of prevention and detection methods are poorly applied in the sector with a mean of between 1 and 2.8893. The other 33% performed on the average with a mean of between 3.0815 and 3.7943.

Moreover from the first hypothesis tested, we found that in all aspects of application of fraud prevention and detection methods, p-value is less than 5% except in the cases of inventory observation, bank reconciliation and virus protection (3 out of 24). This shows that the degree of application of fraud prevention and detection methods by the Nigerian public sector management is low.

On the issue of the effectiveness of controls in detecting or preventing incidence of fraud, the analysis shows that in all aspects of control in the public sector, a p-value of less than 5% is obtained. We therefore reject the null hypothesis (H_0) which states that the controls in existence are effective in detecting or preventing frauds in the public sector.

Conclusion

Based on the analysis carried out and the results obtained, we conclude that the degree of application of fraud prevention and detection methods by the Nigerian public sector management is low. Also, that the controls adopted are not effective in detecting and controlling incidence of fraud in the sector.

Recommendations and Implications of the study

The researchers recommend that accounting practitioners and management may wish to consider investing in these methods and controls as discussed in the paper in order to prevent costly frauds in their organizations. The result of this study will also be of interest to regulators; such as Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices and other Related Offence Commission (ICPC). It shows a lot of available fraud prevention and detection methods which could be explored by the public sector management theme and enforced by the regulatory bodies for effective fraud reduction. Moreover, the researchers recommend that the available control measures for fraud control should be effectively utilized by the public sector to reduce the incidence of fraud in the Nigerian public sector organizations. The implementation of IPSAS based Standards will make it possible for efficient internal controls and results based management, we therefore recommend this also as one of the mediums for fraud control.

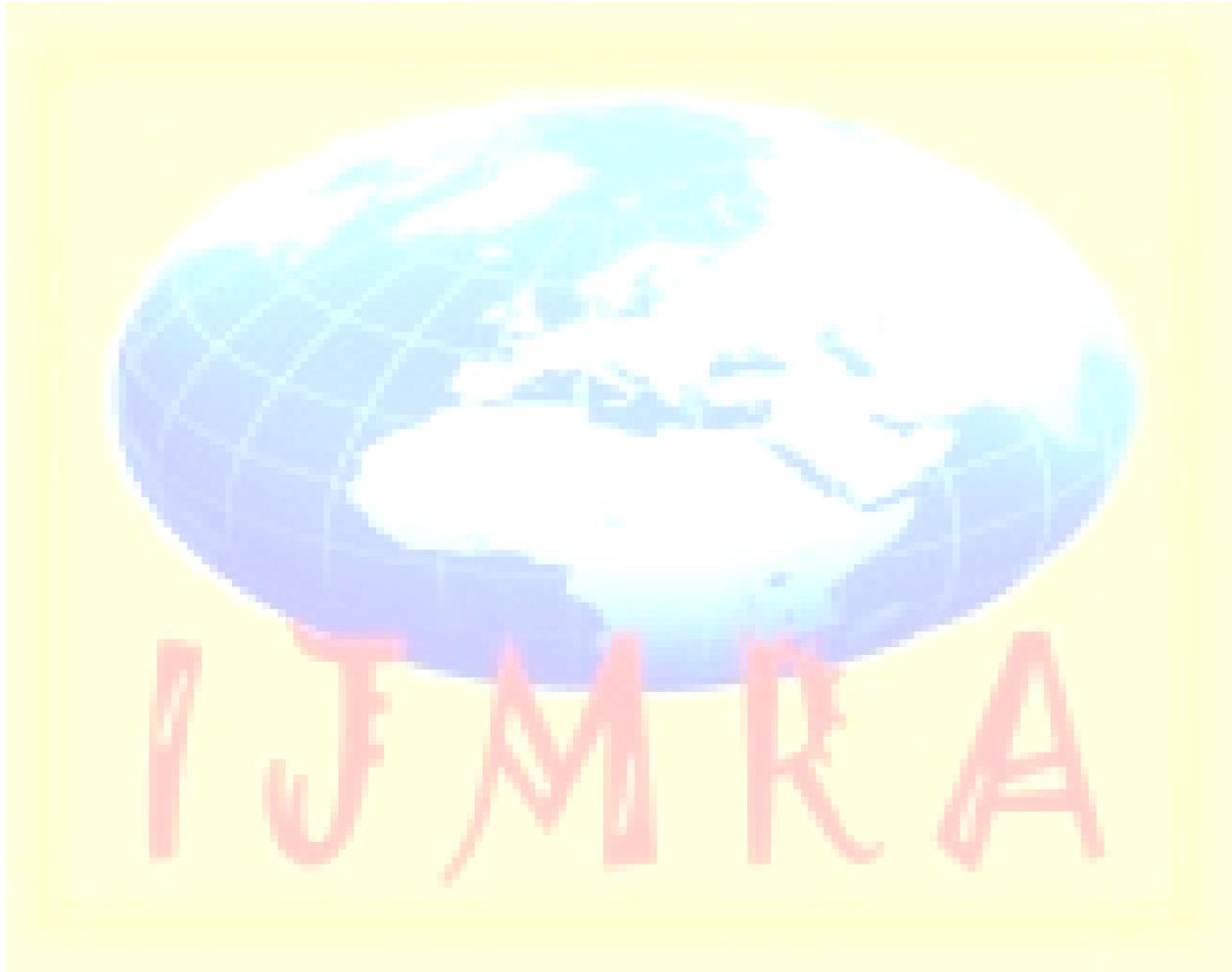
Further research may explore the reasons why organizations are reluctant to invest on anti-fraud technology.

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Appendix 1 (QUESTIONNAIRE)

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate, India as well as in Cabell's Directories of Publishing Opportunities, U.S.A.

International Journal of Physical and Social Sciences
<http://www.ijmra.us>

(a) Indicate the level to which the under listed fraud prevention and detection methods are in use:

S/N	Fraud Prevention and Detection Methods	5 Very High	4 High	3 Average	2 Low	1 Very Low
1	Fraud auditing					
2	Fraud vulnerability review					
3	Fraud hotline					
4	Whistle Blowing					
5	Operational audit					
6	Use of forensic accountants					
7	Surveillance equipment					
8	Increased role of audit committee					
9	Surveillance and electronic correspondence					
10	Staff rotation policy					
11	Use of security department					
12	Employee counseling programmes					
13	Cash reviews					
14	Inventory observation					
15	Bank reconciliation					
16	Discovery sampling					
17	Data miming					
18	Digital analysis					
19	Continuous auditing					

20	Financial ratios					
21	Virus protection					
22	Password protection					
23	Firewalls					
24	Filtering software					

Note: The responses came from 5 point likert scale

(b) Please rate the following controls in terms of their effectiveness in detecting or preventing incidents of fraud:

S/N	Internal Control	5 Very High	4 High	3 Average	2 Low	1 Very Low
1	Operations of Internal Audit Department					
2	People intensive internal control with automated content					
3	Proper accounting system					
4	. Adequate verification of account					
5	Clear organizational structure					
6	Segregation of duty					
7	Staff rotation					
8	Constant supervision of staff on e-environment					
9	Deployment of automated anti-fraud solution with alert functionality					
10	Periodic vulnerability assessment penetration testing and information system review					
11	Recruitment of skilled and competent staff					
12	Management positive attitude to issues of queries raised					
13	Materials and finances allocated for operating the controls					
14	Scope of coverage of the controls					
15	Seriousness attached to enforcing the controls					

Appendix 2: GEO-POLITICAL ZONING OF NIGERIA

S/N	Zones	Member states	Number of state in each zone	State randomly selected	Number of selected states in each zone
1	South - South	Cross River, Rivers, Bayelsa Akwa-Ibom, Delta, Edo	Six (6)	Cross River, Delta, Bayelsa	3
2	South - East	Enugu, Ebonyi, Abia, Anambra, Imo	Five (5)	Anambra, Abia, Enugu	3
3	South - West	Oyo, Ondo, Ekiti, Lagos, Ogun, Osun	Six (6)	Ondo, Lagos, Ekiti	3
4	North - West	Jigawa, Kano, Kasitina, Kebbi, Sokoto, Zamfara	Six (6)	Kano, Kebbi, Jigawa	3
5	North - East	Borno, Bauchi, Adamawa, Gombe, Taraba, Yobe	Six (6)	Adamawa, Taraba, Bauchi	3
6	North-Central	Kaduna Kwara, Abuja Nassarawa, Niger, Kogi Plateau, Benue	Seven (7) plus Abuja (Capital Territory)	Plateau Abuja Kogi	3
					18

Sources: Researcher's field work 2012/2013

Appendix 3: Mode of Distribution of Questionnaires

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate, India as well as in Cabell's Directories of Publishing Opportunities, U.S.A.

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Grouping Respondents	South South	South East	South West	North West	North East	North Central	Total Distributed
Accountants, Auditors and Chief Executives in the public sectors	45	45	45	45	45	45	270
Accountants and Auditors outside public sectors	150	150	150	150	150	150	900
Government Agencies EFCC	30	30	30	30	30	30	180
ICPC	30	30	30	30	30	30	180
Total Distributed	255	255	255	255	255	255	1530

Source: Researcher's fieldwork 2012/13