



Internal Audit Function and Management Support in Nigerian Public Tertiary Institutions

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Authors' contributions

This work was carried out in collaboration between both authors. Author GIE designed the study, wrote the protocol and wrote the first draft of the manuscript. Author NJU managed the literature searches, data analyses and wrote the final draft of the study. Both authors managed the data collection, read and approved the final manuscript.

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ABSTRACT

Aims: This study examined the extent of management support for Internal Audit Function (IAF) in Nigerian public tertiary institutions as well as the determinants of management support for IAF.

Study Design: The research adopted a survey research design.

Place of Study: The study was carried out in the South-South and South-East geo-political zones of Nigeria.

Methodology: Data were collected using a survey questionnaire administered to the heads of IAF in Nigerian public tertiary institutions. The data were analysed using Stata 12. The study established the extent of management support for IAF by interpreting the overall mean responses of the heads Internal Audit Units. The study then formulated four hypotheses and tested them using ordinary least square method of multiple regression.

Results: The study found evidence that there was no significant management support for IAF in Nigerian public tertiary institutions in the dimensions of funding, training and skill development, and use of IAF reports. Conversely, it found management support for IAF in the dimension of access to

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information. The study further documented that the relationship with external auditor was positively and significantly related to management support. Finally, it found evidence that management-internal auditor relationship was negatively and significantly related to the management support. It, however, did not find evidence that the age and size of the Nigerian public tertiary institutions were the determinants of management support for IAF.

Conclusions: The study concluded that management should increase its support to the IAF in the dimensions of funding, training and skill development and use of IAF report. It is recommended that the internal auditor should constantly evaluate his/her relationship with external auditors and management. Finally, it is also recommended that future studies should increase the dimensions of management support.

Keywords: Internal audit function; Nigerian public tertiary institutions; management support; theory of resource dependency; financial regulations; Nigeria.

1. INTRODUCTION

The corporate collapses in the last two decades have brought to the forefront the importance of the internal audit function (IAF) as a part of organisational structure [1]. IAF is now seen as a value-adding function as it evaluates operations for effectiveness and suggests improvements to control and governance processes [2,3,4,5]. The Sarbanes-Oxley Act (2002) in the US and the Financial Regulations of 2009 in Nigeria confirm the public significance of the IAF.

Given the importance of IAF, several prior studies have been conducted to ascertain the effectiveness of IAF and its determinants. The previous studies which were predominantly done in the private sector found that management support is a critical determinant of IAF effectiveness [6,7,8,9].

Previous studies, however, failed to examine the extent and nature of management support for IAF, especially in the public tertiary institutions. Therefore, the main objective of this study is to ascertain the extent and nature as well as the determinants of management support for IAF in the Nigerian public tertiary institutions.

This study is timely because the Nigerian public tertiary institutions are plagued by financial scandals and stakeholders are asking about the internal auditors. The avalanche of fraudulent practices and corruption compelled the Honourable Minister of Education to inaugurate ten committees at one swoop to investigate seven universities and three polytechnics on fraud and other malpractice [10,11]. Popoola, Ahmad & Kehinde [12] contended that the internal audit department in Nigerian tertiary institutions cannot be exonerated for any malpractices or fraudulent practices. This is

consistent with Soh and, Martinov-Bennie [13] who submitted that given its unique position within the organisation, the IAF is well placed to provide internal assurance on corporate governance processes.

The study will provide an enhanced understanding of internal audit practices in Nigerian public tertiary institutions and help regulators to formulate guidelines to foster IAF effectiveness. Furthermore, this study will serve as a springboard for future research on the effectiveness of IAF in the Nigerian public tertiary institutions.

2. LITERATURE REVIEW

2.1 Theoretical Framework

This study is anchored on the theory of resource dependency. A fundamental proposition of the resource-dependency theory is that each organisation is a distinctive collection of tangible and intangible resources and capabilities and these resources are determinants of competitive advantage [14]. According to Barney [14], "resources include all assets, capabilities, organisational process, firm attributes, information, knowledge etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness". In particular, this theory focuses only on strategic resources [15] which were combined and synchronised form organisational capabilities and therefore acted a significant source of its competitive advantage [16].

According to Barney [14], this study views management's support as a strategic resource capable of making a difference in the performance of IAF and therefore deserves in-depth examination. Management support falls in

the human capital resource classification. Human capital resources include the training, experience, knowledge, intelligence, relationships, and insight of individual managers as well as the expertise and skills of the workers.

2.2 Internal Auditing

The global body of internal auditors, the Institute of Internal Auditors (IIA) [17] states:

Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organisation's operations. It helps an organisation to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes.

Internal auditing is established as the eyes and ears of management [18] to compensate for the loss of control [19] as the organisation grows both in size and complexity of operations. To this end, the Financial Regulations of 2009 defines internal audit as a managerial control which functions by measuring and evaluating the effectiveness of internal control system in an organisation.

The above constitutes the major remit of the IAF in the public tertiary institutions in Nigeria. Since IAF provides a systematic, independent, complete and continuous audit of the accounts and records of revenue and expenditure, assets, allocated and unallocated stores where applicable, it has the advantage, compared to external audit, of obtaining insightful information quickly and finding problems at an earlier stage and recommending useful improvements thereby enabling public sector managers to take remedial actions that can cut losses and wastages and improve accountability.

Accountability is an overriding issue in the public sector in view of the heterogeneity of stakeholders and stakeholders' lack of control over public resources. Public sector managers, as agents of the citizens, are charged with using and controlling public resources and therefore must demonstrate accountability vide the performance metrics of the economy, efficiency and effectiveness. This encompasses the efficiency of operations, regulatory and procedural compliance, the integrity of financial records, safeguarding of assets and achievement of set out programmes. But there is an

information asymmetry between public sector managers and the citizens resulting in moral hazard by the public sector managers. Since the citizens cannot effectively monitor public sector managers on a daily basis, it becomes imperative to have internal audit function to conduct an independent, objective, disciplined and systematic evaluation of controls established to ensure the interest of the citizens are adequately served by the public sector managers.

Internal audit functions in the Nigerian public tertiary institutions are established based on the requirement of section 1701(1) (ii) of the Financial Regulations of 2009 which requires all accounting officers in all Ministries, Departments and Agencies to establish Internal Audit Units to provide a complete and continuous audit of the accounts and records of revenue and expenditure, assets, allocated and unallocated stores where applicable.

The provisions of the Financial Regulations are incorporated in the Financial Regulations and Operational Guidelines and Audit Manuals of each public tertiary institution.

2.3 Management Support

Following the Nigerian Standard on Auditing (NSA) No. 7, paragraph 11, issued by the Institute of Chartered Accountants of Nigeria, this study defines management as the person(s) with managerial responsibility for the conduct of the entity's operation. Alzeban & Gwilliam [7] and Arena & Azzone [3] argued that IAF without management support is a non- functional unit and could rightly be described as dead, only existing as ceremony [20] to fulfil legal requirements. Sarens & DeBeelde [19] said that the overall acceptance and appreciation of IAF within the organisation is strongly dependent on the support that IAF receives from the management. Management is considered as the customer receiving IAF service. Thus management is in the most advantageous position to mobilise the critical mass needed to execute any initiative or programme introduced in an organisation. Mihret & Yismaw [9] report that the absence of management support suggests that IAF is unimportant and this creates a poor attitude towards IAF by auditees. This has far-reaching implications in auditor's commitment to develop a career as an internal auditor and job satisfaction [9].

Management support for IAF does not have a single measure and therefore can be gleaned from the actions of management along with several dimensions. This study, therefore, examines management support in four dimensions viz: access to information; funding; training and skill development; and use of IAF report.

2.3.1 Access to information

The Financial Regulations require that internal auditor should have unhindered access at all reasonable times to all documents, records and persons relevant to the performance of his responsibilities. In practice, this is difficult particularly in scenarios of several occurrences of frauds and misappropriation. However, with management support, the IAF can have unfettered access to all documents, persons and departments/units of the organisation and auditees are likely to cooperate with the internal auditor.

2.3.2 Use of IAF report

The nature of management support for IAF is derived from both previous academic literature and authoritative professional pronouncements, particularly the IIA. Mihret & Yismaw [9] considered management support as the response of management to audit findings and commitment to strengthen the internal audit. Management is considered as the customer receiving IAF service. Ali et al. [21] contended that inaction by management on recommended remedies only serves to nullify the positive contribution internal audit potentially holds to elevate the service delivery quality of the public sector.

2.3.3 Funding

The International Standards for the Professional Practice of Internal Auditing (ISPPA) requires the head of IAF to ensure that the IA resources are appropriate and sufficient and that they are used effectively. This he/ she must do by bringing to the attention of management the resource requirement during budget preparation and eventual passage into law. Management would be seen as supporting the IAF if management involves the IAF in budget planning and incorporates the budgetary projections of the IAF in the overall budget and facilitates prompt budgetary releases. The size of the budget should be sufficient to serve as a clear

demonstration of management support for IAF. Baltci & Yilma [22] stated that the independence of the IAF is enhanced when IAF is endowed with the power to allocate its overall budget.

Management would be seen as supporting IAF if the organisational status of the head of IAF in the organisational structure is high enough to permit the head of IAF an unhindered communication with the top management. This would help in conferring independence and importance on the IAF. Furthermore, promptly filling the headship of the IAF with personnel of substantive rank rather in acting capacity would be an indicator of management support to the IAF. Officers in an acting position in the public sector face serious limitations exercising the powers and authority inherent in the office they hold in an acting position.

2.3.4 Training and skill development

Standard setters constantly highlight the importance of the internal auditors who possess the requisite knowledge, skills to undertake internal audit duties and responsibilities. Arena & Azzone [3] opined that a preliminary condition for an internal auditor is to be able to do his/hers duties and the availability skilled professionals in a sufficiently large number. An understaffed public tertiary institution will be hamstrung in executing its ascribed duties [23].

But it is the responsibility of management to ensure that suitably qualified and skilled personnel are recruited for the IAF and also expose the IAF staff to regular, relevant and continuing training and skill upgrade. Internal auditing requires extensive professional skills and continuous upgrade for the internal auditor to be conversant with a wide range of operations and systems.

It is in the interest of management, therefore, to provide IAF with support regarding training and skill development.

From the above the study seeks to answer the following questions:

- RQ1: To what extent is the management support for IAF regarding funding?
- RQ2: To what extent is the management support for IAF regarding access to information?
- RQ3: To what extent is the management support for IAF regarding training and skill development?

RQ4: To what extent is the management support for IAF regarding use of IAF report?

2.4 Determinant of Management Support

2.4.1 Age of the institution

Age refers to the number of years since the institution was established. Older institutions have built reputations such that they are better known and more visible in the educational arena than the young institutions. They, therefore, attract close public scrutiny from stakeholders. Furthermore, Governments consider them flagship institutions and invest more in them than in younger institutions. The above discussions suggest that the age of the institution is likely to influence management support. Accordingly, this study presents the first hypothesis thus:

H1: Management support for IAF is positively related to the age of the institutions.

2.4.2 Size of the institution

Agency theory predicts that as the institution grows in size, so the operations become more complex with consequent loss in control [19,24,25,26] thereby necessitating more investments in IAF. The bigger the institution is, the more the likelihood of greater opportunities for misappropriation of funds. This suggests that management would invest more in IAF as the institution grows in size and would likely implement audit findings to assure stakeholders. It is accountable and transparent in the utilisation of resources under the auditor's care. In view of this, the study presents the second hypothesis thus:

H2: The level of management support for IAF is positively related to the size of the institutions.

2.4.3 Relationship between internal and external auditors

Professional standards require a professional working relationship between the internal and external auditors to facilitate the higher quality audit. The relationship is manifested if the internal auditor coordinates with external auditor and both the auditors exchange information, opinions and reports, and holds the periodic meeting [27]. Such a professional working relationship helps to improve the skills of the internal auditors for better service delivery and is a testimony of peer recognition. Peer recognition

can boost the image of the internal auditor and give signal to management that the IAF is a value- adding component of the organisation. Consequently, management will increase its support to the IAF. The foregoing discussion leads to the third hypothesis thus:

H3: The level of management support for IAF is positively related to the relationship between internal and external auditors.

2.4.4 Management-IAF relationship

An IAF that establishes a rancor- free relationship with auditees is likely to enjoy the support of management and this would rub off its reputation [18]. The head of the IAF must approach his/her work professionally without bias or favour, building relationship throughout the institution. He/she must market the IAF to the admiration of management. He/she must understand the expectations of management and incorporate them into his/her work plan. Sarens & De Beelde [19] found that management expectations are different from those of IAF. Understanding each other's expectations would create a favourable perception of IAF thereby eliciting management support.

It is not enough to plan and perform the audit, but the IAF must be able to communicate the findings to management and auditees in a transparent and unbiased manner [12]. Criticising wisely and providing implementable recommendations after exit meetings with auditees will motivate the auditees to improve and thereby facilitate in portraying the IAF not as an obstacle to the attainment of organisational objective [18] but as a value adding unit [28]. The report must be of high professional quality to motivate the readers to take corrective measures concerning the deficiencies cited [9].

Based on the foregoing, the study formulates the fourth and final hypothesis as follows:

H4: The level of management support to IAF is positively related to the close relationship between management-IAF.

3. METHODOLOGY

3.1 Population and Sample

This study focuses on public tertiary institutions in Nigeria. Following Popoola, Ahmad & Kehinde [12], the study defines tertiary institutions like

universities, polytechnics and colleges of education in Nigeria. The term, public tertiary institutions, therefore refer to universities, polytechnics and colleges of education owned and funded by federal and state governments of Nigeria. Therefore the population of this study comprises all federal and state tertiary institutions in Nigeria on 31st December, 2016. The sample of this study is the public tertiary institutions in the South-South and South-East geo- political zones. These zones were chosen because of the high number of public tertiary institutions in the zones. Table 1 shows the number of public tertiary institutions in the South-South and South- East geo- political zones of Nigeria of 2016.

3.2 Data

Data were collected through questionnaires administered on the heads of IAF of public tertiary institutions in the South-South and South-East geo- political zones Nigeria. The authors mailed the questionnaires to their colleagues in public tertiary institutions outside their states of residence. Their colleagues then administered the questionnaires, retrieved and mailed back the completed questionnaires. This procedure saved cost and enhanced response. The questionnaire was used to generate primary data because the information sought was not in the public domain.

The questionnaire consists of two parts, Part A and Part B. Part A seeks demographic information from the respondents as well as estimates of the student population. Part B presents 16 statements that capture

management support to IAF as well as its determinants. Respondents were asked to indicate their level of agreement or disagreement with each of the sixteen statements based on a five-point Likert scale, with the lowest scale of 1 representing strongly disagree and the highest scale of 5 representing strongly agree [29]. Each of the statements was derived from the reviews of prior studies such as [3,8,9] and IIA pronouncements.

The data on the age of the institutions were obtained from the websites of the institutions as well as the regulatory authorities i.e., National Universities Commission, National Board for Technical Education and National Commission for Colleges of Education.

The validity of the questionnaire was determined through face content and constructed validity. Two academic staff reviewed the draft questionnaire for relevance, adequacy of questionnaire items and question coverage. The study captured the construct validity by performing a reliability analysis. Reliability analysis is commonly measured by the Cronbach Alpha [30,31]. Table 2 provides result of reliability test.

From Table 2, the value of the Cronbach Alpha ranged between 0.68 and 0.88 for all the variables and each value exceeded the minimum value of alpha of 0.6 [30]. A reliability value greater than 0.700 is very much acceptable [31]. Therefore the responses obtained for all the variables used in this paper are reliable enough for data analysis.

Table 1. Public tertiary institutions

S/N	Institution	Federal Government Owned	State Government Owned	Total
1	University	11	13	24
2	Polytechnics	7	16	23
3	Colleges of Education	6	12	18
		24	41	65

Source: Websites of the NUC, NBTE and NCCE

Table 2. Reliability test

S/N	Description	Cronbach Alpha	No of items
1	Funding	0.6832	4
2	Access to information	0.7928	2
3	Training and skill development	0.8377	2
4	Use of report	0.8662	2
5	REA	0.7593	3
6	MIAFR	0.8799	3

3.3 Model Specification

This study used the ordinary least squares (OLS) multiple regression shown below to test the hypotheses H1, H2, H3 and H4 formulated in Section 2.

$$\text{MGTSUP} = \beta_0 + \beta_1\text{AGE} + \beta_2\text{SZE} + \beta_3\text{REA} + \beta_4\text{MIAFR} + \varepsilon$$

Where:

MGTSUP = Management support
AGE = Natural log of the Age of institution
SZE = Natural logarithm of Size of institution
REA = Relationship between internal and external auditors
MIAFR = Relationship between management and internal auditors
 ε = error term
 β_0 , = intercept
 $\beta_1, \beta_2, \beta_3, \beta_4$ = regression coefficients.

3.3.1 Measurement of variables for OLS regression

Management support for IAF was measured by a number of indicators encapsulated under-funding, access to information, training and skill development, the use of IAF reports. The overall mean response to the statements on funding, i.e. 1, 2, 3 and 4; access to information i.e. 5 and 6; training and skill development i.e. 6 and 7; and use of IAF report i.e. 9 and 10 is MGTSUP.

Size (SZE) is the estimated student population obtained from the respondents and transformed to natural logarithms to address issues of multicollinearity and heteroskedasticity.

Age of the institution is the number of years since the institution was established. Again natural logarithms of the years were taken.

The relationship between internal and external auditor (REA) is measured by three indicators: co-ordination of external audit, external auditor's reliance on the work of IAF, sharing of working papers. The overall mean response to Statements 11, 12 and 13 is REA.

The relationship between management and internal auditors (MIAFR) is measured by the frequency of meeting with management, the attitude of auditees to the internal auditors, and involvement of management in the internal audit

plan. The overall mean response to Statements 14, 15 and 16 is MIAFR.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Tables 3, 4, 5 and 6 present the descriptive statistics used in this paper.

Table 3 displays the administration of questionnaires – the research instrument. It showed an overall response rate of 63.98%. The universities recorded the highest response rate of over 70% while the colleges of education, particularly the state-owned institutions had the least response rate of 41.47%. The overall response rate is high enough to permit generalisation of the results.

The overall mean of management support for IAF by funding is 1.68 in Table 4 and this is below the midpoint on the one to five Likert scale where (1) is the extent that the respondents strongly disagree; and (5) is the extent that the respondents strongly agree. This shows that there is no significant management support for IAF in terms of funding in Nigerian public tertiary institutions Table 4 further showed the response regarding access to information. The overall mean response to the dimension of access to information was 3.12. This is slightly above the midpoint of 3 on a Likert scale of one to five and indicates that there is a significant Management support for IAF regarding access to information in Nigerian public tertiary institutions. This finding suggests that management is conscious of the provision of the Financial Regulations which demands that the internal auditor is granted unfettered access to information. The overall mean of management support in the dimension of training and skill development was 2.09 in Table 4. This is below the midpoint of 3. This finding shows that there is no significant Management support for IAF regarding training and skill development in Nigerian public tertiary institutions. The implication of this finding is that the competence and effectiveness of the internal auditor will be negatively affected. Table 4 further revealed an overall mean of 1.92 for management support to IAF in the dimension of use of IAF report. This is below the mean of 3. Consequently, there is no significant Management support for IAF regarding use of IAF report in Nigerian public tertiary institutions. Granting the internal auditor the access to information but refusing to use the IAF report

makes nonsense of the IAF and this could be demoralising to the internal auditor as documented by Mihret and, Yismaw [9]. This finding suggests that management sees IAF as mere unit created to satisfy the requirement of the Financial Regulations.

Table 5 presents the statements that generate the responses for the relationship between the internal and external auditors. It showed the overall mean response of 1.9512 with a range of 1 and 4.66667. Similarly, Table 6 contains the statements that generated the responses for the relationship between management and the internal auditors. The overall mean response was 1.894309.

Table 7 incorporates the overall statistics shown in Tables 5 and 6 and presents the descriptive statistics used in the ordinary least square regression (OLS).

Table 7 revealed the mean age of the institutions as 3.3 and maximum of 4.04. The mean size was 9.26, and this fell within the range of 7.6 and 11. The standard deviations of 0.521911 and 0.7576673 suggested wide variation in age and size of the institutions.

A normality test was carried out using Shapiro-Wilk W test, and it revealed that the data is normally distributed ($p = 0.12533$). After transforming MGTSUP, AGE and SZE respectively into natural logarithms, the Breusch-Pagan/Cook-Weisberg test was conducted for heteroskedasticity. The result showed a chi 2 = 0.38 and $p = 0.5393$. Consequently, homoscedasticity was accepted.

Correlation analysis was done, and the result is displayed in Table 8.

Table 8 shows a positive correlation between all the variables except between MGTSUP and MIAFR. However, only the correlation between MGTSUP and MIAFR, SZE and AGE, REA and AGE, REA and SZE MIAFR and REA were significant at 5% threshold. Consistent with Belsley et al. [32], multicollinearity was not a problem since the correlation matrix of all the variables had the paired values that were less than 0.80. Table 9 showing VIF values provide further support that multicollinearity was not a serious concern in this study, as the values of VIF were below the threshold of 10 [33].

4.2 Result of Hypotheses Testing

The result of the OLS regression is provided in Table 10. An examination of Table 10 shows the model has a good fit (F statistics =5.65; $p = 0.001$). The paper reported the regression results based on robust standard errors to control for heteroskedasticity. A 29% of the variation in management support was explained by the variations of the independent variables in the model. Table 10 shows that age of institution was positively related with management support ($\beta = 0.119124$) but this relationship is insignificant ($p = 0.934$). H1 was therefore rejected. H2 tested the relationship between the size of the institution and management support. The result indicated that the size of the institutions was positively related to management support as predicted ($\beta = 0.0602573$) but was not significant at any of the conventional levels ($p = 0.567$). Thus H2 was also rejected. The result showed that ceteris paribus, a percentage increase in the size of the institution led to a 6% increase in management support for IAF in the Nigerian public tertiary institutions. Relationship with external auditor exhibited a positive and significant association

Table 3. Administration of questionnaires

Description	No of questionnaires administered	Completed questionnaires received	Invalid questionnaires	Valid questionnaires	Response rate
Federal University	11	10	2	8	72.73%
State University	13	11	1	10	76.92%
Federal Polytechnic	7	4	0	4	57.14%
State Polytechnic	15	12	2	10	62.50%
Federal College of Education	6	4	0	4	66.67%
State College of Education	12	6	1	5	41.47%
Total	65	47	6	41	63.08%

Source: Field survey 2017

Table 4. Descriptive statistics of management support

Dimension of management support	Variable	Obs	Mean	Std. Dev.	Min	Max
Funding	Statement 1. The Internal Audit Department enjoys distinct annual appropriation.	41	1.682927	1.171303	1	4
	Statement 2. The Internal Audit Department obtains prompt budgetary releases	41	1.512195	.9252554	1	4
	Statement 3. The Internal Audit Department is involved in budgetary planning.	41	1.170732	.4417261	1	3
	Statement 4. The Internal Audit Department has sufficient fund for its activities	41	2.341463	1.086503	1	5
Overall Mean		164	1.676829	1.032811	1	5
Access to information	Statement 5 The Internal Audit Department has unfettered access to all documents	41	1.268293	.501218	1	3
	Statement 6 The Internal Audit Department has unfettered access to the principal officers	41	4.97561	.1561738	4	5
Overall mean		82	3.121951	1.901203	1	5
Training and skill development	Statement 7 The Internal Audit Department staff does undergo regular job related training courses.	41	1.536585	.7105477	1	4
	Statement 8. Management supports Internal Audit Department staff to undergo professional certification	41	2.634146	1.318258	1	5
Overall mean		82	2.085366	1.188434	1	5
Use of IAF report	Statement 9. Management promptly implements audit recommendations	41	1.658537	.9901958	1	4
	Statement 10. Management sanctions official/department/unit who receives audit queries and fail to resolve the queries promptly.	41	1.780488	.9086307	1	4
Overall mean		82	1.719512	.9463952	1	5

Source: Field survey 2017

with management support ($\beta = 0.2265758$; $p = 0.032$). A 1% increase in the relationship between internal and external auditor led to a 22.7% increase in management support for IAF, other factors such as age and size of the institutions and management-internal auditor

relationship being held constant. Thus H3 was accepted. This suggested management valued peer recognition particularly that emanating from the external auditors. The result implied that the IAF should strive to promote a closer relationship with the external auditor.

Table 5. Descriptive statistics of relationship between internal and external auditors (REA)

Variable	Obs	Mean	Std. Dev.	Min	Max
Statement 11 The IAF co-ordinates external audit	41	2.146341	1.333435	1	5
Statement 12. The Internal and External auditors share working papers	41	1.829268	.997558	1	5
Statement 13. During annual financial audits, the IAF staff perform work under the direct supervision of External auditor	41	1.878049	1.05345	1	4
Overall	123	1.95122	1.136962	1	4.66667

Source: Field survey 2017

Table 6. Descriptive statistics of relationship between management and internal auditors (MIAFR)

Variable	Obs	Mean	Std. Dev.	Min	Max
Statement 14. The IA discusses findings with auditees prior to formal report	41	2.02439	1.369084	1	5
Statement 15. The IA seeks the input of management in preparing audit plan	41	1.658537	.9901958	1	4
Statement 16, The IA frequently interacts with management beyond daily reporting of findings.	41	2	1.161895	1	5
Overall	123	1.894309	1.186074	1	4.6666

Source: Field survey 2017

Table 7. Descriptive statistics of data used in OLS regression

Variable	Obs	Mean	Std Dev.	Min	Max
MGTSUP	41	2.056098	0.4990234	1.3	3.5
AGE	41	3.302934	.521911	1.94591	4.043051
SZE	41	9.264201	.7576673	7.600903	11.0021
REA	41	1.95122	1.128148	1	4.66667
MIAFR	41	1.894309	1.17372493	1	4.66667

Table 8. Correlation matrix

	MGTSUP	AGE	SZE	REA	MIAFR
MGTSUP	1.0000				
AGE	0.1031	1.0000			
SZE	0.1410	0.4603*	1.0000		
REA	0.1511	0.4651*	0.3947*	1.0000	
MIAFR	-0.3718*	0.2325	0.1929	0.4917*	1.0000

* indicates 5% level of significance

Table 9. Variance inflation factor (VIF)

Variable	VIF	1/VIF
REA	1.66	0.600913
AGE	1.44	0.692934
SZE	1.34	0.746478
MIAFR	1.32	0.758234
Mean VIF	1.44	

Table 10 shows a negative and highly significant relationship ($\beta = -0.2761085$; $p = 0.000$) between

management–internal auditor relationship and management support. Indeed a 1% increase in management–internal auditor relationship resulted in 28% decline in management support for IAF in the Nigerian public tertiary institutions. This was inconsistent with the advocacy of Al Twaijry et al. [2] that IAF should endeavour to promote the relationship with management. One likely explanation is that management might view IAF as lacking in courage and independence to report its hard findings when IAF seeks a

Table 10. Regression result

						No of obs	=	41
						F(4, 36)	=	5.65
						Prob>F	=	0.0012
						R-squared	=	0.2931
						Root MSE	=	0.44227
MGTSUP	Coef.	Robust	t	P> t 	[95% Conf. Interval]			
		Std. Err.						
AGE	0.119124	0.1428088	0.08	0.934	-0.2777173	0.3015422		
SZE	0.0602573	0.1042086	0.58	0.567	-0.1510875	0.2716021		
REA	0.2265758	0.101405	2.23	0.032	0.020917	0.4322346		
MIAFR	-0.2761085	0.0593395	-4.65	0.000	-0.3964545	-0.1557625		
CONST	1.539451	0.8746428	1.76	0.087	-0.2344063	3.313309		

relationship with management [34]. Given the above result, H3 was rejected which states that the level of management support to IAF in Nigerian public tertiary institutions is positively related to the relationship between management and IAF.

5. CONCLUSION

This study provided empirical evidence as to the extent of management support for the IAF in the Nigerian public tertiary institutions and the determinants of management support for the IAF. The study showed that there was significant management support for IAF in the Nigerian public tertiary institutions in the dimension of access to information. It, however, found no significant management support for the IAF in the dimensions of funding, training and skill development and use of IAF reports. The study documented that relationship between internal and external auditors was positively and significantly related to the level of management support. It failed to find significant association between management support and age and size of the institution. A negative and highly significant relationship between management support and management-internal auditor relationship was documented. The study broadened the understanding of one of those critical factors underlying the effectiveness of the IAF in the Nigerian public sector.

The major limitation of this study was that it was questionnaire-based, and a measure of management support, the dependent variable, was established according to the perceptions of heads of IAF in the sampled institutions. Studies based on primary data suffered from respondents' bias, and this study was not immune. The question arose as for whether the respondents convey particular views and

perceptions differing from those they actually held.

Since management support is a "sine qua non" for effective IAF it is strongly recommended that management of public tertiary institutions should increase support to IAF in the dimensions of funding, training and skill development and use of the IAF report. The internal auditor should adhere to the professional guidelines as issued by the Institute of Internal Auditors to elicit reliance from external auditors. The study also recommends that internal auditors should constantly evaluate management-internal auditor relationship. It is further recommended that a wider stakeholder group such as governing council members and external auditors should be selected in future research. More dimensions of management support for IAF should be explored.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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