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**CAPABILITY REQUIREMENTS ON FRAUD
PREVENTION IN THE NIGERIAN PUBLIC SECTOR:
PERCEPTION OF FORENSIC ACCOUNTANTS AND
AUDITORS**

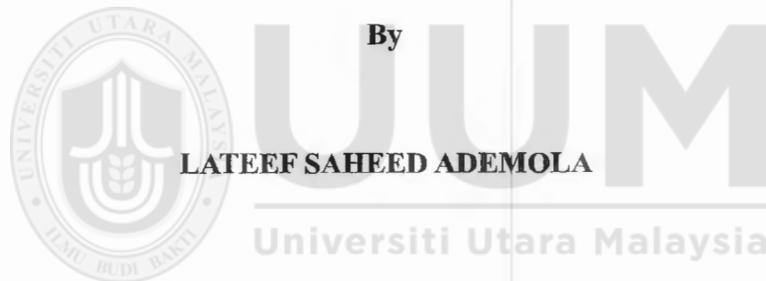


MASTER OF SCIENCE ACCOUNTING

UNIVERSITI UTARA MALAYSIA

SEPTEMBER 2017

**CAPABILITY REQUIREMENTS ON FRAUD PREVENTION IN THE
NIGERIAN PUBLIC SECTOR: PERCEPTION OF FORENSIC ACCOUNTANTS
AND AUDITORS**



**Thesis Submitted to
Tunku Puteri Intan Safinaz School of Accountancy,
Universiti Utara Malaysia,
In Fulfillment of the Requirement for the Degree of Master of Science**

CERTIFICATION OF THESIS WORK



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Universiti Utara Malaysia



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SCHOOL OF ACCOUNTANCY
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Pengerusi Viva
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: **Prof. Madya Dr. Noor Afza Amran**

Tandatangan
(Signature)

Pemeriksa Luar
(External Examiner)

: **Prof. Dato' Dr. Hasnah Haron**

Tandatangan
(Signature)

Pemeriksa Dalam
(Internal Examiner)

: **Dr. Rose Shamsiah Samsudin**

Tandatangan
(Signature)

Tarikh: **28 Mei 2017**
(Date)

Nama Pelajar : **Lateef Saheed Ademola**
(Name of Student)

Tajuk Tesis / Disertasi :
(Title of the Thesis / Dissertation)

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ACCOUNTANTS AND AUDITORS**

Program Pengajian : **Master of Science**
(Programme of Study)

Nama Penyelia/Penyelia-penyelia : **Prof. Dr. Ayoib Che Ahmad**
(Name of Supervisor/Supervisors)



UUM
Universiti Utara Malaysia

Tandatangan

Nama Penyelia/Penyelia-penyelia : **Dr. Oluwatoyin Muse Johnson Popoola**
(Name of Supervisor/Supervisors)

Tandatangan

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ABSTRACT

The objective of the study is to investigate the skills, knowledge and ethics requirements from the perception of forensic accountants and auditors on fraud prevention in the Nigerian public sector. Out of the 500 questionnaires distributed to the respondents, 312 questionnaires were used for the analysis in this study. The respondents are forensic accountants and auditors from the Office of Accountant General of the Federation and the Auditor General for the Federation in Nigeria. The statistical analysis tools employed are the Statistical Package for Social Science (IBM SPSS version 22.0 for Windows) and Partial Least Square-Structural Equation Modeling (PLS-SEM version 3.2.3). Six hypotheses are developed in the study. Three were tested through the use of the PLS-SEM Algorithm and Bootstrapping techniques regarding their internal consistency reliability, convergent validity, discriminant validity, and direct relationships. Furthermore, the other three hypotheses regarding the comparison of groups (forensic accountant and auditor) were tested through non-parametric statistics (the Mann-Whitney U Test). The results of the analysis provided support for the hypothesised relationships as well as the hypothesised comparison of groups. Furthermore, the significant positive relationship of skills, knowledge and ethics (forensic accountants and auditors) indicated that the variables are essential requirements in enhancing fraud prevention in the Nigerian public sector. Similarly, it was found that forensic accountants have higher levels of the skills, knowledge, and ethics on fraud prevention than auditors. The study, therefore, concluded that auditors in the public sector environment should improve their capability requirements in enhancing competency towards fraud prevention.

Keywords: Knowledge requirement, skills requirement, ethics requirement, fraud prevention, forensic accountant, auditor, public sector

ABSTRAK

Objektif kajian ini adalah untuk menyelidik keperluan kemahiran, pengetahuan dan etika terhadap pencegahan penipuan dalam sektor awam di Nigeria daripada persepsi para akauntan forensik dan juruaudit. Daripada 500 borang soal selidik yang telah diedarkan kepada para responden, sejumlah 312 borang soal selidik telah digunakan bagi tujuan analisis kajian ini. Para responden terdiri daripada akauntan-akauntan forensik dan juruaudit-juruaudit di Pejabat Akauntan Negara Persekutuan dan Ketua Audit Negara Persekutuan di Nigeria. Kajian ini menggunakan Pakej Statistik untuk Sains Sosial (IBM SPSS versi 22.0 untuk Windows) dan Pemodelan Persamaan Berstruktur Kuasa Dua Terkecil (PLS-SEM versi 3.2.3) sebagai alatan analisis statistik. Enam hipotesis telah dibangunkan dalam kajian ini. Tiga daripadanya telah diuji kebolehpercayaan ketekalan dalaman, kesahan penumpuan, kesahihan diskriminan dan hubungan langsung menggunakan teknik-teknik algoritma PLS-SEM dan Bootstrapping. Manakala, tiga lagi hipotesis berkaitan perbandingan kumpulan (akauntan forensik dan juruaudit) diuji menggunakan statistik bukan berparameter (Ujian U Mann-Whitney). Keputusan analisis menyokong hubungan-hubungan hipotesis serta perbandingan hypothesis kumpulan. Selain itu, hubungan positif yang signifikan bagi kemahiran, pengetahuan dan etika (para akauntan forensik dan juruaudit) menunjukkan bahawa pembolehubah-pembolehubah ini adalah keperluan penting dalam meningkatkan pencegahan penipuan dalam sektor awam di Nigeria. Akauntan-akauntan forensik juga didapati mempunyai tahap kemahiran, pengetahuan, dan etika (keperluan keupayaan) ke atas pencegahan penipuan yang lebih tinggi berbanding para juruaudit. Oleh yang demikian, kesimpulan daripada kajian ini adalah para juruaudit dalam persekitaran sektor awam perlu menambahbaik keperluan keupayaan diri dalam usaha meningkatkan kecekapan pencegahan penipuan.

Kata kunci: keperluan pengetahuan, keperluan kemahiran, keperluan etika, pencegahan penipuan, akauntan forensik, juruaudit, sektor awam.

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LIST OF ABBREVIATIONS

ACA	Associate Member Chartered Accountant
ACCA	Association of Certified Chartered Accountants
ACFE	Association of Certified Fraud Examiners
AGF	Accountant General of the Federation
AICPA	American Institute of Certified Public Accountants
AO	Audit Ordinance
ANAN	Association of National Accountants of Nigeria
Aud.GF	Auditor General of the Federation
AVE	Average Variance Expected
BBC	British Broadcasting Corporation
BFIG	Boroughs Fraud Investigation Group
CBN	Central Bank of Nigeria
CCB	Code of Conduct Bureau
CCT	Code of Conduct Tribunal
CEMEDEC	Centre for Media and Development Committee
CFA	Confirmatory Factor Analysis
CFRN	Constitution of the Federal Republic of Nigeria
CIFAS	Credit Industry Fraud Avoidance Services
CIMA	Chartered Institute of Management Accountants
CNA	Certified National Accountant
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CPA	Certified Public Accountant
CPE	Continuing Professional Education
CT	Competency Theory
EFCC	Economic and Financial Crimes Commission
ER	Ethics Requirement
FA	Finance (Control and Management) Act.
FCA	Fellow Chartered Accountant
FCNA	Fellow Certified National Accountant
FP	Fraud Prevention
FR	Financial Regulations
FRA	Fiscal Responsibility Act
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Accounting Standard
GDP	Gross Domestic Product
IBM SPSS	Integrated Business Machines Statistical Package for Social Sciences
ICAN	Institute of Chartered Accountants of Nigeria
ICPC	Independent Corrupt Practices Commission
IES	International Education Standards
IFAC	International Federation of Accountants
IPSASB	International Public Sector Accounting Standards Board
KPMG	Klynveld Peat Marwick Geordeler
KR	Knowledge Requirement
NCA	National Crime Agency

NIJ	Nigerian Institute of Justice
NAAFI	National Fraud Authority Annual Fraud Index
NSA	National Security Adviser
NSA	Nigerian Standard of Auditing
OECD	Organization for Economic Corporation and Development
PAC	Public Accounts Committee
PCAOB	Public Company Accounting Oversight Board
PLS	Partial Least Squares
PPA	Public Procurement Act
SAS	Statement of Accounting Standard
SEM	Structural Equation Modeling
SR	Skills Requirement
TPB	Theory of Planned Behavior
WB	World Bank



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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Nigeria got her independence in 1960 from the British colonial masters with pomp and pageantry. The country is blessed with human resources with a population of about 178.52 million people (World Bank, 2014) and natural resources (oil, minerals, energy, water and hydroelectric). Prior to the discovery of crude oil in commercial quantity in Nigeria, agriculture used to be the backbone of the economy of the country. In addition, the country is blessed with an excellent climatic condition.

Despite the abundance of human and natural resources, the rate of economic development appears to be low. In addition, human capital development, utilities, facilities and infrastructure are not adequate and sufficient. The reasons attributed to the insufficiency, inadequacy and low pace might be related to fraud and fraudulent practices, greed, maladministration, corruption, white collar crimes, theft, conversion, and concealment. All these are prevalent in the Nigerian public sector (Popoola, 2014).

Granting the loss due to fraud is becoming severe and unbearable, the federal government introduced the Fiscal Responsibility Act (FRA, 2007), and Public Procurement Act (PPA, 2007) to stimulate public accountability and good governance. Moreover, the federal government strengthens the Independent Corrupt Practices Commission (ICPC, 2000) and Economic and Financial Crime Commission (EFCC, 2003) as watchdogs in the

public sector environment. Despite all these, fraud and corrupt practices continue to be on the increase (Popoola, 2014; Lamorde, 2012).

The frequent lapses indicate that accounting and auditing systems management in the public sector in Nigeria, primarily have failed. Therefore, the inability of auditors to prevent fraud is serious damage to the auditing profession and costly to the society. Previous studies have brought into the limelight that auditors are mostly poor advisors of fraud risk, and they repeatedly fail at preventing fraud (Hackenbrack, 1992; Knapp & Knapp, 2001).

Wells (2005) expresses concerns about the failure of auditors to prevent the fraud incidence. He states that “as a group, CPAs are neither stupid nor crooked. However, the majorities are still ignorant of fraud. Untrained graduates of accounting have been drafted to wage war against sophisticated liars and thieves for the last eighty years” (Wells, 2005). Hence, the researcher wants to make a difference by looking at the capability requirements of forensic accountants and auditors as it relates to fraud prevention in the Nigerian public sector in accordance with the Nigerian Constitution, (1999) and the Finance Control and Management Act, (1958), which places the responsibility on the doorstep of the Office of AGF and Aud.GF, who are the primary users of forensic accountants and auditors.

Fraud in its entirety is not only costly but dangerous if one considers its impact on the public and government activities (Popoola, 2014; Wuerges, 2011). There are outcry and

outrage by the public, the civil societies, and newspaper organisations on the increase in fraud in the public sector. A cursory look at the impact of fraud on United Nation Human Development Index (UNHDI) by the World Bank Annual Report (2007) indicated a gory tale about Nigeria. The report from National Fraud Authority Annual Fraud Indicator (NFAAFI, 2013) states that loss arising from the fraud in the UK public sector is higher than other sectors, namely: private sector, charity, and others. The public sector constitutes the highest loss of £19.9bn out of £36.5bn while the private sectors also follow the public sector as having £15.5bn. The Charity sectors are £117m, and other sectors are £919m. The illustration in Figure 1.1 shows the summary of loss arising from fraud in the UK, 2013.

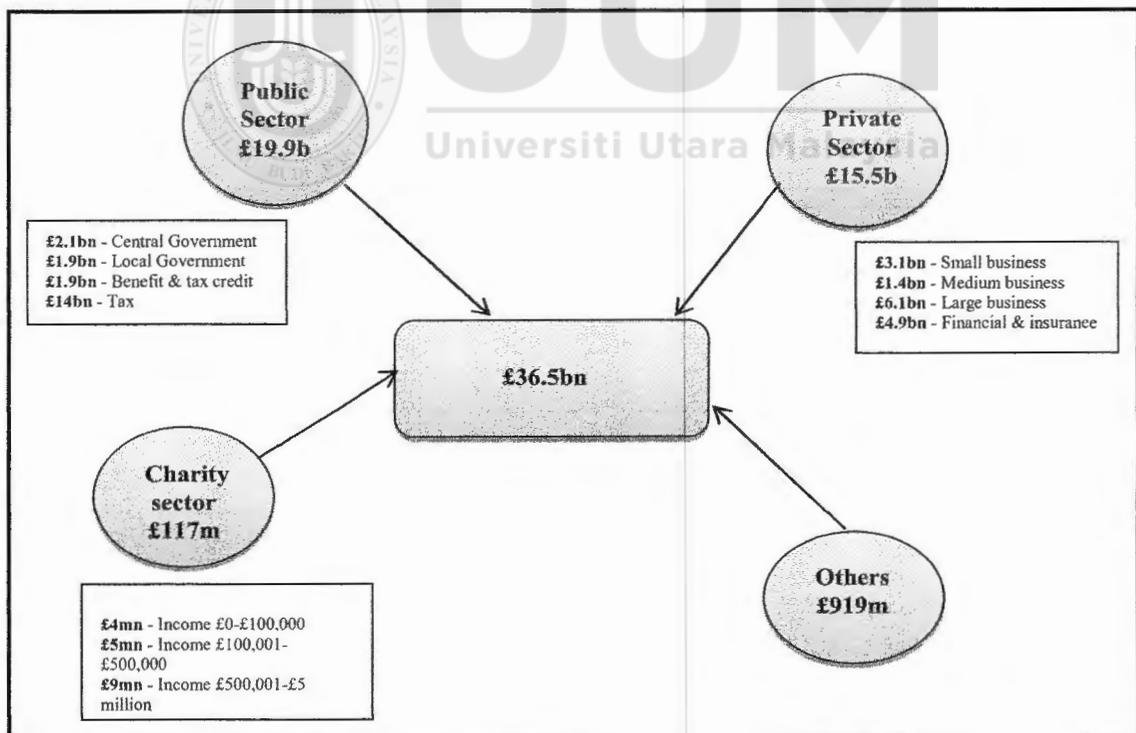


Figure 1.1

Loss due to Fraud in United Kingdom, 2013

Source: National Fraud Authority Annual Fraud Indicator (NFAAFI), 2013

However, the fraud in Nigeria requires more emphasis because it has paralysed the economic development of the country with infrastructure and facilities in a state of decay. Fraud prevention needs the support of those in authority to mirror on the effect of changes in the external and internal activities that may make internal control ineffective.

The Committee of Sponsoring Organisations of the Treadway Commission (COSO, 2011) recognises risk assessment as one of the components of internal controls and considers its consequence about potential and real fraud in any government establishment (COSO, 2011). Fraud prevention has to do with the control system in an organisation. Hence, the American Institute of Certified Public Accountant (AICPA) has recognised that fraud prevention can be achieved through the implementation of control that mitigates against areas already identified as threat regions.

Association of Certified Fraud Examiners (ACFE, 2008) Report to the Nation on Occupational Fraud and Abuse reveals about 46% of fraud occurs because the victim is deficient, and therefore, there are inadequate or no controls to prevent the fraud. These components of internal control mentioned by the COSO are the means for which the 'Opportunity' factors in the fraud triangle can be prevented to most effectively limit occurrences of fraud. The COSO (2011) identified five components of internal control.

These are:

Control Activities

Independent checks on performance, adequate documents, and records, adequate separation of duties, physical control over assets and records; proper authorisation of transactions and activities (Elder, Beasley & Arens, 2011).

Information and Communication

The information must flow down to the line functions and offer the best, reliable and most accurate information as needed to allow the function to produce the best outcomes possible; the information about performance would flow upwards through top management, through both formal and informal communication channels, on condition that objective response (Cendrowski, Martin & Petro, 2007).

Control Environment

The attitude of top management, directors and owners of an entity on internal control and the importance to the organization; the human resource policies and practices; the assignment of authority and responsibility; integrity, ethical values and commitment to competence; the audit committee and involvement of the board of directors; the management's philosophy and operating style - actions, policies, and procedures (Elder, Beasley & Arens, 2011).

Monitoring

Periodic assessment of the quality of internal control performance; it must ensure that all control processes are performed as designed and approved; there must be control compliance analysis to authenticate the acceptable performance of procedures (Cendrowski, Martin & Petro, 2007).

Risk Assessment

To identify something that could prevent the accomplishment of objectives of organisation, the identification of internal and external means that could potentially defeat the organisation's internal control structure; to evaluate them in a way to define which require action; and lastly, the priority of that work (Cendrowski, Martin & Petro, 2007). All these components of internal controls were identified by the Committee of Sponsoring Organisation (COSO) and adopted as catalysts to fraud prevention in the public sector environment.

As stated in the previous research, both forensic accountants and auditors acquire same fundamental knowledge (Davis, Farrel & Ogilby, 2010). Forensic accounting needs individuals who are skilful in the use of investigative and analytical skills related to the areas of accounting records, gathering and evaluating financial statement evidence, interviewing all parties related to an alleged fraud condition, and serving as an expert witness in a fraud case (Hopwood *et al.*, 2008; Rosen, 2006; Singleton *et al.*, 2006).

According to Popoola, Ahmad, and Samsudin (2013), it is the gathering of information, investigation, analysing, reporting and communicating financial information to improve future task performance judgment or to resolve legal matters. The skills and knowledge possessed by forensic accountant include a legal system and its procedures; agility and adaptability; computer applications, communication skills, GAAP and GAAS violation; IFRS and interviewing skills among others.

Whereas, the auditor skills and knowledge provide reasonable assurance that the reported financial statements taken as a whole are stated fairly, in all material respects, in accordance with the Nigerian standards on auditing and International auditing standards and are, therefore, free of material misstatement (Popoola, 2014; Ekeigwe, 2011; Davia, 2000). Also, auditors require unique skills to look at the evidence placed before him from different standpoints, having recognised different possible interpretations and the implications of the matter in hand.

Many professional organisations may explain their ethical approach regarding some discrete components such as honesty, accountability, integrity, objectivity, transparency, loyalty, respectfulness and obedience to the law. The ethical standard of the forensic accountant and auditor contain the fundamental principles, concepts, guidance and procedures that are required in an organisation. The ethics and law are considered as part of the task of the forensic accountant when hiring a forensic accountant (ICAN, 2009).

It is to be noted that both forensic accountant and auditors should have the professional ethics. Ethics is also weighted as part expected and desired set of skills for the forensic accountant. The required knowledge about ethics is the awareness of the ethics as pertains to their specialization and the review of business ethics. It is required for the forensic accountant to participate in continuing professional education program (CPE) that offered the professional ethics as a course. Whereas, the ethical standards of auditors comprise principles, procedures and guidance in graphic form and other materials. The moral standard comprises the following: Integrity, Independence, Objectivity, and Confidentiality.

In essence, for both auditors and forensic accountant to prevent the fraud incidence, the element of capability (knowledge, ability, trait, skills, attitudes and ethics) must be required by the forensic accountant and auditors to have effective and preventive control, well known to the fraudster and finally serves as a strong deterrent to perpetrators in an organization. Hence, this is a motivating issue for the researcher to make some difference in the area of fraudulent financial practice because fraud is an issue that deserves serious attention. Based on the above explanation of the capability of the auditors and forensic accountant on Fraud prevention, the next section discusses the problems statement, research questions, research objectives, significant of the study and together with the scope of the study.

The evidence has shown the magnitude of fraud perpetrated in Nigerian public sector. Several probes were initiated by the National Assembly based on severe infractions due

to fraudulent practice in the Nigerian public sector. These include: (a) The arrest of the Ex-Minister of Petroleum (Diezani Alison-Madueke) alongside with five peoples by National Crime Agency (NCA) in London on suspicion of fraud, bribery and corruption offences. After her alleged arrest in London, about £27,000 was confiscated (Punch, October 2, 2015; Centre for Media and Development Communication (CEMEDEC, 2015); (b) Misappropriation of over ₦1trillion by the former EFCC Chairman, Ibrahim Lamorde. The money being recovered are proceeds of fraud (Udoh, 2015).

According to Sanusi (2014), Nigeria lost about ₦197billion monthly on fraud under former President Goodluck Jonathan tenure. Moreover, \$31 billion was stolen under Jonathan administration in Nigeria (Ogunseye, Okpi & Baiyewu, 2012). Other evidence indicated that Nigeria is the most fraudulent country in Africa (KPMG, 2012); Even the officials saddled with the responsibility of fighting fraud were found wanton, and Court remands two EFCC officers for alleged ₦14.6 million fraud (Ugwu, 2012). Furthermore, the alleged embezzlement of \$2.1billion by the former National Security Adviser (NSA) Alhaji Muhammed Sambo Dasuki supposedly meant for the procurement of military Arms to wage war against the Boko Haram insurgents (The Nation, 14 December 2015). The money was shared by over 20 public political figures who served under the former President Goodluck Ebele Jonathan. In fact, the Office of the NSA turned into treasury office where they were sharing the public fund. The EFCC has arrested and prosecuted 20 political public office holders as illustrated in Figure 1.2, the alleged \$2.1bn Army deals by Colonel Sambo Dasuki. All these cases and others showcase a deficiency or gap

attributable to lack of Skill Requirement (SR); Knowledge requirement (KR) and Ethics Requirement (ER) on Fraud Prevention (FP), hence this study.



Figure 1.2
Alleged \$2.1bn Army deals by Colonel Sambo Dasuki
 Source: Daniel. Umoru and Erunke (2015)

1.2 Problem Statement

In Nigeria, the public sector accounting heavily relies on constitutional and regulatory frameworks such as the Federal Republic of Nigeria Constitution (1999) as amended, the Audit Ordinance (1956), the Finance (control and management) Act (1958), the Financial Regulations, and the Finance or Treasury Circulars (ICAN, 2009; Bammeké, 2008); the non-compliance with the government accounting policies has been argued to be a reason

for the failure to control fraudulent practices in the public sector, making the accounting system in the public sector porous with the potentials for corrupt and fraudulent practices (Popoola, 2014).

The bane of public sector organization (that is, organizations owned by federal, state or local government that provides goods and services for the citizens) financial mismanagement in Nigeria since the oil boom years has created a variety of loopholes and a near total absence of skills, ethics and accountability in the conduct of public affairs which tend to facilitate and sustain corrupt practices in the country (Bello, 2013). This may have dictated the compelling desires to study the capability requirement (knowledge, skills and mindset) of forensic accountant and auditor on fraud prevention in the Nigerian public sector. In order to prevent fraud, controls are needed to be put in place as mentioned by Committee of Sponsoring Organization (COSO, 2011) such controls include; control activities, control environment, information and communication; risk assessment and monitoring.

The role of the forensic accountant is to investigate the fraudulent practices, prevention and detection of fraud, providing legal evidence in the case of any legal action involves government; advising the government on economic and financial legal matters and preservations of the complex financial and business related issues for litigation support (Adams, 2004). Whereas the role of the auditor is to examine the financial statements of an organisation by laws and regulations and to express an opinion as to whether the financial statements of an organisation are free of material misstatements.

The role and function of an auditor are broadly categorised into two; internal auditor and the external auditor. The external auditor is the statutory auditor saddled with the responsibility of expressing an opinion on the true and fair view of the financial statements of an organisation to establish the reliability and credibility of the financial statements. An internal audit involves risk management and control over the effectiveness and the efficiency of operations, the reliability of financial reporting and compliance with the laid down rules and regulations in an organisation.

It is believed that skills, knowledge and professionalism should curb fraud and other irregularities in the Nigeria public sector. However, it has been established by previous studies that forensic accountants and auditors in Nigeria have failed to prevent fraud in the public sector because they lack the required skills and knowledge to function effectively (Imam, Kumshe & Jarere, 2014; Popoola *et al.*, 2013).

For instance, the level of accountability and transparency of public officers in the office of accountant general has been adjudged to be very poor and insufficient of all the good attributes of quality and timely information about government financial activities for the use by citizens to assess the performance of the government (Chi-chi & Ebimobowei, 2012). In fact, fraud has had severe negative consequences on Nigeria, ranging from negative economic impact to negative national image. Thus, this study focuses on the perception of forensic accountants and auditors on their capability requirements in the prevention of fraud in the Nigerian public sector.

Furthermore, low ethics practice is one of the significant issues that are affecting Nigerian public services most especially the public sector accountants who are responsible for the receiving, custody and disbursement of the public fund. This made fraud and other financial crime rampant in the public sector (Omisore & Adeleke, 2015; Inyang & Akaegbu, 2014; Casimir *et al.*, 2014; Eketu & Nwuche, 2014; Osawe, 2014; Adesopo, 2013; Fatile, 2013).

According to Transparency International's (TI) Corrupt Perception Index (CPI) ranking, Nigeria has been among the most corrupt countries. Despite the efforts of the government to get rid of fraudulent practices, the country was ranked 136th out of 176th corrupt nations (Adewusi, 2016). It was also reported that Nigeria was ranked 143th out of 182 nations in the world. The corruption accounts for 20% of the GDP of Nigeria (TI, 2011).

In Nigeria, reported cases of fraud are many which have resulted in the abject poverty of the citizens (Mefor, 2013). For instance, the major source of Nigeria's revenue which is Nigerian National Petroleum Corporation (NNPC) was reported to wrongly over-deduct to the tune of N28.5 billion on subsidy claim on local petroleum consumption (Oboh, 2012). Earlier in 2009, the case of the aviation fraud of N5.6 billion was reported. The incidence of fraud is not limited to federal level alone; states are also affected. An illustration is the case of Bayelsa State on a salary of workers where the sum of N2 billion was not accounted for in 2010 (Oboh, 2016).

Similarly, salary fraud of N1.9 billion fraud was also reported in Kogi State (Osawe, 2014). Also, the capital market (Nigeria Stock Exchange) has not been immune from fraud incident (Ojeme, 2010). According to Onyeje (2016), EFCC report 2015 stated that from 2012-2014, Nigeria had lost \$138 billion to various financial fraud on the NSE. Accordingly, all these tend to reflect the unabated fraud in the Nigerian public sector. Therefore, the preceding justifies the need to examine whether capability requirements such as knowledge requirement (KR), skill requirement (SR) and ethics requirement (ER) are related to Fraud prevention or not.

As stated by Popoola (2014, p.304) understanding the competency requirement of forensic accountants and auditors could be a valuable research field to venture into in the future. As government activities grow in size and complexity, new and complicated legislation, acquisition and deployment of information technology, globalization of trade and management override of the internal controls; there would be no end to fraud challenges and demand for forensic accountants most especially, as a result of auditors' inability in the public sector environment.

Furthermore, previous studies such as Imam et al. (2014) attempted to address fraud detection were made by scholars, but the emphasis was not on aspects such as fraud prevention and fraud response critically. Accordingly, this study aims to look into the capability requirements of forensic accountant and auditor on fraud prevention in the Nigerian public sector to add to the scanty literature on fraud prevention and enable the

country to embrace the best global practices in the fighting fraud in the Nigerian public sector.

The failure of public sector accountants and auditors in Nigeria to assess fraud and financial crimes portend a grave danger. As a result of insufficient skills, knowledge and ethics of forensic accountant and auditor in the Nigeria public sector environment; leading to loss of billions of dollars to fraud (Adewusi, 2016; Okkechea, 2013). Wuerges (2011) stated that any failure to address the issues of fraud and fraud-related crimes may be costly to the general public and damaging to the accounting/auditing profession.

Popoola (2014) revealed that the insufficient of forensic accounting skills, knowledge, and ethics recognised in the public sector accountants and the auditor might likely have contributed to various thrown out cases instituted by law enforcement agencies such as the EFCC, ICPC NAFDAC, NPF and FIRS from courts of law in Nigeria. As a result of the failure in the prosecution of corrupt civil servants due to a shortage of the forensic accountant skills, knowledge, and ethics that crucial to use in carrying out a successful fraud examination, financial forensics and courtroom testimony.

Previous studies such as Popoola (2014) recommended for further research on the effect of skills (SR), knowledge (KR) and ethics (ER) requirements of forensic accountants and auditors on fraud prevention and given the rise in fraud incidents keep re-occurring at an alarming rate. This dictates the compelling desire to study the relationship between

capability requirements (knowledge, skills and ethics) of forensic accountant and auditor on fraud prevention in the Nigerian public sector.

1.3 Research Questions

Based on the discussions in the preceding section, the following research questions are formulated:

1. Does skills requirement of forensic accountants and auditors relate to fraud prevention in the Nigerian public sector?
2. Does knowledge requirement of forensic accountants and auditors relate to fraud prevention in the Nigerian public sector?
3. Does ethics requirement of forensic accountants and auditors relate to fraud prevention in the Nigerian public sector?
4. Do forensic accountants have higher levels of skills requirements on fraud prevention than auditors in the Nigerian public sector?
5. Do forensic accountants have higher levels of knowledge requirements on fraud prevention than auditors in the Nigerian public sector?
6. Do forensic accountants have higher levels of ethics requirements on fraud prevention than auditors in the Nigerian public sector?

1.4 Research Objectives

The primary purpose of the study is to examine forensic accounting and auditing capability requirements on fraud prevention in Nigeria and adopt the offices of the Accountant General of the Federation and Auditor General for the Federation in the

Nigeria public sector as the population of study. To answer the research questions, six specific objectives are proposed:

1. To examine the relationship between skills requirements and fraud prevention of forensic accountants and auditors in the Nigerian public sector.
2. To explore the relationship between knowledge requirements and fraud prevention of forensic accountants and auditors in the Nigerian public sector.
3. To investigate the relationship between ethics requirements and fraud prevention of forensic accountants and auditors in the Nigerian public sector.
4. To examine whether forensic accountants have higher levels of skills requirements on fraud prevention than auditors in the Nigerian public sector.
5. To explore whether forensic accountants have higher levels of knowledge requirements on fraud prevention than auditors in the Nigerian public sector.
6. To investigate whether forensic accountants have higher levels of ethics requirements on fraud prevention than auditors in the Nigerian public sector.

1.5 Significance of the Study

This study adds the ethics requirement as a contribution to the body of knowledge as the remaining independent variables were adapted from Popoola (2014) knowledge requirement and DiGabriele (2009) skills requirement in relation to the fraud prevention.

This study also contributes to the literature of forensic accounting as it makes a distinction between forensic accounting knowledge, skills, and ethics; and auditing knowledge, skills, and ethics with emphasis on Fraud prevention.

It also mentions that professional accountants seek professional training in public sector accounting and auditing systems. It also explains the value of training (on-the-job training), team-building and mentoring to develop communications and sharing of essential information. That is the reasons the forensic accountants required to focus on their team-building skills. The team-building training programs can build rapport and trust and improve the understanding of weakness and strengths of accountants and how people communicate.

Also, this study is significant on the adoption of quantitative research based on a cross-sectional design which has the unique characteristic of no time length, reliance on existing differences instead of change following intervention and group based on existing differences instead of random allocation (Popoola, 2014; De Vaus, 2011). Finally, it is capable of assisting litigators, investigators and regulators regarding understanding the mechanisms of fraud and the assessment and prevention.

1.6 Scope of the Study

This research study intends to cover the auditors and professional accountants of the public sector working in the office of the Accountant General of the Federation and the Auditor General for the Federation of Nigeria. It is from the pool of accountants and auditors in these two offices that those government ministries, departments, and agencies engage in enforcement, regulation and investigation rely on for professional assistance in the areas from which financial statements are prepared.

1.7 Organization of the Study

This research study is classified into six significant chapters. Each chapter covers topic associated with the study. The introduction of the study was discussed in the first chapter. It comprises background of the study, the motivation of the study, statement of the problem, research questions, the research objectives, the significance of the study, the scope of the study and finally the organisation of the study.

Chapter two covers the relevant literature on the topic (capability requirement of a forensic accountant and auditor on fraud prevention. It commences with the conceptualising of fraud, forensic accounting skills, knowledge and ethics as well as auditors skills, knowledge and ethics and the quality of forensic accountant on fraud prevention. The next is the relevant theories to the study which comprises of the Competency theory (CT) and the Theory of Planned Behavior (TPB).

Chapter three discusses the development of research framework and hypotheses of the study. Chapter four describes the research methods involved in this study. These include research design, population and study sampling, data collection procedures, research instrument, measurement, and scales are discussed in this chapter. Furthermore, the statistical techniques to test the hypotheses were also presented in this chapter. Chapter five covers the analysis of the data collected for the study. It discusses the preliminary data analysis, measurement and structural model evaluation, and test of differences. Finally and the last, Chapter six discussed the findings, recommendations, contributions, limitations and suggestions for future research as well as conclusions drawn from the study.

1.8 Chapter Summary

This study describes the effect of the capability requirement (Knowledge, Skills, and Ethics) of forensic accountants and auditors in the public sector, having explained the background and motivation of the study, the problem statement, the research questions, the research objectives, the significance of the study, the scope of the study, organization of the study. The researcher believes that the survey would help in understanding the mechanisms of fraud not only to the Nigerian public sector environment but accounting profession as a whole.



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Universiti Utara Malaysia

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

From the problem statement and the objectives of the study discussed in chapter one, this chapter reviews the previous literature to highlighting previous research efforts in the area of the study. The chapter is broadly divided into two parts the conceptual issues and the theoretical issues. It is further sub-divided into seven sections, Sections 2.1 and 2.2 discuss the introduction and overview of the Nigerian environment in respect of fraud prevention. Section 2.3 and section 2.4 discuss the meaning of fraud and fraud prevention. The last three sections, 2.5; 2.6 and 2.7 discussed the concept of the capability of a forensic accountant and the auditor; theoretical assumptions and the summary of the chapter respectively.

2.2 Overview of Nigeria

Nigeria is the most populous nation in Africa. It is located in the West African region. The country has a population of about 178.52million people and a total landmass of about 357,000sq miles (World Bank, 2014). The public sector according to Nigerian context is split into three tiers of government which comprises of federal, state and local government.

The federal government is also known as a central government which controls the affairs of the whole country, and it is headed by the president. While the state government is the government in the middle that headed by the Governors. Nigeria has 36 states throughout

the federation including Federal Capital Territory. The last tier of government is a local government which is also known as grassroots government. Nigeria has 779 local governments throughout of the federation. Each tiers government has the autonomy to control their territory with little or no supervision from the central government. The three tiers of government mentioned above generate their revenue mostly through taxes and subvention/grants.

Using the cash basis method in the public sector does not allow the proper maintenance and control of the asset of the government as compared to profit-making organisations. This makes a public sectors financial report to be biased because cash basis only records for the year when the asset was purchased. The measurement of the utilisation of performance of the public sector is rough due to the objectives which are linked to the non-profit making nature and the existence of the intangible services that the benefits are not quantified (ICAN, 2009; Hassan, 2001).

Fraud has always been perpetrated in the public sector due to the non-effective and inefficient internal controls (Buang, 2011). The public sectors are the most vulnerable to fraud when they have substantial demand-driven commitments, spending and policies that do not allocate enough time and resources to assess risk and implement controls to prevent fraud (PWC, 2011).

From the history, a bane of the existence of Nigeria since the oil boom of the 1970s has been the reputation for fraud, mostly justified, but also partly the result of perception.

Fraud, corruption and poor governance affected growth and public service delivery in Nigeria in various ways. Fraud distorts the climate for doing business and serves as a tax on private investments.

The resources for human capital and other needed investments, (such as in infrastructure, health and education) are often diverted in a corrupt environment. There are various ways in which this may occur, including procurement fraud, patronage for access to services, absenteeism and misuse of facilities. In particular, poor households are disproportionately hurt in communities where fraud is most prevalent (Okonjo-Iweala & Osafo-Kwaako, 2007).

The federal government is making efforts in correcting the lapses by strengthening of the existing statutory and regulatory structure, such as Constitution of Federal Republic of Nigeria (CFRN) in 1999; Financial Regulation, 2009; FRA as well as PPA in 2007. The federal government also sets up anti-fraud agency such as Independent Corrupt Practices and Related Offences Commission (ICPC); Economic and Financial Crimes Commission (EFCC); Code of Conduct Bureau (CCB); and Code of Conduct Tribunal (CCT) to serve as a watchdog to the public office holders.

However, despite all the above effort, the rate of fraudulent practices in public organisations is still increasing at an alarming rate (Popoola, 2014). Hence, this study seeks to look into the capabilities and competence of the two offices (that is the office of AGF and Aud.GF that is responsible for the accounting and auditing practices at the

federal level in Nigeria. The researcher looks into the two groups of forensic accounting and auditing due to the recommendation of the Public Company Accounting Oversight Board (PCAOB, 2004) which require attention from accounting researchers.

Many scholars on the auditing and investigation have, however, lamented of the auditors' shortcomings to detect and prevent financial statement fraud. Many scholars concern is that those failures may backfire, leading to the replacement of auditors with forensic accountants to audit organisations financial statements as an assurance to the stakeholders of their being protected from fraud (Chui, 2010; Popoola, 2014). PCAOB (2004) recommends for the future research in the area of fraud prevention concerning whether forensic accountants are capable than auditors in preventing fraud and other irregularities.

Most especially, PCAOB is interested in the influence of the forensic accountants' specialised skills and enhanced knowledge and ethics in fraud prevention to improving accountability and transparency in the Nigerian public sectors. The study makes distinction between forensic accounting skills, knowledge and ethics and auditing skills, knowledge and ethics with emphasis on fraud prevention in the Nigerian public sector to show a clear contribution to the institutional, regulatory and legal framework in the public sector accounting most especially in the area of operating, reporting and compliance objective to enhance accountability and transparency in the Nigerian public sector.

2.2.1 Overview of the Public sector

Okoduwa (2007) defines public sector as the part of the economy that is owned and controlled by the government, provides basic services to the citizen and regulating and deregulating the economy. The public sector is a government-owned (i.e., non-profit making) organisation that provides goods and services such as the security, social justice, education, construction of roads, schools, health facilities, electricity and water to the citizens (Hassan, 2001).

Public sector which is established through government policies includes organisations that are accountable and report directly to the government, including all government agencies and ministries. It is an organisation created, managed and funded through taxpayers' money by the government agent to the public. The purpose of public sector organisation is to get good leadership and expertise to the public to enhance the integrity, effectiveness and efficiency. Public sectors are the most vulnerable to fraud when they have large demand-driven commitments, spending and policies that do not allocate enough time and resources to assess risk and implement controls to prevent fraud (PWC, 2011).

On the other hand, the public sector accounting is the process of recording, summarising, analysing, interpreting and communicating the financial statement of the government in detail and aggregate. It has to do with receipt, custody, disbursement and rendering of stewardship of the public fund entrusted (Adams, 2004).

The main purpose of public sector accounting is the recognition of the sources of revenue and expenditures to be generated and incurred, identification of the sources of funding capital and recurrent projects, observation of effective and efficient planning, controlling and reporting (ICAN, 2009). The public sector in Nigeria is administered by the legal, constitutional and institutional framework which includes: Nigeria Constitution of 1999 as amended; audit ordinance of 1956; financial control and management act of 1958; financial regulation for MDA; and financial or treasury circulars (Bammeke, 2008).

2.2.2 Pathway to become a Qualified Forensic Accountant and Auditor in Nigeria

The Institute of Chartered Accountants of Nigeria (ICAN) is the first recognised accounting body established by an Act of Parliament No. 15 of 1965 to regulate accountancy profession in Nigeria and to issue a license to those interested in practising accounting or audit. To become a member of ICAN a person must have passed the professional examinations set by ICAN. The person is then registered as a member during induction. To specialise as a forensic accountant, a chartered accountant first becomes a member of the faculty for Forensic Accounting and Auditing and is expected to write and pass another examination to be a Certified Forensic Accountant (CFA). On its successful completion, the person becomes a CFA and automatically is licensed to practice forensic accounting and auditing in Nigeria.

Therefore, in Nigeria, the only Forensic certification available is the CFA (Certified Forensic Accountant) of the Institute of Chartered Accountants of Nigeria. The audit, investigations and forensic accounting faculty of ICAN is the Institute's platform for

training and certifying professional accountants in Forensic Accounting, Corporate Investigations and Anti-Money Laundering. The program develops the skill sets which combine accounting, auditing and investigative knowledge to analyse and interpret business and financial evidence needed to support and prove cases of economic crimes.

The Institute of Chartered Accountants of Nigeria (ICAN) offers a certification programme in forensic accounting which commenced in 2009. The ICAN Forensic Certification programme is open to Chartered Accountants who are either Associate Member or Fellow Member (i.e. ACA or FCA). At the completion of the programme and having met the requisite practical training in forensic, successful candidates are issued Certified Forensic Accountant (CFA) certificates.

2.2.3 Role of the Forensic Accountant and Auditor in the Public Sector

The dominant role of the forensic accountant in the Nigerian public sector is the prevention and detection of fraud, investigating financial irregularities, providing legal evidence in the case of any legal action that involves government and advising the government on economic and financial legal matters (Adams, 2004).

In the discharge of their duties, they are to act in the public interest and comply with the ethical requirement of the code and observe high standards of professional practices and conduct. Moreover, they are required to comply with basic ethics which describes the fundamental principles that constitute professional behaviour (Hassan 2001). It is expected that forensic accountant needs to qualify in the area of data examination,

investigative analysis, observation, interview, electronic evidence review and preservations of the complex financial and business related issues for litigation support.

On the other hand, an auditor is an independent person, engaged in public practices that lead to the expression of a professional view and opinion to establish the reliability and credibility of the financial statements under consideration (Zysman, 2008). The role and function of an auditor are broadly categorised into two; the internal and external auditor.

The main objective of the external auditor is to examine the financial statement of an organisation in accordance with respective laws and regulations to express an opinion as to whether the financial statements of an organisation are free of material misstatements. The external auditor is independent of the entity being audited and reports directly to the shareholder(s) of the organisation (Gramling et al., 2013).

In Nigeria, external auditors must be members of one of the recognised professional accountancy bodies specifically, ICAN or ANAN (Bakre, 2007). Accordingly, government agencies, investors, and general public heavily rely on the external auditor to present an independent and unbiased audit report. The independence of external auditors is crucial to a correct and thorough appraisal of an entity's financial controls and statements (Nmechielle & Nwauche, 2004).

The internal auditor is an employee of the organisation, primarily engaged to perform the internal audit duties and activities. The internal auditor is saddled with the responsibility

of assisting an organisation in accomplishing its aims and objectives by bringing a disciplined and systematic approach to improve the effectiveness, control and governance processes (Wood & David, 2013).

Similarly, internal audit involves conducting the proactive fraud audits to identify potentiality fraudulent acts, participation in the investigations under the direction of fraud investigators; and conduct post investigation fraud audits to identify control breakdowns and establish financial loss (Institute of Internal Audit, 2013). The scope of internal audit also comprises of risk management and control over effectiveness and efficiency of operations, the reliability of financial reporting and compliance with the laydown rule and regulations in an organisation. The internal auditor ideally possesses the quality of objectivity, clarity, accuracy, brevity and timeliness (PWC, 2012).

The external auditor to some extent rely on the internal audit work in terms of the nature and the extent of audit work, internal audit quality and characteristic on the internal control compliance knowledge, risk management, ethics, control self-assessment techniques and expertise in the area of accounting analysis, inventory observation, clerical work, test of internal accounting control, inventory pricing, cash counting, audit of cost accumulation of internal assets, among others (Gramling et al., 2013).

2.2.4 Differences between Forensic Accountants and Auditors

The study looks at the relationship and differences between the capability of the forensic accountant and auditor towards the fraud prevention to determine who has a higher level

of capability to prevent the fraud and other irregularities. As noted by Popoola (2014), forensic accounting and auditing can be compared in eight areas as adapted from the ICAN Audit, Investigations and Forensic Accounting Faculty (2011). They are in term of purposes; scope of their profession; the required skills; techniques for obtaining evidence; the user of the report; limitation to the report and staffs required to perform investigation

The purpose of the forensic accountant work is to analyse and present complex financial issues and other business-related issues for litigation support. The forensic accountant use procedures and standards, techniques in investigation and gathering of evidence and litigation processes and procedures to perform their work (Crumbly & Smith, 2009). However, the auditor's work is statutorily required by law. As it was established, the auditor is classified into internal and external. The internal auditor employed as a staff in an organisation with the purpose of putting control measure in place and the external auditor is purposely hired to examine the true and fair few of the financial statement of an organisation whether the private or public organisation (Choo, 2007).

Moreover, the scope of a forensic accountant is comprehensive of why an occurrence with necessary evidence whereas the scope of the auditor is mainly to express the opinion on the true and fair view of financial statements and also adding the credibility to the financial statement. Another point is that the skills required by the forensic accountant are analytical proficiency, investigative skills, unstructured problem solving, composure, critical thinking, oral and written communication and court preceding knowledge whereas the skills require by the auditors are accounting, auditing and legal.

Furthermore, the techniques for obtaining evidence is through the use of data examination, observation, electronic evidence review, interview and so on whereas the techniques for obtaining evidence can be done by the external and internal audit staff. Additionally, the staff required to perform investigation exercise are expert only whereas the staffs required doing the audit exercise may be external or internal auditors.

The Time of hiring is another aspect of differences since the forensic accountant is hired when there is a dispute that may lead to a proper investigation and litigation support whereas the auditor is hired at least once in a year for every company most especially the public liability company.

Other differences include, the users of the forensic accountant report are lawyers, courts, government regulatory bodies, and police officer, banks and business enterprises whereas the users of the auditor's reports are management, employees, government, investors, creditors, and regulatory authority. Lastly, the limitation to the forensic accountant report is usually for litigation support for the hirer whereas the report of the auditor must be made known to the member of the company.

2.3 Fraud Concept

Fraud is an intentional deception, misrepresentation of material fact, lying, pretence, cunning, willing, and trickery intended to gain an advantage (Akers & Bellovary, 2006; Singleton *et al.*, 2006; Hanlin, 2004; Bologna & Lindquist, 1987). Similarly, it is an

intentional perversion of truth to induce another in reliance upon it to part with some valuable thing or to surrender a legal right, a false representation of a fact (Nolan *et al.*, 1990). Fraud also occurs when a victim incurs damages by relying on the false representation supplied by the fraud perpetrator who possesses the intention to deceive the victim. For an action to constitute fraud, the following four general elements must exist. These are a false representation of fact, intention to commit fraud, reliance, and damages (Popoola, 2014; Skalak *et al.*, 2006; Wells, 2004). The World Bank defines fraud as:

Public office is abused for private gain when an official accepts, solicits, or extorts a bribe. It is also abused when private agents actively offer bribes to circumvent public policies and processes for competitive advantage and profit. Public office can also be abused for personal benefit even if no bribery occurs, through patronage and nepotism, the theft of state assets or the diversion of state resources (World Bank, 2014).

However, fraud is a global phenomenon that exists in varying degrees in different countries. Whereas it may be endemic in some countries like Nigeria, it could also be minimal or moderate in other countries.

The Transparency International (TI) ranked Nigeria 136th most corrupt nation out of 176 in its 2016 report (TI, 2016). The report indicates that Nigeria was the most corrupt of ten African countries compared to others (Ghana, Egypt, Senegal, Namibia, Niger, Tunisia, Malawi, Botswana and Zambia) covered by the report in 2000 to 2016 (See Table 2.1: Corruption Perception Index CPI). Specifically, cases of public sectors fraud impeding effective implementation of government policies in Nigeria have been severally documented (Ejumudo, 2013). Recently, many MDAs are facing standing trials in court

for alleged fraud of public funds. The over deducted funds in subsidy claim to the sum of N28.5billion (Oboh, 2012). Earlier there was the case of the aviation fraud of N5.6 billion in 2009. According to (Onyeje, 2014; EFCC media report, 2015 adopted from Oboh, 2016) just from 2012-2014, Nigeria has lost \$138 billion to various financial fraud. Accordingly, all these tend to reflect the unabated fraud in the Nigerian public sector.

Meanwhile, there could be different types of corruption ranging from petty corruption to political corruption. Among the fraud perpetrated around the world is management fraud. Management fraud has become the source of major losses for many public sectors (Bierstaker, Brody & Pacini, 2006). It happens in all types of organisations and causes expensive for the organisation (Zahra, Korri & Yu, 2005). The estimated aggregate loss per organisation from management fraud intentionally is \$2,199,930 over the two years period (PWC, 2007). Based on the survey carried out by (ACFE) in 2008 and 2009, the organisations around the world lose 5% of annual revenues to fraud. Applied to the estimated 2009 Gross World Product, this figure interprets to a total fraud loss of more than \$2.9 trillion (ACFE, 2010).

Also, it was revealed that between 2002 and 2010, losses regarding the U.S GDP have increased from \$600billion to \$994billion and the percentage of annual revenue lost to management fraud has risen from 5% to 7% (ACFE, 2009). Hence, there has been alertness among the public of the possible adverse effects of management fraud on economic situations and its delaying effect on public development.

Table 2.1*Corruption Perception Index (CPI) of selected African Countries from 2000 to 2016*

Country Year	Tunisia	Malawi	Egypt	Nigeria	Namibia	Zambia	South Africa	Botswana	Ghana	Senegal
2000	5.2	4.1	3.1	1.2	5.4	3.4	5.0	6.0	3.5	3.5
Rank (th)	33/90	46/90	64/90	90/90	31/90	58/90	34/90	26/90	54/90	54/90
2001	5.3	3.2	3.6	1.0	5.4	2.6	4.8	6.0	3.4	2.9
Rank (th)	33/91	61/91	54/91	90/91	30/91	76/91	39/91	26/91	59/91	67/91
2002	4.8	2.9	3.4	1.6	5.7	2.6	4.8	3.9	5.7	3.1
Rank (th)	38/102	68/102	62/102	101/102	28/102	80/102	38/102	30/102	50/102	66/102
2003	4.9	2.8	3.3	1.4	4.7	2.5	4.4	6.0	3.3	3.2
Rank (th)	39/133	84/133	72/133	132/133	42/133	99/133	49/133	31/133	72/133	76/133
2004	5.0	2.8	3.2	1.6	4.1	2.6	4.6	6.0	3.6	3.0
Rank (th)	40/146	92/146	78/146	144/146	56/146	107/146	47/146	31/146	64/146	86/146
2005	4.9	2.8	3.4	1.9	4.3	2.6	4.5	5.9	3.5	3.2
Rank (th)	43/158	100/158	73/158	154/158	49/158	115/158	46/158	32/158	65/158	81/158
2006	4.6	2.7	3.3	2.2	4.1	2.6	4.6	5.6	3.3	3.3
Rank (th)	51/163	105/163	70/163	142/163	55/163	111/163	51/163	37/163	70/163	70/163
2007	4.2	2.7	2.9	2.2	4.5	2.6	5.1	5.4	3.7	3.6
Rank (th)	61/179	118/179	105	147/179	57/179	123/179	43/179	38/179	69/179	71/179
2008	4.4	3.3	2.2	2.5	3.0	4.7	5.6	3.9	3.7	3.0
Rank (th)	65/180	89/180	111/180	130/180	56/180	99/180	55/180	37/180	69/180	99/180
2009	4.2	3.3	2.8	2.5	4.5	3.0	4.7	5.6	3.9	3.0
Rank (th)	65/180	89/180	111/180	130/180	56/180	99/180	55/180	37/180	69/180	99/180
2010	4.3	3.4	3.1	2.4	4.4	3.0	4.5	5.8	4.1	2.9
Rank (th)	59/178	85/178	98/178	134/178	56/178	101/178	54/178	33/178	62/178	105/178
2011	3.8	3.0	2.9	2.4	4.4	3.2	4.1	6.1	3.9	2.9
Rank (th)	73/182	100/182	112/182	143/182	59/182	91/182	64/182	32/182	69/182	112/182
2012	4.4	3.7	3.2	2.7	4.8	3.7	4.3	6.5	4.5	3.6
Rank (th)	75/174	88/174	118/174	139/174	58/174	88/174	69/174	30/174	64/174	94/174
2013	4.1	3.7	3.2	2.5	4.8	3.8	4.2	6.4	4.6	4.1
Rank (th)	77/175	91/175	114/174	144/175	57/175	83/175	72/175	30/175	63/175	77/175
2014	4.0	3.3	3.7	2.7	4.9	3.8	4.4	6.3	4.8	4.3
Rank (th)	79/174	110/175	94/174	136/174	55/174	85/174	67/174	31/174	61/174	69/174
2015										
Rank (th)	76/167	112/167	106/167	136/167	45/167	76/167	61/167	28/167	56/167	61/167
2016										
Rank (th)	75/176	120/176	108/176	136/176	53/176	87/176	64/176	35/176	70/176	64/176

Source: <http://www.transparency.org/research/cpi> Retrieved 23/09/2015

This creates the relevant to tackle and minimise fraud occurrence, as the management fraud has turned out to be a worldwide problem (OECD, 2004). The above analysis shows that every country in the world experiences the issue of fraud. Not only developing countries but also affecting developed countries regardless of the size, culture, location, industries, and fraud affect many organisations (ACFE, 2004). The reports from ACFE

also find out that US companies lost \$660billion as a result of occupational fraud and abuse and it is nearly one in six cases of fraud cost the organisation greater than \$1million (ACFE, 2004).

Empirical evidence is not consistent regarding the causes of fraud in the public sector while some researchers attribute the causes of fraud to poor internal control, other studies claimed otherwise. Mackevicius (2013) stated that fraud is a life-threatening to the financial system of the world due to the numerous factors that determine the occurrence of fraud, which is regularly growing competition, globalization of financial flows and markets, internet usage, bankruptcies of the companies, division of companies and merging, economic and political factors in other countries. In that regards, fraud has become perpetual issues that got the attention of both internal and external auditors as well as the scientific environment.

Also, Singleton (2003) categorised fraud into four types namely, fraudulent statement fraud, asset misappropriation fraud, corruption and other criminals acts and each category is common with a particular set of the fraudster. To better understanding fraud, the study investigated fraud from numerous perspectives that are whether a fraudster or fraud perpetrator is external or internal to the organisation and whether they are management or non-management. The fraud perpetrated by insiders is increasingly common. Fraud perpetrator categorised with the nature of the fraud committed that is the executive management is set by people responsible for financial fraud. Employees commit asset

misappropriation fraud while the external fraudster commits other types of fraud such as credit card fraud, although external fraud always committed by the former employees.

Watoseninyi (1995) conducted research on the type and amount of fraud occurring in the public sector, and the result shows that the most occurring types of fraud are a misappropriation of assets, false invoice, false representation, and theft. The result from the study found that such fraud happened in the public sector as a result of the negligence of duty, poor system management; bad attitudes; economic burden; weakened societal values; no punishment attached to the offence; and insufficient training for an officer in charge of prevention of fraud. The most reported red flags are a lack of internal control; inventory losses; no response to audit reports; not rely on external and internal audit reports; no care for employee comments; and deficit budget.

Moreover, the result from a study conducted by Khanna and Arora (2009) in India showed that lacks training, low-level compliance, overburdened of staff, competition are the major causes of bank frauds. The researchers suggested that the banks should consider the developing of bank frauds very serious and ensure that there is no weakness in the internal control system because a strong system of internal control and good employment practices prevent frauds and reduce losses. The awareness level of bank employees regarding bank frauds was not very satisfactory, and the majority does not dispose of favourable attitude towards Central Bank procedures as they find it difficult to follow the required procedures, due to pressure and workload of competition. Adequate

training of staffs responsible for Fraud prevention and also affect the level of compliance of employees and enhances employee's attitude towards the actions.

Similarly, Wilson (2004) investigated the survey of risk managers on employee dishonesty and crime as major issues that have raised the crime rates since organisational dishonesty produced mayhem in the US. Capital markets and presumed to be increasing annually. It was recommended that both management and audit committee should receive training on Fraud prevention to improve the productivity of the organisation. The researcher also realised that there is a weakness in the review of the internal controls which might be due to inadequate staffing or fraud expertise. Organizations should also lay more emphasis on the issue of internal control and the review of the control system to prevent exposure to crime.

As part of the anti-fraud strategy for responding to the fraud risk for the Forensic Accountant and Auditor, the effective and efficient anti-fraud strategy has four key components; the four main components are mention below in figure 2.1 as adopted from CIMA (2008).

Forensic accountant and auditor always need to understand the systems and procedures of an organisation. The forensic accountant is developed with experience and ability to act and think logically during the discharge of duties. An organisation's fraud strategy could:

- (a) Set out big goals and objective (e.g. zero tolerance) and regarding deterring, investigate fraud cases and following sanctions.

- (b) Establish the financial investment in work to prevent fraud about the well-known risks.
- (c) Make the necessary authority and support to the officer/employee in charge of countering fraud.
- (d) Maintain that the employee working to prevent fraud have the adequate training and qualification.

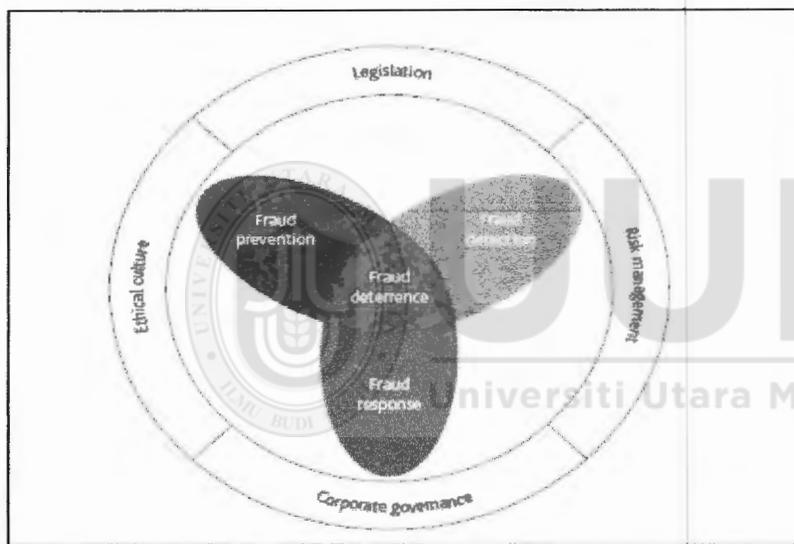


Figure 2.1

Components and framework of an anti-fraud strategy

Adapted: Fraud Risk Management: A guide to good practice (CIMA, 2008, p. 25)

2.4 Fraud Prevention

Fraud prevention involves identifying and reducing actual fraud. Fraud prevention encompasses policies, procedures, training and communication (Brooks *et al.*, 2006). No system is completely fraud-proof because many fraudsters can by-pass the control systems put in place to stop fraud. However, prevention is always preferable to detection. It means early prevention of fraud is better than fraud detection (Nazri *et al.*, 2013). If the

effective controls are in place and well-known to the potential fraudsters, it will serve as a strong deterrent to those who might be tempted to commit fraud. Moreover, also fear of getting caught is always a significant deterrent. Therefore, the internal control is an on-going procedure designed to identify the significant risks to appraise the nature and extent of those risk and to secure them effectively.

Prior literature tends to concentrate on the relevance of an auditor and forensic accountant to fraud in both public and private sector while some researcher presents findings of scholars on the causes of fraud in both public and private sectors. To a great extent, the researcher considered the profession of forensic accounting as a cornerstone for the prevention of fraud in the public sectors.

Immam, Kumshe and Jajere (2015) examine the application of the forensic accounting for financial Fraud prevention in the Nigeria public sectors. 441 questionnaires were collected from the Accountants and Auditors (ICPC, EFCC, ICAN, ANAN), the Nigeria Police and the Nigerian Bar Association. The descriptive statistics and Chi-square were used for the analysis. The findings of the researcher accepted that the forensic accountant could be used to prevent and detect the fraudulent financial practice in the Nigerian public sectors. The researchers also recommended that the forensic accountant can be statutory in Nigerian public sector to help in preventing and detecting the fraud. They also made mention that the code of ethics does not exist in the public sector environment and there is a need to adopt the forensic accounting service in the Nigerian public sector.

Furthermore, Njanike *et al.* (2009) conduct the research on the level at which the forensic accountant fulfil the mandate of preventing and detecting in Zimbabwe and also investigated issues that hindered forensic accounting to make progress in their operation in developing countries. The interviews were conducted as well as 30 questionnaires were distributed to the auditor and forensic accountant in Zimbabwe. The findings stated that forensic accounting department suffers from multiple challenges such as lack of the technical know-how, materials resources, inferences from management and unclear recognition profession. As a result of findings, the study did not link to the expectation gap especially in the public sector which is the main of the study.

Kasum (2007) examines the relevance of the forensic accounting to prevent financial crime in both private and public sectors of the third world economy with particular reference to Nigeria. The result of this study finds out that investigative and forensic accountant has a major role to play generally but more importantly in the public sector as fraudulent practice is an alarming rate in the public sector.

However, Nazri *et al.* (2013) examine the Fraud prevention mechanisms in the Malaysia government agencies. A total 480 questionnaires were distributed to the auditors, accountant and forensic accountant in the public sectors. The results of the survey revealed that increasing in fraud awareness activities; training in the code of ethics, privacy principle, code of conduct and for employee responsible for control activities, are the effective mechanism for Fraud prevention.

Okunbor and Obaretin (2010) investigate the effectiveness of the application of the forensic accounting services by the corporate organisation in Nigeria for deterring and preventing fraudulent financial practices. The interviews were conducted for 10 companies under Nigeria stock exchange (NSE), and questionnaires were administered as well. The simple regression analyses were used for data analysis.

The result of the study finds out that the applications of the forensic accounting services by the corporate organisation in Nigeria are not effective in preventing and deterring fraudulent activities. The researchers recommended that company should formulate the personnel recruitment policies that will attract high pay as an antidote for fraud and management should also adopt the sound accounting practice and principle. Finally, it was suggested that anti-fraud agency should be repositioned by the government for better performances.

Zamzami, Nusa and Timur (2016) researched the effectiveness of the Fraud prevention and detection method at Universities in Indonesia. The study selected randomly from the Internal Auditors of Indonesian Universities as respondents. The study revealed that the most effective prevention procedures are internal control review and improvement; ethics of professional officers; operational audit and cash reviews. The study suggested the use of forensic accountant, financial ratio, virus protection, filtering software and firewall as the Fraud prevention mechanism.

Other researchers in this field of forensic accounting are Rayaan, Che-Ahmad and Popoola, (2016); Cobbs (2012), Karakashian (2011) in New Jersey, PWC's Global Economic Crime Survey June 2011, Michie (2011) in Australia, the study of Koh *et al.* (2009) on forensic accounting in Malaysian public sector and KPMG (2012) "Is fraud in Africa on the decrease?"

Other scholars who made an extensive investigation on Fraud prevention from Nigeria are Mainoma and Adegbola (2009), Owojori and Asaolu (2009), Chi-Chi and Ebimobowei (2011), Adegbite and Fakile, (2012). As it was discussed by previous researchers, fraud needs effective and efficient control to minimise the fraudulent practice in the public sector. CIMA (2008) discusses the fundamental elements of Fraud prevention as (a) the development of the strong ethical culture, (b) sound internal control structures and (c) the capability of a forensic accountant and auditor.

2.4.1 Fraud Prevention Measures

Studies by Sengur (2012) and Ata et al. (2009) examine the study on auditors' perception of fraud prevention measures from Turkey. The study categorised the fraud prevention measures into three categories in compliance with SAS 99: creating a culture of honesty and high ethics; evaluating anti-fraud processes and controls and developing an appropriate oversight process. The result of the study revealed that there are differences regarding auditors' fraudulent financial statement, corruption and misappropriation of assets of the following prevention mechanism: effective audit committee, external auditor

and corporate code of conduct. Subsections 2.4.1.1 – 2.4.1.3 discuss the fraud prevention measure model as highlighted by Sengur (2012).

2.4.1.1 Creating a Culture of Honesty and High Ethics

This dimension of fraud prevention measures comprises (a) Setting the tone at the top; (b) Establishment of corporate code of conduct; (c) Taking consistency actions in response to an alleged fraud; (d) Fraud training for management and employees; (e) Conducting background investigations on individuals being considered for employment; and (f) Creating a positive workplace environment (Albrecht et al., 2009; Coenen, 2008; Biegelman, 2006).

2.4.1.2 Evaluating Antifraud Processes and Controls

The assessment of antifraud processes and controls measures comprises (a) Identifying and measuring fraud risks; (b) Implementing and monitoring appropriate preventive and detective internal controls; and (c) Making changes to the entity's activities and processes in order to reduce fraud risk (Albrecht et al., 2009; Biegelman, 2006).

2.4.1.3 Developing an Appropriate Oversight Process

The development of an appropriate oversight process measures consists of (a) Effective audit committee or board of Directors; (b) Management effectiveness in overseeing activities; and (c) Certified fraud examiners in internal audit team or external audit team (SAS 99.86; Messier et al., 2008; Reding et al., 2007; Razaee, 2002).

2.5 The Concept of the Capability Requirements (Skills, Knowledge, and Ethics) of Forensic Accountants and Auditors

Capability comprises skills, traits, attitudes, knowledge, professional ethics and value possessed by individuals who give the chance to perform the professional task. The capability also defined as the professional values, skills, knowledge, attitudes, and ethics required demonstrating know-how (IFAC IES 8, 2006). It also encompasses professional values, ethics and attitudes, behavioural skills, content knowledge, technical skills, functional skills, and intellectual knowledge and abilities (Popoola, 2014; IFAC-IES8, 2006).

The International Education Standards (IES) No: 8, Competence requirements for audit professionals, further explain capability to mean the individual's attribute that enables professional to perform the task competently in their workplace. Several other literature (Chui, 2010; DiGabriele, 2008) defined capability as fundamental values and skills, competencies, capacities, abilities, attitudes, key skills, core skills, individual attributes, general qualities and distinguishing characteristics.

This study asserts the importance of capability regarding knowledge and skills held by individuals as well as the attitude of individuals to improve their competence in the work area also justifies on their relationships and abundant consideration. For the benefits of this study, the researcher will only adopt the skills, knowledge and ethics capability. Hence, possessing sufficient capability will enable the forensic accountant to prevent fraudulent practices in both private and public organisation.

2.5.1 The Skills Requirement of Forensic Accountants and Auditors

Prior literature suggests that enhanced and core skills are required by the forensic accountant and auditor to prevent fraud occurrence in the public sector. Ahadiat (2010) researched the important skills of a forensic accountant in the United States (US). This result indicated that the accounting curricula in the US were revised to consist of instructions aimed at improving the students' knowledge, skills and abilities beyond their technical knowledge. The skills mentioned by the researcher include critical thinking, oral and written communication, presentation skills, team orientation among others.

Also, Ekeigwe (2011) and Davis, Farrell and Ogilby (2010) survey the relevant and core skills. The result shows that analytical skills are the most important skills possess by the forensic accountant. It also includes global civilisation, accounting, criminology, business, courtroom, auditing, technology, behavioural, metal-thinking and psychology skills are fundamental to the usefulness of forensic accountant.

Also, Bhasin (2012) surveys the relevant skill of forensic accountant in Indian which supported the relevant skills of (Davis, Farewell and Ogilby, 2010). Similarly, Murphy (2014) researches the top skills of a forensic accountant. He finds out that the most important and relevant skill of forensic accountant is investigative skill, Agility and adaptability skills and communication skills.

2.5.1.1 Forensic Accountant Skills

International Federation of Accountants Standard (IES) No. 3, Professional Skills describes the professional skills as essential capabilities needed for a professional accountant to showcase his competence. IFAC suggested the required skills as technical skills, intellectual skills, and interpersonal skills (IFAC-IES, 2005). Harris and Brown (2000) state the specialised skills and technical abilities as essential skills that needed by the forensic accountant and also encourage the forensic accountant to familiarise with criminal law, civil law and understand the procedures and techniques of the courtroom. In the opinion of Messmer (2004) the successful forensic accountant must possess analytical and ability skills; written and oral communication skills; creative mindset and business acumen; scepticism on duty; and interview and elicit information from uncooperative people.

Ramaswamy (2005) suggested the in-depth knowledge of financial reports, understanding of the fraud scheme; analyze result critically, understand the system of internal control of the company; ability to assess the risks; knowledge of psychology; communication and interpersonal skills; and courtroom procedures and legal systems are the required skills that must be possessed by the forensic accountant. Grippo and Ibex (2003) state that essential skills of the forensic accountant come from experience in internal controls, management process, accounting, auditing, taxation, business operations, communication and interpersonal relationship. Albrecht *et al.* (2009) identify good listener; empathetic; research to trace fund and identifies asset recovery; analysis of financial data; analytical

data for litigation and preparation of the report of findings as the required skills that must be possessed by the forensic accountant.

Other researchers discuss the relevant and essential skills needed by the accountant are Bolgna and Linqvist (1995); Ahmad (2008); Torpe (2009); and Davies, Farewell, and Ogilby (2010). All of the above researchers supported that forensic accountant needed the professional skills to perform the required task given by the public or private organization.

Finally, DiGabriele (2008) suggests nine (9) essential skills based on the nationwide survey of random sample of the accounting practitioners, forensic accountants, users of the forensic accountant. 1500 respondents were selected from the population. The supported skills were (a) Unstructured problem solving; (b) Critical thinking; (c) Deductive analysis; (d) Oral communication; (e) Analytical proficiency; (f) Investigative flexibility; (g) Legal knowledge; (h) Written communication; and (i) Composure. Therefore, possessing all the above skills will enable the forensic accountant and auditor to have adequate controls over the fraud and serves as a deterrent and prevention in the public sectors environment.

2.5.1.2 Auditor Skills

According to Zysman (2008), an auditor is an independent person, engaged in public practices that lead to the expression of professional view and opinion which lead to reliability and credibility to the financial statement under examination. The key

responsibility of an auditor to the organisation is to examine whether financial statements of an organisation show a true and fair view of the business. Also, auditor's profession requires a combination of skills in the six areas of professional audit. These auditor's skills are intellectual skills; interpersonal and communication skills; organisation and business skills; technical and functional skills; personal skills and management skills (IFAC, 2003). Problem-solving skills are also required by the auditors (Palmer, 2004). The professional skills of auditors bring the meaningful result as far as the guiding principle is being maintained by auditors. That is, the higher the skills of auditors, the higher the effectiveness audit judgments, and the more audit practice efficiency.

The auditor skills are skills that enable auditors to provide a reasonable assurance that the reported financial statements taken as a whole are spelled out reasonably in all material respects and therefore, free of material misstatement in line with the provision of Nigeria Standard on Auditing and International Auditing Standard (Ekeigwe, 2011; Davis, 2000). Auditors require unique skills to verify the evidence placed before him from a different point of view, having recognised different possible interpretation and the consequence of the matter in hand. Hence, the auditor needs to acquire more skills to minimise fraudulent practices in both public and private sectors.

2.5.2 The Knowledge Requirement of Forensic Accountants and Auditors

Durkin and Ueltzen (2009) define the fundamental forensic accounting knowledge as the management practice and professional responsibilities, law court and dispute resolution; preparation and planning; preservation and information gathering; reporting, experts,

testimony, and discovery. It is supported that any accountant wishing to practice forensic accounting must possess a fundamental knowledge of the law, information technology, accounting, investigative, and communication - both oral and written communication (Davis *et al.*, 2010).

Previous literature investigates the specific knowledge required by the forensic accountant and auditors during the discharge of their duty. Harris and Brown (2000) research the specific knowledge, special ability and specific skills required by the forensic accountant and auditors. The researchers came out with the result that forensic accountant must have knowledge of criminal and civil law; investigative skill such as method, theories, and pattern of fraud abuse; it is also needed for forensic accountant to communicate concisely and clearly the findings of the investigation to many parties that have little or no knowledge of auditing and accounting.

Also, Aderibigbe (2000) conducted the study on the auditor and forensic accountant knowledge in Nigeria. In his report, he finds out that both auditor and forensic accountant needed to possess the principle of integrity, honesty and high level of competent, legal knowledge and auditing to perform the task. He must be thoroughly trained, undergo appropriate examination and always outstanding regarding probity, honesty, and integrity. He must be able to display professional attitude in the discharge of his duty.

Furthermore, Ahadiat (2010) researched in the US. The result shows that the accounting core curriculum across the US was reviewed to contain instructions aim at refining

knowledge of students, ethics, and skills that ahead of their technical knowledge. On the other hand, the research carried out by Oluwagbemi (2010) on the role of the auditor in preventing and detecting fraud in Nigeria. From his findings, he discovered that the auditor is not having the required knowledge to prevent the fraud.

2.5.2.1 Forensic Accountant Knowledge

The forensic accountant can be described as a watchdog of the bookkeeping due to his ability to sniff out fraud transaction, hunt for concrete evidence, discover the misstatement and look ahead of the numbers (De Lorenzo, 1993). Forensic accountants should acquire various amalgams of knowledge in accounting, law, auditing and investigative techniques (DiGabriele, 2008). It should be complemented by strong ethical values and soft skills, even though the main driving force of forensic accounting is involved with the financial parts of an investigation. It involves all the required investigative expertise and experience such as interrogative skills, knowledge of law and rules of evidence, investigative proficiency, and interpersonal skills (Ahmad, 2008).

Similarly, Crumbley and Smith (2009) state that forensic accountants utilise an understanding of business information and financial reporting systems, accounting and auditing procedures and standards, techniques in investigation and gathering of evidence and litigation processes and procedures to perform their work. Despite these, there are increasing cases of fraud and crime rate in Nigeria, with their associated sophistication.

2.5.2.2 Auditor Knowledge

Audit knowledge can be described as an insight of accounting, business environment, and auditing specification to provide a structure and framework for incorporating and evaluating new information and experience to a mix of framed contextual information, values, experience and expert (Choo, 2007; Low, 2004). Prior literature emphasised that auditor who performs auditing under the baseline of the professional had utilised knowledge to provide efficiency audit practice and effectiveness audit judgment through an increase in audit performance and audit report quality (Choo, 2007; Baker, 1993; Low, 2004). The higher the knowledge of auditors, the more effective of auditors' judgment and greater efficiency audit practice.

Previous literature recommended that auditor depend on procedural knowledge to master different works within auditing profession (Curtis & Davies, 2003; Bonner & Walker, 1994; Bonner, 1990). Similarly, audit knowledge is the main determinant of motivating audit survival. This audit knowledge made up of improvement and reliability of audit which is presumed to be positively associated with effective audit judgment, efficient audit practice, audit report quality and audit performance under condition moderating effect of audit scepticism, social responsibility, and environmental turbulence are examined (Mano *et al.*, 2003). If the financial statements are not truthful represented, the auditing profession is worthless (Mano *et al.*, 2003).

However, to survive as a respected and viable professional audit, the professional audit must consider six (6) points such as (a) the professional audit must have a strict

independent; (b) An auditor must commit to the fact that general public is their client regardless of whose signature is on the check; (c) They must reasonably present in accordance with GAAP; (d) Avoid the conflict of interest strictly and concisely; (e) Refrain from accepting jobs with audit clients; and (f) they must recognize that the de-facto SEC auditors. Hence, lack of having the required and essential knowledge to detect and prevent by the auditors during the audit process has affected many companies and hindered the audit profession (Chui, 2010). Therefore, there is a need for the auditor to have required knowledge to prevent fraudulent practice in the public and private sectors.

2.5.3 Ethical Code of Conduct for Forensic Accountants and Auditors

The term “ethics” can be explained in numerous ways. Ethics is seen as a collective agreement between the forensic accountant and public (Bay, 1997). The ethics of forensic accountant is established to influence users of accounting report (financial statement) such as employees, lenders, investors, suppliers, management, customers and government for accurate decision making on the way to prevent fraud (Payne & Landry, 2005).

Forensic accountants have duty and responsibility to perform with the highest level of objectivity and integrity (Bay, 1997). The ethical code of conduct is used to regulate the members of the profession and at the same time regarded as a way of self- protection for each member of accounting profession (Parker, 1994). Similarly, ethics is seen as an essential element of the professional accounting (Bay, 1997). Also, the ethics are regarded as an accountant’s attempt to offer a guideline to advocate in formulating accurate choices in the circumstances (Brecht, 1991). Precisely, the ethical code of

conduct is designed as guidelines for the behaviour expected from a forensic accountant, accountants, and auditors to protect the shareholders and their interests. Moreover, the code of ethics is developed to ensure that forensic accountant will provide excellent quality service and the reputation of the accountants' work will not be stained (Brown *et al.*, 2007). In other words, the guidelines guide the relationship between the forensic accountant accountants, auditors, and the clients.

The code of conduct of ICAN (ICAN, 2009) is based on the principle of integrity, confidentiality, objectivity, independence, due care and professionalism. Accordingly, the professional misconduct by members of the two accounting bodies in Nigeria is checkmate. For instance, ICAN sets up an investigative panel that is charged with the responsibility of inquiring into suspected professional misconduct by its members.

Ethical offences attract penalties which range from warnings to withdrawal of practising licence. Members of the ICAN are at liberty to get clarification on ethical matters from the Institute. All members of the Institute in practice are required to obey and comply with local laws and should stick to the ethical guidelines. The compliance with the ethical standard does not constitute misconduct, but in answer to a complaint, members might be called upon to vindicate any section from the guidance. If the ethical guideline strictly complies with, become internalised and reflect extensively in the professional task (Nwanyanwu, 2010).

Therefore, forensic accountants and auditors are the professionals responsible for the preparation of investigation reports need to comply with the codes of ethics to have more accurate, reliable, timely, understandable, relevant and comprehensive reports (Ogbonna, 2010). The emphasis must be laid on all members of ICAN to be guided by an ethical code of conduct (Nwagboso, 2008). In this era of rapid technological advancement and environmental developments, ethical issues must emphasise on by the Nigerian professional body such as ICAN and ANAN.

Several factors influenced the ethical behaviour of an auditor and forensic accountant in the course of his investigation/audit assignments. These factors are familiarity issues, religious belief, economic issues, monitoring, family background and regulatory issues (Adeyeye, Adeyemi, & Otusanya, 2010). Also, it is imperative to monitor and control these variables positively for forensic investigation and audit profession to sustain the relevance ethics behaviour in an energetic business world. Professional code of ethics has over time shift from a focus on moral duty and responsibility for a public good to the technical specification for a product/service. This replicates a change in public values where the technique has exchanged character as an essential virtue (Valayuthan, 2003).

Rezaee, Elmore and Szendi (2001) and Wotruba, Chonko and Loe (2001) stated that ethical code of conduct could assist both forensic accountant and auditors to achieve five objectives. These include (a) improve their moral values; (b) monitor and communicate their moral expectations to clients, employees, government and society; (c) make

available legality for their activities; (d) there will be an obligation to moral values; and (e) helps everybody in the government organization to resolve ethical problems.

Similarly, Duska *et al.* (2003) identified ways that ethical code of accountant can be valuable (a) it can provide permanent directions to right or wrong than human personalities; (b) the ethical guide can also control the autocratic power of companies; (c) the code of ethics are concisely in the interest of business; and (d) it can assist in specifying the social responsibilities of company business.

The prior literature (AICPA, 2011; Brown *et al.*, 2007; Carcello *et al.*, 1995) carried out accounting ethics research as a reaction to growing public knowledge of audit profession failures. Leob (1971) studies concentrated on determining the extent to which accountants involved in unethical behaviour, and made various initial attempts to determine motives for this type of actions. Also, Loeb (1971) conducted the first empirical research about accounting professional ethics in 1971. Ethics in his study described as compliance with ethics. His reports showed that accountants in complying with the ethical code of conduct are three groups: (a) conformer is 28% (b) violator is 26% and neutral is 46%. He also found out in his result that the professional accountants in the smaller organisation were more likely to be violators than those employed in larger companies.

There was a general concern about the state of ethics in the accounting profession, and more studies continue to find out that unethical behaviours do occur (Carcello,

Hermanson, & Huss, 1995). Carcello *et al.* (1995) extended the results of the ethical studies by looking at partners and seniors rather than staff level of accountants. He found that violations of (GAAS) and (GAAP) are still found, with the poor working paper review being the most frequently observed problem.

In accounting profession, ethics for professional accountants have principles and rules as two significant parts. The principles of ethics are integrity, scope and nature of work, due care, objectivity and independence, public interest, professional responsibilities (AICPA, 2011; Brown *et al.*, 2007). The second part is the rules which are the comprehensive explanation of these principles.

Many studies found out that the relationship between ethics and ethical behaviour was weak (Brown, Brief, Dukerich, & Brett, 1996; Badaracco & Webb, 1995; Chonko, Livingstone, & Roberts, 1995; Callan, 1992; Cleveland & Murphy, 1992; Weeks & Nantel, 1992; Ford, 1982). Adams, James, and Malone (1995) pointed out that professional accountants such as a forensic accountant, auditor, and accountants are likely to adopt the ethical code even when sometimes they know that the proper ethical behaviour would conflict with the code. Bay (1997) explained that every nation must have local accounting ethics.

In AICPA ethical code of conduct, England (1998) and Loeb (1971) acknowledged the ethical code that forensic accountants' auditors and accountant should adopt, their approach to studying the accountants' professional ethics was not on the basis of ethical

principles, as many of the accounting professions in the world do (Mohammed, 2008). The principles are the main background for the forensic accountants' and auditor ethics but on the explanation and detail of these principles.

It was recommended that the forensic accountant and auditors should maintain eighteen (18) accounting ethics, which includes: avoid family relationship; Inside information: Telephone directory; Solicitation for money outside agreement letter between the accountant and his/her client; Trustee: he/she must hold a legal responsibility; Avoid collection of kickback; Fees: he must not accept any unnecessary financial benefit from clients; Caring: an accountant should perform the best professional task; law and code; ethical rules issued by accounting organizations; Instrumental used in carrying out the task; and lastly, accountant independence.

2.5.3.1 Forensic Accountant Ethics Requirement

The forensic accountant uses personal ethics, skills, knowledge and value in accounting, quantitative methods, finance, auditing, and a particular area of the law, investigative skill and research to analyse and evaluate the evidential matter to interprets, communicate and report findings to the clients. Also, the forensic accountant ethical standards entail essential concepts, essential procedures and principles coupled with relevant guidance that must possess during discharge of his/her duties. The ethics and law are considered as part of the task of the forensic accountant when hiring a forensic accountant (AICPA, 2002).

It is fundamental for a forensic accountant to be guided by a code of ethics. It is regarded as part of the skills the forensic accountant must possess. Requisite knowledge would review of the general business and create awareness about the ethics of their specialisation. However, forensic accountants are required to partake in ongoing professional education which ethics must be part of the course to be offered.

It is also necessary to comprehend an entity's culture, and ethical atmosphere presents when executing an investigation or establishing Fraud prevention control. In several occasion, the forensic accountant would endeavour to produce information within the organisation to prevent both internal and external fraud and to uncover where fraud occurred. With this scenario, it is apparent to understand the ethical business environment.

To perform a fraud prevention and investigation, it is always advisable to look at law and ethics when want to employ forensic accountant because those that involved in fraud apparently not have ethics and violating the law. It is becoming more necessary to understanding these concepts deeply, especially in the somewhat individual and nebulous area of ethics.

As a result of these, (AICPA, 2011; S101-103) stated the following as the primary professional ethics of the forensic accountant which explained as follow: (a) Principles of Independence; (b) Integrity; (c) Objectivity; and (d) Confidentiality. The forensic accountant ethics include:

- (a) The forensic accountant should look for the fact and report only the fact;
- (b) He/she must conduct himself ethically and evade conflicts of advocacies;
- (c) He should try to keep the excellent standard of the profession and not on monetary interest in any circumstance; and
- (d) He should attempt to share the skills, experience and knowledge gained with other colleagues in the field of forensic and prevent conflict of interest and continue to be improving in the ongoing professional training.

As a forensic accountant, the relevant skills, knowledge, training, education and experience which gained overtime would assist him to discharge the functions of a forensic accountant.

2.5.3.2 Auditors Ethics Requirement

Auditor's ethics can be explained as the right attitude, behaviour possessed by the auditor to perform a given task. The auditor is also bound by ethics which includes professional behaviour, objectivity; integrity, ability, and the principle of confidentiality make sure that such actions could not cause harm to others people in the society (IFAC, 2005). In the 1980s, several studies reported that ethical issues are significant, but most failed to include ethical considerations. However, instead, these studies merely sight saw the degree to which the ethical conduct occurred (Kelly & Margheim, 1987; Margheim & Pany, 1986; Buchman, 1983). In the late 1980s, studies began to expand the scope of ethical behaviours that were investigated in accounting ethics research (Chonko, Finn & Hunt, 1988).

Hence, audit ethics can be aligned to influence the ability of auditor which has four areas which comprise of audit improvement, audit skills, audit knowledge and audit reliability. The higher the audit ethics are greater audit improvement, audit skills, audit knowledge and audit reliability. Also, the audit ethics will enhance the auditor's professional judgment for them to operate in the utmost interest of general public and the profession that would result in continual improvement; sensitivity to social responsibility and finally to the public interest (IFAC, 2003; Jeffery *et al.*, 1996).

2.5.3.3 The Code of Conduct for Members

The code of conduct for members in accounting profession was established by the AICPA (SCOPA, 2009; Brown *et al.*, 2007; Duska *et al.*, 2007; Abo-Ahmeed, 2006; Mele, 2005; Venezia, 2005). Other accounting professional bodies in many countries like Nigeria, Saudi Arabia, Taiwan, and Canada have developed a code of ethics by adopting the AICPA and IFAC. Historically, AICPA established their code of ethics in 1887 in the United States of America with several nations; organisations and association have agreed with this principle. The code addressed the issues of indiscriminate solicitation which considered unethical or accountant (AICPA, 2009; Brown, 1999).

However, as mentioned in the previous paragraph above, the code of conduct for ethics comprises rules and regulation, principles and guidelines. The AICPA ethical principle identified six principles of ethics: scope and nature of service, due care, public interest, independent and objectivity, integrity and professional responsibility (AICPA). In 2010 the ICAN issued code of ethics to be observed by professional accountants in the course

of performing their functions as licensed accountants in line with IFAC, 2009 code of ethics, other regulatory policies as well as judicial pronouncements (Popoola, 2014).

These are:

Objectivity and Independence

The professional accountant ought to distance themselves from inconsistency interest in the discharge of duties and responsibilities. According to AICPA (2011), the accountant should be self-governing in mind and conduct when providing the attestation and investigative services. This principle encourages accountant to be honest, impartial, free of conflict of interest, get rid of the personal interests and feelings of any decisions being made (Brook *et al.*, 2006). The forensic accountant must prevent relationship that may give thought to harm the principle of independence and objectivity in the discharge of attestation services (AICPA, 2011; Brown, 1999).

The objectivity is the internal attributes, attitudes, conditions of mind that put in force a duty to be intelligently sincere, unbiased, and free from various inconsistency interest (Brown, 1999). The independent is the external expression, a state that prohibits accountants from involving in a relationship that likely to hindered objectivity in the process of verification (Brook *et al.*, 2006; Brown, 1999).

Public Interest

AICPA explain the societal interest that accountants should accept the responsibility to recognise the general public trust and demonstration of loyalty to professionalism

(AICPA, 2011). A distinguishing mark of an accountant's profession is his/her by complying with the responsibility to execute and act for the interest of the general public (Brown *et al.*, 2007; Mohammed, 2008). The principal objective of the professional accountants' code of conduct for ethics is to safeguard the societal interest and uphold the reputation and value of the accounting profession (Brown *et al.*, 2007).

The rules and regulation of AICPA made to ensure the excellent reputation of forensic accountants and auditor in the eyes of the society had been changed from every year to reflect the proper values that customers expect of accountants (Mohammed, 2010). Furthermore, Mele (2005) discloses that the prime target of the code of conduct for ethics has been changed gradually from giving a true and fair view of the accounting standard.

Due Care

The principle of due care is when the professional accountant should be cognisance the ethical principles; career's technical; improve the ability and the services quality to be rendered by his/her skill (AICPA, 2011). The due care principle classifies the pursuit of excellence as the fundamental nature of due care that needed diligence and capability (AICPA, 2011). In this case, the accountant ought to accomplish to the best of the talent and capability of accounting information, and it should be consistent with the standard of the profession which renders for the trust of the society (Brown, 1999).

The principle of due care demands that professional accountants have adequate technical skills to execute the work professionally. It involves acting for other's terms or benefits.

Again, due care demanded consistency in the area of the service, emphasising that there be enough resources and time, then do as much require to render services to the customer satisfaction. Diligence and knowledge are two primary mechanisms of due care. In an organisation, diligence also means supervising, sufficient training, and evaluating team accountants and their task (Jamal *et al.*, 2010).

Professional accountant acquires skills and knowledge through the education. He/she must gain knowledge of the universal body of accounting, and this knowledge must be increased by the ongoing professional improvement. Due care also entails that when professional accountant identified his/her weakness, he/she refers a client to another professional accountant who has the needed competence or consults with others on that client's issues (Brooks *et al.*, 2006).

Therefore, every professional accountant is liable for evaluating his ability by assessing whether education, skills, knowledge, experience, and opinion are enough for the accounting profession's responsibility to be supposed (AICPA, 2011). Marchant (1990) maintains that experience represents an opportunity to acquire knowledge. For the auditor and forensic accountant to prevent fraud in the public sector, they must use the ethical principle of due care to conquer the fraud perpetrator.

Professional Responsibility

AICPA (2011) stated that professional accountant should apply professional standard and moral judgments in all their works in carrying out their duties and responsibilities. This

principle stated unequivocally that the professional accountant responsibilities require ethical judgment, thereby linking professional behaviour with ethical behaviour. AICPA (2011) explained in detail the meaning of this principle as qualified accountants who provide services for the general public. The qualified/profession accountants must be consistent with their functions, cooperation with one another to improve the accounting works, keep the general public interest, and perform the work as required for self-governance (Brooks & Labelle, 2006).

Also, Accountants must follow the accounting principles, standards, rules, and local/government regulations (Brooks, 2006). Accountants have a task and duty to stakeholders such creditors, and regulatory bodies, managers, investors, to be conscious when performing the accounting task (Brown, 1999). More so, accountants are expected to exhibit professional standard, skills, knowledge and ethical judgment (Brown, 1999). Vosselman (2012) considers that accountability to a certain extent is the most objectified type of responsibility. For the auditor and forensic accountant to prevent fraud, there must be ethical responsibility.

Integrity

According to AICPA (2011), the principle of honesty is measured in the area of what is good and bad, right and just AICPA (2011) also defines integrity as soundness of ethical personality, obedience to ethical principles and honesty. It is required that the accountants should perform the duty and responsibility with the highest sense of integrity to increase the public confidence and public trust (AICPA, 2011). Integrity requires the accountant to

be candid and honest within the limit of clients' confidentiality. Ethical theorists, such as Aristotle, have placed a very high weight on integrity (Brooks *et al.*, 2006). In general, integrity as a notion sometimes needs to do with rules, results, the liability of dealings, principles, and morals. As a popular notion, integrity is the systems' of capability to accomplish its goals (Brooks & Labelle, 2006). Integrity also means the degree of sound judgment of truth and honesty regarding the inspiration of the people actions.

Scope and Nature of Services

In carrying out the investigation, both forensic accountant and auditor in public practice should follow and comply with the Code of Professional Conduct in determining the kinds of services to be created (AICPA, 2011). This particular principle connects with other ethical code of principles. The principle starts with professionalism by emphasising on the society interest aspect of professional accountant needs that such services must be in an acceptable standard of professional conduct for professional accountants (AICPA, 2011).

Also, the integrity principle seeks that service and public interest not be subordinated to individual benefit (AICPA, 2011). For the principles of independence and objectivity, this principle explaining that objectivity and independence prevent the professional accountant must be avoiding conflicts of interest in the course of their duties (Brown, 1999). In the same vein, AICPA (2011) asserted that due care seeks that services to be created with skills and diligence and a professional accountant must choose what

situations to render such services or not by taking into consideration all of the six principles.

A professional accountant may embody an overall constraint on the non-audit services that might be provided to a particular customer. The principle of the scope and nature of services is based on the AICPA code (2011) which professional accountant has to practice in firms that have internal quality-control mechanisms to ensure that services rendered are in professional standard.

2.6 The Underpinning Theory and the Supporting Theory

This study is underpinned by the Competency Theory and supported by the Theory of Planned Behavior (TPB). The suitability of the underpinning theory is anchored by the fact that the theory explained the concept of capabilities (Skills, Knowledge, ethics, Abilities and Other Characteristics) of the forensic accountant and auditor to prevent fraud. Similarly, the supporting theory, the TPB predicts intention based on the attitude, subjective norms, perceived behavioural control, and moral obligation of individuals on a specific behaviour.

2.6.1 Competency Theory

The competency theory is a predictor of human performance which was developed by McClelland (1973). It describes the specific knowledge, skills, and characteristics needed to perform a role in an organisation effectively and is used as human resource tools for appraisal, selection, training and development and succession planning (Lucia &

Lepsinger, 1999). The competency approach as framed by McClelland (1973) postulates that competencies are ideal for determining the potentials for the efficient performance of individuals, which ultimately impact organisational outcomes.

Unless forensic accountants and auditors are having the required capability (Skills, Knowledge and ethics) on the way the fraudster thinks, they will not be able to keep one step ahead of the fraudster. Among those numerous theories, the competency theory was found to be most suitable for this study. The management of an organisation decides the amount of detail to use to describe competencies that will be included in the desired competency model (Mirabile, 1997). Competency model can be used to rate the level of competence of employees in an organisation. According to Dubois and Rothwell (2000), competency model classically includes a list of competencies and behavioural indicators that make the competency come alive regarding what it looks like in the context of an organisation.

From the empirical studies, Jena and Sahoo (2014) conducted a study on the improving managerial performance on entrepreneurial and leadership competencies. Fifteen (15) independent variables were used in the study, out of which only three factors extracted (business knowledge, the dimension of leadership and spirit of competitiveness) were found to be significant concerning the managerial performance of the organisations. Therefore, the study recommends the three competencies as essential to the superior managerial performance. Also, Scheer (2011) carried out the study on the competency modelling in extension education: integrating an academic extension education model

with an extension human resource management model. Scheer adopted the seven (7) unique competencies for the human resource management model. Also, the study indicated possible educational opportunities for credit and non-credit coursework.

In this study, competencies are the capabilities (skills, knowledge and ethics) of the forensic accountants and auditors in the Nigerian public sector required for the prevention of fraud. The capabilities are vital and crucial for the forensic accountants and auditors in the performance of their respective responsibilities particularly the prevention of fraud. This is in line with Dubois *et al.* (2004) who explained a competency model as a written description of the competencies required for entirely successful or exemplary performance in a job category, work team, department, division, or organisation. Boyatzis (1982) and Ley (2006) defined competencies as cognitive (e.g. knowledge and skills), effective (e.g. attitudes, ethics and values), Behavioral and motivational characteristics and dispositions of a person which enables him or her to perform well in a given situation (Ley, 2006; Boyatzis, 1982).

Furthermore, competency model is used to align individual capabilities and human resource functions with organisational strategies (Lucia & Lepsinger, 1999). This suits public service organisations such as the office of the AGF and AudGF to adopt, with the primary aim of preventing fraud and ensuring accountability and transparency on their respective stewardship. Similar studies such as Tan (2014) have revealed the strength of the competency model in predicting the capabilities of the professional accountant in the Public sectors. Accordingly, competency theory offers a better view of the factors to

fraud by emphasising on the capabilities (skills, knowledge, abilities, ethics and other characteristics). Thus, competency model can be used by the forensic accountant in so many ways including when accessing the risk of Fraud. Given the preceding, this study employed the competency theory as the underpinning theory of the research work.

2.6.2 Theory of Planned Behavior (TPB)

TPB is an offshoot of Theory of Reasoned Action (TRA). It has substantial power to explain disparities of intentions (Popoola, 2014; Cohen *et al.*, 2010; Hess, 2007). The TPB was developed by Ajzen in 1975 through his article from intentions to actions: a theory of planned behaviour was developed from the theory of reasoned action that was developed by Martin Fishbein along with Ajzen in 1975. The theory of reasoned action was successively grounded in varied theories of perspective like Learning Theory, Festinger's Dissonance Theory, Expectancy-value Theory, Osgood, and Tannenbaum's Consciousness Theory, and Attribution Theory, Heider's Balance Theory, and Consistency Theory.

A high correlation of attitudes and subjective norms to behavioural intention, and afterwards to behaviour, has been confirmed in several studies. It is subjected to criticism and against the high relationship between behavioural intention, and real behaviour has conjointly been projected, because some of the findings of previous shown specific limitations, behavioural intention does not forever cause actual behaviour. Namely, since behavioural intention cannot be the exclusive determinant of behaviour wherever a

person's management over the behaviour is incomplete, Ajzen introduced the theory of planned behaviour by adding a brand new element, perceived behavioural management.

This particular theory is useful to forecast dishonest actions (Beck & Ajzen, 1991). As noted by Al-Qeisi (2009), this theory does not recognize person's volitional control before it addresses the problem of behavior's that happen, By this, he extended the theory of reasoned action to include non-volitional behaviors for the theory of planned behavior was projected by Icek Ajzen in 1985 through his article From intentions to actions: A theory of planned behavior. The speculation was developed from the speculation of reasoned action that was projected by Martin Fishbein along with Icek Ajzen in 1975. Beck and Ajzen (1991) introduced the theory of planned behaviour by adding a brand new element, perceived behavioural control. By this, he extended the theory of reasoned action to include non-volitional behaviours for predicting behavioural intention and actual behaviour.

Beck and Ajzen (1991) state in the TPB, knowledge of the role of perceived behavioural control came from Bandura's model of self-efficacy. In recent times, Fishbein and Cappella indicated that self-efficacy is the same as a perceived behavioural control in his integrative model, which is also dignified by items of self-efficacy in a previous study. This is to show the useful comparison between the Perceived behavioural control and self-efficacy. This theory is useful in predicting dishonest actions (Beck & Ajzen, 1991). In fact, it sheds more light on unethical and fraudulent financial reporting (Carpenter & Reimers, 2005). The theory of planned behaviour is summary in Figure 2.2.

Three categories of consideration guide human behaviour. These are controlled beliefs, behavioural beliefs, and normative beliefs. In its entirety sum, behavioural beliefs create a favourable or unfavourable attitude toward the fraud; normative beliefs result in subjective norm and control beliefs gives rise to perceived behavioural control. Also, attitude, subjective norm, and perceived behavioural control clue to the creation of a behavioural intention. Predominantly, perceived behavioural control is supposed to not only affect particular behaviour directly, and they also affect it indirectly through behavioural intention.

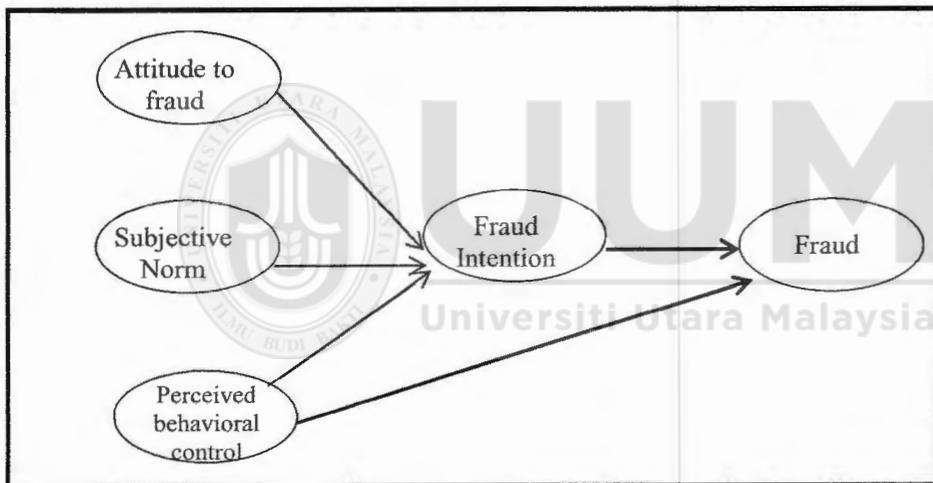


Figure 2.2
Theory of Planned Behavior (TPB)
Source: Ajzen (1985)

The general rule, the higher the perceived behavioural control, the stronger the person's intention to perform the activities in question should be and the more favourable the attitude toward fraud and subjective norm. Agreed on equal degrees of precise control over the fraud, the public is expected to execute their intentions when the opportunity comes up. Finally, this theory is useful in predicting dishonest actions (Beck & Ajzen,

1991). In fact, it sheds more light on unethical and fraudulent financial reporting (Carpenter & Reimers, 2005).

2.7 Chapter Summary

This chapter comprised seven sections of which the detailed relevant literature review was conducted. The first section discussed the overview of Nigeria, public sector accounting and auditing systems. The next section discussed the differences between forensic accountants and auditors and the fraud concepts. Then there were discussions on the concept of fraud prevention. After it was explanations of the capability requirements of knowledge, skills and ethics. This was followed by discussions on underpinning theory and the supported theory. Finally, the summary of the literature reviewed. The chapter is followed by Chapter Three which discusses the research framework and the hypotheses development of the study.

CHAPTER THREE

RESEARCH FRAMEWORK AND HYPOTHESIS DEVELOPMENT

3.1 Introduction

In this section, there are four significant constructs of the study. These constructs constitute the skills, knowledge, and ethics of a forensic accountant and auditor as the independent variables, and the fraud prevention represents the dependent variable. This chapter is sub-divided into six sub-sections. Sections 3.1 and 3.2 presented introduction to the study and detail the overall research framework. Sections 3.3 discuss the capability of forensic accountants and the auditors to prevent fraud. Sections 3.4 and 3.5 explained the hypothesis development of the relationship between forensic accountants and auditors, and differences between forensic accountants and auditors. Lastly, Section 3.6 is a summary of the whole chapter.

3.2 Research Framework

The research framework of this study is an offshoot from Popoola (2014) that was applied to the public sector in a developing country, Nigeria. This study fills the research gap by contributing more on examining capability requirement on the part of Forensic accountants and auditors in preventing fraud rather than waiting for the fraud to occur in the public sector before taking action in developing countries, particularly Nigeria.

Also, research framework is being derived from auditing standards. According to Nigerian Standards on Auditing (NSA) an auditor has the responsibility of considering

fraud in a financial audit statement (ICAN, 2005). Also according to Statement of Auditing Standards (SAS), fraud consideration in a financial statement audit has a role of supervision in the risk assessment of material misstatement in financial statement (AICPA, 2002, section 316.50). The standard stated that an auditor would assess identified material risk misstatement as a result of fraud by appointing an expert given with relevant information and technology (AICPA, 2002, p.177).

The International Education Standard (IES) No 8 states that the two principal terms competence and capability requirements for audit professionals are fundamentals to forensic accountants who undertake the audit professional's role and also who have a responsibility to make significant judgments in the audit of a financial statement in specific industries and working environments (IFAC-IES, 2006). The conceptual framework is derived from the literature as follows:

- (a) Heed the clarion call for future research to be carried out in Skills and Knowledge Requirements (Chui, 2010; Davis *et al.*, 2010).
- (b) International Federation of Accountants (2006) and (IES, 2005) No. 3 – Professional Skills.
- (c) Also, future research is suggested to be carried out on the professional ethics and professional values (Popoola, 2014).

This study deals with Fraud prevention and the capability requirements (i.e., skills, knowledge, and ethics) of auditors and forensic accountants in the public sector. Given the above, the researcher examines the relationship between capability requirements (i.e.

Skills, Knowledge, and Ethics) and Fraud prevention of auditors and forensic accountants in Nigerian public sector. The conceptual research framework is developed as demonstrated in Figure 3.1.

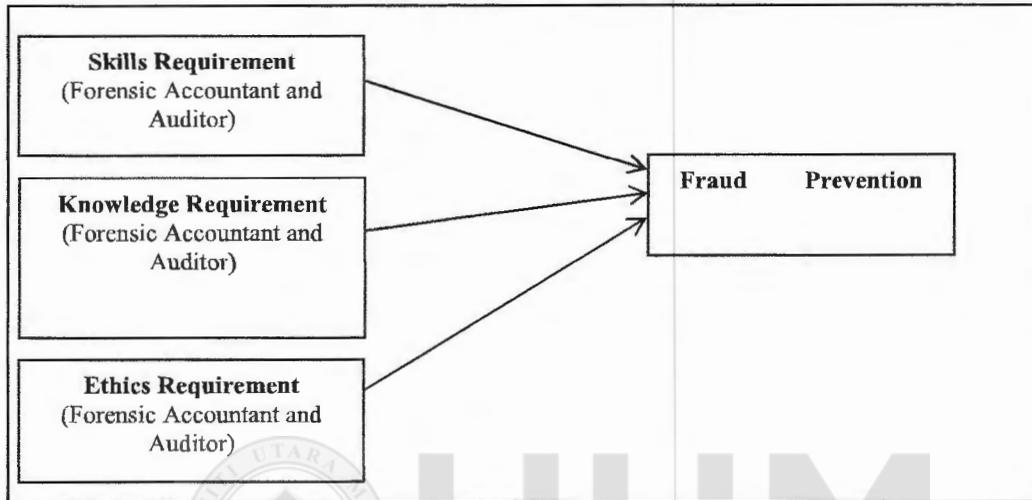


Figure 3.1
Conceptual Research framework - Capability requirements of forensic accountant and auditors on Fraud prevention.
Source: Adapted from (Popoola, 2014).

3.3 Capability

Capability refers to the ability possessed by individuals that make such individuals deliver on a task or perform a duty. Just put the ability to do something. The characteristics of capability about this study are: (a) Professional skills; (b) Professional knowledge; and (c) Professional ethics.

Professional attitudes, ethics are values necessary for individual accountants and auditors to demonstrate their competence (IFAC-IES 8.8, 2006). The previous study defines capability as core skill; enhance skills, capacities, competencies, abilities, fundamental

values, characteristics, individual attitudes, qualities and attributes (Davis, Farrel & Ogilby, 2010; DiGabrielle, 2008).

Capability improves individual performance in the place of work. As noted by IES No 8, Capability consists of professional values, ethics and attitudes, content knowledge, behavioural skills, functional and technical skills, and intellectual abilities (IFAC-IES 8, 2006). For this study, the investigator stresses that value of capability regarding knowledge, skills and ethics held by individuals and to enhance their competence (in Fraud prevention) in the place of work justifies being studied upon in the public sector considering the impact of fraud on the economy of the nation.

3.4 Theoretical Framework and Hypothesis Development

In this study, there are six hypotheses which have been hypothesised to answer the research questions. The expressed hypotheses include the association between knowledge, skills, and ethics (regarding forensic accountant and auditor), the independent variables (exogenous constructs) and Fraud prevention, the dependent variable. Given the theoretical framework of the relationship between knowledge, skills, ethics (capability) and Fraud prevention in Figure 3.2, the hypothesis development of the research is developed as follows:

Hypothesis 1: There is a positive significant relationship between Skills requirement (forensic accountant and auditor) and Fraud prevention in the Nigerian public sector.

between the forensic accountants and auditors (Popoola, 2014, DiGabriele, 2008; Ramaswamy, 2007, 2005). In this study, forensic accountants and auditors reflect on their exposure and experiences on fraud risk assessment and the relationship with knowledge, skills, and ethics as capability requirements. Prior literature suggests that those who are clear about their self-concept as forensic accountants and auditors have greater control of their assignment (Mercer, 2011; Marsh & Martin, 2011).

A forensic accountant is somebody who can look behind the faced-out, accept the records and all document at their face value. He is someone who has a suspicious mind that the documents he is looking at may not be what they seem to be and somebody who has the expertise knowledge to go out and conduct very interviews of individuals in details to develop the truth, most especially if some are alleged to be lying (Crumbley & Apostolou, 2005).

The above view shows that the role of forensic accountant profession is different from Auditing profession and another accounting profession regarding skills, training, and experience among other. It means that the forensic accountant is superior to the auditor in term of skills acquired. Hence, forensic accountants may have a significantly higher level of skills in Fraud prevention than auditors. For this reason, the formulated hypothesis is as follows:

Hypothesis 1: There is a positive significant relationship between Skills requirement (forensic accountant and auditor) and fraud prevention in the Nigerian public sector.

3.4.2 The Relationship between Knowledge Requirements (KR) and Fraud Prevention (FP)

The theoretical links in this study framework represent the prediction that knowledge requirement (auditor and forensic accountant) has a direct influence on fraud prevention. Based on the earlier literature, a modest change in knowledge requirement could create significant performance modifications as well as influence individuals' obligation, resolve, and sureness to attain decision-making job (Popoola, 2014; Sengur, 2012; Davis *et al.*, 2010). Also, similar findings could be found in Owen (2012) and Eichar (2009). These scholars stated that these features are relevant to Public sectors environments. This research suggests the hypothesis as follows:

Hypothesis 2: There is a positive significant association between Knowledge requirement (forensic accountant and auditor) and Fraud prevention in the Nigerian public sector.

3.4.3 The Relationship between Ethics Requirement and Fraud Prevention

The theoretical linkage in this research framework represents the prediction that ethics requirement (forensic accountant and auditor) has a direct influence on Fraud prevention. These studies have made available empirical evidence to support the assertion that ethics influence the development of fraud prevention which in turn inspires their task performances.

Also, it is the right thing to do by a code of ethics such as professional behaviour, objectivity, integrity, competence, and principle of confidentiality to ensure that actions

by rational human beings do not cause harm to others (IFAC, 2005). Hence, ethics can be aligned to influence the competence of a forensic accountant and auditor which has four dimensions including audit improvement, skills, knowledge, and reliability. The higher the ethics are, the more significant audit improvement, skills, knowledge, and reliability. From the above, this study asserts that there is a significant relationship between professional ethics and fraud prevention. Specifically, and in recognition of this reasoning, the formulated hypothesis is thus:

Hypothesis 3: There is a positive significant association between Ethics requirement (forensic accountant and auditor) and Fraud prevention in the Nigerian public sector.

3.5 Differences between Forensic Accountant and Auditor Knowledge (KR), Skills (SR), Ethics (ER) and Fraud Prevention (FP)

Hypothesis 4: Forensic accountants have a significantly higher level of skills requirement in fraud prevention than auditors in the Nigerian public sector.

Hypothesis 5: Forensic accountants have a significantly higher level of knowledge requirement in fraud prevention than auditors in the Nigerian public sector.

Hypothesis 6: Forensic accountants have a significantly higher level of ethics requirement in fraud prevention than auditors in the Nigerian public sector.

3.5.1 Skills Requirement and Fraud Prevention of Forensic Accountant and Auditor

Specifically, literature has shown that there are existing harmonies between the forensic accountants and the financial statement auditors (Hopwood *et al.*, 2008). The main difference between the two subjects is based on their mission. The objective of an auditor is to examine whether the financial reports of the companies are stated true and fair view in all material respects in compliance with the accounting principles and also to express an opinion on the financial statements of the organization in accordance with the reporting standards of both foreign and local as appropriate (IFAC, 2012; Rittenberg *et al.*, 2008).

Contrarily, the critical objective of forensic accountants is an investigation, verification and litigation support. Based on this study, the forensic accountant skills differ from auditor skills regarding objective, purpose, scope, and frequency. Forensic accountants are investigating and decide whether fraud perpetrators exist or not. For this reason, the formulated hypothesis is as follows:

Hypothesis 4: Forensic accountants have a significantly higher level of Skills requirement in fraud prevention than auditors in the Nigerian public sector.

3.5.2 Knowledge Requirement and Fraud Prevention of Forensic Accountants and Auditors

The study has shown that there are several existing agreements between the financial statement auditors and forensic accountants (Popoola, 2014). The forensic accountant and auditors need to maintain a high degree of objectivity, independent, integrity, business practices, relevant knowledge and business processes (Bologna, 1984).

Furthermore, the primary objective of a forensic accountant is verification and is in line with the professional services. The forensic accountant must be oriented, persistent, organised and ambitious. Creativity is an essential skill for the forensic accountant to clarify mixed financial opinions to an audience that lacks elementary accounting experience (Popoola, 2014). While the primary objectives of auditors are to examine financial statements of the organisation, stated fairly in all material respects in conformity with accepted accounting principles (Rittenberg *et al.*, 2008). It also includes expressing an opinion on the financial statements of the entity by the IFRS and other local standards (IFAC, 2012). Hence, forensic accountants may be significantly knowledgeable than auditors on the Fraud prevention. Therefore, the formulated hypothesis is as follows:

Hypothesis 5: Forensic accountants have a significantly higher level of knowledge requirement in fraud prevention than auditors in the Nigerian public sector.

3.5.3 Ethics Requirement and Fraud Prevention of Forensic Accountant and Auditor

The study has revealed that there are agreements exist between auditors and forensic accountants (Popoola, 2014). In particular, earlier studies advocated that auditors may appear not to exhibit a sense of compassion in eagle-eying the indicative signs of fraud owing to the much-publicized scandals of WorldCom, Enron, and others, yet they are not by any means subordinate to forensic accountants based on their training and education, experience and professionalism (Wuerges, 2011; Brown, 1962; AICPA, 1939). Hence, forensic accountants may have significantly higher levels of the ethical standard on Fraud prevention than auditors. For this reason, the formulated hypothesis is as follows:

Hypothesis 6: Forensic accountants have a significantly higher level of Ethics requirement in fraud prevention than auditors in the Nigerian public sector.

3.6 Chapter Summary

This chapter discussed the research framework as factors to be operationalized at two levels auditor and forensic accountant reported in the Nigerian public sector and also hypothesis development of the study applying the constructs of Knowledge, Skills, Ethics requirement and Fraud prevention in adherence to the PCAOB standing advisory group scheme for advance research on whether Fraud specialist (Forensic accountants) are more capable and competent than auditors in preventing fraud (Popoola, 2014).

Furthermore, the research framework is broadly in agreement with the IES No 8, competence requirements for audit professionals, which highlighted the importance of capability about Fraud prevention (IFAC-IES 8, 2006).

Most importantly, a total of six hypotheses were formulated and to be tested in agreement with the research questions identified in section 1.3 of Chapter One. These hypotheses were as a result of the direct relationships between Knowledge, Skills, and Ethics requirements and Fraud prevention. Finally, the chapter summary conclusion of this chapter leads to the research methodology, which is the next and significant stage in the social science research.



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CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter focuses on the practical issues concerning the methods and procedures of the research questions and the research objectives the study seeks to address. It is sub-divided into eleven main sections. Sections 4.1 to Section 4.4 discuss the research paradigm, research philosophy, assumption of quantitative and research process of the study. Section 4.5 and section 4.6 discuss in details the research design and its components of the study. The unit of analysis and the operational definition and measurement of the constructs are provided in Sections 4.7 and 4.8. The data analysis and pilot study are also explained in Section 4.9 and Section 4.10 of the study. Finally, Section 4.11 contains the summary chapter of the study.

4.2 Research Paradigms

Cohen and Manion (1988) define research methodology as systematic approach involved in data collection for inference and interpretation to give detail and prediction about the research. It is also referred to those procedures involving positivistic models such as initiating a response to predetermined questions, recording data, demonstrating the phenomenon and performing experiments. The standard procedure also adapted to include the formation of concepts and hypothesis, constructing models and theories, and sampling procedures.

The research paradigm is to explain and analyse methods involved in research, provides better understanding regarding limitations, pre-supposition and consequences relating to their potentialities at the frontiers of knowledge (Cohen & Manion, 1988).

Creswell (2003) argued that the design of a study begin with the topic selection and research paradigms. In the similar vein, Chisick (2008) stated that any research that deserves respect must be anchored in the scientific method especially in the social science research that is quantitative research based on positivist paradigms.

4.3 Research Philosophy

A necessary step in social science research is to define and justify the chosen philosophy guiding the study as adopted by the researcher. In this study, the researcher adopts a quantitative type (i.e., positivism) in determining the research philosophy (Hussey & Hussey, 1997; Patton & Baker, 1987).

This positivistic paradigm illustrates the links between the assumptions of the paradigm concerning the nature of reality (assumption of ontology), the role of the researcher (assumption of epistemology); value-free and unbiased reporting (assumption of axiology); the formal language used in quantitative research (assumption of rhetorical); and the process of research (assumption of methodology). The positivistic paradigm is known to be real facts due to the adoption of an investigation technique (just like a natural scientist), which follows the research questions' expression in the form of hypotheses and equations to test the validity of the phenomena hypothesised (Bryman &

Bell, 2003; Creswell, 1994). In this respect, the positivistic paradigm is explained through the quantitative or scientific methods and techniques based on the deductive reasoning to analyse the hypotheses on the relationship between the exogenous and endogenous variables.

4.4 Assumption of Quantitative Methodology

The quantitative research is the prevailing research paradigm, as observed by Onwuegbuzie and Leech (2005), the quantitative proponents promote research studies that empty value, using rhetorical neutrality with the outcome to discover social laws and context-free generalisations.

However, the procedures used in quantitative methodology were predominantly experimental, statistical and mathematical, and used to measure, control, manipulate, and predict social behaviour by using the large sample (Scott & Usher, 1999). Therefore, this research is the capability requirement (skills, knowledge, and ethics) for the forensic expert (accountant and auditor) on Fraud prevention in the public sector in Nigeria. Thus, this research follows the footsteps of a set of research over the years which were produced by research scholars in the aspect of forensic accounting and fraud (Popoola, 2014; Owens, 2012; Wuerges, 2011; Chui, 2010; Davis *et al.*, 2010; DiGabrielle, 2008).

4.5 Research Process

This study applies a research process that is common to all scientifically based investigations. According to Zikmund (2003), there are seven steps of the research

processes. These are the definition of the problem; planning research design; planning sample; data collection stage; processing and analysing of the data; formulating of conclusion; and lastly, preparation of the report. Since the steps of the research process are logical, a step of a new issue emerges henceforth, and the steps continue. The steps of the research process are illustrated in Figure 4.1.

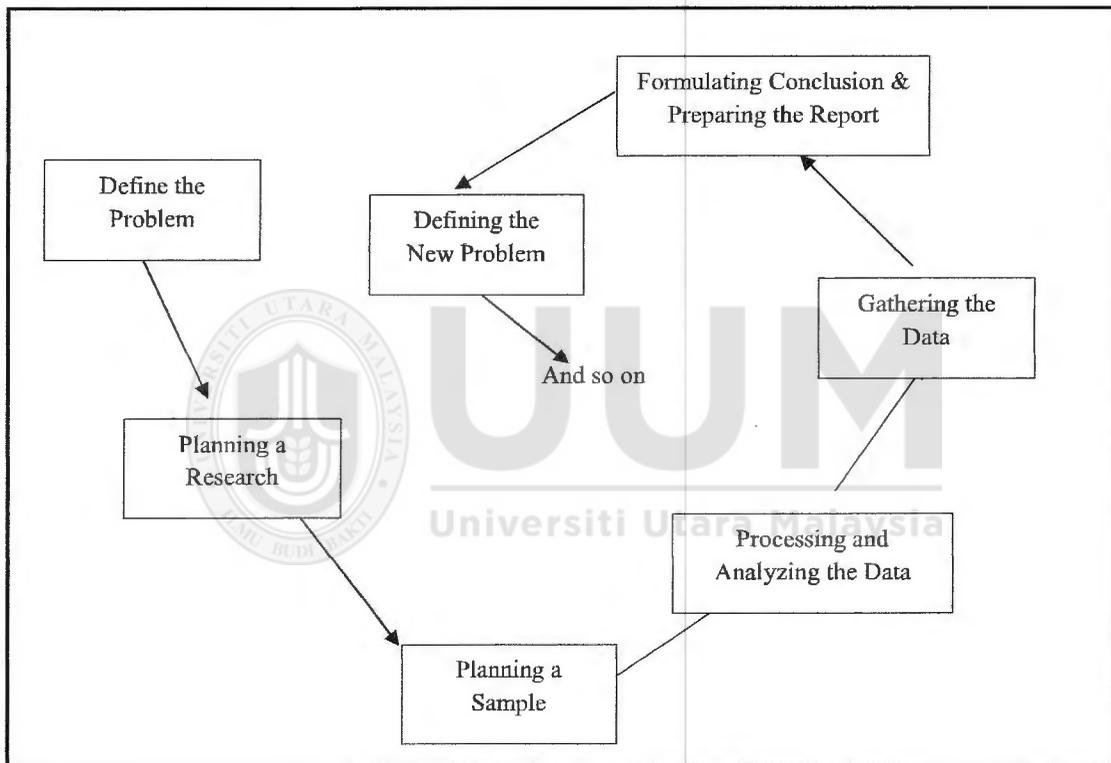


Figure 4.1

Key Phases of the Research Process

Source: Adopted from Forensic accountants, Auditors and Fraud: Capability and Competence Requirements in the Nigerian Public Sector Popoola, (2014 p.104) and Business Research Methods William G. Zikmund (2003)

Based on this study, the research process commences with the review of the literature to identify the gaps to develop the research questions and objectives and significance of the study as stated in chapter one. Furthermore, review of relevant literature was carried out

and stated in chapter two. This study also identifies the relevant underpinning theories. The extension of the literature review is the disclosure of the theoretical framework and hypothesis development of the study which reflect in chapter three of this research study. The next step is the planning research design for this study. Moreover, there is a need to identify the relevant research paradigm. After choosing the research model which is, positivism, the researcher applied the cross-sectional design as an appropriate design for this study. The next step of the research process is the developing and designing the survey questionnaire, which serves as an instrument for the study.

The next level of the research process is gathering of data in which the pilot study will be carried out to assess the internal consistency. Reliability and validity of the study will be done, and finalised instrument will be a source of data collection from the sample of respondents. The next step of the research process after the gathering of data is the processing and analysing of data, the data collected will be analysed by using two types of software. The software includes IBM SPSS for descriptive analysis and Smarts-SEM (structural equation modelling) which will be analyzed in chapter five.

The sixth step of this research process is the conclusions and the preparation of the report. This conclusion and the preparation of the report are in line with the result of finding from the data analysed. It is necessary to state that the researcher confers with relevant theories and literature to make an unambiguous interpretation, simple and clear discussion based on the understanding of the findings. However, the last step of this

research process is defining a new problem emerges, which is the future research recommendation step of the study.

4.6 Research Design

Cooper and Schindler (2003) define research design as the blueprint for the collection, measurement, and analysis of data. It assists the scientist in the allocation of his limited resources by posing important choice. The role of research design is to provide vital information on the research and to also hypothesise in an accurate and precise manner (Hair, Black, Money, Samuel & Page, 2010; 2007). The research design can be defined as a structure, plan, and strategy of investigation considered obtaining an answer to the research question and controlling variables. Also, it is an avenue for the researcher to use a sequence of investigation to carry out data collection (Babatunde, 2014).

In line with the research objectives, the research design is the master plan of a study that explains the procedures for data collection, a unit of analysis, population, sampling method and sample size, instrument and measurement.

The survey entails primary source of data from the Office of the Accountant General of Federation and Auditor General for Federation and it is used to develop a measure that will enable empirical measurement of skills, knowledge and ethics of the forensic accountant and auditors in preventing fraud and provide a basis for subsequent monitoring of fraud overtime in Nigeria. As an initial step in measuring the skills and knowledge in Nigeria, the study is a cross-sectional study that will source data from

target respondents about their perceptions and assessment of skills and knowledge of forensic accountant and auditors in Nigeria public sectors.

4.6.1 Components of Research Design

There are three components of research design that deals with the purpose of any research study. These components of the research design are descriptive, exploratory, and explanatory design (Sekaran, 2010; 2003; Zikmund, 2003). The descriptive design is a situation where there is the existence of little knowledge of the nature of the problem. This design is conducted to provide specific details of the problem (Sekaran 2003; Zikmund, 2000).

The exploratory is useful when gathering information on a particular problem at hand, of which the results may not be conclusive. The adoption of exploratory enhances the understanding of a new phenomenon and attracts further studies to arrive at the verifiable and conclusive evidence (Zikmund, Babin, Carr & Griffin, 2010). The third component of the research design is explanatory design. It is needed when there is a need to provide further specific knowledge and description of the nature of relationships among the variables under investigation (Sekaran, 2003; Zikmund, 2003).

This study will adopt explanatory design as it enhances the explanation of the relationships between knowledge of forensic accountant and auditor, their skills and Fraud prevention. Hence, the hypotheses are formulated to explain the relationships

between the variables as well as demonstrate the results of the relationship between the variables.

4.6.2 Cross-Sectional Design

The cross-sectional design is unique in having more successes than other designs towards achieving representativeness when compared to other design such as experimental, longitudinal, and case study. It is a strategy of research regarding ethical considerations, suitability and feasibility of fraud prevention, knowledge and skills among auditors and forensic accountant in public sector in the Federal Republic of Nigeria. In that regards, a cross-sectional design is used in this study because it is free from bias.

The smooth and best way of achieving representative sample is to adopt simple probability sampling methods that encourage equal chance of being selected from the population of the study. To make decisions as to the external validity of the study, representative samples are needed if a researcher wishes to generalise from the results obtained that the sample is meant to represent in a sample of the population.

4.7 Population and Sampling Techniques, Sample Size, Sample Size Determination, Data Collection, Data Collection Process, and Unit of Analysis

This section 4.7 discusses subsections 4.7.1 to 4.7.7 that consist of a population of the study, sampling, sampling frame, sample size, sample size determination, data collection, data collection process, and unit of analysis.

4.7.1 Population

The population can be defined as an entire group of people, events, and things of interest that the researcher desires to examine or make inferences based on sample statistics (Sekaran & Bougie, 2010). The study selects two stakeholder groups: every office and department in the AGF and Aud.GF of Nigeria public sectors. The choice of these groups is in line with prior exploratory studies on forensic accountants, auditors and fraud: capability and competence requirements in the Nigerian Public Sector (i.e., Popoola, 2014). The study will select officers in these two offices because of their experience and knowledge about the accounting and auditing system in Nigeria public sector.

4.7.2 The Sampling Frame

According to the Audited Annual Report of the Office of the Accountant General of the Federation in Nigerian, the total numbers of personnel are 10,196 staffs across the ministries, departments and agencies of federal government as highlighted in Table 4.1 of the study.

This study used simple random sampling method of probability sampling as it enables respondents (forensic accountants and auditors) in the total population to have the same chance of being chosen to participate in the study (Sekaran, 2003). The value of this sampling technique to the study is to ensure lack of bias by the researcher against the choice of sample objects (Salkind, 2003) and for true representativeness and generalisation of results (Cavana, Delahaye, & Sekaran, 2001).

4.7.3 Sample Size

The sample size is an integral part of the target population of interest to be studied, and the sample represents a sub-collection that is selected from a population of interest for the survey (Abdullateef, 2011). In essence, the sample size is an element of the population. Sekaran and Bougie (2010) stated sample size as elements of the population being selected to represent the interest of another element. Prior literature concluded that an appropriate sample size is essential to improve overall estimates and reduce errors in the model (Popoola, 2014; Marcoulides & Sanders, 2006).

Based on this study, 370 numbers are drawn from a population of 10,196 experts (forensic accountants, auditors and accountants) from the office of AGF and Aud.GF. Hence, the researcher makes conclusions that this sample size of 500 auditors and forensic accountants represents the entire population of 10,196 employees.

Table 4.1
Service-wide Staff Position as at December 2009

No.	Cadre	Grade Level	Number
1.	Directors (Accounts)	17	43
2.	Deputy Directors (Accounts)	16	70
3.	Assistant Directors (Accounts)	15	261
4.	Chief Accountants	14	302
5.	Assistant Chief Accountants	13	320
6.	Principal Accountants	12	207
7.	Senior Accountants	10	404
8.	Accountants I	09	397
9.	Accountants II	08	302
10.	Chief Executive Officer (Accounts)	14	144
12.	Assistant Chief Executive Officer (Accounts)	13	253
13.	Principal Executive Officer I (Accounts)	12	766
14.	Principal Executive Officer II (Accounts)	10	1,297
15.	Senior Executive Officer (Accounts)	09	1,800
16.	Higher Executive Officer (Accounts)	08	1,900
17.	Executive Officer (Accounts)	07	1,730
			10,196

Professional cadre staff in the Ministries, Departments and Agencies (Serial no: 1-9) while the Executive cadre staff in the Ministries, Departments and Agencies (Serial no:10 - 16)

Source: Adopted from Popoola, (2014)

4.7.4 Sample Size Determination

Sekaran and Bougie (2010) explained that the objective of conducting quantitative research is to collect data that is representative of the whole population of the study.

Similarly, Dillman (2000) recommended a method to determine the sample size for social science research which is considered in this study, all in a bid to ensure the accuracy of a

representative sample size. The formula is:

$$n = \frac{(N)(p)(1-p)}{(N-1)(b/c)^2 + (p)(1-p)}$$

Where:

n = required sample size

N = population size

p = proportion of population expected (assume to be 0.50 for maximum sample size)

b = acceptable sampling error (representing 10%, 5%, or 3% respectively)

c = z-statistic associated with the confidence level

For this study, the proportion of 5% was applied rather than 3% for a homogenous sample (Dillman, 2000), and this is consistent with Biemer and Lyberg (2003) about the provision of adequate sample size for smaller or larger population.

Therefore,

N= 10, 196; p = 0.5; b = 0.05; and c = 1.96

$$n = \frac{[(10,196) (0.5) (1 - 0.5)]}{[(10,196 - 1) (0.05/1.96)^2] + [(0.5) (1 - 0.5)]}$$

$$n = \frac{(10,195 * 0.5 * 0.5)}{[(10,195 * (0.026)^2 + (0.5 * 0.5)]}$$

$$n = \frac{2548.75}{(10.195 * 0.000651) + 0.25}$$

$$n = 2548.75 / 6.888$$

$$n = 370$$

The Dillman (2000) approaches yielded the sample size of 370. According to earlier research, it is evidenced by the results computed by Dillman (2000) and Krejcie and Morgan (1970) that both methods have the same result sample size of 370. In that

regards, this study adopted the sample size determination of 370 as it was determined by Dillman (2000) earlier in this study. To give room for non-return and void questionnaire, 500 samples will be used during the process.

4.7.5 Data Collection

Data can be collected in different settings such as laboratory or field and from primary and secondary sources (Sekaran & Bougie, 2010). Data collection process is an integral part of the research design (De Vaus, 2011). This research adopts the primary method of data collection because of its uniqueness in testing skills, knowledge, attitude, abilities, attitude, behaviour, attribute, feelings, opinions and ethics, which are not applicable in the secondary data.

The researcher distributed questionnaires to the forensic Accountant and Auditor in the office of AGF and Aud.GF in Nigeria Public sector. The Forensic Accountant and Auditor will be asked to evaluate the Fraud prevention question based on the given questionnaire. Questionnaires will be hand-delivered to the respondents. The completed questionnaires will be returned to the researcher. Based on the uniqueness of the cross-sectional design, this study adopted the cross-sectional design because of its uniqueness in avoiding long time consumption compare to the case of longitudinal design (Sekaran & Bougie, 2010).

4.7.6 Data Collection Process

An official letter was collected from Othman Yeop Abdullah Graduate School of Business (OYAGSB) in 21st November 2016, which introduces the researcher and the purpose of the study. The researcher paid personal visits several times to the relevant offices (Accountant general office and Auditor general office in Abuja, Nigeria) where the respondents were met. Letter of data collection from Universiti Utara was submitted to Director General Office in both two offices which later directed to the Director of Training and Development.

The procedure for data distribution was followed by handing over the questionnaires to the Director of training and development in the two offices, and the researcher was asked to check frequently for the collection of the administered questionnaires. The researcher went to the two offices several times to collect the administered questionnaires and the recommendation letters for data collection from the two offices (See Appendix III). All questionnaires were collected from December 5, 2016, to January 17, 2017.

The researcher was able to retrieve 312 questionnaires from the respondents which represent 62.4%. Out of which, 298 (59.6%) were found usable while the total number of fourteen (14) were removed due to double clicking and incomplete questionnaires. A total number of thirty-one (31) responses were excluded from the analysis after treatment of outliers. A measure of Mahalanobis distance was used as outliers detection techniques as several kinds of literature established that it could detect observation that is away from

the centre of the data (Gerrit *et al.*, 2010; Chambers, 1986). Exonerating a such number of questionnaires is essential because they do not represent the sample (Hair *et al.*, 1998).

4.7.7 Unit of Analysis

This study attempted to examine the capability and competence of auditor and forensic accountant in Nigeria public sector and their relationship to Fraud prevention. The unit of analysis in this study is individual forensic accountant and auditor in the offices of Accountant General and Auditor General for the Federation. Hence, the unit of analysis is individual.

4.8 Operational Definitions and Measurement of Variables

The operationalisation is the process of clarifying abstract constructs and translating them into specific and observable measures, that is, a concept that makes abstract constructs measurable empirically and quantitatively. Hence, it is descending the ladder of abstraction (De Vaus, 2011). In essence, it is a process of sliding down the ladder of abstraction into ascending the ladder of observation (Popoola, 2014).

For this research, the researcher operationally explained forensic accounting as the application of fundamental knowledge, core and enhanced skills in the accounting profession to resolve legal issues about the fraud. It entails a process of research preparation, data collection, examination, analysis and reporting organisation financial and business related issues in a form relevant to litigation and public discussion or debate.

The measurement of fraud prevention in this study was adopted from a study on auditors' perception of fraud prevention on University internal audit Indonesia Sengur, (2012). Its suitability for this study was justified because of the similarities between Nigeria and Indonesia as both countries are developing countries with similar traits. Furthermore, the study is considered to be similar to this study and the measurements were found to be comprehensive as it encompasses the fraud prevention measurements recommended by COSO (2011).

This study comprises four main constructs. These are skills, knowledge, and ethics of auditors and forensic accountants as independent variables and Fraud prevention as a dependent variable. Thus, the sections that follow relate to the dependent variable and independent variables which were operationalised and measurements thereafter developed for each of the variables.

4.8.1 Dependent Variable (Fraud Prevention)

The dependent variable used in this study is the fraud prevention. Fraud prevention is about the behaviour of what forensic accountant comes out with them as an outcome (Aguinis, Sturman & Pierce, 2007). Also, Fraud prevention is determined by a combination of declarative knowledge, control knowledge and motivation.

Fraud prevention refers to the ability to accurately assess the fraud risk to a precise standard by auditors and forensic accountants and possibly prevent fraud occurrence in the real working environment. The robust prevention processes help increase the

confidence of private company and public sectors as well as investors, audit committee, regulators and the general public as well as ensure integrity in the company's financial report.

Fraud prevention is the basis of the audit assignment and symbolises the controls to be adopted will depend on upon the organisation's environment, timing, and scope of the audit assignment. This study considers Fraud prevention between subject factors to be operationalised at two levels: all risk conditions (high and low-risk conditions). The measurement scales were adopted from (Dzomira, 2014; Sengur 2012; Albrecht *et al.*, 2012; Owens, 2012; and ACFE, 2009).

Table 4.2
Measurement of Fraud prevention constructs for the forensic accountant and auditors

Construct	Indicators	Sources
Fraud prevention	<ol style="list-style-type: none"> 1. Setting the tone at the top. 2. Establishing a corporate code of conduct. 3. Taking consistent actions in response to an alleged fraud. 4. Fraud training for employees and management. 5. Conducting background investigations on individuals being considered for employment. 6. Creating a positive workplace environment. 7. Identifying and measuring fraud risks. 8. Implementing and Monitoring Appropriate Preventive and Detective Internal Controls. 9. Making changes to the entity's activities and processes in order to reduce or eliminate fraud risk. 10. Effective Audit Committee or Board of directors. 11. Management effectiveness in overseeing activities. 12. Certified Fraud Examiner in internal audit team or external audit team 	Sengur (2012), Albrecht <i>et al.</i> (2012), AICPA, (2008)

Source: Adapted from Sengur (2012), Albrecht *et al.* (2012), American Institute Certified Public Accountant (AICPA, 2008)

The measurement scales were adapted from Sengur (2012), Albrecht *et al.* (2012), American Institute Certified Public Accountant (AICPA, 2008). A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) of 12 items are illustrated in Table 4.2 of this study.

4.8.2 Independent Variables

The primary objective is to measure knowledge, skills and ethics against the other dependent variable and come up with a conclusion on how the objectives of this research are being made. Several studies have been made out to determine the knowledge and skills of the auditors and forensic accountants over's perception and intention to hire Grugulis, Warhurst and Keep (2004). The following are the independent variables that are used for the measurement of this study.

4.8.2.1 Knowledge Requirement

Krager, Ford and Salas (1993) defined knowledge as the information acquired into memory. Knowledge can be accessed through formal examination. Also, Bloom (1984) defined knowledge as the ability to remember of information together with theories, principle, and methodology. It is organised into known information when to use the information and understanding of how to use information.

The knowledge construct measurement is the experience, attribute, capability in the place of work by the auditors and forensic accountants. Hence, knowledge in this study signifies auditors and forensic accountants' proficiency and competency that are relevant

to the discharge of technical work by the forensic accountants and auditors regarding Fraud prevention. This study considers knowledge between the auditors and forensic accountants in the Nigeria public sector. The knowledge operational measurement construct is illustrated in Table 4.3.

Table 4.3
Operational definition and Measures of knowledge construct for forensic accountant and Auditor

Construct	Indicators	Sources
Knowledge	<ol style="list-style-type: none"> 1. The forensic accountant/Auditor needs to be a more broadly experienced professional. 2. The forensic accountant/Auditor needs to be more specialised in the field of Fraud prevention. 3. The forensic accountant/Auditor needs to have more general business experience. 4. The forensic accountant/Auditor needs to have more technical accounting knowledge 5. The forensic accountant/Auditor needs to have more court proceedings knowledge, criminal and civil law 6. The forensic accountant/Auditor needs to have more information technology knowledge. 7. The forensic accountant/Auditor needs to have more criminology knowledge. 	Popoola (2014); Davis, Farrell & Ogilby (2009); and Ramaswamy, (2007; 2005)

Source: Adapted from Popoola, (2014).

The measurement scales were adopted from Popoola, 2014; Davis, Farrell and Ogilby (2010) and Ramaswamy (2007; 2005). A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) of 7 items are illustrated in Table 4.3 of this study.

4.8.2.2 Skills Requirement

Popoola (2014) defines the skills as the capacities, abilities, competency required to perform role and responsibility which are acquired from training and experience. Cheney (2006) and Nelson and Winter (1982) state that skill is the proficient manual, verbal or mental manipulation of tools, techniques and methods. This can be measured by a

performance test where quantity and quality of performance are tested, typically within a required time limit.

Also, Henderson (2000) stated that the skills refer to accuracy, dexterity and alertness required in understanding the levels of complexity or progress of work in the use of and interaction with both human and non-human resources in performing assignments. Interaction with human requires individuals to be alert and accurate in managing mental, creativity and situation. In the like manner, skills are developed over time through continuous training and development program (Desimone, Werner & Harris, 2002). Hence, the summary of the list of essential skills and its meaning used in the study are illustrated in Table 4.4.

Table 4.4
Operational definition and Measures of Skills construct for Forensic accountant and auditor

Construct	Indicators	Sources
Skills	<ol style="list-style-type: none"> 1. Deductive analysis - the ability to take aim at financial contradictions that do not fit the standard pattern of an assignment. 2. Critical thinking - the ability to decipher between opinion and fact. 3. Unstructured problem solving - the ability to approach each situation (inherently unique) prepared to solve problems with an unstructured approach. 4. Investigative flexibility – the ability to move away from standardised audit procedures and thoroughly examine circumstances for typical warning signs. 5. Analytical proficiency – the ability to examine what should be given rather than what is provided. 6. Oral communication – the ability to effectively communicate in a speech via expert testimony and general explanation as for the basis of opinion 7. Written communication – the ability to communicate effectively in writing via reports, charts, graphs, and schedules the basis of opinion. 8. Specific legal knowledge – to understand basic legal issues and legal processes including the rules of evidence. 9. Composure – the ability to uphold a calm approach in pressured time. 	<p>Popoola, (2014) Davies, Farrell & Ogilby (2010) DiGabriele (2008)</p>

Source: Adopted from Popoola, (2014)

The measurement scales for the skills were adopted from Popoola, (2014); Davis, Farrell and Ogilby (2010) and Ramaswamy (2007; 2005). A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) of 9 items are illustrated in Table 4.4 of this study.

4.8.2.3 Ethics Requirement

The Development of Ethical Instruments

To develop an ethics for forensic accountants and auditors in the Office of the AGF and Aud.GF in Nigeria, an instrument based on that developed by ICAN (2009) and Brown *et al.* (2007) was adopted in this study.

The ethical instrument is divided into six categories. They are acting with responsibly; public trust; integrity; objectivity and independence; due care and scope and nature of services. Out of which, three (3) important instruments of an ethics proposed to test in this study which is public trust; integrity; and objectivity and independence. The three (3) construct consists of twenty-eight (28) items as shown in Table 4.5.

4.9 Data Analysis

The study adopted the use of SPSS IBM Statistics for Windows and second generation analytical tools of Structural Equation Modeling (PLS-SEM). The previous literature such as Popoola (2014) recommends the use of PLS-SEM because of its uniqueness on issues relating to attitude, attribute, feelings, and opinions.

Table 4.5

Operational measurement of the Ethics construct for the forensic accountant and Auditors

Construct	Indicators	Sources
Ethics Requirement (ER)	Principle (1): Acting with integrity 1. Conceal any information to a third party at any costs. 2. Adhere to technical and ethical standards issued by accounting organisations. 3. Issue an urgent letter to the shareholders when the company is about to collapse. 4. Prohibit disclosing any information to a third party unless demanded by the law. 5. Conceal any information to a third party unless demanded by the law. 6. Neglect to comply with the technical and ethical standards sometimes. 7. Report to the board of directors, in writing, of any violation of company rules and regulations from the management. 8. Inform the board of directors about all financial transactions that negatively affect the company. 9. Abstain from using any information about his/her clients for his/her gain.	Brown <i>et al.</i> , 2007; Mele, 2005; AICPA, 2011 & ACFE, 2012
	Principle (2)- Acting with Independent and Objectivity 10. Not to allow the influence of others to override professional judgment. 11. Not to accept any financial benefit from clients aside your normal fees. 12. Not to allow conflict of interests and bias to come in between management and company's owner 13. Not to change his/her judgment due to pressure from any quarters. 14. To carry out professional evaluations based on documents made available to him/her. 15. Not to accept work when he/she does not have enough knowledge about how to perform the work. 16. Not to make any alteration to the report to please the management 17. Not to be impartial. 18. Not to accept gifts from his/her clients. 19. To avoid investigating a company in which one of his/her family is the owner or one of the shareholders.	
	Principle (3) - Protecting the public interest 20. Provide accurate and excellent services beyond what is required by the country's rules. 21. Be genuinely interested in serving the public. 22. Prohibit paying a percentage of investigating/auditing fees to people for obtaining professional work. 23. Use clients' money, held by the investigator/ auditor, only for investigating/auditing work purposes. 24. Avoid not offering quality services. 25. Sign the financial report that he prepared and specify exactly the kind of auditing services that he has performed. 26. Avoid advertising him/herself or his/her services through public media such as TV, radio, electronic websites, and newspapers. 27. Prohibit offer any commission to people in exchange for getting professional work. 28. Prohibit mix clients' money, held by the auditor, with auditor's money by creating an account for the clients' money separated from auditor account	

Source: Adapted from Brown *et al.* (2007); Mele, (2005); AICPA (2011); ACFE (2012); Al-Aidaros, Idris, and Shamsudin (2011).

4.9 Data Analysis

The study adopted the use of SPSS IBM Statistics for Windows and second generation analytical tools of Structural Equation Modeling (PLS-SEM). The previous literature such as Popoola (2014) recommends the use of PLS-SEM because of its uniqueness on issues relating to attitude, attribute, feelings, and opinions.

4.9.1 Descriptive Analysis

The descriptive analysis produces the frequency tables that show the distribution of the item. It explains the characteristic and the phenomena of which items are tested.

4.9.2 Regression Analysis

Regression analysis produces the relationship between a dependent (Y) and independent variables (X) (Creswell, 2008). It also measures how much the X explained the Y, estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. The regression model that is used in the study is as follows.

$$FP = \alpha + \beta_1SR + \beta_2KR + \beta_3ER + \varepsilon$$

Where:

Dependent Variable:

FP = Fraud prevention

Independent Variables:

SR = Skills requirement

KR = Knowledge requirement

ER = Ethics requirement

α = Constant

β = coefficient

ε = Standard Error

4.10 Pilot Study

Before using regression analysis to explore relationships among variables, all the assumptions recommended by Tabachnick and Fidell (2001) have been fulfilled, such as (a) sample size; (b) multicollinearity and singularity; and (c) outliers and normality.

A pre-test is essential before using the questionnaire to collect data from the respondent (Creswell, 2012). The pre-test is needed for validity and reliability of the instrument since this study is using questionnaire instrument for data collection (Hair *et al.*, 2007). Researcher's work will be prudent when adopting the pilot test method (Cavana, Delahave & Sekaran, 2001). As stated by Sekaran, (2003), the pilot test survey is the test of understandability, appropriateness and reduction of the measurement error of the instrument planned to be included in the study (Bhattacharjee, 2012; Hair, 2010). The procedure for the pilot test is essential before carry out the actual data collection to ensure respondents understand the intention of the researcher.

Despite the fact that the items used in this study were adapted and adopted from the previous literature in this field, this study went further to confirm the validity and

reliability of the instrument because many factors may warrant amendment as stated by Hair *et al.* (2007).

Sixty (60) questionnaires were administered to the experts in the field of forensic accounting and auditing practices in the office of accountant general and auditor general for the federation in the Nigerian public sector through the research assistant. Forty-five (45) were able to retrieve back from the respondents, and three (3) questionnaires were not used for the pilot test due to double clicking and wrong filling, which remain only forty-two (42) used for the pilot study. This is supported by Lopez-Gamero *et al.* (2009) who stated that pilot test should be within the range of five (5) to thirty (30) questionnaires. The observation received from the pilot test was used to revise the items for the quality improvement of the questionnaires. To carry out the Pilot test of this study, Smart PLS 3 was used for the test. Table 4.6 indicated the result of the Pilot study.

Table 4.6
Result of the Pilot Test

Indicator	Items No	AVE	Cronbach's Alpha	CR
Ethics (ER)	12	0.511	0.913	0.926
Fraud Prevention (FP)	5	0.555	0.796	0.861
Knowledge (KR)	5	0.540	0.788	0.854
Skills (SR)	5	0.543	0.787	0.855

Table 4.6 is the test of reliability and validity of the study. Several tests were done. Firstly, composite reliability (CR) and Cronbach's Alpha (α) were conducted for all the

constructs to be able to decide the measure sampling appropriateness. The result of the CR and α for all constructs range from 0.854 to 0.926 and 0.787 to 0.913 respectively above 0.7 which is considered acceptable (Hair *et al.*, 2010). Also, Average Variance Expected (AVE) was conducted for all the constructs. The result pointed out that it ranges from 0.511 to 0.555 which is an acceptable value. The value of AVE should not go below 0.5 (Ringle *et al.*, 2005). The reliability of the study is considered to be satisfactory as the prior study considered the reliability coefficient of 0.6 to 0.7 as adequate in exploratory research (Hair, Ringle & Sarded, 2012).

4.11 Chapter Summary

Chapter four described the type of study (quantitative method) and research respondents who are forensic accountants and auditors in the Offices of AGF and AudGF. This chapter also provided a detailed description of the research design, population, sample frame, sample size specific data collection, analysis, and integration methods. Reliability and validity in the context of post-positivist research were also addressed.

CHAPTER FIVE RESEARCH FINDINGS

5.1 Introduction

This chapter presents the data analysis and the empirical results to test the research hypotheses. This chapter is sub-divided into ten main sections including the summary. Sections 5.1 and 5.2 deal with the introduction of the chapter and the response of respondents. Sections 5.3 and 5.4 present data screening and non-response bias. Next are sections 5.5 and 5.6 which provide a detailed discussion of the descriptive statistics (such as the profile of despondence, mean, and standard deviation) and confirmatory factor analysis. Similarly, sections 5.7 and 5.8 provide a general model specification, measurement model and structural model of the study. Finally, sections 5.9 and 5.10 analyse the differences between forensic accountants and auditors in term of skills, knowledge, and ethics, and lastly, the summary of the study.

5.2 Survey Responses

The sample size was drawn from Dillman (2000) equation for sample size determination, based on the 370 Forensic Accountant and auditor in the Accountant-General office and Auditor-General office in Nigerian public sector that were selected. The sample size was increased to make provision for none response rate and curtail error in sampling as recommended by Hair, Wolfinbarger, and Ortinal (2008). Hence, a total of 500 questionnaires were administered to the forensic accountants and auditors of both Accountant General Office and Auditor General Office in Nigerian public sector. The respondents were selected by simple random sampling technique.

The researcher did a follow-up by paying personal visits to the relevant offices of the respondents and in some instances, phone calls were placed during the period of data collection. 312 questionnaires were returned by the respondents, representing 62.4% which is considered adequate (Hair et al., 2010). Out of the figure, 45 questionnaires (9%) were found unusable due to incompleteness and multivariate outliers. Hence, 267 questionnaires (53.4%) were retained for further analysis (see Table 5.1, a response rate of the respondent). A measure of Mahalanobis Distance was used as outliers detection techniques as several kinds of literature established that it could detect observation that is away from the centre of the data (Gerrit *et al.*, 2010; Chambers, 1986). Exonerating a such number of questionnaires is essential because they do not represent the sample (Hair *et al.*, 1998).

Table 5.1
Response Rate of the Respondents

Questionnaire Distribution and Retention Item	Frequency	Percentage (%)
Distributed Questionnaires	500	100
Unreturned Questionnaires	(188)	(37.6)
Returned Questionnaires	312	62.4
Unusable returned Questionnaires (Incomplete and Double tick)	(14)	2.8
Rejected Questionnaires – Outliers	(31)	6.2
Retained Questionnaires Usable for further analysis	267	53.4

This is justified as it covers the entire forensic accountants and auditors of both the Office of Accountant General and Auditor General in the Nigerian public sector as mentioned by Linus (2001) and Popoola (2014) that 50% response rate is adequate for social science research. Furthermore, this rate is sufficient as mentioned by the Sekaran's (2003) that a 30 percent response rate is adequate for the analysis. Moreover, the current response rate

is sufficient and is in line with the suggestion of Hair *et al.* (2010) that a sample size should be between 5 and 10 times the number of study variable for type of analysis to be carried out (Hair *et al.*, 2010; Pallant, 2001). Given the number of study constructs (i.e., 4 variables) multiplied by 10 gave a sample of 40, and hence is considered adequate for data analysis (Sekaran, 2003). Therefore, 267 usable responses (i.e., 53.4%) of the required sample size was keyed into SPSS (version 22) for further analysis.

5.3 Non-Response Bias

Non-response bias is described as the most common mistake a researcher anticipates to make in estimating the characteristics of the sample because some category of respondents is underrepresented due to nonresponse (Berg, 2002). Singer (2006) asserts that there is no minimum response rate below which a survey estimate is necessarily biased. On the other hand, no response rate above which it is never biased. However, no matter how small a non-response is, there is the possibility of bias which needed to be investigated (Pearl & Fairly, 1985; Sheikh, 1981).

To test non-response bias, extrapolation procedure was conducted as suggested by Armstrong and Overton (1977). Respondents were divided into two independent samples based on their response to survey questionnaire with regards to four major study variables (Skills requirement, Knowledge requirement, Ethics requirement and Fraud prevention).

The questionnaires were administered within five (5) weeks from December 2016 to January 2017. Armstrong and Overton (1977) and Lin and Schaeffer (1995) recommend

ways to test non-response bias by comparing the responses to the instrument (questionnaire) distributed early and lately of the respondents. However, the responses of the respondents after December 2016 are regarded as late response and also a sample of non-response to the first questionnaire administered (i.e. it presumed to be the representative of the non-respondents group). Table 5.2 represents the independent T-Test of the early and late respondents (non-response bias).

Table 5.2
Descriptive Statistics for Early and Late respondents

Measures	T	N	Mean	Std. Deviation	t-value	Sig.
	Test					
FP	Early	149	4.42	.404	1.186	0.328
	Late	118	4.38	.496		
SR	Early	149	4.39	.397	0.188	0.367
	Late	118	4.38	.506		
KR	Early	149	4.40	.430	0.812	0.320
	Late	118	4.38	.550		
ER	Early	149	4.41	.414	1.386	0.311
	Late	118	4.37	.508		

From the independent samples t-test for equality of means, the results indicate that the group mean and standard deviation for early responses and late responses are seemingly no different. As represented in Table 5.2, there is no significant difference between early responses and late responses based on the items in the constructs. For example, the constructs of skills requirement ($t = 0.188, p < 0.367$); knowledge requirement ($t = 0.812, p < 0.320$); ethics requirement ($t = 1.386, p < 0.311$); and fraud prevention ($t = 1.186, p < 0.328$). Thus, the results indicate that while these items are statistically different, the differences are fairly small and insignificant to affect the overall results of the study.

5.4 Data Screening and Cleaning

According to Pallant (2010), data screening is the method of checking for errors in the data collected. The error expected to take various forms which may include missing data or data that is outside the normal range stated by the researcher (out of range data). Data cleaning is essential in conducting any multivariate analysis. It is because the quality and the meaningfulness outcome of the analysis depend on the data screening and editing (Pallant, 2010). Hence, missing data and outliers were thoroughly checked and treated.

5.4.1 Detection of Missing Data

Missing data refers to the unavailability of suitable value on one or more variables for data analysis (Hair, Black, Babin & Anderson, 2010). Given the negative consequence of missing data in the analysis, the researcher took precautionary action right from the field in an attempt at reducing and ensuring that the data is free from any missing value. Upon receipt of any duly completed questionnaire, the researcher, and his assistants quickly checked through to make sure that every question was appropriately answered. In the case of respondent's inability to respond to a given question, respondents' attention was immediately drawn to kindly and adequately complete the section.

Additionally, the researcher followed the data entry step by step, with caution and curiosity. Whenever a missing value was noted, the researcher referred to the questionnaire and traced it. Therefore, this goes a long way in significantly ensuring that lesser missing value is detected. A preliminary descriptive statistics were conducted to find out whether there is missing data or not. The descriptive statistics result shows that

only two (2) missing value is recorded. Hair *et al.* (2010) assert that any case with more than 50 percent missing value should be deleted as long as there is an adequate sample. Similarly, Tabachnich and Fidde (2007) and Babbie (2004) observe the method of treating missing data is to drop the case merely. Hence, in this study two (2) missing data was recorded and corrected.

5.4.2 Treatment of Outliers

Byrne (2010) describes outliers as those cases whose scores are significantly dissimilar from all the others in a given set of data. Several studies established many ways of using a measure of distance in detecting and correcting outliers. Some of these techniques of identifying outliers are scale and locator estimators (Venhan & Suresh, 2011); modification of Akaike's information criterion (Ueda, 2009); and median or quartile techniques (Liu *et al.*, 2004). Many outliers' detection techniques adopt the measure of Mahalanobis distance to determine the isolation of observation.

The reason for adopting Mahalanobis distance techniques as stated by Gerrit *et al.* (2010) is that Mahalanobis has the capability of detecting observations and also gives less influence to a variable with highly interrelated variables. Given this, chi-square statistics were used to know the empirical optimal values. The simple linear regression analysis was used by using the new response number as dependent variable while other items excluding demographical information were used as an independent variable. The Mahalanobis output compared with the chi-square table. By so doing, the study detects

31 cases from 298 respondents as outliers. These have been removed from the total respondents, and a total number of 267 respondents are available for analysis.

5.5 Descriptive Statistics – Profile of the Respondents

Table 5.3 denotes the demographical information of respondents. The respondents were asked to explain some of their demographic information, which include organisation, gender, educational background, position, working experience, and area of profession. The finding shows male dominance in an entire number of a forensic accountant and auditor staffs of both accountant general office and auditor general office in Nigerian public sector with the response rate of 149 (55.8%). It is an indication that the sector is dominated by a male with 118 (44.2%) provision for a female to participate in managing the sector. Regarding the educational background, those with Diploma and below constituted 17 responses, representing 6.4% of the total responses, followed by Degree holders with 70 responses 26.2%, next are those with Masters Certificates with 109 responses, representing 40.8% of the total response. Respondents with doctorate accounted for 71 responses, which is exactly 26.6% of the total response.

As for the professional education of respondent, 75 respondents had ACA which is equivalent to 28.1% whereas 68 respondents (25.5%) have FCA, followed by that respondent CNA constituted the response rate of 38 amounted to 14.2%. 46 respondents have FCNA with 17.2%, and those possess the other professional qualification are 40 respondents with the percentage of 15%. Meanwhile, with regards to the Position in an organisation, 157 respondents (58.8%) were forensic accountants, while 110 respondents

(41.2%) were Auditors. As for the Organization, the Office of Accountant General was the primary focus, which has the highest respondents of 176 with the percentage of 65.9% while the Auditor General office has 91 (34.1%) respondents.

However, for the working experience, there are 34 respondents (12.7 %) that were below five years. 71 respondents (26.6%) that were between 6 – 10years, 67 respondents (25.1%) were between 11 – 15years, while the 66 respondents (24.7%) and 29 respondents (10.9%) were 16 – 20years and over 20 years respectively. Table 5.3 shows the summary of the demography of the respondents.

5.5.1 Mean and Standard Deviation

The most common measure of central tendency is the mean, which is referring to the average value of the data set (Sekaran & Bougie, 2010). Standard deviation is a measure of spread or dispersion, which provides an index of variability in the data set and it is the square root of the variance. Both mean and the standard deviation is basic descriptive statistics for interval and ratio scale.

This study adopts five points Likert scale, and Nik, Jantan, and Taib (2010) interpretation of the level of the score are used. They recommended that scores of less than 2.33 be low level, 2.33 to 3.67 are moderate level, and 3.67 and above are regarded as high level. Table 5.4 presents the mean and standard deviation of the entire variables used in this study. Fraud prevention has the highest mean ($M = 4.40$, $SD = 0.446$) while skills

requirement recorded the lowest mean ($M = 4.386$, $SD = 0.448$). Finally, the entire variables means are in the range of high level.

Table 5.3
Summary of the Respondents' Demography

S/N	Items	Frequency	Percentage (%)
1	Organization		
	Accountant General Office	157	58.8
	Auditor General Office	110	41.2
2	Educational background		
	Diploma	17	6.4
	Degree	70	26.2
	Master	109	40.8
	Doctoral degree	71	26.6
3	Professional Qualification		
	Associate Chartered Accountant (ACA)	75	28.1
	Fellow Chartered Accountant (FCA)	68	25.5
	Certified National Accountant (CNA)	38	14.2
	Fellow Certified National Accountant (FCNA)	46	17.2
	Others	40	15.0
4	Gender		
	Male	149	55.8
	Female	118	44.2
5	Profession		
	Forensic Accountant	157	58.8
	Auditor	110	41.2
6	Working experience		
	1 - 5 yrs	34	12.7
	6 - 10 yrs	71	26.6
	11 - 15 yrs	67	25.1
	16 - 20 yrs	66	24.7
	21 yrs and above	29	10.9

Table 5.4
Mean and Standard Deviation of Variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FP	267	1	5	4.401	.446
SR	267	1	5	4.386	.448
KR	267	1	5	4.393	.486
ER	267	1	5	4.393	.458

5.6 Confirmatory Factor Analysis

This section explains the results of confirmatory factor analysis (CFA) for this research using the principal component analysis technique. As mentioned previously in chapter three (3) of this study, all the items are adapted from the prior studies. Thus, this study undertakes the confirmatory factor analysis (CFA). Smart PLS 2.0 M3 has an inbuilt mechanism that takes care of the confirmatory factor analysis (CFA) (Ringle *et al.*, 2005).

5.7 Models Evaluation

This segment treats both the measurement model and the structural model. In section 5.7.1 that follows, an evaluation of the measurement model is discussed in detail.

5.7.1 Measurement Model

The first attempt is to ensure that the measurement model is valid and reliable. This is done by following the argument of Esposito Vinzi *et al.* (2010) who pointed out that the rules of thumb are, for an outer loading to be considered, it should be 0.5, and above and for the average variance extracted, it should be higher than 0.5. Based on this, all the items with outer loadings below 0.5 were deleted beginning with the one with the lowest

value, a technique which according to Hair *et al.* (2012) is very appropriate because it improves data quality and presents the measuring of the construct.

This section further gives a detailed description of the modelling procedures as pointed out by Anderson and Gerbing (1988). They believe that a two-step modelling approach should be undertaken to determine the quality of items used for measurement and secondly to be able to estimate the relationship between models. The two approaches are also discussed as measurement model and structural model (Hair *et al.*, 2012). This study uses partial least squares as suggested by Chin *et al.* (2003) and SmartPLS 2.0 M3 is adopted in this study to be able to assess the reliability and validity as well as testing the structural model.

5.7.2 Evaluation of Uni-dimensionality of the Construct

The measurement model needed to be restated by removing the redundant items if any items become redundant (Arbuckle, 2007). There is a need for the removal of the redundant items to achieve the Uni-dimensionality of the construct. (Hair *et al.*, 2006). This approach is used to achieve un-dimensionality of the construct as suggested by Anderson and Gerbing (1988) outer loading must be 0.5 and above. The Cronbach Alpha (α) and Composite Reliability (CR) must be in the range of 0.7 and 0.9, and lastly, to avoid boosting error term correlation (Hayduk & Littvay, 2012).

5.7.2.1 Assessment of the Uni-dimensionality for the Fraud Prevention (FP)

The Fraud prevention construct was assessed by Nazri *et al.* (2013); Sengur (2012); Albrecht *et al.* (2012) and AICPA. (2008). It is a dependent variable which consists of 14 items. Some items (8 items) were deleted, and only seven (6) were retained by the PLS-SEM algorithm. The item FP1, FP4, FP5, FP8, FP9, FP10, FP12 and FP13, were deleted due to the outer loading of below 0.5 AVE and therefore suffered deletion while the remaining seven (6) items of indicators FP2, FP3, FP6, FP7, FP11 and FP14 were retained for the further analysis. Table 5.5 summarised the skills requirement items and its details.

Table 5.5
Description of the Fraud prevention (FP) Items

Original Items	Items Label	Decision
Setting the tone at the top.	FP1	Deleted
Establishing a corporate code of conduct.	FP2	
Taking consistent actions in response to an alleged fraud.	FP3	
Fraud training for employees and management.	FP4	Deleted
Conducting background investigations on individuals being considered for employment.	FP5	Deleted
Creating a positive workplace environment.	FP6	
Identifying and measuring fraud risks.	FP7	
Implementing and Monitoring Appropriate Preventive and Detective Internal Controls.	FP8	Deleted
Making changes to the entity's activities and processes in order to reduce or eliminate fraud risk.	FP9	Deleted
Effective Audit Committee or Board of directors.	FP10	Deleted
Management effectiveness in overseeing activities.	FP11	
Certified Forensic accountants in internal audit team or external audit team.	FP12	

5.7.2.2 Assessment of the Uni-dimensionality for the Skills Requirement

The skills of the forensic accountant construct were assessed by Davis *et al.* (2010) and DiGabriele (2008). It is an independent variable which consists of 9 items. Four (4) items were deleted, and five (5) were retained by the PLS-SEM Algorithm.

Table 5.6

Description of the Skills Requirement (SR) Items

Original Items	Items Label	Decision
The important skills requirement of a forensic accountant is analytical proficiency (the ability to examine for what should be provided rather than what is provided).	SR1	
The important skills requirement of a forensic accountant is deductive analysis (the ability to take aim at financial contradictions that do not fit in the normal pattern of an assignment).	SR2	Deleted
An important skills requirement of a forensic accountant is critical thinking (The ability to decipher between opinion and fact).	SR3	Deleted
The important skills requirement of a forensic accountant is investigative skills (the ability to examine the situation for typical warning signs thoroughly).	SR4	
The important skills requirement of a forensic accountant is unstructured problem solving (the ability to approach each situation and prepared to solve problems with an unstructured approach).	SR5	
The important skills requirement of a forensic accountant is specific legal knowledge (the ability to understand basic legal processes and legal issues including the rules of evidence).	SR6	Deleted
The important skills requirement of a forensic accountant is written communication (the ability to effectively communicate in writing via reports, charts, graphs, and schedules the basis of opinion).	SR7	
The important skills requirement of a forensic accountant is oral communication (the ability to effectively communicate in a speech via expert testimony and general explanation the basis of opinion).	SR8	Deleted
The important skills requirement of a forensic accountant is composure (the ability to maintain a calm attitude in pressured situations.)	SR9	

The indicators -SR2, SR3, SR6, and SR8 were deleted due to the outer loading of below 0.5 AVE and therefore suffered deletion while the remaining five (5) indicators SR1, SR4, SR5, SR7, and SR9 were retained for the further analysis. Table 5.6 summarised the knowledge requirement items and its details.

5.7.2.3 Assessment of the Uni-dimensionality for the Knowledge Requirement

The knowledge requirement construct was evaluated by Popoola (2014); Davis *et al.* (2010) and Ramaswamy (2007). It is an independent variable which consists of 7 items. Three (3) items (KR1, KR4 and KR5) were deleted, and only four (4) such as KR2, KR3, SR6, and KR7 were retained upon the PLS-SEM Algorithm due to the outer loading of below 0.5 AVE. Table 5.7 summarised the knowledge requirement items and its details.

Table 5.7
Description of the Knowledge Requirement (KR) Items

Original Items	Items Label	Decision
The forensic accountant needs to be a more broadly experienced professional.	KR1	Deleted
The forensic accountant needs to be more specialised within the field of Fraud prevention.	KR2	
The forensic accountant needs to have more general business experience.	KR3	
The forensic accountant needs to have more technical accounting knowledge.	KR4	Deleted
The forensic accountant needs to have more court proceedings knowledge, criminal and civil law.	KR5	Deleted
The forensic accountant needs to have more information technology knowledge.	KR6	
The forensic accountant needs to have more criminology knowledge.	KR7	

5.7.2.4 Assessment of the Uni-dimensionality for the Ethics Requirement

The code of ethics of forensic accountant construct was assessed by Al-Aidaros, Idris, and Shamsudin (2011); AICPA (2011); SCOPA (2009) and Brown *et al.* (2007). It is an independent variable which consists of 28 items. Twenty-two (22) indicators were deleted, and only six (6) items were retained upon the PLS-SEM algorithm. The 22 indicators were deleted due to the outer loading of below 0.5 AVE and therefore suffered deletion while the remaining six (6) indicators ER1, ER6, ER11, ER21, ER26, and ER27 retained for the further analysis. Table 5.8 summarised the ethics requirement items and its details.



Table 5.8
Description of the Ethics Requirement (ER) Items

Original Items	Items Label	Decision
Conceal any information to a third party at any costs.	ER1	
Adhere to technical and ethical standards issued by accounting organisations.	ER2	Deleted
Issue an urgent letter to the shareholders when the company is about to collapse.	ER3	Deleted
Prohibit disclosing any information to a third party unless demanded by the law.	ER4	Deleted
Conceal any information to a third party unless demanded by the law.	ER5	Deleted
Neglect to comply with the technical and ethical standards sometimes.	ER6	
Report to the board of directors, in writing, of any violation of company rules and regulations from the management.	ER7	Deleted
Inform the board of directors about all financial transactions that negatively affect the company.	ER8	Deleted
Abstain from using any information about his/her clients for his/her gain.	ER9	Deleted
Not to allow the influence of others to override professional judgment.	ER10	Deleted
Not to accept any financial benefit from clients aside your normal fees.	ER11	
Not to allow conflict of interests and bias to come in between management and company's owner	ER12	Deleted
Not to change his/her judgment due to pressure from any quarters.	ER13	Deleted
To carry out professional evaluations based on documents made available to him/her.	ER14	Deleted
Not to accept work when he/she does not have enough knowledge about how to perform the work.	ER15	Deleted
Not to make any alteration to the report to please the management	ER16	Deleted
Not to be impartial.	ER17	Deleted
Not to accept gifts from his/her clients.	ER18	Deleted
To avoid investigating a company in which one of his/her family is the owner or one of the shareholders.	ER19	Deleted

Table 5.8 (Continued)

Original Items	Items Label	Decision
Provide accurate and excellent services beyond what is required by the country's rules.	ER20	Deleted
Be genuinely interested in serving the public.	ER21	
Prohibit paying a percentage of investigating/auditing fees to people for obtaining professional work.	ER22	Deleted
Use clients' money, held by the investigator/auditor, only for investigating/auditing work purposes.	ER23	Deleted
Avoid Not offering quality services.	ER24	Deleted
Sign the financial report that he prepared and specify exactly the kind of auditing services that he has performed.	ER25	Deleted
Avoid advertising him/herself or his/her services through public media such as TV, radio, electronic websites, and newspapers.	ER26	
The offer of any commission to people in exchange for getting professional work.	ER27	
Prohibit mix clients' money, held by the auditor, with auditor's money by creating an account for the clients' money separate from auditor account.	ER28	Deleted

An examination of the loadings and cross-loadings are conducted to be able to spot any problem with the items. It also serves as a pre-requisite for ascertaining the convergent validity as shown in Table 5.9

Table 5.9
Cross Loadings Analysis for Discriminant Validity

Latent Variable	ER	FP	KR	SR
ER1	0.737	0.609	0.572	0.607
ER11	0.765	0.617	0.567	0.571
ER21	0.764	0.620	0.620	0.636
ER26	0.743	0.594	0.582	0.588
ER27	0.741	0.596	0.606	0.604
ER6	0.737	0.598	0.561	0.554
FP11	0.614	0.727	0.570	0.556
FP12	0.582	0.730	0.608	0.596
FP2	0.649	0.805	0.609	0.645
FP3	0.584	0.765	0.573	0.608
FP6	0.615	0.718	0.530	0.544
FP7	0.569	0.720	0.500	0.525
KR2	0.542	0.556	0.802	0.534
KR3	0.657	0.604	0.768	0.559
KR6	0.570	0.586	0.722	0.609
KR7	0.660	0.622	0.824	0.631
SR1	0.591	0.547	0.532	0.725
SR4	0.572	0.591	0.497	0.691
SR5	0.501	0.527	0.551	0.703
SR7	0.603	0.538	0.538	0.721
SR9	0.594	0.605	0.588	0.767

Note: The item in the bold form is a construct on the same column, and each of them possesses the loading higher than 0.5 as recommended by the (Hair *et al.*, 2010).

Convergent validity is achieved when the loading items are greater than 0.5 (Hair *et al.*, 2010). Twenty-one (21) items have the loading higher than 0.5 as illustrated in Table 5.9. All the highlighted items in bold are the cross-loadings from 0.691 to 0.823. Table 5.10 displays the result of the discriminant validity.

Table 5.10
Fornell-Larcker Criteria for Discriminant Validity

Latent variable	ER	FP	KR	SR
ER	0.748			
FP	0.609	0.744		
KR	0.582	0.661	0.780	
SR	0.594	0.680	0.650	0.722

Note: The entire figures that are in bold represent the square root of Average Variance Extracted (AVE) in diagonal, and it represents latent variable correlation.

5.7.2.5 Summary Result for Reflective Measurement Model of the Study

The results in Table 5.11 indicates the criteria for the evaluation of the reflective measurement model of the study regarding internal consistency reliability, convergent validity and discriminant validity.

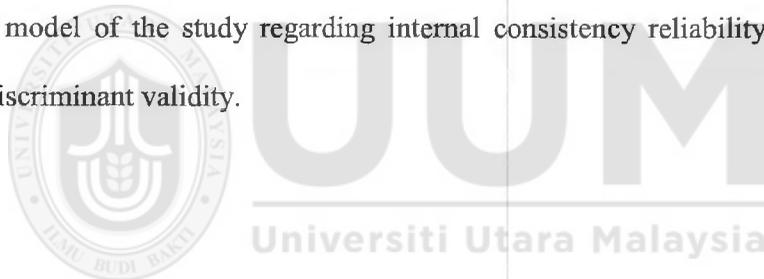


Table 5.11

Summary Result for Reflective Measurement Model of the Study

Latent Variable	Indicator	Loading	Indicator Reliability	Cronbach's Alpha	Composite Reliability	AVE	Discriminant Validity
Skills	SR1	0.725	0.525	0.770	0.844	0.521	Yes
Requirement	SR4	0.691	0.478				
	SR5	0.703	0.494				
	SR7	0.721	0.519				
Knowledge	SR9	0.767	0.589	0.784	0.861	0.608	Yes
	KR2	0.802	0.642				
	Requirement	KR3	0.768				
KR6		0.722	0.521				
Ethics	KR7	0.824	0.678	0.843	0.884	0.560	Yes
	ER1	0.737	0.543				
	Requirement	ER11	0.765				
ER21		0.764	0.584				
ER26		0.743	0.552				
ER27		0.741	0.549				
Fraud Prevention	ER6	0.737	0.544	0.838	0.881	0.554	Yes
	FP11	0.727	0.528				
	FP12	0.727	0.528				
	FP2	0.805	0.649				
	FP3	0.765	0.585				
	FP6	0.718	0.515				
FP7	0.720	0.518					

5.8 Structural Model of the Study

Having analysed the Measurement Model in Figure 5.1, this section examines the Structural Model. Hair *et al.* (2006) explained the structural model as the dependence of the relationship in the hypothesised model. In PLS, the structural model describes the directional relationship between construct, their t-values, and path coefficient and follow the indirect relationship. This study only has the directional relationship in the model.

The only directional relationship will be explained in this structural model. The PLS as argued by Hair *et al.* (2010) on the path coefficient, it is just like the standardised beta coefficient in the regression analysis.

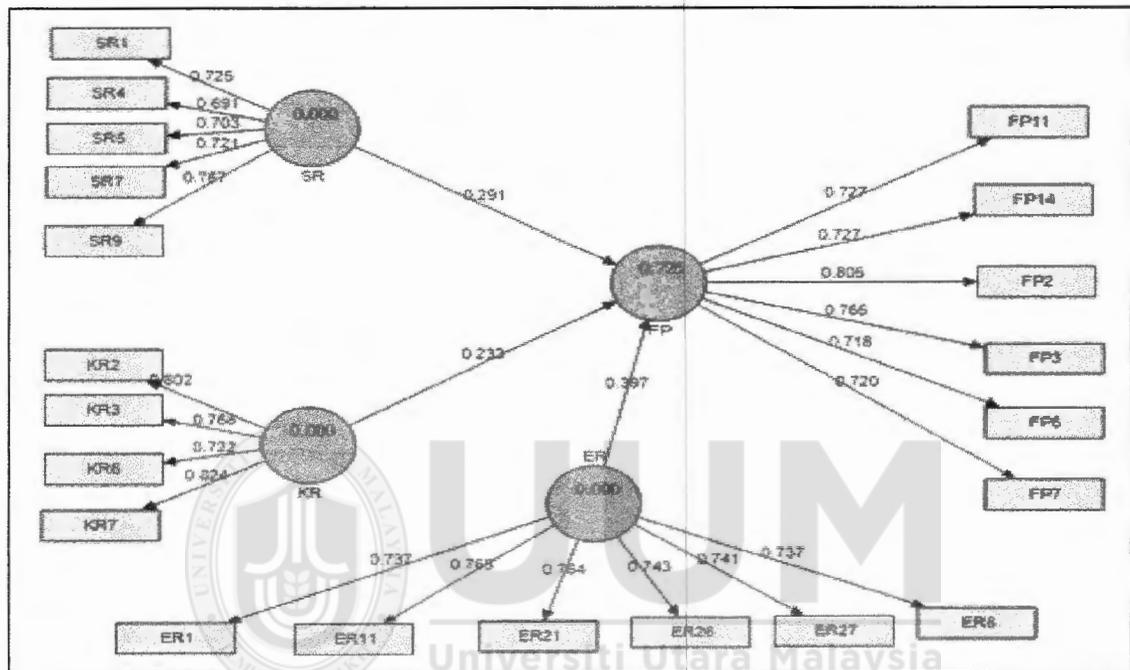


Figure 5.1
Result for Reflective Measurement Model Algorithm

The primary objective here is to test the hypothesis relationships among constructs. This research focuses on the model evaluation and followed by the examining of the assumption of regression and correlation of variables. The structural model evaluates the relationship of the skill (SR), knowledge (KR) and ethics (ER) as an independent variable to the Fraud prevention (FP) as dependent variable which all the variables were supported. Figure 5.2 shows the effect of every latent variable on the endogenous variables.

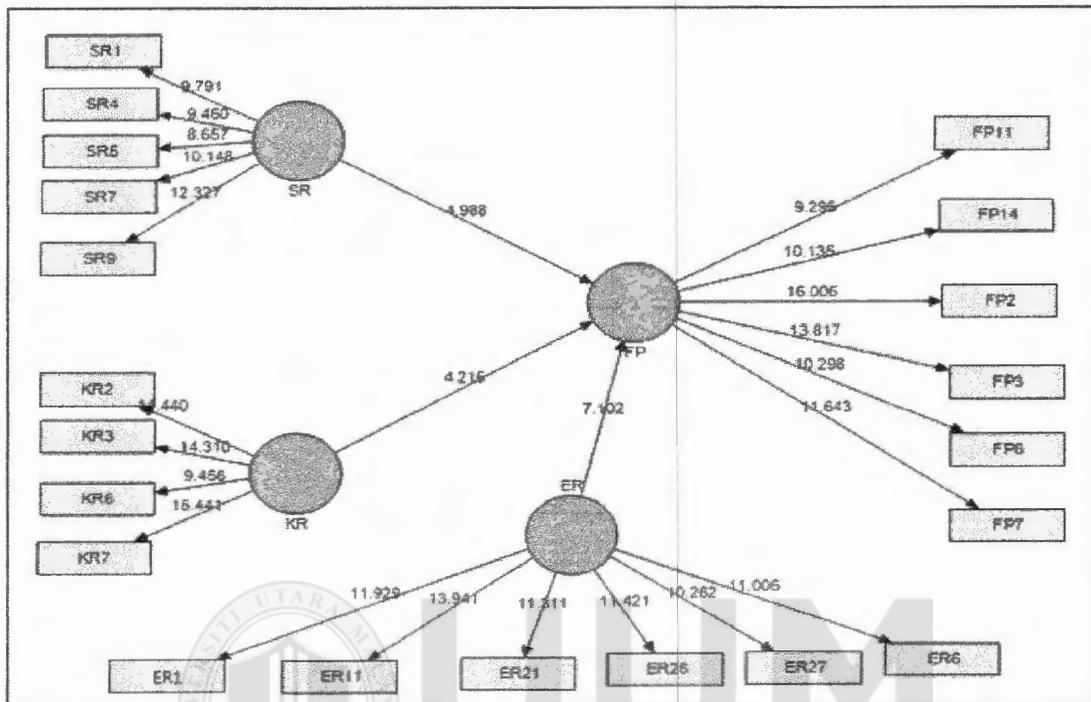


Figure 5.2
Results of Bootstrapping on Structural Model

Figure 5.2 explained in the Table 5.12 which indicates the t-values, path coefficients and standard error at which the hypotheses supported. The t-values are determined by using 5000 sampling iterations in the repetitive bootstrapping. The 5000 sampling iteration using in this study justifies that every model parameter has empirical sampling distribution and standard deviation will serve as a proxy of the empirical standard error parameter (Hair *et al.*, 2012).

Table 5.12
Results of Hypotheses Testing

Hypotheses	Beta	Standard error	t-value	p-value	Decision
ER -> FP	0.397	0.056	7.102	0.000***	Supported
KR -> FP	0.233	0.055	4.216	0.000***	Supported
SR -> FP	0.291	0.058	4.988	0.000***	Supported

Note: All the hypotheses are accepted based on their t-values (t-value ≥ 1.96).
 *** p-value @ 5% significant level.

Table 5.12 shows the indication that all the hypotheses accepted possess t-value of greater than or equal to 1.96 (i.e., t-value ≥ 1.96). The following Table 5.13 indicates the holistic effect of all the capabilities (SR, KR and ER) practices by the forensic accountant and auditor on Fraud prevention.

Table 5.13
R Square of the Constructs

Capabilities	R Square (R²)
SR	
KR	
FP	0.725
ER	

Note: All the three Capabilities (SR, KR & ER) explained 72.5% variation in Fraud prevention

Table 5.13 displays the holistic effect of three capabilities requirement (SR, KR and ER) of a forensic accountant and auditor on fraud prevention (FP). The (R²) value indicates that all the three capabilities (SR, KR & ER) put together are capable of explaining 72.5% of the changes in the dependent variable fraud prevention (FP)

5.8.1 Determining the Effect Size (f^2) in Structural Model

After the results of the holistic effect of size (f^2), it is also important to determine the individual contribution of all exogenous variables by calculating effect sizes of the exogenous variables (independent variables). This section reports the results of the effect size (f^2) of all hypotheses that were statistically supported. Cohen (1988) calculates the effect size (f^2) by using the formula provided below:

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

This effect translates the effect of the variance of every construct in the model. Where R^2 included and R^2 excluded denotes the R^2 on the exogenous variable whereas the endogenous variables are represented R^2 included. The following are the effect size of the supporting relationships.

Table 5.14

Determination of effect size (f^2) and rating on the Structural Model

Independent Variable	R^2 incl.	R^2 excl.	R^2 incl. – R^2 excl.	$1-R^2$ incl.	Effect Size (f^2)	Criterion
ER -> FP	0.725	0.698	0.027	0.275	0.10	Small
KR -> FP	0.725	0.706	0.019	0.275	0.07	Small
SR -> FP	0.725	0.680	0.045	0.275	0.16	Medium

From the Table 5.14, the effect size of the independent variables to the dependent variable indicates that the f^2 is within small and medium effect size (SR= 0.10 small; KR= 0.07 small and ER= 0.16 medium). In that regards, SR and KR possess a small effect size (f^2), and the only ER indicates a medium effect size. Thereby, it explains the contribution of each of the independent constructs of SR, KR and ER forensic accountant and auditors to the dependent variable of Fraud prevention.

5.8.2 The Predictive Relevance of the Model

This study applies a test for the predictive relevance of the model to assess the predictive capacity of the model. Q^2 represents it. As explained by the Hair *et al.* (2012), the predictive relevance (Q^2) also assesses the parameter estimates. This research finds the predictive relevance of the Blindfolding and the result obtained through the variable score, and then the cross-validated redundancy was taken out. The cross-validated redundancy defines the capability of the model to predict the dependent variable (Endogenous variable), and it demonstrates the quality of the model. Table 5.15 illustrates the cross-validated redundancy construct.

Table 5.15
Cross Validated Redundancy construct

Total	SSO	SSE	1-SSE/SSO
FP	1602	1018	0.364

Predictive relevance (Q^2) > 0

Stone (1974) and Geisser (1974) pinpoint that if the $Q^2 > 0$, the model has predictive relevance. On the other hand, if the $Q^2 < 0$, the model has no predictive relevance. Based

on the Table 5.15, the $Q^2 = 0.36$. This result shows an outstanding ability of 0.36 for the Fraud prevention. This indicates that the model of the research has a predictive ability.

5.9 Differences between Forensic Accountant and Auditor's Capability (Skills, Knowledge, and Ethics) and Fraud prevention

This section adopts the Mann-Whitney U Test to test the Hypothesis H₄, Hypothesis H₅, and Hypothesis H₆, as stated in the research objective. It shows differences between the capability of forensic accountants and auditors on the prevention of fraud in the public sector. The Mann-Whitney U test is the test of non-parametric for the independent samples (Pallant, 2010).

Mann-Whitney U test determines the ranks of two or more groups, i.e.; it describes the direction of the differences between two or more groups and the effect sizes (Pallant, 2010). As stated in the research hypothesis, "Does the forensic accountant have the higher level of capabilities and competency than auditors in the Nigerian public sector?" the Mann-Whitney U Test was used to test the differences between the two groups. Table 5.16 determines the direction of differences between the forensic accountant and auditors

Table 5.16*Statistical differences between Forensic Accountant and Auditors Capability*

Hypothesis No	Latent Variable	Role of FA & Auditor	N	Test Statistics		Means		
				Mann-Whitney U Test	Z Score	Asymp. Sig.	Median	Decision
H ₄	SR	1.FA	157	7818.500	-1.361	0.007***	3.244	Support
		2.Auditor	110				2.757	
		Total	267				3.244	
H ₅	KR	1.FA	157	8196.500	-0.740	0.017**	2.828	Support
		2.Auditor	110				2.414	
		Total	267				2.828	
H ₆	ER	1.FA	157	7944.500	-1.119	0.007***	3.279	Support
		2.Auditor	110				2.764	
		Total	267				3.279	

Note: *** p-value @1% and ** p-value @ 5% significant level.

5.9.1 Differences between Skills Requirement of Forensic Accountant and Auditors

The study determines which groups between the forensic accountant and auditor have a higher level of capability in term of skills on fraud prevention in response to the Hypothesis H₄. “Forensic accountants have a significantly higher level of skills requirement in fraud prevention than auditors in the Nigerian public sector”. The Mann-Whitney U Test reports the median value for each group.

The skills requirement average value of forensic accountant is (SR = 3.24) and the auditor (SR = 2.76). The test of the Mann-Witney U shows the results of forensic accountant (Md = 3.24, n = 157) and auditor (Md = 2.76, n = 110) with U = 7818.500, z = -1.361, p = 0.007 and r = 0.083. These findings are in line with the prior study (Popoola *et al.* 2015; Ramaswamy, 2005). The effect size statistics (r) is the total value

of z statistics divide by the square root of a total number of respondents (N) (i.e., $r = z/\sqrt{N}$). Hence, $z = -1.361$, $N = 267$. Therefore, the effect size is 0.083. According to Cohen (1988) the criteria for the effect size is as follow: 0.1 = small size; 0.3 = medium size and 0.5 = large size. Therefore, the effect size (r) is a small effect.

5.9.2 Differences between Knowledge Requirement of Forensic Accountant and Auditors

The study examines the groups between the forensic accountant and auditor with a higher level of capability regarding knowledge on fraud prevention in response to the Hypothesis H₅. “Forensic accountants have a significantly higher level of knowledge requirement in fraud prevention than auditors in the Nigerian public sector”. The Mann-Whitney U Test reports the median value for each group.

The knowledge requirement median value of forensic accountant is (KR = 2.83) and the auditor (KR = 2.41). The test of the Mann-Witney U test shows the results of forensic accountant (Md = 2.83, n = 157) and auditor (Md = 2.41, n = 110) with $U = 8196.500$, $z = -0.740$, $P = 0.007$ and $r = 0.05$, which revealed that forensic accountants have higher level of knowledge requirement than auditors on Fraud prevention in the Nigerian public sectors. This finding is in support of the previous study (Popoola, 2014; Davis *et al.*, 2010). Hence, $z = -0.740$, $N = 267$. Therefore, effect size (r) is 0.05. Therefore, the effect size (r) is a small effect.

5.9.3 Differences between Ethics Requirement of Forensic Accountant and Auditors

The study determines the groups of the forensic accountants and auditors that have a higher level of capability in term of ethics requirement on fraud prevention in response to the Hypothesis H₆. “Forensic accountants have a significantly higher level of ethics requirement in fraud prevention than auditors in the Nigerian public sector”. The Mann-Whitney U Test reports the median value for each group.

The ethics requirement median value of forensic accountant is (ER = 3.28) and the auditor (ER = 2.76). The test of the Mann-Witney U shows the results of forensic accountant (Md = 3.28, n = 157) and auditor (Md = 2.76, n = 110) with $U = 7944.500$, $z = -1.110$, $P = 0.007$ and $r = 0.07$, which revealed that forensic accountants have higher level of ethics requirement than auditor on Fraud prevention in the Nigerian public sectors. These findings are in agreement with the previous research (Al-Aidaros, Idris, & Shamsudin, 2011; and Akadakpo & Izedonmi, 2013). Hence, $z = -1.119$, $N = 267$. Therefore, effect size (r) is 0.07. Therefore, the effect size (r) is a small effect.

5.10 Chapter Summary

Chapter five explained the results of the questionnaires that were administered to the respondents from the Offices of the Accountant-General of the Federation and the Auditor General for the Federation in the Nigeria public sector. Series of the tests were being carried out from the result of the questionnaires based on techniques of analysis. The analysis test started from screening of data from SPSS to the measurement model and structural model in SmartPLS2.0 M3 (Ringle *et al.*, 2005). Also, the loading and

cross loading confirmed the achievement of the convergent validity. The actual representation items measure confirmed the achievement of thorough discriminant validity.

The measurement model and structural model were assessed in Smart PLS 2.0 M3 (Ringle *et al.*, 2005) and hypotheses were tested and supported that having the required capability of forensic accountant and auditor will prevent the fraudulent practices not only in the Nigerian public sector but also all other sectors. Finally, the last part of the sub-section examined the differences between the groups (i.e., forensic accountants and auditors) regarding fraud prevention in the Nigerian public sector. Mann-Whitney U Test was used to measure the differences, which shows that forensic accountants have higher levels of capability requirement (Skills, Knowledge, and Ethics) than auditors in Fraud prevention in the Nigerian public sector. The next chapter is the summary, conclusion, and recommendation of the study.

CHAPTER SIX

DISCUSSIONS AND CONCLUSION

6.1 Introduction

This chapter discusses the findings, recommendations, and conclusions of the study. The chapter is divided into eight (8) sub-sections. It commences with Sections 6.1 and 6.2 that deal with the introduction of the chapter and the review of the study. Sections 6.3 and 6.4 present detailed discussions and contributions to the study. Next are sections 6.5 and 6.6 that provide the recommendation and limitations of the study. Finally, Sections 6.7 and 6.8 present the suggestions for future research and conclusion.

6.2 Review of the Study

The study examined the relationship between capability requirement of forensic accountants and auditors (Skills, Knowledge, and Ethics) on fraud prevention in the Nigerian public sector. In addition, the study investigated whether forensic accountants have a higher level of capability requirement than auditors on fraud prevention in the public sector environment of Nigeria.

The quantitative method of data collection is adopted, which involves the use of a structured questionnaire adapted and adopted from prior research. A self-administered questionnaire was employed, which allowed the researcher to have direct contact with the respondents. A total number of 500 questionnaires were administered to the forensic accountants and auditors in the offices of Accountant General and Auditor General for the Federation of Nigerian public sector. A total of 312 questionnaires were completed

and retrieved from the two offices. The data were keyed into statistical packages for social science (SPSS version 22) and analysis commenced by checking for the missing values and outliers. The total number of two (2) missing values were detected and corrected with the median method and thirty-one (31) responses were excluded from the analysis due to issues of outliers (Mahalanobis). The preliminary component analysis was conducted to enable the assessment of the validity of the instruments.

The reliability test was carried out to evaluate the internal consistency of the measures through composite reliability of the Smart PLS. The structural equation modelling (SmartPLS2.M3) was used to test the first three hypothesis, and Mann - Whitney U test used to test the last three hypotheses. The result of the analysis of Fraud prevention as the endogenous variable showed that the construct is measured with one component. Skills requirement, knowledge requirement, and ethics requirement were all measured as one dimension, and their reliability is above 0.708 as requested by Hair *et al.*, (2014: 2017).

As regards to the hypothesis testing for the relationship using partial least square-structural equation modelling, the result indicates that all developed hypotheses are accepted. The Hypotheses H₁, H₂, and H₃ are accepted because the results show that skills requirement, knowledge requirement, and ethics requirement have a significant relationship with fraud prevention. The hypotheses H₄, H₅, and H₆ are also accepted because the Forensic accountants have the higher level skills, knowledge, and ethics requirement on fraud prevention than Auditors.

6.3 Discussion

As explained in the analytical findings, the capability of forensic accountants and auditors possess the potentials to predict the prevention of fraud in Nigerian public sector. The discussion mainly focuses on the research questions stated in Chapter One of this study. Research objectives conform to research questions.

The research questions from chapter one above are as follows (a) Does skills requirement of forensic accountants and auditor relate to fraud prevention? (b) Does knowledge requirement of forensic accountants and auditor relate to fraud prevention? (c) Does ethics requirement of forensic accountants and auditor relate to fraud prevention? (d) Do forensic accountants have higher levels of skills requirements on fraud prevention than auditors? (e) Do forensic accountants have higher levels of knowledge requirements on fraud prevention than auditors? (f) Do forensic accountants have higher levels of ethics requirements on fraud prevention than auditors? There were three hypotheses formulated to test the direct effect of skills, knowledge, and ethics on fraud prevention and three hypotheses about differences between the groups (Forensic Accountants and Auditors) on fraud prevention in the Nigerian public sector. The hypotheses and summary of the findings are presented in Table 6.1.

Table 6.1

Hypotheses and Summary Result of all the relationships

No	Hypothesis	Result
H ₁	There is a positive significant relationship between skills requirement (forensic accountant and auditor) and fraud prevention in the Nigerian public sector.	Supported
H ₂	There is a positive significant relationship between knowledge requirement (forensic accountant and auditor) and fraud prevention in the Nigerian public sector.	Supported
H ₃	There is a positive significant relationship between ethics requirement (forensic accountant and auditor) and fraud prevention in the Nigerian public sector.	Supported
H ₄	Forensic accountants have significant higher level of skills requirement (SR) in Fraud prevention than Auditors in the Nigerian public sector.	Supported
H ₅	Forensic accountants have significant higher level of knowledge requirement (KR) in Fraud prevention than Auditors in the Nigerian public sector.	Supported
H ₆	Forensic accountants have significant higher level of ethics requirement (ER) on Fraud prevention than Auditors in the Nigerian public sector.	Supported

6.3.1 Research Question One: Does Skills Requirement of Forensic Accountants and Auditors Relate to Fraud Prevention in the Nigerian Public Sector?

The first research question of the study examined whether there is a significant relationship between skills requirement of the forensic accountants and auditors and fraud prevention in the Nigerian public sector. The objective of this question is to know whether skills requirement can be proper mechanism/tools towards prevention in the Nigerian public sector. In the first place, the descriptive statistics on the data of the study provide substantial evidence indicating that skills requirement of forensic accountants and auditors have a strong influence on control. Algorithms and bootstrapping techniques were conducted to test the measurement and structural model of this hypothesis.

The result indicates that the predicted hypotheses can explain 72.5% of the model ($R^2 = .725$, and $p = < .000$). The skills requirement variable found to predict Fraud prevention with the following figures ($\beta = 0.291$, $t = 4.988$, $p = < .000$), hence, the Hypothesis H_1 is supported. As such the result indicates that the skills requirement is significantly related to Fraud prevention in Nigerian public sector which is in line with the Competency Model (underpinning theory of the study) which is explaining the skills of forensic accountant and auditor towards the prevention of financial fraud and other irregularities.

These findings agree with the previous studies such as (Popoola, 2014; AICPA, 2008). Further emphasis on this relationship could be seen in the findings of Davies et al. (2010). Scholars such as Albrecht *et al.* (2009) and Ahmad (2008) agreed that prevention of fraud and other irregularities depend on skills of the forensic accountant and auditors.

Additionally, DiGabriele (2008) suggests nine (9) essential skills based on the nationwide survey of random sample of the accounting practitioners, forensic accountants, users of the forensic Accountant. 1500 respondents were selected from the population. The supported skills were (a) Unstructured problem-solving; (b) Critical thinking; (c) Deductive analysis; (d) Oral communication; (e) Analytical proficiency; (f) Investigative flexibility; (g) Legal knowledge; (h) Written communication; and (i) Composure. Possession of the skills above would enable the forensic accountant and auditor to have adequate controls over the fraud and serve as a deterrent and prevention in the public sectors environment. This study contributes to knowledge by further opening up and

clarifying the relationship that exists between skills required by forensic accountant and fraud prevention in the Nigerian public sector.

6.3.2 Research Question Two: Does Knowledge Requirement of Forensic Accountants and Auditors relate to Fraud Prevention in the Nigerian Public Sector?

This section addressed research question two and hypothesis H₂ that states “There is a significant positive relationship between Knowledge (forensic accountant and auditor) and Fraud prevention in the Nigerian public sector”. From the descriptive statistics, it is revealed that knowledge requirement of forensic accountant and auditors have a strong influence on Fraud prevention in the Nigerian public sector. Algorithms and bootstrapping were conducted to test the measurement and structural model of this hypothesis. The Hypothesis (H₂) of this study states that knowledge of forensic accountant and the auditor is positively related to Fraud prevention with the following figures ($\beta = 0.233$, $t = 4.215$, $p < .000$). As expected, the result the knowledge requirement provides support for Fraud prevention in Nigerian public sector.

This result indicates that knowledge requirement is a good predictor of fraud prevention in Nigerian public sector. These findings show that the forensic accountant and auditor should pay more attention to the issue and concept of knowledge requirement, being one of the independent variables that predict the prevention of fraud. The ability of forensic accountant and auditor to take the calculated risk, develop culture and proactive measures will guarantee their success and their performance. Possession of knowledge attributes such as skill development and ability to access their immediate environment (Public

sector) will give forensic accountant and auditor a better opportunity to remain relevant and improve their level of fraud prevention.

This finding conforms with the previous study of Popoola (2014) that employed a sample of four hundred and four (404) in Nigeria which shows a positive relationship between knowledge requirement and task performance fraud risk assessment (fraud prevention, detection and response). The current study proved that knowledge requirement and fraud prevention shares a robust and significant relationship with each other. As supported by the Contingency theory and theory of planned behaviour, this study agreed that knowledge requirement plays a significant influence on fraud prevention as one of the reasons why accounting professionals in Nigeria consider knowledge requirement as a prime motivator (Immam *et al.*, 2015).

6.3.3 Research Question Three: Does Ethics Requirement of Forensic Accountants and Auditors Relate to Fraud Prevention in the Nigerian Public Sector?

This section addressed research question three and Hypothesis H₃ that states: “There is a significant positive relationship between ethics (forensic accountant and auditor) and fraud prevention in the Nigerian public sector”. Descriptive statistics on the data of this study provide strong evidence indicating that ethics requirement of forensic accountant and auditors influence fraud prevention. The measurement and structural model of this study were tested. The result of this indicates that ethics requirement related to fraud prevention with the following figures ($\beta = 0.397$, $t = 7.102$, $p < .000$). Hence, the Hypothesis H₃ is supported. The results of this study conform with the earlier literature of

Adewusi (2016), Fatile (2013), Ibietan and Joshua (2013), Anyim, Ufodiama, and Olusanya (2013), Agba, Ochimana, and Abubakar (2013), AICPA (2011), SCOPA (2009), and Yahaya (2006) that revealed the relationship between ethics requirement and Fraud prevention.

Furthermore, Hopwood *et al.* (2008), Carpenter (2007), and Arens and Elder (2006) have the same goal of ensuring that fraud is prevented in all sector of the economy. They pointed out that proper adoption of ethics must be considered for effective fraud prevention mechanism. Having the ethical requirement for the forensic accountant and auditor will control the fraud risk, errors, and irregularities. Also, it will provide permanent directions to right or wrong than human personalities; it will control the autocratic powers of companies; it will assist in specifying the social responsibilities of organisational business, and the code of ethics towards sustaining the goals of the business.

6.3.4 Adoption of Competency Model Theory and the Theory of Planned Behavior on Knowledge, Skills and Ethics (forensic Accountant and Auditor) on Fraud Prevention

Necessarily, the skills, knowledge and ethics requirements of forensic accountant and auditor are in agreement with the theory of planned behaviour (TPB) and competency theory (McClelland, 1973; Lucia & Lepsinger, 1999; Ajzen & Fishbein, 1980; Cohen et al., 2010). The theory of planned behaviour is a model that has substantial power to explain the disparity of intention. Also, it deals with the attitude, behavioural control and

subjective norm (Hess, 2007; Ajzen, 2006). TPB is an individual expectation regarding the degree to which they are capable of performing a given behaviour.

In essence, the perceived control over performance behaviour refers to the expectation of forensic accountants and auditors about the degree to which they are capable of controlling fraud be it external or internal. The theory of competency theory by McClelland (1973) refers to the combination of knowledge, skills, abilities and characteristics needed by the forensic accountant and auditor to prevent fraud and other irregularities (Lucia & Lepsinger, 1999).

Competency theory also explains the competencies required of the forensic accountant and auditor on the investigative skills and criminology and legal knowledge. The model is used to align individual capabilities and human resource functions with organisational strategy (Dubois & Rothwell, 2000). Both theories of planned behaviour and competency theory explained the non-shareable business problem, knowledge of the working of a specific enterprise and the opportunity to violate the trust, and the ability to adjust self-perception. AICPA (2002) identifies the conditions to which fraud may occur, and this is very important to both forensic accountant and auditor on the implementation of fraud prevention in the public sector environment.

6.3.4 Research Question Four: Do Forensic Accountants have Higher Levels of Skills Requirement on Fraud Prevention than Auditors in the Nigerian Public Sector?

This section presents the fourth Hypothesis titled “Forensic accountants have a significantly higher level of skills requirement in fraud prevention than auditors in the Nigerian public sector”. Mann-Whitney U Test was conducted to test this hypothesis. The forensic accountant has a higher level of skills requirement than auditor towards fraud prevention with the following figures ($r = .08$; $p < .007$). Though, the result of the effect size (r) is small due to the Nigerian context. Hence, Hypothesis H₄ is significant and supported.

These findings are in agreement with the prior studies since the result indicates that the forensic accountant has a higher level of skill than financial statement auditor in the Nigerian public sector. Similarly, it conforms to Popoola (2014) postulation that says ‘forensic accountant has a higher level of skills than an auditor’. The prior literature explains the skills possessed by the forensic accountant. Davis *et al.* (2010) and Hopwood *et al.* (2008) state the forensic accountant skills as written communication; critical thinking; oral communication; investigative flexibility; analytical proficiency; composure; unstructured problem solving; specific legal knowledge and deductive analysis.

Whereas, financial statement auditor’s main objective is to examine whether the financial statement of the company states the true and fair view in all material respects in conformity with the financial reporting standard recognised locally and internationally.

The previous literature indicates that there are existing harmonies between the forensic accountants and auditors toward fraud prevention (Popoola, 2013a; Hopwood *et al.*, 2008). Hence, Popoola (2013a) points out that forensic accountants may be significantly knowledgeable than auditors on the fraud prevention.

6.3.6 Research Question Five: Do Forensic Accountants have Higher Levels of Knowledge Requirement on Fraud Prevention than Auditors in the Nigerian Public Sector?

This section represents the fifth Hypothesis: “Forensic accountants have a significantly higher level of knowledge requirement in fraud prevention than auditors in the Nigerian public sector”. Mann-Whitney U was conducted to test this hypothesis. A forensic accountant has a higher level of knowledge requirement than an auditor towards fraud prevention with the following figures ($r = .05$; $p < .017$). Hence, Hypothesis H_5 is significant.

This finding is in agreement with that of the study carried out by Popoola (2014), which confirms that a forensic accountant has a higher level of knowledge requirement than an Auditor. Similarly, several other studies are in agreement with the findings of this study. For instance, Durkin and Ueltzen (2009) study highlight the fundamental knowledge of Forensic Accountant as criminology knowledge; information technology knowledge; court proceedings knowledge; criminal and civil law knowledge; technical accounting knowledge; general business experience knowledge and professional experience knowledge; discovery, reporting, experts, and testimony. Whereas the

knowledge of financial statement auditor a historical financial information audit; financial accounting and reporting; and information technology.

Davis *et al.* (2010) agree on the attribute of the competence of forensic accounting services in an organisation. This finding seems to be consistent with other studies such as (Popoola, 2014; Wuerges, 2011; Davis *et al.*, 2010; Ramaswamy, 2007) that found a strong and significant relationship. Based on this study, it is realised that a Forensic accountant has a higher level of knowledge requirement than an Auditor in the area of Fraud prevention in the Nigerian public sector.

6.3.7 Research Question six: Do Forensic Accountants have Higher Levels of Ethics Requirement on Fraud Prevention than Auditors in the Nigerian Public Sector?

This section represents the sixth Hypothesis: “Forensic accountants have a significantly higher level of ethics requirement in fraud prevention than auditors in the Nigerian public sector”. Mann-Whitney U was conducted to test this hypothesis. The result indicates that forensic accountant has a higher level of ethics requirement than an Auditor towards fraud prevention with the following figures ($r = .07$; $p < .007$). Hence, Hypothesis H₆ is supported.

The result concurs with the previous literature, which point out that forensic accountants have higher level of ethical requirement than financial statement audit in terms of moral and religious ethical code of conduct (Al-Aidaros, Idris, & Shamsudin, 2011; Mohammed, 2008; Brown, Stocks, & Wilder, 2007; Delaney, 2005). Prior research has

proved that the level of morale among professional accountant is low (Richmond, 2001). While other research found that forensic accountant has a higher level of moral reasoning than an average accountant (Bancroft, 2003).

The ethical code of conduct is continuously and most important for the forensic accountant, auditor and the users of the accounting information within and outside the organisation (Mohammed, 2008). With the ethics of the accounting profession, the practitioners are protected not to derail from the codes of conduct emphasising transparency, accountability, and professionalism. Moral reasoning is the ethical way that can be adopted to justify the deliberate action of the professional accountant. Also, it is the level at which professional accountants use ethical principles and consideration in solving an ethical dilemma (Delaney, 2005).

6.4 Contributions to the Study

The findings of the research work have provided insights on the capability requirements of forensic accountants and auditors in fraud prevention in the Nigerian public sector which are considered as a contribution to the body of knowledge in the area. Further details are provided in three parts; the practical implications, the theoretical implications and the methodological implications, as follows:

6.4.1 Practical Contributions

This study has provided empirical evidence to support the argument that skills, knowledge and ethics requirements are significantly related to fraud prevention in the

Nigerian public sector especially the office of the AGF and AudGF. If forensic accountant and auditors have the required capabilities as showcased in the results of the study, fraud will not only be curbed but prevented in the Nigerian public sector. Hence, it deserves more attention by the authorities concerned in the Nigerian public sector through constant updating and raising the standard of those capability requirements to be attained by the forensic accountants and auditors as is done in similar environments (Popoola, 2014).

In addition, the management in the authority position should encourage and promote the culture of appreciating forensic accounting skills, knowledge and ethics requirements in their working place that may minimise the effect of fraudulent practices in the public sector. Similarly, it is important to inject in the Nigerian public sector the required skills, knowledge and ethics for forensic accountant and auditors to achieve the desired positive results.

This research work emphasised the public sector organisations, particularly the office of the AGF and Aud.GF to imbibe the training and retraining policies and practices for forensic accountants and auditors on fraud prevention to minimise fraud and promote the good corporate governance practice in the Nigerian public sector. Accordingly, the government should prioritise skills, knowledge and ethics of forensic accountant and auditor in its human resources policies. Furthermore, as the government and the society grow in size and complexity, it is a fundamental requirement for forensic accountants and

auditors to become more proficient in respect of professional skills, knowledge and ethics to be able to prevent fraud in the Nigerian public sector.

6.4.2 Theoretical Contributions

From the empirical data collected from the office of the AGF and AudGF and analysed using the appropriate tool (SPSS and PLS), results in this study have signalled the significant relationship of the three capabilities (knowledge, skills and ethics) in fraud prevention as underpinned by the competency theory. A competent forensic accountant or auditor will have the ability to unearth such motive of a fraudster if equipped with the three capability requirements as elucidated and confirmed in this research work.

Therefore, the findings supported the postulation that the stronger the KR, SR & ER are, the more effective the fraud prevention and vice versa. Thus, it is established from the revealed results that the competency theory is appropriately linked to the capability requirements of forensic accountants and auditors in fraud prevention specifically in the office of the AGF and AudGF. Its suitability for fraud prevention through the continued deserved focus on capability requirements of forensic accountants and auditors in the public sector of developing countries such as Nigeria cannot be over-emphasised.

This study has been able to establish the efficacy of Competency theory in confirming the relationship between capability requirement for professional accountant and fraud prevention in the organisational framework in developing country like Nigeria. Similarly, this study revealed that the theory of planned behaviour described the condition under

which fraud can occur (Ajzen, 2002). This theory (TPB) assists the forensic accountant and auditor in designing the procedures to assess the risk of fraud most especially where the internal control is not sufficient (weak). The issue of ethics, skills, and knowledge cannot be over-emphasised in exploring and confirming the Competency Model and the theory of planned behaviour in fraud prevention.

The two theories represent the documentation of specific actions with evidence and control points where the fraud may be prevented. This assists the forensic accountant and auditor to develop certain measures, structure or controls of their audit in such a way to notice the conversion and concealment in the Nigeria public sector. In a nutshell, this study contributes to the body of knowledge by confirming the relationship between the capability requirements of forensic accountants and auditors and fraud prevention in the context of Competency theory in the office of the AGF and Aud.GF in the Nigerian public sector in particular and public sector in general.

6.4.3 Methodological Contributions

Prior studies on capability requirements (SR, KR and ER) and fraud prevention (FP) have used series of analytical techniques in analysing the data collected, but not PLS-SEM. In this study, PLS-SEM was employed in data analysis. Hence, this research stands to be unique in this respect.

However, a closely related research work is the study by Popoola (2014) using the SmartPLS 2.0 M3 as analytical tools to examine the mediating effect of fraud problem

representation on task performance fraud risk assessment, which can be contrasted to this study. The current study examines the capability requirements of forensic accountants and auditors in fraud prevention in the Nigerian public sector. As explained earlier, the Smart PLS is a sophisticated tool that performs many functions such as correlation analysis, multivariate data analysis, Multiple Regression Analysis (MRA) and Confirmatory Factor Analysis (CFA). Smart PLS 2.0 M3 (Ringle *et al.*, 2005) also predicts the relationship between variables.

Furthermore, this study also contributes to the body of knowledge in revising the measurement items for the variables despite the fact that the measurement scales are adopted and adapted from many previous studies. For instance FP, in this study has taken the operational measurement scales that was developed and tested by Sengur (2012); Albrecht *et al.* (2012); AICPA (2008) in measuring the fraud prevention. This study also adopts the operational measurement items used the previous studies of DiGabriele (2009); Davis *et al.* (2010) and Ramaswamy (2005) in measuring skills requirement of forensic accountant and auditor.

The researcher applies measurement scales, which have been adapted and tested in the studies of Popoola (2014); Davis, Farrell, and Ogilby (2010) and Ramaswamy (2007) in measuring knowledge requirement forensic accountant and auditor on fraud prevention. Moreover, the study used the measurement items that were developed by Al-Aidaros, Idris, & Shamsudin (2011); Brown *et al.* (2007); Mele (2005); AICPA (2011); Akapakpo (2013); ACFE (2012) in measuring the ethics requirement of forensic accountants and

auditors. This study refines all the measurement scales adapted and adopted from previous studies through the confirmatory analysis where some items which have threshold less than 0.5 were removed, and new measurement items emerged.

6.5 Recommendations

This study comes up with the following recommendations that would serve as a mechanism and guide towards improving accounting profession in the Nigeria public sector. Firstly, the professionals need to introduce forensic accounting skills, knowledge and ethics before, during and after the audit exercise, as well as to develop effective forensic accounting skills, knowledge, mindset, and ethics.

It is noted from the previous literature that forensic accounting is a new area in Nigeria. It is established in this study that skills, knowledge and ethics supported fraud prevention. Thus, the study recommends the forensic accounting skills, knowledge and ethics to be part of compulsory courses offer to the accounting professionals by the Nigerian accounting professional body and also, accountants and auditors in the Office of Accountant General and Auditor General, then they must adopt the forensic accountant skills, knowledge and ethics on their day to day activities. Also, training and development on required capabilities must frequently be organised to the accountants and auditors to enhance capacity development.

For an auditor to perform effective auditing, he or she requires experimental research design guided by the foundational forensic procedure for the identification of any

fraudulent financial statement. Not only that, it is essential for the auditor to be equipped with necessary capabilities in forensic accounting and auditing to serve as a stimulus for enhancing efficient auditing for fraud prevention and detection.

The study may assist the public sector accounting and auditing system management to deal with fraud and other irregularities through the adoption of the forensic accounting skills, knowledge and ethics effectively. Nigerian government should establish a conducive environment for the forensic accountants to thrive to fight the pervasive culture of disloyalty and dishonesty among the practitioners. Also, provisions should be made for whistleblowing without subjecting the whistleblower to any form of threat.

6.6 Limitations of the Study

Like in previous research, this study has its limitations. The first limitation is the inability of the researcher to spread Fraud prevention measurement beyond knowledge, skills and ethics requirement. Similarly, data administered are only centred on public sector using the Accountant-General and Auditor-General offices without placing attention on the other sectors such as private non-profit making organisations. This cannot be used to generalise the practice in the entire country.

This research focused on fraud in a developing nation, Nigeria. Examining the capability requirement on Fraud prevention in the public sector may be considered as sensitive. Hence, the forensic accountant and auditor may feel more comfortable reporting their involvement in fraud prevention in the working place rather than exhibit lack of

capability and competence requirements to prevent, control and remediate fraud in the accounting and auditing systems. Hence, the result of this differential willingness to report may have somehow distorted the findings of this research.

Also, this study uses a cross-sectional method that involves data collection within a limited period. The period is short due to limited resources and time. Sekaran (2003) asserts that one the shortcoming of the cross-sectional study is the inability to prove cause and effect association among variables. The present study relies on the perceptions of forensic accountants and auditors regarding the fraud prevention, this is quite familiar with social science research, but the response of accounting professional in these two offices may not necessarily be a precise reflection of reality. There is the apparent tendency that the data collected may reflect some degree of confidence of the respondents who might have their perceptual biases and cognitive shortcomings in assessing their places of work.

The variance explained in this study of 72.5% ($R^2 = 0.725$), and the predictive relevance Q^2 of 36.4% of fraud prevention is considered acceptable and significant in adherence to Cohen (1988) criteria. Hence the theoretical demonstration of the predictive validity of the skills, knowledge, ethics and Fraud prevention model of this study, leaves space for further research in the area. Specifically, future research can be conducted on other variables which may increase the variance explained by the present model.

6.7 Suggestions for Future Research

This study is cross-sectional. Therefore, future studies should consider collecting data over an extended period, (i.e., longitudinal research design) to have ample time for data collection. Future research should examine in detail the nature of the relationship, considering the cause and effect relationship of financial fraud in public sectors. This study adopts quantitative research design such as cross-sectional research design.

Future research may employ a mixed mode or triangulation type of research. For instance, the interview can be carried out for an in-depth assessment to give a better understanding of the relationship between the constructs under study. The present study suggests a comparative study between Nigeria and other developing countries; this may provide a better insight into the understanding of similarities and differences as obtainable in another environment. Finally, this study focuses mainly on the public sector; the future research needs to be conducted to cut across the private sector of the economy for useful generalisation.

6.8 Conclusion

The primary aim of this study was to examine the relationship of capability requirements (knowledge, skills and ethics) of a forensic accountant and auditor on fraud prevention in the Nigerian public sector to find out their relationship with fraud prevention empirically and to recommend the necessary decisions to be taken by stakeholders to tackle fraud effectively. From the result of the study, the stated capabilities (SR, KR and ER) were

found to be associated with the fraud prevention in the Nigerian public sector and as such recommendations were offered in that direction.

Additionally, the findings may be utilized to create awareness to the users of the forensic accountant and auditor particularly the office of the Accountant General and Auditor General, the professional bodies, the educational institutions, financial institutions, regulatory, law enforcement agencies, ministries, courts, and departments to understand the fraud prevention mechanisms by adopting the forensic accounting ethics, knowledge and skills towards fraud prevention in public sector.

The respondents were accounting professionals in the office of Accountant-General and Auditor-General of the Federation and had contributed to the success of this research study. The study also confirms the existence of the audit gap on the prevention of fraud and other irregularities in the Nigerian public sector.

Ethics as the major contribution of this study is an essential pre-requisite in the conduct of public servants and human affairs. This is the fact that system of morals which define the set of principle by which men live will be devoid of order without ethics. Hence, it is recommended that the principle of ethics should serve as mandatory for the forensic accountants and auditors and any forensic accountants or auditors who violate the ethics of their office should be punished to serve as a deterrent to others who will adhere to the ethical principle.

Also, the study was a response to the calls to examine the inability of the auditor to prevent fraud (Chui, 2010; Wells, 2005). Thus this study recommends for future research on Fraud prevention in other levels (state level and local government level) of governance to further boost effective fraud prevention at all levels of the Nigerian public sector. In this respect, the current study has made immense contributions to the literature on Fraud prevention, most especially, in developing countries context such as Nigeria. It also confirmed that forensic accountants require a higher level of skills, knowledge and ethics, and fraud prevention in the Nigerian public sector context.

Finally, fraud in any form is a threat to the society; it is costly and could cause an adverse effect on the development of any nation. Hence, the findings of this study are expected to assist public sector accounting and auditing systems in dealing with fraud and corrupt practices efficiently and effectively especially in Nigeria and other developing countries in general.

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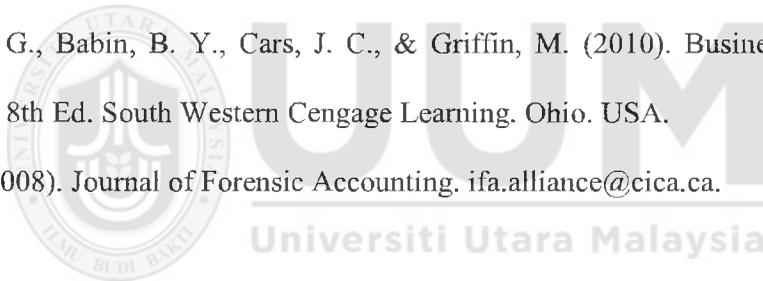
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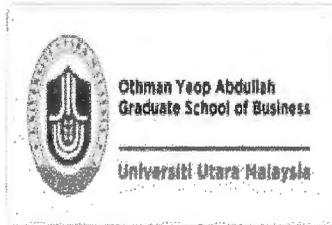
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APPENDIX A
COLLEGE OF BUSINESS
UNIVERSITI UTARA MALAYSIA

ACADEMIC RESEARCH QUESTIONNAIRE

December 5, 2016

Dear Sir/Madam,

I am a postgraduate student at Tunku Puteri Intan Safinaz School of Accountancy, College of Business, Universiti Utara Malaysia (UUM), and currently conducting a survey to examine the Capability requirements (i.e. Knowledge, Skills and Ethics) of Forensic Accountant and Auditor on Competence requirement (i.e. Fraud prevention) in the Nigerian Public Sector as part of the M.Sc requirement.

This questionnaire is solely for the academic purpose. All information provided shall be treated with utmost confidentiality with the researcher and the Supervisors, Prof. Dr Ayoib Che Ahmad and Dr Oluwatoyin Muse Johnson Popoola. I undertake to report the result in such a way that anonymity of the respondent is preserved.

Thank you very much for your participation.

Sincerely,

LATEEF, Saheed Ademola.
Tel No: +601126088074; +234703863018
E-mail: latsad4real@yahoo.com

INFORMATION

The questionnaire comprises two parts. Part I represents the demographic information while Part II (Sections A-D) consists of questions on Knowledge requirement, Skills requirement, Ethics, and Fraud prevention in the Nigerian public sector.

PART I: DEMOGRAPHIC INFORMATION

Please tick ✓ the option that correctly and accurately describes your circumstance:

1. What is the name of your Organisation?

- Accountant General Office
- Auditor General Office

2. What is your highest Academic education?

- Diploma and below
- Degree
- Masters
- Doctoral degree

3. What is your highest Professional education?

- ACA
- FCA
- CNA
- FCNA
- OTHERS

4. What is your Gender?

- Male
- Female

5. What is your position in the Organization?

- Forensic Accountant
- Auditor

6. What is your experience in the Nigerian Public Sector?

- Less than 5 years
- 6 – 10 years
- 11 – 15 years

- 16 – 20 years
 20 and above

PART II (SECTIONS A – D)
SECTION A: FRAUD PREVENTION (FORENSIC ACCOUNTANT AND AUDITOR)

GUIDELINES In section A, please rate your level of agreement with the following statements as all questions have the same options (1= Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SD)):

		SD	D	N	A	SA
Creating a Culture of Honesty and High Ethics:						
1	Setting the tone at the top.	1	2	3	4	5
2	Establishing corporate code of conduct.	1	2	3	4	5
3	Taking consistent actions in response to an alleged fraud.	1	2	3	4	5
4	Fraud training for employees and management.	1	2	3	4	5
5	Conducting background investigations on individuals being considered for employment.	1	2	3	4	5
6	Creating a positive workplace environment.	1	2	3	4	5
Evaluating Antifraud Processes and Controls:						
7	Identifying and measuring fraud risks.	1	2	3	4	5
8	Implementing and Monitoring Appropriate Preventive and Detective Internal Controls.	1	2	3	4	5
9	Making changes to the entity's activities and processes in order to reduce or eliminate fraud risk	1	2	3	4	5
Developing an Appropriate Oversight Process:						
10	Effective Audit committee or Board of directors.	1	2	3	4	5
11	Management effectiveness in overseeing activities.	1	2	3	4	5
12	Certified Fraud Examiner in internal audit team or external audit team	1	2	3	4	5

SECTION B: SKILLS REQUIREMENT (FORENSIC ACCOUNTANT AND AUDITOR)

GUIDELINES: In section B, please rate your level of agreement with the following statements as all questions have the same options (1= Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SD)):

		SD	D	N	A	SA
1	The important skills requirement of a forensic accountant/auditor is analytical proficiency (the ability to examine for what should be provided rather than what is provided).	1	2	3	4	5
2	The important skills requirement of a forensic accountant/auditor is deductive analysis (the ability to take aim at financial contradictions that do not fit in the normal pattern of an assignment).	1	2	3	4	5
3	An important skills requirement of a forensic accountant/auditor is critical thinking (The ability to decipher between opinion and fact).	1	2	3	4	5
4	The important skills requirement of a forensic accountant/auditor is investigative skills (the ability to examine the situation for typical warning signs thoroughly).	1	2	3	4	5
5	The important skills requirement of a forensic accountant/auditor is unstructured problem solving (the ability to approach each situation and prepared to solve problems with an unstructured approach).	1	2	3	4	5
6	The important skills requirement of a forensic accountant/auditor is specific legal knowledge (the ability to understand basic legal processes and legal issues including the rules of evidence).	1	2	3	4	5
7	The important skills requirement of a forensic accountant/auditor is written communication (the ability to effectively communicate in writing via reports, charts, graphs, and schedules the basis of opinion).	1	2	3	4	5
8	The important skills requirement of a forensic accountant/auditor is oral communication (the ability to effectively communicate in a speech via expert testimony and general explanation the bases of opinion).	1	2	3	4	5

9	The important skills requirement of a forensic accountant/auditor is composure (the ability to maintain a calm attitude in pressured situations.)	1	2	3	4	5
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SECTION C: KNOWLEDGE REQUIREMENT (FORENSIC ACCOUNTANT AND AUDITOR)

GUIDELINES: In section C, please rate your level of agreement with the following statements as all questions have the same options (1= Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SD)):

		SD	D	N	A	SA
1	The forensic accountant/auditor needs to be a more broadly experienced professional.	1	2	3	4	5
2	The forensic accountant/auditor needs to be more specialized within the field of Fraud prevention.	1	2	3	4	5
3	The forensic accountant/auditor needs to have more general business experience.	1	2	3	4	5
4	The forensic accountant/auditor needs to have more technical accounting knowledge.	1	2	3	4	5
5	The forensic accountant/auditor needs to have more court proceedings knowledge, criminal and civil law.	1	2	3	4	5
6	The forensic accountant/auditor needs to have more information technology knowledge.	1	2	3	4	5
7	The forensic accountant/auditor needs to have more criminology knowledge.	1	2	3	4	5

SECTION D: ETHICS REQUIREMENT (FORENSIC ACCOUNTANT AND AUDITOR)

GUIDELINES: In section D, please rate your level of agreement with the following statements as all questions have the same options (1= Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)):

		SD	D	N	A	SA
Acting with integrity						
A Forensic accountant/auditor is expected to:						
1	Conceal any information to a third party at any costs.	1	2	3	4	5
2	Adhere to technical and ethical standards issued by accounting organizations.	1	2	3	4	5
3	Issue an urgent letter to the shareholders when the company is about to collapse.	1	2	3	4	5
4	Prohibit disclosing any information to a third party unless demanded by the law.	1	2	3	4	5
5	Conceal any information to a third party unless demanded by the law.	1	2	3	4	5
6	Neglect to comply with the technical and ethical standards sometimes.	1	2	3	4	5
7	Report to the board of directors, in writing, of any violation of company rules and regulations from the management.	1	2	3	4	5
8	Inform the board of directors about all financial transactions that negatively affect the company.	1	2	3	4	5
9	Abstain from using any information about his/her clients for his/her own personal gain.	1	2	3	4	5
Acting with Independent and Objectivity						
A Forensic accountant/auditor is required:						
10	Not to allow the influence of others to override professional judgment.	1	2	3	4	5
11	Not to accept any financial benefit from clients aside your normal fees.	1	2	3	4	5
12	Not to allow conflict of interests and bias to come in between management and company's owner	1	2	3	4	5
13	Not to change his/her judgment due to pressure from any quarters.	1	2	3	4	5
14	To carry out professional evaluations based	1	2	3	4	5

	on documents made available to him/her.					
15	Not to accept work when he/she does not have enough knowledge about how to perform the work.	1	2	3	4	5
16	Not to make any alteration to the report to please the management	1	2	3	4	5
17	Not to be impartial.	1	2	3	4	5
18	Not to accept gifts from his/her clients.	1	2	3	4	5
19	To avoid investigating a company in which one of his/her family is the owner or one of the shareholders.	1	2	3	4	5
Protecting the public interest						
A Forensic accountant/auditor is required to:						
20	Provide accurate and excellent services beyond what is required by the country's rules.	1	2	3	4	5
21	Be genuinely interested in serving the public.	1	2	3	4	5
22	Prohibit paying a percentage of investigating/auditing fees to people for obtaining professional work.	1	2	3	4	5
23	Use clients' money, held by the investigator/auditor, only for investigating/auditing work purposes.	1	2	3	4	5
24	Avoid Not offering quality services.	1	2	3	4	5
25	Sign the financial report that he prepared and specify exactly the kind of auditing services that he has performed.	1	2	3	4	5
26	Avoid advertising him/herself or his/her services through public media such as TV, radio, electronic websites, and newspapers.	1	2	3	4	5
27	Prohibit offer any commission to people in exchange for getting professional work.	1	2	3	4	5
28	Prohibit mix clients' money, held by the auditor, with auditor's money by creating an account for the clients' money separate from auditor account.	1	2	3	4	5

Please indicate any comments you have in order to improve this questionnaire:

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Please, feel free to contact me on any issue(s) regarding to this questionnaire.

Thank you for your participation in answering this questionnaire.

LATEEF, Saheed Ademola.
Tel No: +601126088074; +234703863018
E-mail: latsad4real@yahoo.com



APPENDIX B

LETTER OF DATA COLLECTION TO ACCOUNTANT GENERAL AND AUDITOR GENERAL OFFICE NIGERIA

	OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS Universiti Utara Malaysia 06010 UUM SINTOK KEDAH DARUL AMAN MALAYSIA	 UUM Universiti Utara Malaysia
		Tel: 604-928 7101/7112/7130 Faks (Fax): 604-928 7160 Laman Web (Web): www.oygsb.uum.edu.my
"MUAFAKAT KEDAH"		
		UUM/OYAGSB/R-4/4/1 21 November 2016
ACCOUNTING GENERAL OFFICE NIGERIA		
Dear Sir/Madam,		
LETTER OF RECOMMENDATION FOR DATA COLLECTION AND RESEARCH WORK		
This is to certify that LATEEF SAHEED ADEMOLA (Matric No: 819772) is a student of Othman Yeop Abdullah Graduate School of Business, Universiti Utara Malaysia pursuing his Master of Science (Accounting) by Research. He is conducting a research entitled "Forensic Accounting and Auditing: Capability Requirement on Fraud Prevention in Nigerian Public Sector" under the supervision of Prof. Dr. Ayoib B. Che Ahmad and Dr. Oluwatoyin Muse Johnson Papoola.		
In this regard, we hope that you could kindly provide assistance and cooperation for him to successfully complete the research. All the information gathered will be strictly used for academic purposes only.		
Your cooperation and assistance is very much appreciated.		
Thank you.		
"BERKHIDMAT UNTUK NEGARA" "ILMU, BUDI, BAKTI"		
Yours faithfully		
 AZIAN BINTI NAFAH Senior Principal Assistant Registrar for Dean Othman Yeop Abdullah Graduate School of Business		
c.c	Supervisor Student's File (819772)	
Universiti Pengurusan Terkemuka The Eminent Management University		
		

**LETTER OF DATA COLLECTION TO AUDITOR GENERAL OFFICE
NIGERIA**



**OTHMAN YEOP ABDULLAH
GRADUATE SCHOOL OF BUSINESS**
Universiti Utara Malaysia
08010 UUM SINTOK
KEDAH DARUL AMAN
MALAYSIA



Tel: 604-028 7101/7113/7130
Faks (Fax): 604-028 7160
Laman Web (Web): www.oyagab.uum.edu.my

"MUAFAKAT KEDAH"

UUM/OYAGSB/R-4/4/1
21 November 2016

AUDITOR GENERAL FOR THE FEDERATION NIGERIA

Dear Sir/Madam,

LETTER OF RECOMMENDATION FOR DATA COLLECTION AND RESEARCH WORK

This is to certify that **LATEEF SAHEED ADEMOLA (Matric No: 819772)** is a student of Othman Yeop Abdullah Graduate School of Business, Universiti Utara Malaysia pursuing his Master of Science (Accounting) by Research. He is conducting a research entitled **"Forensic Accounting and Auditing: Capability Requirement on Fraud Prevention in Nigerian Public Sector"** under the supervision of Prof. Dr. Ayoib B Che Ahmad and Dr. Oluwatoyin Muse Johnson Popoola.

In this regard, we hope that you could kindly provide assistance and cooperation for him to successfully complete the research. All the information gathered will be strictly used for academic purposes only.

Your cooperation and assistance is very much appreciated.

Thank you.

"BERKHIDMAT UNTUK NEGARA"
"ILMU, BUDI, BAKTI"

Yours faithfully

AZIAN BINTI NAFIAH
Senior Principal Assistant Registrar
for Dean
Othman Yeop Abdullah Graduate School of Business

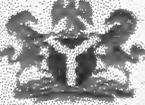
c.c. - Supervisor
Student's File (819772)

Universiti Pengurusan Terkemuka
The Eminent Management University



APPENDIX C

**RECOMMENDATION LETTER FROM ACCOUNTANT GENERAL AND AUDITOR
GENERAL OFFICE, ABUJA**



**OFFICE OF THE ACCOUNTANT - GENERAL OF THE FEDERATION
Federal Ministry of Finance
AUDIT MONITORING DEPARTMENT**

P.M.B. 7015
Telegrams
Telephone 09 - 2340709

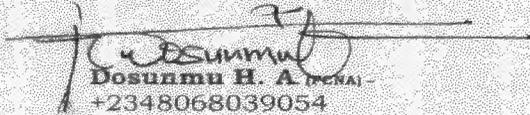
Ref. No. NDAM/41022/003/1
Date 7th December, 2016

The Assistant Registrar,
Othman Yeop Abdullah
Graduate School of Business
University of Utara Malaysia.

**Re: Letter of Recommendation For Data Collection and
Research Work**

1. I am directed to refer to your letter Ref: UUM/OYG/SB/R-4/4/1 of 21st November, 2016 and to confirm that the Accountant General of the Federation (AGF) has approved the conduct of Research by Lateef Saheed Ademola (Matric No: 819772) using the facilities and data to be supplied by the Office of the Accountant General of the Federation.

2. Please accept the assurances of the Accountant General of the Federation's highest regards.


Dosunmu H. A. Inuwa
+2348068039054
Director (Audit Monitoring)
For: Accountant-General of the Federation

RECOMMENDATION LETTER FROM AUDITOR GENERAL OFFICE, ABUJA

**OFFICE OF THE AUDITOR-GENERAL FOR THE FEDERATION
ADMIN & HUMAN RESOURCES DEPARTMENT**

HEADQUARTERS:
Audit House,
Plot 273, Samuel Ademulegun Street,
Central Business District,
P.M.B. 126, Garki- Abuja, Nigeria



LAGOS OFFICE :
5, Sir Mobolaji Bank Anthony Street,
P.M.B. 12503
Lagos, Nigeria
Tel: +234(1) 2632335

Ref No.....

9th December, 2016.....

The Assistant Registrar,
Othman Yeop Abdullah,
Graduate School of Business,
University of Utara, Malaysia.

**RE: LETTER OF RECOMMENDATION FOR DATA COLLECTION
AND RESEARCH WORK**

I am directed to refer to your letter with Ref: **UUM/OYG SB/R-4/4/1** of 21st November, 2016 and to confirm that the Office of the Auditor-General for the Federation has approved the conduct of research by **LATEEF SAHEED ADEMOLA** with Matriculation number **819772** and International Passport number: **A06464558**, using the facilities and data to be supplied by the Office of the Auditor-General for the Federation.

Please accept the assurances of the Auditor-General for the Federation's highest regards.

AGAN IS (FCNA)
+23407030841471
Shangev2001@yahoo.com
Assistant Director, (Head, Training)
For: Auditor-General for the Federation.