IMPACT OF FORENSIC ACCOUNTING PRACTICE ON CORPORATE CRIME MITIGATION IN MANUFACTURING COMPANIES IN NIGERIA

By

Bilqees Bukky ANIFOWOSE

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BEING A DISSERTATION PRESENTED AND SUBMITTEE TO THE DEPARTMENT OF ACCOUNTING AND FINANCE,
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SUPERVISOR: DR. Ramat, T. Salman.

CERTIFICATION OF THESIS WORK

This is to certify that this thesis by Anifowose Bilqees Bukky with matric No:16/27/MAC/011.Tittled "IMPACT OF FORENSIC ACCOUNTING PRACTICE ON COPORATE CRIME MITIGATION IN MANUFACTURING COMPANIES IN NIGERIA" has been read and approved as meeting part of the requirements for the award of master of science degree in Accounting, Kwara State University Malete.

DR. RAMAT T. SALMAN — DATE

(***Project Supervisor)***

DR. OLANIYI A.O — DATE

(Co Supervisor)

DR.EMMANUEL ONOMOELA

(Head of department) — DATE

DEAN — DATE

School of Post Graduate Studies

INTERNAL EXAMINER — DATE

EXTERNAL EXAMINER — DATE

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DEDICATION

This thesis is dedicated to Almighty Allah, the creator of the Heavens and Earth who gives knowledge and wisdom and also to my parents “MAY ALLAH HAVE MERCY UPON THEM AS THEY BROUGHT ME UP FROM INFANCY.

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I owed my indebtedness to Almighty Allah who in His infinite mercy obliges me with the inspiration and ability to put this study together.

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ABSTRACT

The widespread of fraud in modern organizations have made traditional auditing and investigation inefficient and ineffective in the crime mitigation and prevention of frauds confronting businesses world-wide. Despite the introduction of forensic accounting/auditing services in providing support in mitigating fraud, the problem of fraud still persist .The broad objective of the study is to investigate the impact forensic accounting practice on corporate crime mitigation in manufacturing companies in Nigeria. The specific objectives spelt out in order to achieve the broad objectives are: i. examine the effect of forensic accounting tools (skills, knowledge &techniques) on corporate crime mitigation of quoted manufacturing companies in Nigeria. ii investigate the effect of training in code of ethics on corporate crime mitigation in quoted manufacturing companies in Nigeria, and iii establish the effect of fraud awareness activities on corporate crime mitigation of quoted manufacturing companies in Nigeria. Descriptive survey research design was adopted in the study. The population of the study consist of the accountant and auditors of the manufacturing companies in Nigeria, the sample of the study was determined by the statistical formula of Dillman (2010).The data collected through questionnaire was analyzed with the use of regression analyses. The study revealed that there is significant positive impact of forensic accounting tools and code of ethics on corporate crime mitigation of quoted manufacturing companies in Nigeria. The result of the study also revealed that fraud awareness has no significant impact on corporate crime in quoted manufacturing companies in Nigeria at 95% confidence level. This implies that effect forensic accounting practice is an important tool in curbing and combating crime in the quoted manufacturing companies in Nigeria. The study, therefore concluded that forensic accounting practice has significant positive impact in quoted manufacturing companies. The study recommends among others that regulators should establish a conducive environment for the forensic accountants in order to thrive to fight the pervasive culture of disloyalty and dishonesty among the practitioners.

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Fraud has been associated with human organization from recorded history most especially in developing countries of the world. It is endemic that fraud are gradually becoming a normal way of life in both public and private sectors, from the presidential cabinets, down to the political officer, to the ward councilors, from managing directors of companies, through middle management cadre and to lower managers. The media reports have made the fraud headline of the news ranging from developed countries to the developing countries. Some of the companies affected in various countries include Sanyo Electronic (Korea Japan), HIH Insurance (Australia), Nortel Network (Canada), LCI Computer (Netherlands), Adecco Int'l (Switzerland), Afinsa and Gescartera (Spain), Versailles and Wiggins (UK), Enron, Adelphia Comm. Xerox (US), Bank Bali (Indonesia), United Engineer (Malaysia) and Oceanic Bank and Intercontinental Bank (Nigeria) among others (Ademola, 2017; Bhasin, 2012).

The financial fraudulent activities and scandals have been headlines of the most newspapers in the past decade. Many professional agents and regulatory bodies have tried to correct the existing defects in their reporting system (Imam, Kumshe & Jajere, 2015). The magnitude of fraud in Nigeria and the extent to which the economy is affected is alarming (Abiola, 2009). The eradication of which has remained elusive in most parts of human society and civilization. The widespread of frauds in modern organizations have made traditional auditing and investigation inefficient and ineffective in the crime mitigation and prevention of the various types of crimes/ frauds confronting businesses world-wide. Therefore, the increasing sophistication of crime mitigation requires that forensic accounting be added to the tools

necessary to bring about the successful investigation and prosecution of those individuals involved in financial crime activities.

With the globally growing demand of forensic accounting, it is a new and rapidly growing area of accounting in Nigeria and is concerned with the detection and prevention of financial fraud and white collar or economic crimes (Bhasin, 2014). Evidence from the regulatory authority, government, courts and business indicates that expertise in forensic accounting is necessary to investigate and analyze the complicated financial transactions and some other financial events (Rezaee *et al.*, 2006). Due to this reasons, forensic accountants have been at the forefront of the awareness against financial fraud, deception, corruption and other financial irregularities (Popoola, 2014; Rezaee *et al*., 2006; Ramaswamy, 2005).

Consequently, the incorporation of modern forensic auditing techniques in audit in Nigeria is seen as timely in order to prepare the accounting profession to deal effectively with the problem of unearthing ingenious fraud schemes arising from audit failure to detect frauds in Nigeria. Centre for Forensic Studies (2010) report in Nigeria states that if well applied, forensic accounting could be used to reverse the leakages that cause corporate failures. Forensic accounting tools, accounting and computer forensic are the investigators best weapon in detecting and mitigating corporate crime (Hansen, 2009). It is against this backdrop that this study investigates the impact of Forensic Accounting practice through the adoption of forensic accounting tools such as skills, knowledge and techniques. Also code of ethics and fraud awareness on Corporate Crime Mitigation in quoted Manufacturing Companies in Nigeria were examined.

1.2 Statement of the Problem

The Nigerian society is filled with stories of wrong practices such as stories of ghost workers on the pay roll of both private and public sectors, frauds, embezzlements and setting ablaze of offices housing sensitive documents and corruption are found everywhere in the country (Okwoli, 2004). Corporate organizations are essentially social-technical devices made up of people and physical actors who process inputs and at the same time execute some functions and / or tasks that lead to the accomplishment of certain goals and these stakeholders who are probably within and/or outside the organizations may for various reasons have engaged in corporate crime financial activities. Fraud is costly as an estimated $3.5 trillion worldwide has been lost due to fraudulent financial statements, asset misappropriation, and corruption (ACFE, 2012).

However, in recent times, series of fraud have been committed both in the public sector and private sector of the economy in Nigeria. These in no doubt are perpetrated under the supervision of the internal auditors of the organization (Adewusi, 2016). It suffices to say that the independent of the internal auditor is not guaranteed because he works as an employee of the government or organization. Then come the idea of external auditors, yet frauds are still being committed on a daily basis. In view of this, the application of forensic accounting helps to prevent the occurrence of corporate crime in firms. The application of forensic accounting increases the chances of detecting and disclosing fraud activities, and if potential fraudsters are aware of this they tend to fear committing fraud.

Thus, several studies have been conducted on the fraud detection and prevention in various organizations, for example, Abu Saeed & Kabir (2012) Omondi, (2013); Olukowade & Balogun, (2015); Milica & Tadiya, (2015). For instance in Nigeria, the arrest of the former

Nigerian petroleum minister (Mrs. Alison Madueke) by the National Crime Agency in London for corruption and bribery (Punch October, 2 2015); Misappropriation of over N1trillion by the former Economic and Financial Crime Commission (EFCC) boss Mr I. Lamorde (Udoh, 2015); Embezzlement of USD 2.1billion by the former National Security Adviser to President, retired Colonel Sambo Dasuki (The Nation Dec 2, 2015). The money meant for the procurement of war equipment to wage war against Boko Haram. Another report on FAMAD Nigeria Plc formally known as BATA was a corporate crime committed by Chief (Mrs) O.O Olakunrin reported by Sahara (Nov 5,2009) All these indicate high level of manifestation of fraudulent acts among public and private officials in the country.

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

Furthermore, low ethics practice is one of the significant issues that are affecting both public and private services most especially the public sector accountants who are responsible for the receiving, custodian 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).

Most of these studies have completely ignored the role of forensic accountants as a way of detecting fraud and prevention. It is therefore imperative for this study to fill the gap left by earlier researchers in the study given the unravel role of forensic accountant to express an opinion on the financial statements. It is important to remember that while auditors do have

important responsibilities, management (director of the company) is primarily responsible for the fairness of the company's financial statements. It is therefore against this background that this study investigates impact of forensic accounting practice in relation to tools, code of ethics and fraud awareness on corporate crime mitigation.

1.3 Objectives of the study

The primary objective of this study is to examine the impact of forensic accounting practice on corporate crime mitigation of quoted manufacturing companies in Nigeria.

The specific objectives of this study are as follows:

i. To examine the effect of Skills of forensic accountants on corporate crime mitigation of quoted manufacturing companies in Nigeria.
ii. To determine the effect of Knowledge of forensic accountants on corporate crime mitigation of quoted manufacturing companies in Nigeria.
iii. To examine the effect of Techniques of forensic accountants on corporate crime mitigation of quoted manufacturing companies in Nigeria.
iv. To investigate the effect of training in code of ethics on corporate crime mitigation of quoted manufacturing companies in Nigeria.
v. To establish the effect of fraud awareness activities on corporate crime mitigation of quoted manufacturing companies in Nigeria.

1.4 Research Questions

The study has the following research questions:

i. What is the effect of forensic accounting skills on corporate crime mitigation in quoted manufacturing companies in Nigeria?

ii. To what extent is the effect of forensic accounting knowledge on corporate crime mitigation in quoted manufacturing companies in Nigeria?

iii. What is the effect of forensic accounting techniques on corporate crime mitigation in quoted manufacturing companies in Nigeria?

iv. What effect does training in code of ethics have on corporate crime mitigation of quoted manufacturing companies?

v. Do the fraud awareness activities have effect on corporate crime mitigation of quoted manufacturing companies in Nigeria?

1.5 Statement of Hypothesis

H_1: Forensic accounting skills do not significantly influence corporate crime mitigation in quoted manufacturing companies in Nigeria.

H_2: There is no significant difference between Forensic accounting knowledge and corporate crime mitigation in quoted manufacturing companies in Nigeria.

H_3: Forensic accounting techniques do not significantly influence corporate crime mitigation in quoted manufacturing companies in Nigeria.

H_4: There is no significant difference between the training in code of ethics and corporate crime mitigation in quoted manufacturing companies in Nigeria.

$H_{5:}$ Fraud awareness activities have no effect on corporate crime mitigation of quoted manufacturing companies in Nigeria.

1.6 Significance of the Study

This study was expected to be of importance to researchers and academicians as it contributes to theory on effectiveness of forensic accounting on corporate crime mitigation. It also forms the basis for future researchers and academicians carrying out studies in the same

field and provides a source of reference to further empirical studies in the area of forensic accounting and corporate crime mitigation.

The findings of this study assists in policy formulation for quoted manufacturing firms in Nigeria, as pertains to duties and roles of forensic auditors. It will also provide first-hand evidence on the effects of forensic accounting on corporate crime mitigation, thus contributing to policy formulation and implementation. Another importance of this study is to the management of listed manufacturing firms in Nigeria by offering suggestions as to internal controls that these firms can implement to reduce the incidences of corporate crime and also strengthen forensic accounting services.

Investors, both potential and current also benefits from this study as it seeks to inform the investors about the importance of forensic accounting services and further advice on the risks related to their exclusion from quoted manufacturing firms in Nigeria. Hence, the investors will be well inform and take proper decision whether to dispose or buy more share of such company(s) in the future.

1.7 Scope of the Study

The study focused mainly on the impact of forensic accounting practice and corporate crime mitigation in quoted manufacturing companies in Nigeria. Due to the risk inherent in setting broad parameter for this study, it extent of coverage has been narrowed to the forensic accounting tools such that it cannot comprehensively address all areas of forensic accounting. It's however specifically examines all relevant issues bordering on corporate crime vis-à-vis the practice of exploring accounting, auditing and investigation skills to establish the reality of corporate crime occurrence in manufacturing companies.

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CHAPTER TWO

LITERATURE REVIEW

This chapter discusses the conceptual issues, theoretical review and the empirical studies on the subject matter.

2.0 Forensic and Forensic Accounting 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 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 dominant role of the forensic accountant in Nigeria 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).

2.1.1 Forensic Accounting Practices

Forensic accounting is a discipline that has its own models and methodologies of investigative procedures that search for assurance, attestation and advisory perspective to produce legal evidence. It is concerned with the evidentiary nature of accounting data, and as a practical field concerned with accounting fraud and forensic auditing; compliance, due diligence; detection of financial misrepresentation and financial statement fraud (Dhar and Sarkar, 2010).

Hopwood, Leiner, and Young (2008) define forensic accounting as the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law. It is the integration of accounting, auditing and investigative skills (Dada, Owolabi & Okwu, 2013). According to Curtis (2008), forensic accountants are essential to the legal system, providing expert services such as fake invoicing valuations, suspicious bankruptcy valuations, and analysis of financial documents in fraud schemes. Crumbley (2003) defined forensic science as the application of laws of nature to the laws of man. He described forensic scientists as examiners and interpreters of evidence and facts in legal cases that also offers expert opinions regarding their findings in court of law.

Okunbor and Obaretin (2010) reported that the spates of corporate failures have placed greater responsibility and function on accountants to equip themselves with the skills to identify

and act upon indicators of poor corporate governance, mismanagement, frauds and other wrong doings. It has become imperative for accountants at all levels to have the requisite skills and knowledge for identifying, discovering as well as preserving the evidence of all forms of irregularities and fraud. Therefore, fraud requires more sophisticated approach from preventative to detection. One of the modern approaches that can be used from the prevention to detection is called forensic accounting. It touches almost all disciplines especially, accounting, auditing, investigation, law and psychology (Enofe, Agbonkpolor & Edebiri, 2015).

For professional accountant to prevent/detect corporate crime in the manufacturing industry, the forensic accounting practice needs to be adopted. Therefore, this study narrow to the forensic accounting tools: skills, knowledge, techniques, fraud awareness activities and training on code of ethics as dimension of forensic accounting practices.

2.1.2 Forensic Accounting Tools

The forensic accounting tools refers to as capability acquired by forensic accountants which comprises skills, traits, attitudes, knowledge, professional ethics and value possessed by individuals who give the chance to perform the professional task. The capability is 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).

2.1.2.1 Forensic Accounting Skills and Techniques

International Federation of Accountants Standard (2005) describe forensic accounting Skills as the professional skills and 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.

Other researchers discuss the relevant and essential skills needed by the forensic accountant are Bolgna and Linquist (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 supported skills. 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.

2.1.3 Forensic Accounting 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.

2.1.4 Tranining on Code of Ethics

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 (Adewusi, 2016; 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 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 that 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 by the code of conduct. For instance, ICAN sets up an investigative panel that is charged with the responsibility of inquiring into suspected professional misconduct of its members.

2.1.5 Fraud Awareness Activities

Organisations need to adopt methods that will decrease motive, restrict opportunity and limit the ability for potential fraudsters to rationalize their actions as a way to deal with fraud. The aim or the purpose of preventative controls is to reduce opportunity and remove temptation from potential offenders; Prevention techniques to stop fraud from occurring include the introduction of policies, procedures and controls as well as activities such as training and fraud awareness (CGMA, Fraud Risk Management, 2012).

In addition, the effectiveness of fraud prevention mechanism will be measured using the following: perceptions of how effective mechanisms are at detecting fraud and will become more effective; perceptions about intentions of fraudulent activities; and the practicality and proportionality of the mechanisms.

2.1.6 Fraud and Financial Fraud

Fraud, according to Adeniji (2004) and ICAN (2006), is an intentional act by one or more individuals among management, employees or third parties, which results in a misrepresentation of financial statements. Fraud can also be seen as the intentional misrepresentation, concealment,

or omission of the truth for the purpose of deception/manipulation to the financial detriment of an individual or an organization which also includes embezzlement, theft or any attempt to steal or unlawfully obtain, misuse or harm the asset of the organization, (PWC, 2014; Institute of Internal Audit 2012). Fraud has increased considerably over the recent years and professionals believe this trend is likely to continue.

According to Gramling (2013) fraud is an ever present threat to the effective utilization of resources and it will always be an important concern of management. ISA 240 'The Auditor's Responsibilities to Consider Fraud in an Audit of Financial Statement (Revised)' refers to fraud as "an intentional act by one or more individuals among management, those charged with governance, employees or third parties, involving the use of deception to obtain an unjust or illegal advantage".

Aderibigbe and Dada (2007) define fraud as a deliberate deceit planned and executed with the intent to deprive another person of his property or rights directly or indirectly, regardless of whether the perpetrator benefits from his/her actions. Weirich and Reinstein (2000) cited in Allyne and Howard (2005), define fraud as "intentional deception, cheating and stealing". Some common types of fraud include creating fictitious creditors, "ghosts" on the payroll, falsifying cash sales, undeclared stock, making unauthorized "write-offs", and claiming excessive or never-incurred expenses. Pollick (2006) regards fraud as a "deliberate misrepresentation, which causes one to suffer damages, usually monetary losses".

Allyne and Howard (2005) classified fraud into employee embezzlement, management fraud, investment scams, vendor fraud, customer fraud, and miscellaneous fraud. Fraud also involves complicated financial transactions conducted by white collar criminals, business professionals with specialized knowledge and criminal intent (Pollick 2006). Okafor (2004)

reported that fraud is a generic term and embraces all the multifarious means which human ingenuity can devise, and resorted to by an individual to get advantage over another in false representation. According to Anyanwu (1993), fraud is an act or course of deception, deliberately practiced to gain unlawful or unfair advantage; at the detriment of another.

Karwai, (2002); Ajie and Ezi, (2002); Anyanwu, (1993); Okafor, (2004) and Adeniji, (2004), summarize the types of fraud on the basis of methods of perpetration which includes the following but not exhaustive: defalcation, suppression, outright theft and embezzlement, tampering with reserves, inside abuses and forgeries, fraudulent substitutions, unauthorized lendings, lending to ghost borrowers, kite flying and cross firing, unofficial borrowing, impersonation, fake payment, fraudulent use of the firms documents, fictitious accounts, false proceeds of collection, manipulation of vouchers, dry posting, over invoicing, inflation of statistical data, ledger accounts manipulation, fictitious contracts, duplication cheque books, computer fraud, misuse of suspense accounts, false declaration of cash shortages etc. It has been analysed that three components come to bear when committing fraud. These components which are pressure, opportunity and justification constitute the fraud triangle. Pressure factors could be categorized into three groups: pressures with financial content, pressures steaming from bad habits and pressures related with job.

Opportunity factor is the second component of the fraud triangle. It directly involves top management and owners of the business in particular. Providing the opportunity to commit fraud is one of the most important factors arising from frauds. The third component of the fraud triangle is fraudster's developing defence mechanisms in order to justify their action (Enofe, *et al.,* 2013).Over time, increase in the events of fraudulent acts has led to great importance attached to the initial detection of fraud (Enofe, *et al.,* 2013).There are two main ways to detect

frauds: (a) detection by chance and (b) conducting a proactive research and encouraging initial identification of symptoms, (Enofe, *et al.,* 2013). Fraud is costly as an estimated $3.5 trillion worldwide has been lost due to fraudulent financial statements, asset misappropriation, and corruption (ACFE, 2012). As a result, Accounting standard setters have increased the steps auditors are expected to take in order to detect fraud which ultimately should restore public trust in the audit profession. However, identifying the occurrence of the cases of fraud is very difficult (Karwai, 2002).

According to Karwai (2002), frauds perpetrated by organizations in modern day usually involve complex web of conspiracy and deception that often mask the actual cause. Fraud in whatever nature and guise has to be detected first, since detection of fraud is an important prerequisite of rooting out its occurrence.

Ehioghiren and Atu (2016) opined that financial crimes cannot be precisely defined but can be described. No one description suffices. Williams (2005) incorporates corruptions, bribes cronyism, nepotism, political donation, kickbacks, artificial pricing and frauds of all kinds to his description of financial crimes. Nwaze (2012) defined fraud as a predetermined as well as planned tricky process or device usually undertaken by a person or group of persons with the sole aim of cheating another person or organisation to gain ill-gotten advantage which would not have accrued in the absence of such deceptive procedure.

Karwai (2002) is of the view that financial fraud in organizations vary in nature, character and method of operation in general. It was noted by Nwaze (2008) that fraud is perpetrated in many forms and usually has insiders (staff) and outsiders conniving together to successfully implement the act.

Financial crimes are crime against property, involving the unlawful conversion of the ownership of property (belonging to another) to one's own personal use and benefit. Financial crimes may involve additional criminal acts, such as computer crime, burglary, and even violent crime such as armed robbery or murder. Financial crimes may be carried out by individuals, corporations, or by organized crime groups. Victims may include individuals, corporations, governments, and entire economies.

2.1.7 Corporate Crime Mitigation

Braithwaite, as cited in Enofe, Ekpulu, and Ajala, (2015) defined corporate crime as the conduct of a corporation, or of employees acting on behalf of a corporation, which is proscribed and punishable by law. Corporate crime intersects and is usually confused with white-collar crime, organised crime and state-corporate crime (Enofe et al., 2015). Edwin Sutherland was the first to coin the term white-collar crime, and he defined it as the crime committed by a person of respectability and high status in the course of his occupation (Sutherland, 1940). Corporate crime is often committed by skilled perpetrators and more often by a conspiring group who are usually ahead of the law enforcement authorities. These characteristics make corporate crime a serious threat and difficult to prevent, deter and combat not only at the domestic level but also at the global level (Sudti, 2008). The world has become a global village as progression in information, communication, and technologies have been made, thus making the commission of corporate crime more sophisticated and complicated (Sudti, 2008).

Corporate crime is difficult to be detected and identified and is not as evident as the conventional crime (Enofe *et al.,* 2015). It is of essence therefore for legal action and other administrative measures to be taken to prevent, defeat and reduce the occurrence and the impact of this crime (Sudti-autasilp, 2008). This kind of crime involves a complex web of deception and

conspiracy that most times mask the actual cause of the fraud (Enofe *et al.,* 2015). Forensic accounting tools, accounting and computer forensic are the investigators best weapon in detecting and mitigating corporate crime (Hansen, 2009).

Therefore, detection and mitigation of corporate crime or white-collar crime are made possible by the application of investigative tools by the forensic accountant (Baird & Zelin, 2009). Examples of types of corporate crimes committed by corporate individuals and institutional management include but not limited to; securities-related crimes, consumer fraud, tax fraud, insider-trading, insurance fraud, bribery, corruption, political fraud, bankruptcy among other (Enofe *et al.,* 2015).

2.2 Theoretical Framework

The theories adopted for this work are perturbation theory, policeman theory and fraud management theory. The purpose of adopting the afore mentioned theories for this study is that they all captured the essence of the work.

2.2.1 The perturbation Theory

The theory is propounded by Paul Daric,(1927) is a set of approximation schemes for describing a complicated quantum system. The expression produced by perturbation theory are not exact but they can lead to accurate result as long as the expansion of parameter. A critical feature of the technique is step breaks the problems into solvable and perturbation parts. The set of series use in perturbation are like tools used by the forensic accountant to solve the critical problem of corporate crime.

2.2.2 Policeman Theory

This theory explain the auditor's job which is focused on arithmetical accuracy and on the prevention and detection of fraud. Like a policeman trying to dig deep into the cause and

responsible culprit of a crime, the auditor works on verification of truth and fairness of the financial system.

2.2.3Fraud management lifecycle

The fraud management lifecycle was developed by Wilhelm (2004) it has eight stages with interrelated activities geared towards managing fraud. These eight stages are prevention, deterrence, detection, mitigation, analysis, policy making, investigation and prosecution. This stages are independent actions but can be performed simultaneously. This is the awareness of the existence of the forensic accountant which is a menace to the financial crime perpetrators and also sensitize the manufacturing companies to tighten up loopholes in their internal control system.

2.2.4 Theoretical Framework

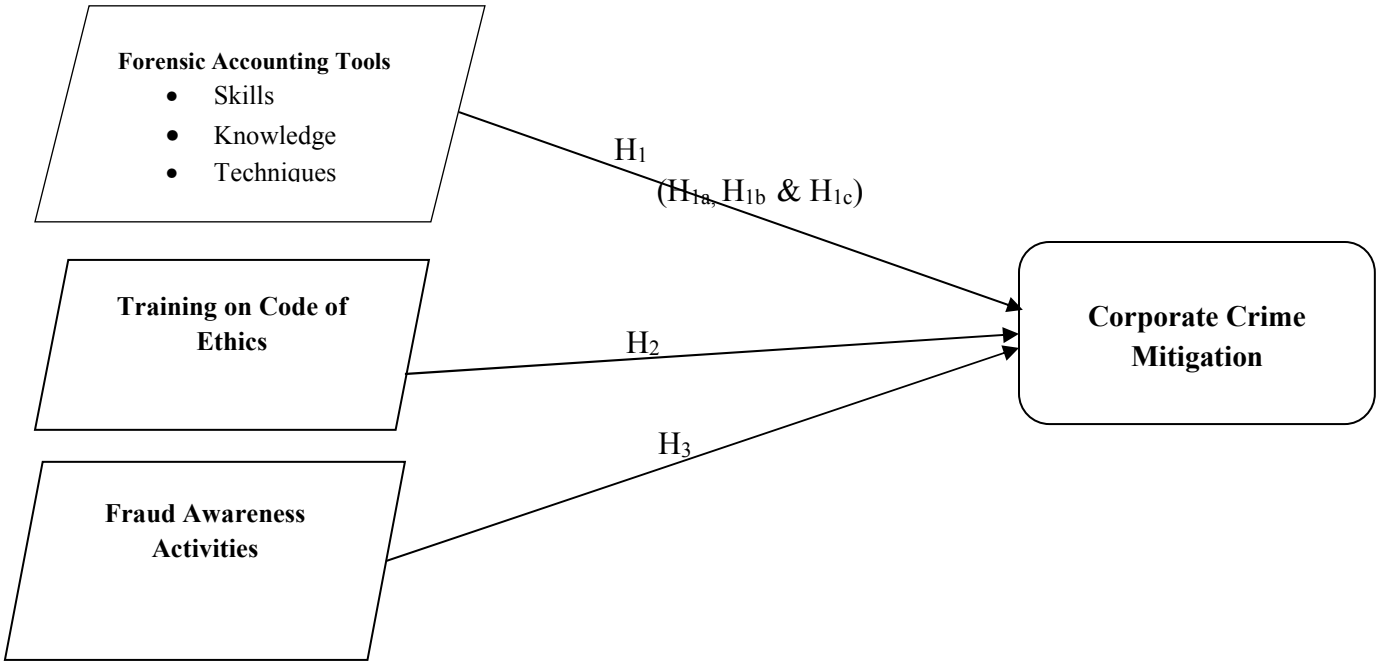


Figure 2.1
Research Framework – the impact of forensic accounting practices on corporate crime mitigation

2.3 Empirical Review

There are several empirical studies on forensic accounting in crime detection and preventions ranging from developed countries of the world, down to developing countries. Some of these were discussed.

Empirical Studies from Developed Countries

Brody and Pacini (2017) examine the extent to which accountants, internal auditors, and certified fraud examiners use fraud prevention and detection methods, and their perceptions regarding the effectiveness of these methods in US. A survey was administered to 86 accountants, internal auditors and certified fraud examiners. The results indicate that firewalls, virus and password protection, and internal control review and improvement are quite commonly used to combat fraud. However, discovery sampling, data mining, forensic accountants, and digital analysis software are not often used, despite receiving high ratings of effectiveness. In particular, organizational use of forensic accountants and digital analysis were the least often used of any anti-fraud method but had the highest mean effectiveness ratings. The lack of use of these highly effective methods may be driven by lack of firm resources

Madeline Ann Domino, Matthew Stradiot, Mariah Webinger, (2015) investigate factors which may influence or bias judges' decisions to exclude or admit the testimony of accounting expert witnesses, under the US judicial guidelines commonly known as the Daubert/Kuhmo standards. Accounting experts are increasingly providing expert testimony as a part of financial litigation support services. Judges' decisions, in which opposing council evoked a Daubert/Kuhmo challenge to the testimony provided by 130 professional accountants serving as expert witnesses, were analyzed. The period of study was 2010 through 2014. The results of binary logistic regression show that none of the variables has a significant relationship to the

accounting expert witnesses' probability of surviving a challenge to Daubert/Kuhmo standards. Findings suggest that judges are objective in evaluating the testimony provided by accounting experts under Daubert/Kuhmo guidelines and that they may be immune to biases based solely on gender, complexity and familiarity.

Timothy and Louwers, (2015) conducted survey on the origins of crime-related forensic accounting methodology in the USA. The study describes how these early methods have evolved through the use of technology. The study also discusses the next generation of crime-related forensic accounting tools and techniques which, although in limited use today, will grow to widespread use in the near future. This viewpoint is a summary of a presentation made at the 3rd National Forensic Accounting Teaching and Research Symposium held at the Queensland University of Technology.

DiGabriele, and Dennis Huber, (2015), examined those topics of forensic accounting that have received little or no attention in the forensic accounting research that has been published in forensic accounting research journals; discover what research methods have been most commonly used; and identify research methods that have been infrequently used. This is a descriptive research study that explores the topics and methods used in forensic accounting research published in forensic accounting journals. Fraud and quantitative methods make up the largest percentage of topics and research methods published in forensic accounting journals. Results suggest forensic accounting researchers are using mimetic topics and methods of accounting research. The absence of diversity in forensic accounting research topics and methods has the potential to compromise the overall contribution of forensic accounting research.

Mary Barnao Peter Robertson Tony Ward, (2012) examined the Ethical decision making and forensic practice. Three case vignettes are used to demonstrate how the ethical framework

can be used as a heuristic device to encourage practitioners to be alert to genuine, although often subtle, ethical problems and to think beyond the confines of ethical codes. Findings revealed that the ethical framework outlined in this paper can alert clinicians to a broader range of ethical issues than those flagged by codes of ethics and encourage them to think about the contribution of systemic, as well as individual variables, to ethical problems.

Akkeren, Buckby and MacKenzie, (2013) conducted survey on metamorphosis of the traditional accountant: An insight into forensic accounting services in Australia. Findings from 32 interviews with Australian practicing forensic professionals suggest that these services are broad and complex. Opinions differ widely on the best way forward for this area of the accounting profession. Findings from this study suggest there is still a deficiency in forensic accounting graduates skill set, particularly in relation to oral and written communication. The lack of an Australian-based forensic accounting certification was also raised.

Rose et al.(2012) using graphical representation of 15 fraud cues found preliminary evidence that fraud preliminary evidence that fraud specialist s organized red flags in memory differently than auditors. They found out that the auditors who adapted the fraud specialist pattern of knowledge of organization improved their accuracy of risk assessment.

Wilson, (2004) investigated the survey of risk managers on employee dishonesty and crime as major issues that have raised the crime rates since organizational 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 organization. The study also realized 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.

Singleton (2003) categorized fraud into four types namely, fraudulent statement fraud, asset misappropriation fraud, corruption and other criminals acts and each category is common with a certain 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 organization and whether they are management or non-management. The fraud perpetrated by insiders is increasingly common. Fraud perpetrator categorized with the nature of the fraud committed that is the executive management is set of 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.

Empirical Studies from Developing Countries

Zamzami, Nusa and Timur (2016) carried out the research on 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.

Bhasin (2015) conducted survey on Skills required by the Forensic Accountants in India: Evidence from a Developing Country. The present study investigates through a questionnaire, which was conducted in three leading States of the national capital region (NCR) of India during

2011-12, From the statistical test of the hypotheses propounded for this study, we discovered that "core skills are not enough requirements for FA's, there are significant differences in the relevant skills of FA's, as given by previous researchers with the current research, and the necessary skills of FA's, as identified by both academics and professionals, will hopefully meet employers' expectations too." The results of this study may provide some guidance to educators for the development of forensic accounting curriculum by identifying the pertinent skills to accompany such a program of study.

Salleh and Aziz (2014). Conducted empirical study on Traits, skills and ethical values of public sector forensic accountants in Malaysia. A survey research was carried out and was distributed to the target population who are the users of forensic services such as auditors and academicians. One-way ANOVAs is used to determine if the three major groups of users of forensic accounting differed in their perception ratings on the top five information for the essential traits, relevant skills, and Islamic ethical values of forensic accountants in the public sector.

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.

Mat, Nazri, Fahmi, Ismail, Smith (2013). Assessing the Fraud Prevention Mechanisms in Malaysian Government Agencies. The framework of this study is developed based on the fraud triangle concepts which explain how pressure, rationalization and opportunity could be minimized by implementing effective fraud prevention activities such as internal control

assessments, training and education, and other organisation-wide strategies. This study concentrates on fraud training and education mechanisms. (Insert research method). The results show that raising fraud awareness activities, training in ethics or code of conduct, training in privacy principles and training to employees involved in fraud control activities are effective mechanisms for fraud prevention.

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.

Moreover, the result from a study conducted by Khanna and Arora (2009) in India showed that lacks of 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 favorable 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.

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 didn't link to the expectation gap especially in the public sector which is the main of the study.

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.

Empirical Studies from Nigeria

Ademola, Ayoib and Popoola (2017) conducted study on the forensic accountants' skills and ethics on fraud prevention in the Nigerian Public sectors. The primary source of data was utilized for data collection. Using the simple random sampling (SRS), a total of 300 questionnaires were administered; 163 were retrieved. The data obtained was analyzed using SmartPLS. One of the major findings revealed that skills requirement was significant predator of

fraud prevention as well as ethics requirement. This means that the higher the skills and ethics of the forensic accountant, the better is the fraud prevention. It is thus, recommended that forensic accounting services should be made statutory in the Nigerian public sector to help in preventing fraudulent practices. Hence the need to create awareness and expand the application of forensic accounting services in Nigerian public sector

Imam, Kumshe and Jajere (2015) carried out study on applicability of forensic accounting services for financial fraud detection and prevention in the public sector of Nigeria. A total of 441 questionnaires were retrieved from public sector accountants and auditors, two anti-graft agencies, four professional accounting associations, the forensic section of the Nigeria Police Force and the Nigeria Bar Association using systematic sampling. Analysis was carried out using descriptive statistics, chi-square. The null hypotheses was rejected indicating an acceptance of government's intention that forensic accounting can be applied for preventing and detecting fraudulent financial practices in the Nigerian public sector. It recommended that forensic accounting be made statutory in the public sector to assist in preventing and detecting fraudulent financial practices.

Popoola (2014) conducted study on the task performance fraud risk assessment among forensic accountants and auditors in the Nigerian public sector. The study employed the second generation statistical analysis tools of PLS-SEM and IBM SPSS. The ten out of fifteen hypotheses were tested through the use of PLS-SEM algorithm and bootstrap techniques on the hypothesized relationships while the remaining five hypotheses of differences among groups were tested using the Mann-Whitney U Test. The results provided verifiable support for the hypothesized relationships of the study. Specifically, knowledge, skills and mindset (forensic accountant and auditor), and fraud related problem representation are significant and positively

related to task performance fraud risk assessment. Therefore, accountants and auditors in the Nigerian public sector should be encouraged to acquire forensic accounting knowledge, skills, mindset, fraud related problem representation to enhance task performance fraud risk assessment in the workplace.

Okoye (2011) in his examination of forensic accounting as a tool for fraud detection and prevention used primary and secondary sources of data. 370 questionnaires were administered to staff of 5 selected ministries in Kogi area. Tables and simple percentages were used to analyze the data. The statistical tool used to test hypotheses was Analysis of Variance (ANOVA). Among the findings was that, the use of forensic accounting do significantly reduce the occurrence of fraud cases in the public sector and therefore can help better in detecting and preventing fraud cases in the public sector organization.

Also, Ekeigwe (2011) 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 globalcivilisation, accounting, criminology, business, courtroom, auditing, technology, behavioural, metal-thinking and psychology skills are fundamental to the usefulness of forensic accountant.

Ebimobowei (2011) examined the effect of forensic accounting services in fraud detection. The primary data was collected with the help of a well-structured questionnaire of three sections administered to twenty four banks in Port Harcourt, the capital of Rivers State and the data collected from the questionnaires were analyzed with descriptive statistics, Augmented Dickey-fuller, ordinary least square and Granger Causality. The result reveals that the application of forensic accounting services affects the level of fraudulent activities of banks.

Okunbor and Obaretin (2010) investigate the effectiveness of the application of the forensic accounting services by the corporate organization 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 organization 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 reposition by the government for better performances.

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 the 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.

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.

2.8 Gaps in Literature

The assertion that corporate crime mitigation is very complicated was confirmed, as there seems to be no standard or agreed definition of corporate crime mitigation. Review of existing literature however reveals that forensic accounting tools, training on code of ethics and fraud awareness seems to be the most commonly stated as components of forensic accounting practice. It was also discovered that though there are various methods that have been developed for the measurement of forensic accounting practice, which forensic accounting tools seems to be most commonly used method.

Study of the literature also revealed that despite the much research that has been done in advanced world, the body of research work available in developing countries like Nigeria on forensic accounting practice and corporate crime mitigation seems to be few. That is, Nigeria as a country is yet to tap into the capabilities that come up as a result of effective forensic accounting practice. This study therefore fills the gap in literature by using forensic accounting tools, training on code of ethics and fraud awareness, adding to the few existing empirical evidence on the impact of forensic accounting practice to corporate crime mitigation in Nigeria manufacturing sector.

Base on the literature reviewed and to the best knowledge of the researcher, the study on forensic accounting only limited to public sector and banking sector with little or no research conducted in the manufacturing sector. Furthermore, the little study on the forensic accounting practice in Nigeria context only limited to forensic accounting knowledge and skills but yet to check the area of techniques, code of ethics and fraud awareness. However, this is filling the gap by looking into the forensic accounting practice on fraud awareness and code of ethics in manufacturing sector.

CHAPTER THREE

METHODOLOGY

This chapter contains the general procedure for the conduct of the study. It therefore gives detail information on the following: research design, population of the study, sample and sampling techniques, instrumentation, psychometric properties of the instrument, validity of research instrument, reliability of research instrument, procedure for administration of the instrument, procedure for scoring and method of data analysis.

3.1 Research Design

The research design that was adopted for the study is the descriptive survey method. Ayena (2005) opined that descriptive survey aims at estimating as precisely as possible the attributes of the population. Descriptive survey method is considered because it arrives at dependable solution to problem through the planned and systematic, analysis and interpretation of data collected on this subject matter.

3.2 Population of the study

The population of this study comprised of quoted manufacturing company in the Nigerian stock exchange. The choice of the quoted manufacturing company was chosen because the shift usage of money from less productive activities in the economy to more productive activities which translate to high profits. This profits make quoted manufacturing company a worthy target for corporate crime in terms of fraud hence the need to see the impact of forensic accounting practice in the companies

The entire population of the inductees of the forensic accounting professional bodies whose membership status was published as at the time of this research survey was conducted

stood at 5,644 respondents for quoted manufacturing companies in Nigeria as shown in Appendix C.

3.3 Sample technique and sample size of the Study

To be able to reduce sampling errors, Dillman (2010) 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, 2010), and this is in line with Biemer and Lyberg (2003) about the provision of adequate sample size for smaller or larger population.

Therefore,

N= 5,644; p = 0.5; b = 0.05; and c = 1.96

$$n = \frac{[(5{,}644)\,(0.5)\,(1-0.5)]}{[(5{,}644-1)\,(0.05/1.96)^2] + [(0.5)\,(1-0.5)]} \qquad n = 370$$

This study adopted the sample size determination of 370 as it was determined by Dillman (2010) earlier in this study.

3.4. Data Collection

The data for this study was source through primary source by administration of questionnaires to the selected respondents. The questionnaires managed through mail and drop and pick method. The questionnaire contained three sections. Section one comprises of questions that seek to find the general information about the firm. Section two seeks information on the impact of forensic accounting on corporate crime mitigation and section three seeks to get information on how to mitigate corporate crime. The targeted respondents were the audit and accounting managers for all quoted manufacturing companies on the Nigerian stock exchange.

3.5 Validity and Reliability of the Instrument

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Golafshani, 2003). To ensure validity of the questionnaires used for the study, the draft form of the questionnaire was presented to researchers and lecturers at the University for their Independent Reviews on its content. Based on their comments and suggestions, necessary adjustments were done on the draft.

Reliability refers to the extent to which results are consistent over time and the results of the study can be reproduced under a similar methodology (Joppe, 2000). Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by uniform testing procedures (Kubasu, 2014). For verification of the reliability of the questionnaire used in this study, it was subjected to pre-trial tests by administering the instrument to a sample selected from the entire population of listed manufacturing companies in Nigeria, after which the results was analyzed and assessed for reliability.

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).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 (Bhattacherjee, 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).

Thirty (30) questionnaires were administered to the experts in the field of forensic accounting and auditing practices in the quoted manufacturing companies in Nigeria through the research assistant. Twenty-five (25) 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 Twenty-two (22) 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, SPSS (version 22) was used for the test. Table 3.1 indicated the result of the Pilot test.

Table 3.1
Result of the Pilot Test

Indicator	**Items No**	**Cronbach's Alpha**
Corporate Crime Mitigation	12	0.813
Forensic Accounting Tools	15	0.786
Training on Code of Ethics	10	0.768
Fraud Awareness	12	0.757

Source: Research Survey 2018

Table 3.1 is the test of reliability and validity of the study. Cronbach's Alpha (α) were conducted for all the constructs to be able to decide the measure sampling appropriateness. The result of the cronbach's Alpha (α) for all constructs range from 0.757 to 0.813 and this is above 0.7 which is considered acceptable (Hair *et al*., 2010). 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 & Sartedt, 2012).

Data Analysis

The study made use of multiple regression analyses to analyze the data collected

3.6 Model Specification

This study adapts the model of Popoola (2014). The model of Popoola (2014) was written as:

$TPFRA = \beta_0 + a_i + b_{x1} + b_{x2} + b_{x3} + \varepsilon_i$

The reason for the modification is that the variables used in the present study are different form the variables used by Popoola (2014). The model of the present study is written as:

$CCM_i = \beta_0 + \beta$íFAS$_+$ β2FAK+β3FAT+β4 COE_i + β5FAA_i + ε_i

Where:

Dependent variable:

CCM = Financial Crime

Independent variables:

FAS = Forensic Accounting Skill

FAK =Forensic Accounting Knowledge

FAT =Forensic Accounting Technique

COE = Training on Code of Ethics

FAA = Fraud Awareness Activities

β_0 = Constant coefficient

$\beta_1 - \beta_5$ = parameters of the estimate

ε = Standard Error (5% significance level)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF THE RESULTS

This chapter presents data analysis and interpretation of the results. Starting from the response rate of respondents. Next to data screening and non-response bias. Follow by the discussion of the descriptive statistics (such as the profile of despondence, mean, and standard deviation) and confirmatory factor analysis. Lastly, the study report assumption for multiple regression analysis, correlation, regression and the summary of the chapter.

4.1 Survey Responses

The sample size was drawn from Dillman (2010) equation for sample size determination, based on the 370 manufacturing staffs in Nigerian that were selected. Hence, a total of 370 questionnaires were administered to the accountants and auditors in the manufacturing companies in Nigerian. However, 310 questionnaires were returned by the respondents, representing 83.8% which is considered adequate (Hair et al., 2010). Out of the figure, 38(12.2%) questionnaires were found unusable due to incompleteness and multivariate outliers.

Hence, 272(73.5%) questionnaires were retained for further analysis. 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 4.1
Response Rate of the Respondents

Questionnaire Distribution and Retention Item	**Frequency**	**Percentage (%)**
Distributed Questionnaires	370	100
Unreturned Questionnaires	(60)	(16.2)

Returned Questionnaires	310	83.8
Unusable returned Questionnaires (Incomplete and Double tick)	(17)	5.4
Rejected Questionnaires – Outliers	(21)	6.8
Retained Questionnaires Usable for further analysis	272	73.5

Source: Research Survey 2018

This is justified as it covers the entire forensic accountants and auditors of manufacturing companies in Nigerian as mentioned by Linus (2001) 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, 272 usable responses (i.e., 73.5%) of the required sample size was keyed into SPSS (version 22) for further analysis.

4.3 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 (Forensic accounting tools, code of ethics, fraud awareness and corporate crime mitigation).

The questionnaires were administered within five (5) weeks from April 2018 to May 2018. 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 April 2018 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 4.2 represents the independent T-Test of the early and late respondents (non-response bias).

Table 4.2
Descriptive Statistics for Early and Late respondents

Measures	**T Test**	**N**	**Mean**	**Std. Deviation**	**t-value**	**Sig.**
CCM	Early	149	4.42	.404		
	Late	123	4.38	.496	1.186	0.328
FAS	Early	149	4.39	.397		
	Late	123	4.48	.606	0.268	0.357
FAK	Early	149	4.21	.367		
	Late	123	4.18	.522	0.751	0.228
FAT	Early	149	4.25	.397		
	Late	123	4.32	.506	0.632	0.318
COE	Early	149	4.40	.430		
	Late	123	4.38	.550	0.812	0.320
FA	Early	149	4.41	.414		
	Late	123	4.37	.508	1.386	0.311

Source: Research Survey 2018

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 4.2, there is no significant difference between early responses and late responses based on the items in the constructs. For example, the constructs of Forensic accounting skills, ($t = 0.268$, $p < 0.357$); code of ethics, ($t = 0.812$, $p < 0.320$); fraud awareness ($t = 1.386$, $p < 0.311$); and corporate crime mitigation ($t = 1.186$, $p < 0.328$). 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.

4.4 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.

4.4.1 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 valve. 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 indicates that only twelve (12) 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 Fiddel (2007) and Babbie (2004) observe the method of treating missing data is to drop the case. Hence, in this study two (2) missing data was recorded and corrected.

4.4.2 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. Therefore, the study detects 21 cases from 293 respondents as outliers. These have been removed from the total respondents, and a total number of 272 respondents are available for analysis.

4.5 Descriptive Statistics – Profile of the Respondents

Table 4.3 denotes the demographical information of respondents. The respondents were asked to explain some of their demographic information, which include 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 quoted manufacturing with the response rate of 154 (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 22 responses, representing 6.4% of the total responses, followed by Degree holders with 90 responses 26.2%, next are those with Masters Certificates with 89 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, 110 respondents (41.2%) were forensic accountants, while 163 respondents (58.8%) were Auditors.

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 4.3 shows the summary of the demography of the respondents.

Table 4.3
Summary of the Respondents' Demography

S/N	Items	Frequency	Percentage (%)
1	**Educational background**		
	Diploma	22	6.4
	Degree	70	26.2
	Master	109	40.8
	Doctoral degree	71	26.6
2	**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	46	17.2
	(FCNA)	40	15.0
	Others		
3	**Gender**		
	Male	154	55.8
	Female	118	44.2
4	**Profession**		
	Forensic Accountant	110	41.2
	Auditor	162	58.8
5	**Working experience**		
	1 - 5yrs	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

Source: Research Survey 2018

4.5.1 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 isbasic 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 scoreare 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 4.4 presents the mean and standard deviation of the entire variables used in this study. Corporate Crime Mitigation has the highest mean (M = 4.458, SD = 0.125) while Forensic Accounting Techniques recorded the lowest mean (M = 4.342, SD = 0.154). Finally, the entire variables means are in the range of high level.

Table 4.4
Mean and Standard Deviation of Variables

Variables	N	Min	Max	Mean	Std. Dev.
Corporate Crime Mitigation	272	1	5	4.458	.125
Forensic Accounting Skills	272	1	5	4.411	.134
Forensic Accounting Knowledge	272	1	5	4.422	.186
Forensic Accounting Techniques	272	1	5	4.342	.115
Training on Code of Ethics	272	1	5	4.453	.162
Fraud Awareness	272	1	5	4.446	.177

Source: Research Survey 2018

4.6 Descriptive Statistics

4.6.1 Forensic Accounting Tools (FAT)

The Forensic Accounting Tools of the respondents towards Corporate Crime Mitigation is presented in Table 4.5. The results show that the mean scores concerning the respondents' Forensic Accounting Tools range from 4.36 to 4.60 together with the standard deviation from 0.501 to 0.615. Majority of the respondents strongly agreed that forensic accounting tools in term of FAT1 to FAT15 have influence on the corporate crime mitigation. This suggests that the respondents had a strong agreement on the forensic accounting tools towards the corporate crime mitigation. The overall mean scores and standard deviation of 4.458 and 0.125 respectively on all the items on forensic accounting tools indicate that the respondents strongly agreed on the forensic accounting tools.

Table 4.5
Forensic Accounting Tools (FAT)

S/N	Items	Mean	S.Dev
Skills Requirement			
1	The important skills requirement of a forensic accountant is analytical proficiency	4.50	.501
2	The important skills requirement of a forensic accountant/auditor is deductive analysis	4.47	.536
3	An important skills requirement of a forensic accountant is critical thinking	4.48	.536
4	The important skills requirement of a forensic accountant is investigative skills	4.39	.597
5	The important skills requirement of a forensic accountant is unstructured problem solving	4.36	.615
6	The important skills requirement of a forensic accountant is specific legal knowledge	4.46	.575
7	The important skills requirement of a forensic accountant is written communication	4.41	.556
8	The important skills requirement of a forensic accountant is oral communication	4.42	.614
Knowledge Requirement			
9	The forensic accountant needs to be a more broadly experienced professional.	4.46	.535

10	The forensic accountant needs to have more court proceedings knowledge, criminal and civil law.	4.43	.545
11	The forensic accountant needs to have more information technology knowledge.	4.51	.595
12	The forensic accountant needs to have more criminology knowledge.	4.27	.548
Forensic Accounting Techniques			
13	The forensic accountant needs to adopt more techniques on investigative analysis	4.60	.581
14	The forensic accountant needs to be adopt more techniques on problems solving	4.46	.606
15	The forensic accountant needs to be more of deductive analysis.	4.41	.556

Source: Research Survey 2018

4.6.2 Training on Code of Ethics (COE)

The descriptive statistics concerning the training on Code of Ethics of respondents of towards corporate crime mitigation are shown in Table 4.6. The results show that the mean scores concerning the respondents' corporate crime mitigation range from 4.39 to 4.52 together with the standard deviation from 0.508 to 0.627. Majority of the respondents strongly agreed that Code of Ethics in term of COE1 to COE10 have influence on the corporate crime mitigation. This suggests that the respondents had a strong agreement on the code of ethics and corporate crime mitigation. Generally, the overall mean scores and standard deviation of 4.453 and 0.162, respectively, on all the items on Code of Ethics indicate that the respondents strongly agreed on the training on Code of Ethics.

Table 4.6
Training on Code of Ethics

S/N	Items	Mean	S.Dev
Acting with integrity			
1	Conceal any information to a third party at any costs.	4.39	.627
2	Adhere to technical and ethical standards issued by accounting organizations.	4.49	.595
3	Issue an urgent letter to the shareholders when the	4.51	.583

	company is about to collapse.		
4	Prohibit disclosing any information to a third party unless demanded by the law.	4.46	.569
Independent and Objectivity			
5	Not to allow the influence of others to override professional judgment.	4.52	.508
6	Not to accept any financial benefit from clients aside your normal fees.	4.49	.563
7	Not to allow conflict of interests and bias to come in between management and company's owner	4.49	.550
Protecting the public interest			
8	Provide accurate and excellent services.	4.42	.551
9	Be genuinely interested in serving the public.	4.51	.543
10	Prohibit paying a percentage of investigating/auditing fees to people for obtaining professional work.	4.39	.546

Source: Research Survey 2018

4.6.3 Fraud Awareness (FA)

The respondents' views on the fraud awareness in Nigeria manufacturing companies were expressed through items FA1 to FA12 and presented in Table 4.7. The mean of this constructs are range from 4.16 to 4.56; the standard deviation of these items range from 0.522 to 1.115. This statistical description is an indication that the respondents perceived the fraud awareness as strong agreement with the corporate crime mitigation. Of these items, FA10 has the lowest mean score of 4.16 and more respondents (85.6%) expressed strong agreement with the item (i.e., increase in fraud awareness to a large extent has positive effect on corporate crime mitigation) than the other ten items.

A comparative analysis of these items reveals that more respondents (98.5%) agreed with FA1 (Implementation cost). This item has a mean score and standard deviation of 4.56 and

0.567, respectively. While FA10 with mean score of 4.16 has lower respondents (85.6%) who agreed with the statement "Increase in fraud Awareness". With the overall mean score of 4.446 and standard deviation of .177, the respondents generally perceived that the fraud awareness as strong.

Table 4.7
Fraud Awareness (FA)

S/N	Items	Mean	S.Dev
1	Implementation cost	4.56	.567
2	Cost Benefit	4.42	.608
3	Practicality	4.49	.523
4	Fraudulent Activities	4.40	.605
5	Intention to Commit Fraud	4.41	.563
6	Effectiveness of Fraud Prevention Mechanism	4.49	.543
7	Increase Public Trust	4.52	.543
8	Responsibility to Prevent Fraud	4.50	.563
9	Morale Implication	4.45	.593
10	Increase in Awareness	4.16	1.115
11	Reduction in Fraud Risk	4.46	.568
12	Overall Benefit	4.51	.522

Source: Research Survey 2018

4.6.4 Corporate Crime Mitigation (CCM)

The views of the respondents on the corporate crime mitigation in manufacturing companies, Nigeria were expressed through items CCM1 to CCM12 (which comprised of Create Culture of Honesty and High Ethics, Evaluating Antifraud Processes; and Developing an Appropriate Oversight Process) and the results of the descriptive analysis of the items are documented in Table 4.8. Specifically, the results reveal that the perception of the respondents about the corporate crime mitigation in Nigerian manufacturing companies as convened in item CCM1, - CCM12 was strong, which is indicated in the strong mean scores of 4.32 - 4.54 together with the standard deviation of 0.503, - 0.542 respectively. However, in a comparison of the

items, more respondents (98.5%) expressed strong agreement with item CCM12 (i.e., Certified Fraud Examiner in internal audit team or external audit team) than in the other twelve (12) items. Generally, the overall mean scores and standard deviation of 4.458 and 0.125, respectively, on all the items on corporate crime mitigation indicate that the respondents strongly agreed on the corporate crime mitigation in the manufacturing companies.

Table 4.8
Corporate Crime Mitigation (CCM)

S/N	Items	Mean	S.Dev
Create Culture of Honesty and High Ethics			
1	Setting the tone at the top.	4.36	.511
2	Establishing corporate code of conduct.	4.61	.503
3	Taking consistent actions in response to an alleged fraud.	4.50	.530
4	Fraud training for employees and management.	4.32	.511
5	Conducting background investigations on individuals being considered for employment.	4.45	.541
6	Creating a positive workplace environment.	4.51	,550
Evaluating Antifraud Processes and Controls			
7	Identifying and measuring fraud risks.	4.49	.536
8	Implementing and Monitoring Appropriate Preventive and Detective Internal Controls.	4.50	.530
9	Making changes to the entity's activities and processes in order to reduce or eliminate fraud risk	4.36	.511
Developing an Appropriate Oversight Process:			
10	Effective Audit committee or Board of directors.	4.38	.536
11	Management effectiveness in overseeing activities.	4.47	.500
12	Certified Fraud Examiner in internal audit team or external audit team	4.54	.542

Source: Research Survey 2018

4.7 Fundamental Statistical Assumptions of Regression Analysis

Hair *et al.,* (2010) believe that it is very paramount to refer to some basic assumptions (i.e., normality, linearity and Multcollinearity) regarding the variables to be able to confirm the results and in order to deal with the incidence of errors effectively such as Type I and Type II error. For easy understanding, these fundamental assumptions are highlighted as follows:

4.7.1 Normality Test

Hair, et al., (2012) suggested that researchers should perform a normality test on the data. Highly skewed or kurtotic data can inflate the bootstrapped standard error estimates which in turn underestimate the statistical significance of the path coefficients (Ringle, Sarstedt, & Straub, 2012).

Against this background, the present study employed a graphical method to check for the normality of data collected (Tabachnick & Fidell, 2007). Field (2009) suggested that in a large sample of 200 or more, it is more essential to check the shape of the distribution graphically rather than looking at the value of the skewness and kurtosis statistics. Field (2009) also said that a large sample decreases the standard errors, which in turn inflate the value of the skewness and kurtosis statistics. Hence, this justified the reason for using a graphical method of normality test rather than the statistical methods.

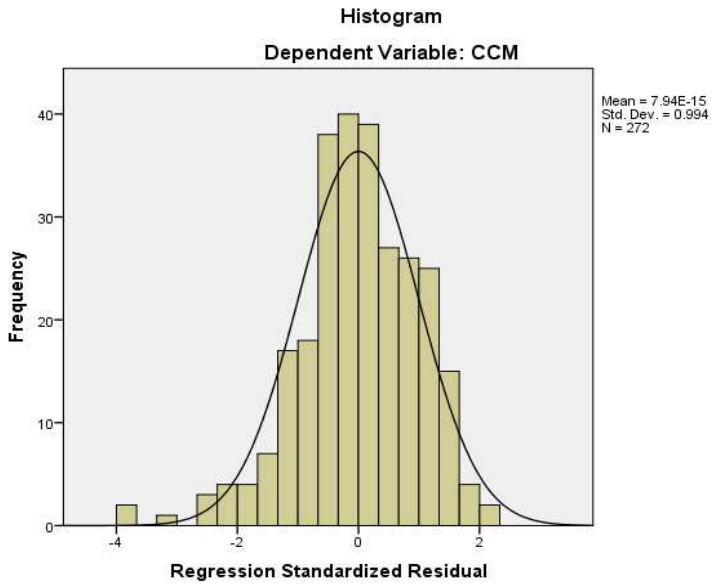


Figure 4.1
Histogram and Normal Probability Plots for Corporate Crime Mitigation

Secondly, going by the guidelines provided by Hair *et al.* (2010) that, variables should be seen as having violated normality if, they have their respective values higher than ±2.58. This study however achieves normality because all the variables as shown in the Table 4.9 do not have the problem of normality.

Table 4.9
Skweness and Kurtosis of the Variables

Variables	Items	Skweness	Kurtosis
Corporate Crime Mitigation	12	-1.028	2.550
Forensic Accounting Skills	15	-1.554	1.166
Forensic Accounting Knowledge		-1.383	1.262
Forensic Accounting Techniques		-1.423	1.561
Training on Code of Ethics	10	-1.286	1.874
Fraud Awareness	12	-.915	1.315

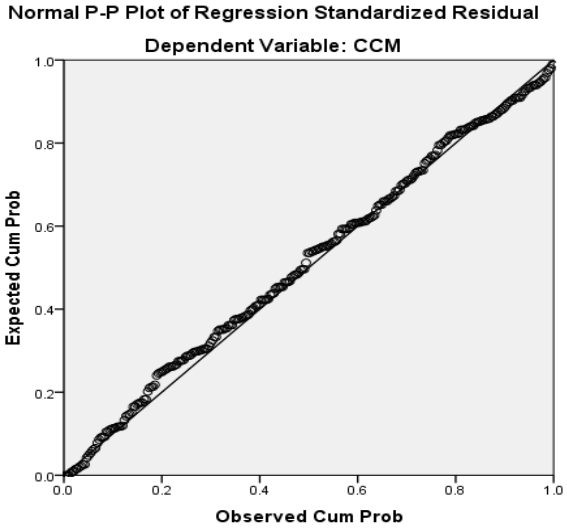
Source: Research Survey 2018

Table 4.9 indicates that skweness and kurtosis are not higher than ±2.58 among the exogenous latent constructs as suggested by Hair *et al.* (2011). Therefore, skweness and kurtosis is not an issue in the present study.

4.7.2 Linearity

Linearity is of necessary in regression analysis because one of the assumptions of the technique is that the relationship between independent and dependent variables is linear. However, correlation can only capture the linear association between variables. Therefore, if substantial non-linear relationships exist, they will be ignored in the analysis, which will in turn underestimate the actual strength of the relationship (Tabachnich & Fidell, 2007). The study used residual scatter plot, the residual ought to scatter around 0 and most of the scores should concentrate at 0 points (Ringim, 2012). Figure 4.2 presents the scatter plot between FAT, COE, FA, and corporate crime mitigation. The assumption was not violated as the plot shows that residual scores converged at the centre along the zero point, hence evidencing that the linearity

assumption was satisfied.



Crime Mitigation

4.7.3 Multicollinearity Test

Multicollinearity is a situation where two or more exogenous latent constructs become highly correlated. The presence of multicollinearity among the exogenous latent constructs can substantially distort the estimates of regression coefficients and their statistical significance tests (Hair, et al., 2014). Specifically, multicollinearity increases the standard errors of the coefficients, which in turn render the coefficients statistically non-significant (Tabachnick & Fidell, 2007).

To detect multicollinearity, two methods were embraced in the present study. Firstly, the correlation matrix of the exogenous latent constructs was examined. According to Hair *et al.* (2010), a correlation coefficient of 0.90 and above indicates multicollinearity between exogenous latent constructs. Table 4.10 indicates the correlation matrix of all exogenous latent constructs.

Table 4.10
Pearson Correlation Analysis of the Variables

Latent Variables	**CCM**	**FAS**	**FAK**	**FAT**	**COE**	**FA**
Corporate Crime Mitigation	1					
Forensic Accounting Skills	.349**	1				

Forensic Accounting Knowledge	.425**	.620**	1			
Forensic Accounting Techniques	.321**	.411**	.380**	1		
Training on Code of Ethics	.325**	.420**	.420**	.420**	1	
Fraud Awareness	.245**	.447**	.245**	.447**	.330**	1

**P ≤ 0.01 level (2-tailed); * P ≤ 0.05 (2- tailed)
Source: Research Survey 2018

As presented in Table 4.10, the correlations between the independent variables were sufficiently below the suggested threshold values of .90 or more, which suggests that the independent variables were not highly correlated. Secondly, variance inflated factor (VIF), and tolerance value were examined to detect multicollinearity problem. Hair, et al. (2011; 2014) suggested that multicollinearity is a concern if VIF value is higher than 5 and tolerance value is less than .20. Table 4.11 shows the VIF values and tolerance values for the exogenous latent constructs.

Table 4.11
Assessment of Collinearity Test

Variables	**Tolerance**	**VIF**
Forensic Accounting Skills	.717	2.186
Forensic Accounting Knowledge	.717	3.212
Forensic Accounting Techniques	.717	1.624
Training on Code of Ethics	.799	1.252
Fraud Awareness	.776	1.289

Source: Research Survey 2018

Table 4.11 indicates that multicollinearity did not exist among the exogenous latent constructs as all VIF values were less than 5 and tolerance values exceeded .20 as suggested by Hair *et al.* (2011). There, multicollinearity is not an issue in the present study.

4.8. Correlation Test

Correlation analysis is used to explain the strength and direction of a linear relationship between two variables (Pallant, 2011). Pearson correlation was employed to assess the

interrelationship between study variables. The table below shows the interrelations among corporate crime mitigation, forensic accounting tools, training on code of ethics as well as fraud awareness. Pallant (2011) asserted that a correlation of 0 indicated no relationship at all, a correlation of 1.0 is an indication of positive correlation, and a value of -1 is a pointer of a perfect negative correlation. Cohen (1988) suggested the following guidelines as: r = 0.10 to 0.29 small; r = 0.30 to 0.49 medium; and r = 0.5 to 1.0 large.

Table 4.12
Pearson Correlation Analysis of the Variables

Latent Variables	**CCM**	**FAS**	**FAK**	**FAT**	**COE**	**FA**
Corporate Crime Mitigation	1					
Forensic Accounting Skills	.349**	1				
Forensic Accounting Knowledge	.425**	.620**	1			
Forensic Accounting Techniques	.321**	.411**	.380**	1		
Training on Code of Ethics	.325**	.420**	.420**	.420**	1	
Fraud Awareness	.245**	.447**	.245**	.447**	.330**	1

Source: Research Survey 2018

The table above signifies that the variables are significantly correlated to the fact that there is no variable with a value of 0.9 which indicated that there is no problem of multicollinearity (Hair *et al.,* 2010).

4.9 Multiple Regressions and Hypotheses Test

Multiple regression analysis provides an avenue of neutrally assessing the degree and character of the relationship between independent variables and the dependent variable (Sekaran & Bougie, 2012; Hair, Money, Samovel & Page, 2007; Field, 2009). The regression coefficient uses to show the relative importance of each of the independent variable in the prediction of the dependent variable. When independent variables are jointly regressed against the dependent variable in an attempt to explain the variance in it, the size of each (individual) regression

coefficients will show how much an increase in one unit in the individual variable would affect the dependent variable, taking into cognizance all other individual variables and dependent variable cave in to multiple correlation coefficient (Sekaran & Bougie, 2010; Zikmund, Babin, Carr & Griffin, 2010).

Regression analysis was employed to test the hypotheses in this study; it is intended to investigate the relationship between predicting as well as the criterion variables respectively. For the conduct of regression analysis large sample is required and considered appropriate and also the underlying assumptions of multiple regressions were fulfilled (Hair *et al.,* 2010). This assumption includes normality, linearity, multicollinearity which are normally examined through the scatter residual plots and the normality probability plot in the regression standardized residuals.

The fundamental assumption above was carefully examined and found that none of the assumption was violated in this study, thus, making the conduct of multiple regression analysis appropriate. Table 4.12 shows the result of the multiple regression analysis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706[a]	.465	.455	.11472

a. Predictors: (Constant), FA, COE, FAS, FAK, FAT

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.695	3	.232	17.603	.000[b]
	Residual	3.527	268	.013		
	Total	4.222	271			

a. Dependent Variable: CCM

b. Predictors: (Constant), FA, COE, FAS, FAK, FAT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.697	.245		10.997	.000
	FAS	.172	.064	.187	2.680	.004
	FAK	.367	.083	.286	4.422	.000
	FAT	.233	.102	.241	2.288	.003
	COE	.157	.048	.204	3.258	.001
	FA	.053	.045	.076	1.192	.234

a. Dependent Variable: CCM

Multiple regression analysis was conducted in determining the relationship between forensic accounting tools, training on code of ethics, fraud awareness as well as corporate crime mitigation. The results as indicated in table 4.17 with predictors that were significant, R =.706, R^2 =.465, Adj. R^2 =.455, F - Change = 17.603. The multiple correlation coefficients between the predictors and the criterion variable were .706; the predictor accounted for 46.5% of the variance in the firm performance. Cohen (1988) classified R^2 into three as: a) 0.02 as weak; 2) 0.13 as moderate; 3) 0.26 as substantial. Based on the Cohen and Cohen (1983) and Cohen (1988) classifications the value of R^2 is substantial. The generalizability of this model in the population was .455. The significant F-test shows that the relationship (17.603, $p< 0.000$) signifies the overall significant prediction of independent variables to the dependent variable, but did not explain the relative contribution of each independent variable to the dependent variable (Green &

Salkind, 2008). Among the five predicting variables, forensic accounting knowledge is the variable that best predict the criterion with the following values (β =.367, t= 4.422, p<.000). The next vital predictor in order of importance is the training on code of ethics (β = .204, t= 3.258, p< .001); followed by forensic accounting knowledge (β = .172, t= 2.680, p< .004) and lastly forensic accounting techniques (β = .233, t= 2.288, p< .003). However, fraud awareness (β = -.076, t= 1.192, p< .234) is not significantly related to corporate crime mitigation. Four out of five independent variables impacted on the directional hypotheses. Therefore, hypotheses H_1, H_2, H_3 and H_4 are supported, whereas H_5 is rejected.

4.10 Discussion of findings

As explained in the analytical findings, the forensic accounting tools, fraud awareness and corporate ethics of forensic accountants possess the potentials to predict the corporate crime mitigation in Nigerian manufacturing industry. The discussion mainly focuses on the research questions stated in Chapter One of this study. Research objectives conform to research questions.

There were three hypotheses formulated to test the direct effect of forensic accounting tools, training on code of ethics, fraud awareness on corporate crime mitigation. The hypotheses and summary of the findings are presented in Table 5.1.

Table 5.1
Summary of Hypotheses Testing

Hyp.	Relationship	T - value	P -value	Decision
H_1	Forensic Accounting Skills -> Corporate Crime Mitigation	2.680	0.004	Supported
H_2	Forensic Accounting Knowledge -> Corporate Crime Mitigation	4.422	0.000	Supported
H_3	Forensic Accounting Techniques-> Corporate Crime Mitigation	2.288	0.003	Supported
H_4	Training on Code of Ethics -> Corporate Crime Mitigation	3.258	0.001	Supported
H_5	Fraud Awareness -> Corporate Crime Mitigation	1.192	0.234	Not

Supported

4.10.1 Forensic Accounting Skills and Corporate Crime Mitigation

The first three research objective examined whether the effect forensic accounting skills, knowledge and techniques on corporate crime mitigation in Nigerian manufacturing companies. In the first place, the descriptive statistics on the data of the study provide substantial evidence indicating that forensic accounting practice have a strong influence on corporate crime mitigation. Correlation and regression analysis were conducted to test the stated hypothesis.

The result indicates that the forensic accounting skills variable found to predict corporate crime mitigation with the following figures (β = 0.172, t= 2.680, p = <.004), hence, the Hypothesis H_1 is supported. As such the result indicates that the forensic accounting skills significantly influence to corporate crime mitigation in manufacturing companies in Nigeria which is in line with the fraud triangle theory that explaining the impact of forensic accounting tools towards corporate crime mitigation.

The result indicates that the forensic accounting knowledge variable found to predict corporate crime mitigation with the following figures (β = 0.367, t= 4.422, p = <.000), hence, the Hypothesis H_2 is supported. As such the result indicates that the forensic accounting knowledge significantly influence to corporate crime mitigation in manufacturing companies which is in line with the fraud triangle theory that explaining the impact of forensic accounting tools towards corporate crime mitigation.

The result indicates that the forensic accounting skills variable found to predict corporate crime mitigation with the following figures (β = 0.233, t= 2.288, p = <.003), hence, the Hypothesis H_3 is supported. As such the result indicates that the forensic accounting technique significantly influence to corporate crime mitigation in Nigerian manufacturing industries which

is in line with the fraud triangle theory that explaining the impact of forensic accounting tools towards corporate crime mitigation.

These findings also in line with the previous studies such as (Imam, Kumshe & Jajere, 2015; Popoola, 2014). Further emphasis on this relationship could be seen in the study of Davies et al. (2010). Scholars such as Albrecht *et al*. (2009) and Ahmad (2008) agreed that corporate crime mitigation depend on skills and knowledge of forensic accountant and auditors. This study contributes to body of knowledge by further opening up and clarifying the relationship that exists between forensic accounting tools and corporate crime mitigation in the Nigerian manufacturing sector.

4.10.2 Training on Code of Ethics and Corporate Crime Mitigation

This section addressed second research objective and Hypothesis H_2 which states that "There is a significant relationship between training on code of ethics and corporate crime mitigation in Nigerian manufacturing sector". Descriptive statistics on the data of this study provide strong evidence indicating that training on code of ethics influence corporate crime mitigation. The correlation and regression was used to test the hypothesis. The result indicate that training on code of ethics influence corporate crime mitigation with the following figures (β =0.157, t= 3.258, p<.001). Hence, the Hypothesis H_4 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 training on code of ethics and corporate crime mitigation.

Furthermore, Hopwood *et al*. (2008), Carpenter (2007), and Arens and Elder (2006) have the same goal of ensuring that corporate crime is prevented in all sector of the economy. They

pointed out that proper adoption of ethics must be considered for effective crime mitigation. Having detected the ethical requirement for the control of fraud risk, errors, and irregularities. It will also provide permanent directions to right or wrong than human personalities; it will control the autocratic powers of companies; this will assist in specifying the social responsibilities of organisational business, and the code of ethics towards sustaining the goals of the business.

4.10.3 Fraud Awareness and Corporate Crime Mitigation

This section addressed third research objective and hypothesis H_3 that states "There is a significant relationship between fraud awareness and corporate crime mitigation in the Nigerian manufacturing companies". From the descriptive statistics, it is revealed that fraud awareness has a strong influence on corporate crime mitigation. Correlation and regression analysis was used to test the stated hypothesis. However, the result revealed the following figures (β =0.053, t= 1.192, p<.234). Hence, the result of fraud awareness is not significantly related to corporate crime mitigation in the manufacturing sector. But it may be supported in other sector as stated by previous studies outside Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter discusses the summary, recommendations, and conclusions of the study. The chapter is divided into sub-sections. It commences with the introduction of the chapter. Follow by the discussions and contributions to the study. Next sub-section provides the recommendation and limitations of the study. Final section presents the suggestions for future research and conclusion.

5.1 Summary

The study examined the impact of forensic accounting practice on corporate crime mitigation. It however achieved this through specific objectives which include to:(i) To examine the effect of forensic accounting tools (Skills, Knowledge & Techniques) on corporate crime mitigation of quoted manufacturing companies in Nigeria; (ii) To investigate the effect of training in code of ethics on corporate crime mitigation of quoted manufacturing companies in Nigeria; (iii) To establish the effect of fraud awareness activities on corporate crime mitigation of quoted manufacturing companies in Nigeria.

Summary of major findings of the study are:

i. The results of the Regression for objective one show that adoption of forensic accounting tools has significant impact on corporate crime mitigation. The joint significance of the model measured by F-statistic shows a value of 17.603. Forensic accounting skills, knowledge, techniques are the sub variables that have significant impact on corporate crime mitigation of selected manufacturing companies (with p-values of 0.000).

ii. The results of objective two shows that adoption training on code of ethics have significant impact on corporate crime mitigation with joint significance of the model measured by F-statistic value of 17.603. Acting with integrity, public interest, independent and objectivity have statistically significant impact on corporate crime performance (with p-values of 0.008)

iii. The results of third objective shows that fraud awareness have insignificant impact on corporate crime mitigation in the selected manufacturing companies in Nigerian with joint insignificance of the model.

5.2 Conclusion

Forensic accounting practice is a philosophy that is rooted in a combination of forensic accounting tools and training on code of ethics that can mitigate the level of corporate crime in Nigeria. As such, the adoption of forensic accounting practice in the manufacturing sector can act as a panacea in filling the gap between what the nation desired and what is currently obtainable in manufacturing sector in Nigeria. This makes it imperative to know the nature of forensic accounting practices in Nigerian and how it has impact on the manufacturing performance, and also draw inferences thereof. The following conclusions are therefore derived based on the findings of this study.

The impact of the adoption of forensic accounting tools on corporate crime mitigation is established from the findings of this study. Forensic accounting skills, knowledge and forensic accounting techniques are important in preventing corporate crime. Therefore, a step to improve the adoption of forensic accounting tools in these regards is vital for reduced the corporate crime. The training on code of ethics for the professional accounting staffs towards the corporate crime mitigation in the manufacturing industry was established from the findings of this study. Hence,

a step to improve the training on code of ethics professional accountant is an essential for crime prevention and detection in the manufacturing industry.

5.2 Recommendations

This study comes up with the following recommendations that would serve as a mechanism and guide towards improving accounting profession in the area of forensic accounting tools and code of ethics in the Nigeria most especially manufacturing sector.

i As revealed from the result of the study, the professional accountant need to introduce forensic accounting skills, knowledge and techniques before, during and after the audit exercise, as well as to develop effective forensic accounting skills, knowledge and techniques and code of ethics. Thus, the study recommends the forensic accounting tools to be part of compulsory courses offer to the accounting professionals by the Nigerian accounting professional body.

ii. Furthermore, training and development on code of ethics must frequently be organised to the accountants and auditors to enhance capacity development. Manufacturing companies should establish a conducive environment for the forensic accountants to thrive to fight the pervasive culture of disloyalty and dishonesty among the practitioners.

iii. Despite the fact that the relationship between fraud awareness and corporate crime mitigation is not significant, the awareness creation is very essential towards corporate crime mitigation. Also, as stated by the previous studies, awareness needed to be created in the area of forensic accounting service in the developing country most especially, in Nigeria. Also, various sectors, corporate institution, government and the society at large should be sensitize on fraud awareness.

5.4 Limitation of the Study

As with any research, the current study is subject to a number of limitations. The sample of this study may not be fully representative of the population of various manufacturing industries in Nigeria. Thus, any generalization of the study's results cannot be made without caution. The data was collected at one point in time rather than longitudinally. Thus, the research could not account for time-lag effects of how the effective corporate crime mitigation may reduce the fraud risk.

The limitations addressed above however, do not negate the results and findings of the study. Despite these limitations, the results have extended our understanding of the implementation of corporate crime mitigation mechanisms in Nigerian manufacturing industries.

5.5 Future Research

This study comes up with the following suggestion for future research:

i. This study is cross-sectional in nature, therefore, future studies should consider collecting data over an extended period, (i.e.,longitudinal research design)to have ample time for data collection.

ii. 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, interview can be carried out for an in-depth assessment to give a better understanding of the relationship between the constructs under study.

iii. Finally, this study focuses mainly on the manufacturing sector; the future research needs to be conducted to cut across the other sector of the economy for effective generalization.

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APPENDICES

APPENDIX A

ACADEMIC QUESTIONNAIRE SURVEY

COLLEGE OF HUMANITIES, MANAGEMENT AND SOCIAL SCIENCES
KWARA STATE UNIVERSITY, MALETE

ACADEMIC RESEARCH QUESTIONNAIRE

March 5, 2018
Dear Sir/Madam,

I am a postgraduate student at School of Accounting and Finance, College of Humanities, Management and Social Sciences, Kwara State University, Malete (KWASU), and currently conducting a survey to examine the impact of Forensic Accounting Practice on Corporate Crime Mitigation in Quoted Nigerian Manufacturing Companies 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 Supervisor. 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,

ANIFOWOSE BILIQEES BUKKY
Tel No: +23480 35771143
E-mail: @yahoo.com

INFORMATION

The questionnaire comprises two parts. Part I represents the demographic information while Part II (Sections A-D) consists of questions on forensic accounting tools, training on code of ethics, fraud awareness and corporate crime mitigation in the selected manufacturing companies.

PART I: DEMOGRAPHIC INFORMATION

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

1. What is your highest Academic education?
   - Diploma and below ( )
   - Degree ( )
   - Masters ( )
   - Doctoral degree ( )

2. What is your highest Professional education?
   - ACA ( )
   - FCA ( )
   - CNA ( )
   - FCNA ( )
   - OTHERS ( )

3. What is your Gender?
   - Male ( )
   - Female ( )

4. What is your experience in the manufacturing industry?
   - Less than 5 years ( )
   - 6 – 10 years ( )
   - 11 – 15 years ( )
   - 16 – 20 years ( )
   - 20 and above ( )

PART II (SECTIONS A – D)
SECTION A: CORPORATE CRIME MITIGATION (FORENSIC ACCOUNTANT)

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.					
2	Establishing 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.					
Evaluating Antifraud Processes and Controls:						
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					
Developing an Appropriate Oversight Process:						
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					

SECTION B: FORENSIC ACCOUNTING TOOLS

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
SKILLS REQUIREMENT						
1	The important skills requirement of a forensic accountant is analytical proficiency					
2	The important skills requirement of a forensic accountant/auditor is deductive analysis					
3	An important skills requirement of a forensic accountant is critical thinking					
4	The important skills requirement of a forensic accountant is investigative skills					
5	The important skills requirement of a forensic accountant is unstructured problem solving					
6	The important skills requirement of a forensic accountant is specific legal knowledge					
7	The important skills requirement of a forensic accountant is written communication					
8	The important skills requirement of a forensic accountant is oral communication					
KNOWLEDGE REQUIREMENT						
9	The forensic accountant needs to be a more broadly experienced professional.					
10	The forensic accountant needs to have more court proceedings knowledge, criminal and civil law.					
11	The forensic accountant needs to have more information technology knowledge.					
12	The forensic accountant needs to have more criminology knowledge.					
FORENSIC ACCOUNTING TECHNIQUES						
13	The forensic accountant needs to be a more techniques on investigative analysis					
14	The forensic accountant needs to be a more on techniques on problems solving					
15	The forensic accountant needs to be a more on deductive analysis.					

SECTION C: TRAINING ON CODE OF ETHICS

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 (SD)):

		SD	D	N	A	SA
Acting with integrity						
A Forensic accountant/auditor is expected to receive training on:						
1	Conceal any information to a third party at any costs.					
2	Adhere to technical and ethical standards issued by accounting organizations.					
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.					
Acting with Independent and Objectivity						
A Forensic accountant/auditor is expected to receive training on:						
5	Not to allow the influence of others to override professional judgment.					
6	Not to accept any financial benefit from clients aside your normal fees.					
7	Not to allow conflict of interests and bias to come in between management and company's owner					
Protecting the public interest						
A Forensic accountant/auditor is expected to receive training on:						
8	Provide accurate and excellent services beyond what is required by the country's rules.					
9	Be genuinely interested in serving the public.					
10	Prohibit paying a percentage of investigating/auditing fees to people for obtaining professional work.					

SECTION D: FRAUD AWARENESS

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	Implementation cost					
2	Cost Benefit					
3	Practicality					
4	Fraudulent Activities					
5	Intention to Commit Fraud					
6	Effectiveness of Fraud Prevention Mechanism					
7	Increase Public Trust					
8	Responsibility to Prevent Fraud					
9	Morale Implication					
10	Increase in Awareness					
11	Reduction in Fraud Risk					
12	Overall Benefit					

Appendix C
Sample Frame

Distribution of the Study Population for Primary Data Collection

S /No	Forensic Accounting Bodies	Population
1.	Association of Certified Forensic Accountants (ACFA)***	217
2.	Association of National Accountants of Nigeria (ANAN)**	135
3.	Institute of Chartered Accountants of Nigeria (ICAN)*	405
4.	Institute of Certified Fraud Examiners (ICFE)***	60
5	Institute of Forensic Accountants of Nigeria (IFAN)***	4,767
6	International Institute of Certified Forensic Investigation Professionals (IICFIP)***	60
	Total	**5,644**

Sources:*ICAN Annual Report and Financial Statements as at 31st December, 2016.
**ANAN Practicing Members: http: anan.org.ng/wp- content/uploads/2016/02/List.
*** Official websites of ACFA, ICFE and IFAN as at December, 2017.