



Ethics as a Moderator on Knowledge Requirement of Accountants and Fraud Risk Assessment in Nigerian Public Sector

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Abstract

This paper discussed the moderating effect of professional ethics on knowledge requirement of accountants and fraud risk assessment in Nigerian public sector. The research was carried out using quantitative approach and cross-sectional research design, survey method of data collection and a self-selection (convenience) sampling technique. Primary data was collected through questionnaire. The population of the study comprised of the 10,196 Nigerian public sector accountants from the office of the Accountant General of the Federation, out of which a sample size of 404 was scientifically selected. The dependent variable is Fraud Risk Assessment; the independent variable is Professional Knowledge Requirement whereas the moderator is Professional Ethics. Descriptive statistics and Partial Least Square Structural Equation, reflective measurement model was used while Stata version 17.0 was the research technique. The result of the study revealed that Knowledge Requirement has significant positive effect on fraud risk assessment and professional ethics significantly moderated Professional Knowledge Requirement accountants and fraud risk assessment. The study recommended that, accountants should seek for means of growing in knowledge to be able to effectively discharge their responsibilities. There should be conscious efforts at exposing accountants to the basic codes relevant to the accounting profession as issued by the various accounting bodies both locally and internationally.

Keywords: Professional Ethics, Knowledge Requirement, Accountants, Fraud Risk Assessment, Nigeria

Introduction

Financial fraud remains a stubborn, systemic threat in Nigeria's public sector, draining scarce resources, eroding citizens' trust in government, and weakening the nation's development agenda. A global survey by the Association of Certified Fraud Examiners (ACFE) ranked sub-Saharan Africa among the regions with the highest average loss per fraud scheme, with public sector cases in Nigeria often topping the list (ACFE, 2022). The Nigerian public sector, categorized by intricate administrative processes, inadequate resources, and evolving regulatory requirements, the risk of fraudulent activities has necessitated renewed examination over prevention and detection mechanisms. The public sector accountants are critical first line of defence, with their knowledge requirement to recognize red flags early and conduct rigorous fraud risk assessment.

Consequently, fraud risk assessment is a systematic evaluation that determines how vulnerable an organization is to fraudulent activities and lays out strategies to prevent financial loss, reputational harm, or legal repercussions. By pinpointing areas of potential weakness, organizations can implement tailored safeguards that support their strategic goals while proactively countering the rise of fraudulent activities (Vicente, 2024). FRA denotes competences that are an anti-dote to multiple internal and external sources of risks faced by organization.

This phenomenon requires a great deal of knowledge competence on the part of the accountants to be able to uncover fraud. Hence, accountant's knowledge requirement involves the application of "quantitative analysis, accounting, information technology, laws and criminology expertise to prevent and detect fraud" (Odukoya & Samsudin, 2021). Yet knowledge alone is not sufficient, there is compliance gap when accountants know what is right but fail to do it because of lack of ethics. Hence, the required knowledge about ethics according to the Institute of Chartered Accountants of Nigeria (2019), ethics is "the discipline that studies moral duty, distinguishing right from wrong and prescribing the principles that should govern the conduct of professional accountants". Its five fundamental principles of are 'integrity, objectivity, professional competence & due care, confidentiality and professional behaviour' (p. 2).

Public sector can be referred to as "all organizations which are not privately owned and operated, but are created, managed and financed by the government on behalf of the public" (Sejidi., et al 2023). The effect of loss of revenue due to fraud in the public sector is higher than all sectors of the Nigerian economy put together (ACFE, 2022; EFCC, 2012; ICAN, 2010). There is rarely a week that passes without the cases of fraud or other fraudulent activities being reported in the Nigerian Newspapers. Comprehensive fraud statistics are difficult to come by because government agencies and companies tend to keep records of only those frauds that affect their area(s) of interest. All fraud statistics are based on known frauds and any number that is quoted are considered to be only a minute part of the whole fraud incidences (LawBirdie, 2023; Silverstone & Sheetz, 2007). Although, statistical data are not readily available to find out the level of fraud in the Nigerian public sector, researchers have argued that fraud has become prevalent and a cankerworm that has resisted all treatments as reflected by several national news outlets.

Cases prosecuted by law enforcement or regulatory agencies against civil servants or public officials in Nigeria have always been met with disappointing outcomes, and in some instances turned the corrupt civil servants or politicians into celebrities due to a deficit in accountant knowledge necessary to carry out a successful fraud examination. These observed lapses necessitated the call for a study to investigate the ethics as a moderator on knowledge requirement of accountants and fraud risk assessment in Nigerian public sector. The required knowledge about ethics is the awareness of the ethics as pertains to their specialization to function effectively in conducting FRA and helping organizations mitigate against incessant occurrences of fraud in order to draw implications for academic research and for policy formulation.

In the light of the foregoing, the study formulated and answered the following research questions:

- i. What is the effect of Professional Knowledge Requirement (PKR) of Accountants on Fraud Risk Assessment in Nigerian public sector?
- ii. How does Professional Ethics (PES) moderate the effect of Knowledge Requirement (KR) and Fraud Risk Assessment in Nigerian public sector?

The main objective of this study is to assess the moderating effect of Professional Ethics on Accountants' Professional Knowledge Requirements and Fraud Risk Assessment in Nigerian public sector. In order to achieve this, the specific objectives of this study are to:

- i. Examine the effect of professional knowledge requirement of accountants and fraud risk assessment in Nigerian public sector.
- ii. Examine the moderating effect of professional ethics on knowledge requirement of accountants and fraud risk assessment in Nigerian public sector.

In line with the specific objectives of the study, the following research hypotheses are formulated and tested in the study:

- i. H_{01} : Professional Knowledge requirement of accountants has no effect on fraud risk assessment in Nigerian public sector.
- ii. H_{02} : There is no moderating effect of professional ethics on Professional Knowledge requirement of accountants and fraud risk assessment in Nigerian public sector.

This study would contribute significantly towards empowering accountants on accounting knowledge with a view to detect, prevent, deter, remediate and respond to fraud and fraud-related crimes in Nigeria. As a consequence of the divergent observations of scholars on the capacity of the auditors to measure the risk of fraud, this study focuses on the investigation of FRA on FA knowledge in the Nigerian public sector, the outcome or findings have the potential to either support or oppose the observation. Fraud risk assessment is of immense importance to all stakeholders of the Nigerian public sector in many ways. Theoretically, it would expand fraud risk assessment literature within the organizational context in Nigeria. Secondly, establishing the moderating influence of professional ethics and its impact on knowledge of accountants and fraud risk assessment.

The study focused on professional ethics as a moderator on knowledge requirement of accountants and fraud risk assessment in Nigerian public sector. This work covered public sector accountants under the office of the accountant general of the federation in Nigeria. The survey data was obtained from October, 2023 to February, 2024.

Literature Review

Conceptual Framework

The study suggests that FRA is a function of accountant's professional knowledge requirement and that, the effect is moderated by professional ethics. The conceptual framework of the study is presented in figure 1.

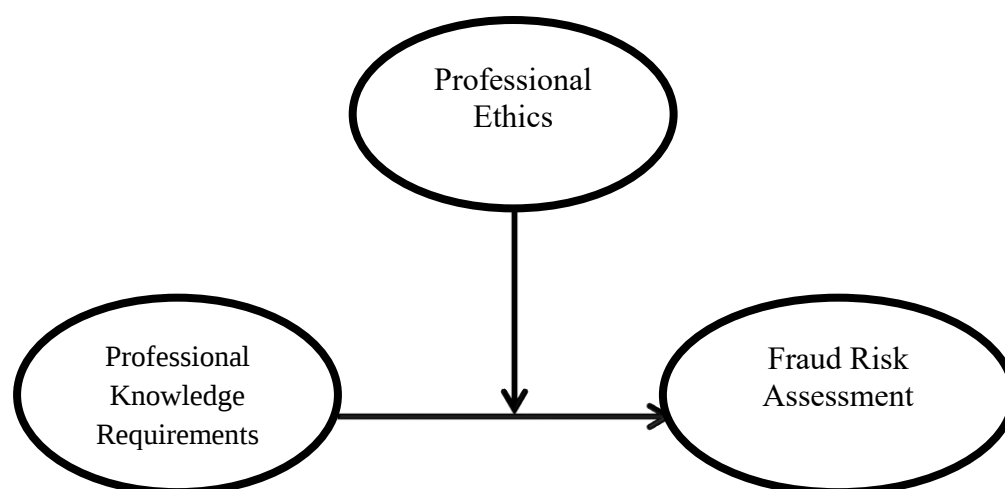


Figure 1: Conceptual Framework
Source: Researcher's Compilation, 2025

Professional Knowledge

Knowledge represents attribute that drives an individual with the prerequisite chance to perform. It is “the professional knowledge, values and ethics required to demonstrate competence” (IFAC-IES, 2019). Additionally, earlier research defined professional knowledge as “capacities, competences, abilities, pervasive qualities, distinguishing characteristics and individual attributes” (Davis et al., 2010; Odukoya & Samsudin, 2021). Professional Knowledge is fundamental and a necessary competence requirement in evaluating fraud assessors' capability towards check-mating fraud in the public sector. Accountant's professional knowledge requirement involves the application of “quantitative analysis, accounting, information technology, laws and criminology expertise to prevent and detect fraud”.

Bolutife (2011) supports the argument that an accountant requires high degree of competence, integrity and honesty to perform. He points out that an accountant must be thoroughly trained and must prove his competence by passing all relevant examinations to become a member of a recognised accountancy body. Professional accountant knowledge comprises fundamental and specialised forensic knowledge, (AICPA, 2021). The fundamental knowledge includes: “professional responsibilities and practice management, laws, courts and dispute resolution and planning preparation, information gathering and preservation, discovery and reporting, experts and testimony”. The AICPA in financial forensics core focus wheel, confirms professional knowledge to include: “fraud prevention, detection and response; valuation; financial statement misrepresentation and family law; computer forensic analysis; bankruptcy, insolvency and re-organisation; and economic damages calculations” (Davis et al., 2010).

This research focuses on professional knowledge, that is, fraud prevention, detection and response. In Davis et al. (2010) when reflecting on knowledge requirements argued that, “being an effective accountant does not necessarily translate into being an effective professional accountant; and being an effective accountant requires the professional to possess a broad spectrum of knowledge”. To stress this further, Oyedokun et al. (2018) posits that, “as

government business and companies grow in size and complexity, uncovering fraud requires an accountant to become proficient in an ever-increasing number of professional competencies". Some of the areas of competencies include in-depth knowledge of financial statements, thorough understanding of fraud schemes, ability to comprehend internal control systems of corporations, knowledge of psychology, knowledge of criminology, command of criminal and civil laws, knowledge of organisation's governance policies, proficiency in computers and knowledge of network systems.

For this research, professional knowledge as an attribute implies the application of accounting, laws, quantitative analysis, information technology and criminology know-how to prevent, detect and respond to fraud in the public sector environment. Thus, knowledge refers to an accountant's proficiency and competencies necessary and relevant to discharge technical and innovative tasks, especially with respect to identifying and analysing processes and procedures for fraud deterrence, detection and response in the Nigerian public sector environment. The measures of professional knowledge construct refer to the accountant attribute and ability towards competent performance in the workplace.

Professional Ethics

Ethics is a word subject to several and sometimes conflicting explanations and as such, ethical problems are a very relevant issue present in many aspects of real life. In general, ethics is a conception that is difficult to define but easy to describe, as has been defined severally by diverse writers. Ethics are the moral values that an individual practises in governing his or her behaviour (Ezeagba & Abiahu 2018). As opined by Enofe et al. (2015) key qualities that frequently appear in the codes of ethics of most professional bodies include; "independence, integrity, objectivity, competence and judgment".

Accounting as a profession has developed its codes of professional ethics. The essence of the codes, is to provide professional accountants with guiding principle for conducting themselves in a fashion consistent with the tasks of the profession, predominantly when the accountant carries out professional judgment. A professional accountant is indebted with certain ethical obligations to his profession, clients, and the society as a whole, even if at different times such obligations may conflict with his personal interest. In the exercise of professional judgment, an accountant must not let; management pressure, his greed, selfish interest or over-rule his professional and societal requirements. The accounting professional codes of ethics in practice include; "competence, confidentiality, independence, integrity and objectivity" (Akenbor & Onuoha, 2013).

Ethics can be defined as the forensic accountant's compliance with the basic five principles of: "objectivity, professional competence and due care, confidentiality, integrity, and professional behaviour" in the discharge of their duties within the work environment. A forensic accountant, with necessary academic, technical knowledge, skills and mind-set who acts unethically cannot be relied upon to effectually and efficiently discover and prevent-fraud in the Nigerian public domain. Ethics is also seen as a collective agreement between the accountant and the public (Ademola, 2018). Professional accountants have a duty and responsibility to operate with the highest degree of objectivity and integrity.

Similarly, ethics serves to regulate members of the profession and is also seen as a way of self-protection for each member of the accounting profession. Ethics is also seen as an accountant's attempt to provide a guide to assist in formulating correct decisions under the circumstances (Ademola, 2018). The ethics is intended as a guideline for the behaviour expected of

accountants in order to protect shareholders interests, in addition to providing excellent quality services and that the reputation of the accountant's work is not compromised.

ICAN 2009 Code of Conduct is based on the principles of integrity, confidentiality, objectivity, independence, due care and professionalism. This study explains professional ethics as, accountant's exhibition of the essential principles of integrity, confidentiality, objectivity, professional competence and due care, and professional behaviour in the discharge of assigned responsibilities in the Nigerian public sector.

Fraud Risk Assessment (FRA)

The "Chartered Institute of Public Finance and Accountancy" (CIPFA, 2020) explained fraud as "any intentional false representation, including failure to declare information or abuse of position that is carried out to make gains, cause loss or expose another to the risk of loss". Fraud likewise includes "false representation, theft, forgery, embezzlement, deception, misappropriation, concealment of material facts, and also cover omission, deception or manipulation of facts and intentional misrepresentation". The Black's Law Dictionary (1997) describes "fraud (also sometimes referred to as the fraudulent act), as an intentional perversion of truth for the purpose of inducing another in reliance upon it to part with some valuable thing or to surrender a legal right, a false representation of a matter of fact". Fraud is trickery and is classified into two, namely: internal fraud is most often committed by employees and officers of organisations, while external fraud is usually committed by organisations against individuals, individuals against organisations, and organisations against organisations.

Odukoya and Samsudin (2021) asserted fraud as a global phenomenon which hampers economic developments and growth. Furthermore, Fraud Advisory Panel (2018) posited that, fraud is "the removal of cash or assets to which the fraudsters are not entitled to or false accounting, the classification or alteration of accounting records or other documents". The Association of Certified Fraud Examiners (ACFE, 2020) defined fraud as the usage of one's occupation for individual enrichment through the thoughtful misuse or misapplication of the employing organization's resources or assets. Therefore, fraud can be said to be a complex crime incorporating multiple offences and Behavioural traits.

Hence, FRA denotes competences that is an anti-dote to multiple internal and external sources of risks faced by organization. Furthermore, assessment of fraud risk aids FA in determining the extent and nature of processes required to facilitate their chances of fraud detection (Odukoya & Samsudin, 2021). Additionally, Popoola, (2016) established that, assessment of fraud risk required requisite technical knowledge, competence and involves vigorous and repetitive procedures for spotting and evaluating risks related to the actualization of organizational objectives

As noted by Chui 2010, FRA does not only indicate the direction of the audit but supports auditors to ascertain the organisation's environment and scope of audit procedures which are planned purposely to identify the possibility and consequence of fraud occurring in any organisation. It involves an iterative process stage, the stages are: firstly, developing a FRA framework; secondly, populate fraud risk; thirdly, rate likelihood and significance; fourthly, identify controls and assess alignment; fifthly, identify gaps; and lastly, remediation (Owens, 2012).

For this study, FRA is defined as accountant's ability to assess risks of fraud to a defined standard within the public sectors' operating sphere. FRA is the bedrock of audit assignment with respect to fraud detection, prevention and responses in the public sector environment. This symbolizes that the procedures to be adopted will depend upon the organization's environment, timing and scope of the audit task.

Theoretical Review

This subsection is concerned with the review of theory that is relevant to FA knowledge and fraud risk assessment, using the Triangle of Fraud Action theory.

The Triangle of Fraud Action (ToFA)

The ToFA deals with the characteristics of the white collar crime, that is, the action. As noted by Dorminey et al. ((2012), the fraud triangle identifies the conditions under which fraud may occur, whereas the ToFA describes the actions an individual must perform to perpetrate the fraud. Previous research has shown that a consequence of the fraud triangle is the lesser-known triangle of fraud action, sometimes referred to as the “components of fraud” (Desai, 2020; Fitri et al., 2019 and Kranacher et al., 2011).

The three components of the ToFA are: the act, the concealment, and the conversion. For example, the “act” represents the execution and methodology of fraud such as embezzlement, cheque kiting, or substantial fraudulent financial reporting. Also, the “concealment” represents hiding the fraud act such as creating false journal entries, falsifying bank reconciliations or destroying files while the “conversion” is the process of turning the ill-gotten gains into something usable by the perpetrator in a way that appears to be legitimate, such as money laundering, cars, or homes. The incremental value of the triangle of fraud action according to Dorminey et al., (2012) is that it represents the documentation of specific actions with evidence as well as control points where the potential fraud may be prevented, detected or remediated. This clearly shows that forensic accountants can develop certain measures, and controls, or structure their audits in such a way as to illuminate the act, the concealment or the conversion.

The ToFA is the greatest value for the forensic accountant or fraud specialist where proof of intent is required. While the fraud triangle directs forensic accountants to why people might commit fraud, the evidentiary trail might not be strong or unavailable. For example, the financial pressure and rationalisation components of the fraud triangle are not directly observable and accordingly a lack of fraud evidence is not proof that a fraud has not occurred (Gamlath et al. 2018). It therefore follows that, forensic accountants require an evidenced-based approach to conduct audits or investigations and the ToFA is most helpful in this regard because the components can be directly observed and documented.

The ToFA represents a theoretical model for detecting fraud and obtaining prosecutorial evidence. This means the evidence of the act, concealment and conversion can be collected and presented in a court of law or public adjudication. In totality, it could be said the ToFA makes it an undeniable fact for the perpetrator to argue that the act was accidental or to deny the role in the act. Dorminey et al. (2012) argue that the evidence of concealment especially provides a convincing argument that the act was intentional.

Review of Empirical Studies

Popoola et al. (2016) interrogated “accountants’ capability requirements for fraud prevention and detection in Nigerian public sector”. The study’s dependent variable was FRA whereas one of the proxies for independent variable was KR. The study encompassed positivist paradigm, it also adopted cross sectional research design in addition to survey method. The study sample size comprised of 400 respondents who were administered questionnaires, a primary research instrument in order to obtain the quantitative data needed for analysis.

The data collected from the targeted respondents was analyzed by the use of PLS-SEM and SPSS software techniques of analysis. The study results revealed that, knowledge requirement has positive significant effect on FRA. In addition, the discoveries showed that, FAs have

significantly higher levels of knowledge and FRA than auditors on the subject of; fraud prevention, detection as well as response. The result of the study showed that, as forensic accountants obtain additional knowledge around fraud detection, the individual's level of FRA continues to increase. This then, would result in an overall decrease in fraud in the Nigerian public sector, also, enhance institutional, supervisory and legal framework.

Additionally, Odukoya and Samsudin (2021) investigated the impact of knowledge capability (KC) on FRA within deposit money banks in Nigeria (DMBs) with the dependent variable being FRA whereas the independent variable was KC. The article employed cross-sectional research design with survey method approach, utilizing quantitative data obtained through the administration of well-structured questionnaire as a means of data collection to FAs and bank examiners. The sample scope of 150 was used for the study and Statistical package for social sciences (SPSS) version 25 as well as Partial Least Square Structural Equation Model (PLS-SEM) software version 3 were employed as methods for data analysis. Similarly, regression analysis technique was engaged for inferential statistics to test the hypotheses while descriptive statistics was used for summary of statistics.

The study found that, knowledge capability requirement has a direct and positive effect on fraud risk assessment, implying a potential for overall decline in the prevalence of fraud in the Nigerian deposit money banks. It equally implies thus, where the examiners have the requisite knowledge, fraud will be drastically if not completely eradicated. Notwithstanding the findings, this study differs from the current one in terms of the period of investigation, the sector from which data was collated from. Furthermore, the researcher did not anchor the work on any theoretical underpinning to serve as a basis of the study, likewise the sample size studied is relatively small in order to give generalization.

In the same vein, Osugba and Onyige (2022) studied knowledge and fraud prevention in Nigerian banks, adopting mixed technique research design approach of descriptive survey and interview method. Multistage sampling procedure was deployed in choosing the sample population of the work comprising of 324 respondents sampled by means of the Taro Yamane procedure for sample size determination. The quantitative data for the paper was achieved through the use of well-structured questionnaire.

The result of the study revealed that, bank staff agreed with the fact that knowledge is an effective instrument for fraud prevention. This implies that the senior management staff of banks ought to be adequately trained and this should be on a regular basis as well as update them on criminal intelligence and monitoring as this would enable them to greatly perform reliable intelligence in the prevention of bank fraud in addition to other criminal actions not just within the banking system but other sectors of the economy as well.

Internationally, Ridzuan et al. (2022) assessed individual factors that may contribute to the effectiveness of fraud risk assessment among external auditors in Malaysia. The DV for the study was effectiveness in fraud risk assessment while the IV proxied knowledge. The paper used survey research instrument to obtain the quantitative data that was collected through the issuance of questionnaires to a total of 455 respondents who were drawn from the poll of external auditors who were registered members of the Malaysian Institute of Accountants (MIA) and were attached to audit firms located in Selangor, Malaysia.

The data was gotten via the use of survey monkey database questionnaire links sent using e-mail, WhatsApp platforms, and Telegram groups of the auditors. The information, was

systematically analyzed by means of partial least-squares structural equation model (PLS-SEM) using the Smart-PLS 4.0 software.

The result from the study showed that, knowledge has no significant positive effect on effectiveness in FRA. The outcomes depicted that, knowledge has no significant effect on effectiveness in assessing risk. The findings have some practical implication, which could assist audit firms in highlighting the key knowledge areas that they should focus at developing as it concerns the issues of FRA and the ones that should be ignored since it was found not to have significant relationship with risk.

The Moderating Role of Professional Ethics

Ademola et al. (2017) investigated the relationship between capability requirements of a forensic accountant on fraud prevention in the Nigerian public sector, using fraud prevention as dependent variable whereas accountants' capability requirement was the independent variable proxied by, ethical requirement (ER). The study utilized survey method and the use of primary source of data collection although, simple random sampling (SRS) technique was employed to administer a total of 300 questionnaires to the targeted respondents who were drawn from the public sector of the economy. The survey questions were ranked using the 5-point Likert scales. Cross sectional research design was used and the quantitative data achieved was analyzed by means of PLS-SEM.

The findings from the article revealed that, ethics requirement was significant predictor of fraud prevention. This implies that, the higher the ethics of the forensic accountants, the better will be their ability to prevent fraud. Therefore, ethics should be adopted and recommended as a necessary code to be given utmost priority by every forensic accountant in order to prevent fraudulent practices by professional accountants in the Nigerian public sector.

Similarly, Rehman and Hashim (2020) explored "the relationship between fraud risk assessment and good corporate governance of companies listed in the Muscat Stock Market in the Sultanate of Oman" using FRA as dependent variable while the IV was proxied by professional ethics. The article used quantitative method of data collection and the use of descriptive cross-sectional survey approach been employed in addition to the data being analyzed by means of utilizing PLS-SEM. The element of analysis was the 115 Omani public listed firms. The use of five-point Likert scale was applied in the study to get responses. Similarly, census sampling technique was utilized and all the 115 companies were taken into consideration.

The result of the study showed that, FRA has direct and significant effect on professional ethics, in addition, the approval and implementation FRA will greatly assist in the attainment of a good corporate governance structure in organizations. It was concluded that, organizations should embrace FRA as fraud detection and control mechanism as well as, embed as a part of their corporate governance guidelines, which would ultimately aid in the realization of good professional ethics.

Cross Study Synthesis and Implications

All the studies reviewed however, have some limitations bothering around; the sample frame of the research concentrated only in a particular region. Hence, the study is extending the variables and using a different geographical location to conduct the survey. There is no theoretical underpinning as an anchor to serve as a stance for making decision.

None of the studies thoroughly model professional ethics as a moderator. In practice, knowledge does not automatically translate into action if ethical resolve is weak, hence the need for moderator.

Ridzuan et al. have several limitations. First, their geographic scope is confined to Selangor, so cultural or firm-size differences across Malaysia are invisible in their data. Second, the cross-sectional, self-report design cannot disentangle whether technology skills improve FRA or whether auditors who already excel at FRA simply pursue more tech training. Third, the study omits contextual moderators such as organisational ethical climate or supervisory support, factors that could probably convert dormant knowledge into active fraud detection behaviour.

These limitations make this study highly relevant to the Nigerian public sector research agenda. Their null result on traditional competency reinforces the idea that knowledge alone is insufficient, an insight that aligns with this study plan to introduce professional ethics as a moderator.

Methodology

This research was carried out using quantitative approach and cross-sectional research design. This work embraced positivist paradigm and a survey method of data collection. Questionnaire was employed via the use of Google Form. The population of the study comprised of all the 10,196 public sector accountants as obtained in the service-wide Staff position from the office of the Accountant General of the Federation as at December 31, 2009 who are knowledgeable due to their experience having worked as accountants for years, and so, should have feedback on what they feel should be the requisite knowledge requirement public sector accountants should have in order to reduce the incidences of fraud. The sample size was determined using Cohen et al. (2003) method for computing power for regression coefficients, the formula is as follows:

$$n = \frac{L}{f^2} + k + 1 \quad .. \quad (1)$$

Where

n is the sample size

k is the number of predictors in the regression equation

f is an effect size measure for ordinary least squares regression (that is, 0.14, 0.26, 0.39, and 0.59).

L is a tabled value corresponding to a specific power value. For predictor ordinary least squares regression with a Type I error of .05 and power of 0.80, L is equal to 7.85.

Using the formula in equation (1), the sample size for this study will be arrived at as follows:

$$\begin{aligned} n &= \frac{7.85}{(0.14)^2} + 3 + 1 \\ &= 400 + 3 + 1 \\ &= 404 \end{aligned}$$

The study used descriptive statistics and “Partial Least Square Structural Equation Modeling” (PLS-SEM) for data analysis while the Stata version 17.0 was employed for data analysis.

Independent variable is Professional Knowledge Requirements (PKR) assessed by the use of 5-point Likert scales of 5 to 1 (strongly agree, agree, neutral, disagree and strongly disagree) with 4 being a positive response. Dependent variable is Fraud Risk Assessment (FRA) measured using 5-point Likert scales with 4 being positive responses ranging from 5 to 1 (strongly agree, agree, neutral, disagree and strongly disagree) with the moderator as

Professional Ethics (PES) measured by means of 5-point Likert scales of 5 to 1 (very often, often, sometimes, rarely, and not at all) with 4 being a positive response.

Questionnaires were adapted from various sources such as; Ademola et al. (2017); Dzomira (2014); Odukoya and Samsudin (2021); Popoola et al. (2015); etc., because developing a new questionnaire need to be validated through a reliability test to confirm the reliability of the measures (Findley et al., 2021; Straub et al., 2004). The questionnaire consisted of demographic information, close ended questions to get a response from the levels of accountants of the public sector accountants in Nigeria out of which 20 questionnaires were first administered for validity, reliability, and sensitivity tests for comments for a pilot study. Thereafter, the final questionnaire was drawn and administered to all the respondents.

Pilot Study

The tool for this study was subjected to a pilot test for validity and reliability. Validity is an indication of the degree to which the research instrument measured the constructs being investigated Nyangori and Ndede (2018). Validity tests are of three types, which include content, criterion and related construct validity. This study focused on content validity which measures the degree to which the sample of the items represents the content that the test is intended to measure. A pilot study was carried out by issuing out some of the questionnaires to the staff at the headquarter office of the Accountant General of the Federation in Abuja to be filled by the respondents at random. From the pilot study, the researcher was able to detect questions that need to be edited and those that were ambiguous. The final questionnaire was then distributed as a Google-form and used to collect the data for analysis after it was edited to ensure its completeness and consistency.

Model Specification

The following mathematical model was analyzed using PLS-SEM:

$$FRA_i = \beta_0 + \beta_1 PKR_i + \beta_2 PES + e_i \dots\dots\dots (i)$$

$$FRA_{it} = \beta_0 + \beta_1 PKR_i + \beta_2 PES + \beta_3 (PKR_i * PES_i) e_i \dots\dots\dots (ii)$$

Equation 2: The effect of the moderator on the variables

Where:

FRA = Fraud Risk assessment

PKR = Professional Knowledge Requirements

β_0 = is the intercept

β_1 = is the parameter to be estimated in the equation

β_2 & β_3 = Moderated variable

PES = Professional Ethics (the moderating variable)

i = Number of samples

e = error term

Results and Discussions

This survey was carried out from October, 2023 to February, 2024. Electronic version of the questionnaire was sent out to the WhatsApp platform of the public sector accountants through the help of a research assistant who is a member of the group and 216 responses were returned yielding a response rate of 53.5% (216/404). The responses can be said to be very high as Osma et al., 2022 in their research reported that, response rates normally range between 5-21%.

Table 3 reports the demographic data on staff profile including sex, age, level of education (qualification) and professional affiliation.

Table 3

Respondents' profile

Variable	Obs	Mean	Std. Dev.	Min	Max
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Sex	216	0.713	0.453	0	1
Age	216	2.028	0.801	1	4
Education	216	2.472	0.909	1	4
Profession	216	1.685	0.557	1	3
Percentage analysis of Qualifications				Total	Percentage
HND				37	17.5%
BSc				60	27.6%
MSc/MA				91	41.9%
PhD				24	11.1%
ICAN				58	27.2%
ANAN				110	51.2%
CIMA				45	17.1%

Source: Stata 17.0 result output (2024)

From Table 3, the respondents are about 71.3% male and 28.7% female, hence, it is assumed that there is gender in-balance in the views of the respondents on the subject matter since the male have more dominance. The average age of the staff is in the range of 40-49 years old. About 41.9% of the respondents have MSc or MA as their highest academic qualification. Another 27.6% of the respondents are BSc holders while 51.2% are professional members of ANAN and another 27.2% are ICAN members. This shows that the respondents are well educated with the required knowledge of the answers they gave in the questionnaire.

Descriptive Statistics

The descriptive analysis for the moderating effect of professional ethics and professional knowledge requirement is shown in Table 4.

Table 4

Summary statistics for indicator variables

Indicator	Mean	sd	Median	Min	Max	N
Q20	4.606	0.746	5	1	5	216
Q21	4.588	0.742	5	1	5	216
Q22	4.394	0.834	5	1	5	216
Q23	4.352	0.866	5	1	5	216
Q24	4.347	0.907	5	1	5	216
Q25	4.403	0.783	5	1	5	216
Q5	4.380	0.798	5	1	5	216
Q6	4.366	0.889	5	1	5	216
Q7	2.495	1.450	2	1	5	216
Q8	3.806	1.091	4	1	5	216
Q9	3.764	1.328	4	1	5	216
Q10	4.366	0.974	5	1	5	216
Q11	4.111	1.111	4	1	5	216
Q12	4.120	1.072	4	1	5	216
Q13	3.926	1.155	4	1	5	216
Q14	4.046	1.238	5	1	5	216
Q15	3.852	1.098	4	1	5	216
Q16	4.282	0.904	4	1	5	216
Q17	3.417	1.330	4	1	5	216
Q18	4.074	0.971	4	1	5	216

Q1	4.394	0.788	5	1	5	216
Q2	4.347	0.685	4	1	5	216
Q3	4.296	0.844	4	1	5	216
Q4	4.097	0.907	4	1	5	216

Source: Stata 17.0 result output (2024)

Table 4, from the three constructs of this study, PKR, PES and FRA, PKR construct, Q20 revealed the peak mean value of 4.606 and a S.D of 0.746 (Q21 = 4.588; Q25 = 4.403; Q22 = 4.394; Q23 = 4.352; Q24 = 4.347) whereas the FRA construct showed the lowest mean value of 4.097 (Q1 = 4.394; Q2 = 4.347; Q3 = 4.296; Q4 = 4.097). Also, as can be seen in Table 4, the construct of PES indicated mean value of (Q5=4.380; Q6=4.366; Q7=2.495; Q8=3.806; Q9=3.764; Q10=4.366; Q11=4.111; Q12=4.120; Q13=3.926; Q14=4.046; Q15=3.852; Q16=4.282; Q17=3.417; Q18=4.074).

Table 5

Measurement model - Standardized loadings

	Reflective: PKR	Reflective: PES	Reflective: FRA
Cronbach	0.863	0.836	0.739
DG	0.898	0.869	0.836
Rho_A	0.871	0.865	0.742

Source: Stata 17.0 result output (2024)

From Table 5, the research examined the PLS-SEM measurement model, focusing on professional knowledge requirement (PKR), professional ethics (PES) and task performance fraud risk assessment (FRA). The reflective construct for PKR and PES is a tool used to measure the relationship between the latent variables. It consists of multiple indicators with standardized loadings, indicating the strength and direction of the relationship between the variables.

Reliability measures for PKR, PES and FRA are Cronbach's alpha (0.863, 0.836 and 0.739) respectively, Dillon-Goldstein's (DG) are 0.898, 0.869 and 0.836 respectively, and while rho_A is 0.871, 0.865 and 0.742 for PKR, PES and FRA. Higher values for these measures indicates that, the indicators reliably measure their latent constructs. These reliability measures, help assess the robustness and consistency of the measurement model.

PKR's Cronbach alpha is 0.863, indicating good internal consistency. KPR is high at 0.898, indicating robust reliability. Rho_A is 0.871, highlighting the reliability of KPR. PES is reliable with Cronbach alpha of 0.836, higher at 0.869, and rho_A of 0.865 while FRA is also reliable, with Cronbach alpha of 0.739, DG of 0.836, and rho_A of 0.742, indicating the proportion of true score variance in the total score for FRA. The findings support the relevance and reliability of the chosen indicators for KPR, PES and FRA in the context of the study. The findings is in line with Popoola et al., 2016; Osugba and Onyige, 2022, Odukoya and Samsudin, 2021 as well as Zidzuan et al., 2022.

Table 6

Discriminant validity - Squared interfactor correlation vs. Average variance extracted (AVE)

	PKR	PES	FRA
PKR	1		
PES	0.282	1	

FRA	0.316	0.346	1
AVE	0.595	0.346	0.561

Source: Stata 17.0 result output (2024)

Table 6, is focused on discriminant validity, it presents squared inter-factor correlations and Average Variance Extracted (AVE) for the variables PKR, PES and FRA. The squared interfactor correlation amongst PKR, PES and FRA is 0.316, and with all the variables having an AVE of 0.595, 0.346 and 0.561 respectively. These values are presented in the lower triangle of the matrix, indicating the correlations between the latent constructs. It's essential to note that the squared interfactor correlation is lower than the AVE values for PKR, PES and FRA, signifying satisfactory discriminant validity. This indicates that, the latent constructs are distinct and not excessively correlated, supporting the idea that they measure different underlying concepts.

Table 7

Structural model - Standardized path coefficients (Bootstrap)

Variable	FRA
PKR	0.348
p-value	(0.000)
PES	0.403
p-value	(0.000)
r^2_a	0.427

Source: Stata 17.0 result output (2024)

Table 7 is a presentation of the result of the structural model using standardized path coefficients which was gotten through bootstrap analysis. The variable in focus is PKR, with a coefficient value of 0.348 representing a positive significant effect of PKR on the dependent variable (FRA). The p-value of 0.000 suggest a highly significant relationship between PKR and the associated construct (FRA) in the structural model. This is in agreement with the findings of Ademola et al., 2017 and Rehman and Hashim, 2020.

Whereas, the moderator PES has the coefficient of 0.403 and the p-value of 0.000 signifying that PES positively and significantly moderates the relationship between PKR and FRA. The R-squared adjusted (R^2_a) value of 0.427 provides insight into the proportion of variance in the dependent variable that can be explained by the independent variable and other variables in the model. This indicates that approximately 42.7% of the variability in the dependent variable is accounted for by the variables in the model, with KPR being a significant contributor. These findings emphasize the robustness of the relationship between PKR and the dependent variable, as evidenced by both the high coefficient and the statistical significance indicated by the low p-value.

Table 8

Correlation of latent variables

	PKR	PES	FRA
KPR	1.000		
PES	0.531	1.000	
FRA	0.562	0.588	1.000

Source: Stata 17.0 result output (2024)

Table 8 represents the correlation of latent variables, PKR, PES and FRA. The correlation

between PKR and FRA is 0.562 while that of the moderator PES, is 0.588. This strong positive correlation suggests a significant and positive relationship between the latent variable and the moderator, indicating that as PKR increases, there is a corresponding increase in FRA.

1. Conclusion and Recommendations

Arising from the study, PKR has a coefficient of 0.348 signifying a positive significant effect of PKR on the dependent variable (FRA) with a p-value of 0.000 suggest a highly significant relationship between PKR and the associated construct (FRA) in the structural model.

The moderator PES also has the coefficient of 0.403 and the p-value of 0.000 signifying that PES significantly and positively moderates the relationship between PKR and FRA. Since professional ethics has positive coefficient, PKR → FRA slope becomes steeper as ethics strength increases. This implies that knowledge matters on its own and its impact grows when embedded in a strong ethical environment. Put differently, “knowing” without “ethical will” delivers sub-optimal fraud-risk assessments.

These findings emphasize the robustness of the relationship between PKR and the dependent variable, as evidenced by both the high coefficient and the statistical significance indicated by the low p-value.

It will hence be concluded based on the findings of the research that, firstly, professional knowledge of accountants is a significant capability requirement in the workplace for the public accountant to be effective and efficient in carrying out fraud investigation. Hence, it is strongly recommended that PKR should be held in high esteem and that professional accountants should seek for means of growing in knowledge to be able to effectively discharge their responsibilities.

Secondly, PES has been revealed to have significantly moderated PKR accountants and fraud risk assessment. Therefore, it is recommended that, in addition to the knowledge to be gained, there should be a conscious effort at exposing the accountants to the basic code relevance to the accounting profession as issued by the various accounting bodies both locally and internationally and to ensure that they are duly compelled with in the discharge of their duties to enhance fraud risk assessments.

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