UTILISATION OF FORENSIC AUDITING INVESTIGATION TECHNIQUES FOR FRAUD DETECTION IN LARGE SCALE BUSINESS ORGANISATIONS IN DELTA STATE, NIGERIA

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2016197006F

A DISSERTATION SUBMITTED TO THE
DEPARTMENT OF TECHNOLOGY AND VOCATIONAL EDUCATION
FACULTY OF EDUCATION
NNAMDI AZIKIWE UNIVERSITY, AWKA

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY (PhD) DEGREE IN BUSINESS EDUCATION

NOVERMBER, 2019

APPROVAL PAGE

This dissertation has been approved for the award of the degree of Doctor of Philosophy (Ph.D) in Business Education in the Department of Technology and Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka.

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CERTIFICATION

I, Udukeke Owhajutome Frank with Registration Number: 2016197006F hereby certify that the research reported in this dissertation is my original work and that references to existing studies were duly acknowledged. To the best of my knowledge, this dissertation has not been submitted in part or in full to Nnamdi Azikiwe University, Awka or any other institution for the award of a degree or diploma.

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DEDICATION

This work is dedicated to my mother, Mrs. Helen Udukeke.

ACKNOWLEDGEMENTS

The researcher sincerely wishes to express his profound gratitude to his supervisor, Prof. J. I. Ezenwafor, for her invaluable and perspicacious suggestions, corrections at various stages, patience and professional guidance that contributed immensely to the successful completion of this study. He wishes to express unalloyed appreciation to Prof. C. M. Ile, Head, Department of Technology and Vocational Education, Prof. A. N. Eze, Dean, Faculty of Education, Dr. F. Nnajiofor, Departmental Postgraduate Coordinator and Rev. Sr. Dr. M. N. Obi for their assistance in the course of this study. He also acknowledges the inputs of his readers, Prof. C. C. Okolocha, Prof. V. N. Nwogbo, Prof. G. N. Okoli and Prof. T. I. Eze. The researcher is specially ennobled by the *crème de la crème* of these renowned academics.

He acknowledges his colleagues at the University of Uyo, Prof. I. V. O. Modo, Dr. I. G. Nyorere, Dr. N. A. Ngozika, Miss U. M. Ezekiel, Mr. E. F. Eneawaji and Mr. N. Udo for their sedulous encouragement during the course of this work. The researcher is totally indebted to his family members, Mr. U. Henry, Mr. U. Nelson, Mrs. D. Ericsson, Mrs. K. Blessing and friends, Mr. A. A. Benjamin, Comrd. G. Okakoso and Mr. N. Mathias for their financial supports, prayers and encouragement all through the period of this study. Also he appreciates Mr. O. Rashid, Mrs. C. Odimmega, Mrs. A. Okonkwo, Mr. E. Caleb and other coursemates for their support and encouragement in the conduct of the research work and the doctoral programme.

Finally, the researcher's unreserved gratitude goes to God Almighty who made it possible for his dream to become a reality in spite of all challenges during the programme.

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ABSTRACT

This study was on utilisation of forensic auditing investigation techniques for fraud detection in large scale business organisations (LSBOs) in Delta State, Nigeria. Six research questions guided the study and twelve null hypotheses were tested at 0.05 level of significance. Related literature to the study were reviewed. Descriptive survey research design was adopted for the study. The population of the study was 260 accounting staff of large scale business organisations in Delta State. A sample size of 160 was drawn for the study using simple random sampling technique. A four-point rating scale questionnaire developed by the researcher was used for data collection. The internal consistency method with Cronbach Alpha technique was used to determine the reliability of the instrument and this yielded reliability coefficient values of 0.85, 0.80, 0.83, 0.91, 0.88 and 0.84 respectively for the different sections with an overall reliability coefficient value of 0.85. Data were analysed using mean and standard deviation to answer the research questions and ascertain the homogeneity of the respondents' views while t-test and Analysis of variance were used to test the hypotheses at 0.05 level of significance. The results showed that the accounting staff lowly utilised data mining, anonymous communication and background investigation techniques and moderately utilised analytical technique and investigative interview for fraud detection in the LSBOs. Only substantive test was highly utilised. Furthermore, it was found that types and status of organisation in NSE significantly influenced respondents' ratings on the utilisation of data mining but did not influence their ratings on utilisation of the five other techniques for fraud detection. Based on the findings, it was concluded that forensic auditing investigation techniques were not adequately utilised for fraud detection in the LSBOs in Delta State, which accounts for the incessant cases of fraud in such organisations. Based on the findings, it was recommended among others, that managers of large scale business organisations in Delta State should provide regular training for their accounting staff on analytical and other forensic auditing techniques to enable them detect and nip fraud in the bud. Shareholders in large scale business organisations should insist that the techniques used in the study and other forensic auditing techniques are adequately utilised by holding the management accountable for fraud occurrences.

CHAPTER ONE

INTRODUCTION

Background to the Study

The activities involved in the production of goods and rendering of services constitute business. A business is any organised set of legal activities carried out by an individual or an organisation for the purpose of producing goods or rendering services in exchange for other goods, services or money, for the mutual benefit of the individuals or organisations concerned. The primary objective of a business organisation is to make profit. Other objectives of a business organisation include shareholders' satisfaction, employees' satisfaction, growth, innovation, productivity, good public image, customers' satisfaction among others. A business organisation may be micro, small, medium or large-scale. Large-scale businesses are the life wire of any nation because the rate at which the economy of a country generates and sustains annual increase in its Gross Domestic Products (GDP) depends, to a great extent, on the volume of activities of large-scale business organisations.

According to the Nigerian Institute of Management (2009), a Large-Scale Business Organisation (LSBO) is an enterprise that has full-time labour force of more than 100 people and a total cost and working capital, less cost of land, of more than two hundred million naira. Large-scale business organisations constituted the main stabilizing force in Delta State economy in the 1970's and early 1980's. These organisations provided employment and

income forDeltans. The number of people who worked for large-scale business organisations increased significantly with the introduction of the Indigenization Decree of 1977, which ensured the transfer of ownership and control of business organisations from foreigners to indigenes. This reduced foreign domination of these organisations and increased indigenous participation leading to the employment of Deltans at all levels of management (lower, middle and top levels) in these organisations in cities like Warri, Sapele, Asaba and Ughelli.

These businesses brought the then Bendel State to economic limelight as local and international investors saw the state as one of the “melting pots” for business activities in Nigeria. This was also facilitated by the availability of some infrastructural facilities – seaport and good road network, through which these businesses imported materials, spare parts, partly finished goods and exported finished goods. The impacts of these organisations were felt in all the nooks and crannies of Nigeria as they helped in providing markets for the raw materials of small-scale producers, employment for the teeming population and revenue to the government.

The businesses improved local technology and raised the standard of living of the people through the provision of high quality goods, services and social amenities. Okandu, Azubuike, Onuaha, Chukwu and Emelike (2013) opined that it has become obvious that sustainable growth of business activities in any nation remains the key for unlocking the developmental

potentials of the nation. Large-scale business organisations such as Delta Glass Plc, Eternit Ltd, Delta Steel Company Ltd and others flourished as they were patronized not only by Nigerians but also by other West African countries (Esene, 2010). However, reports in recent times have shown that fraudulent practices pose a serious threat to the existence of LSBOs in Delta State.

In the Delta State business environment, fraud is so pervasive that it has become the greatest bane on business growth and a clog in the wheel of economic development. There are serveral cases of fraud in these organisations in Delta State. For example, $182 million Halliburton energy service bribery scandal of 1994, Delta Steel company valued for $1.5billion which was sold for $30million (Ajibola, 2018). According to Esene (2010), many companies in Delta State have gone into liquidation due to mismanagement, inventory theft and fraudulent financial reporting. Esene listed Bendel Glass Factory, Delta Shrimp, Sparkling Breweries Ltd, Asaba Textile Mill, Super Ibru Breweries, Warri Bolting Company, Delta Boat Yard, among others as business entities that wound up due to fraudulent activities.

Today, organised financial frauds have surfaced and are occurring too frequently in Nigeria and other countries. Financial fraud includes cash theft, fraudulent disbursement, inclusion of ghost workers in an organisation's payroll, inventory theft, income smoothing, fraudulent reporting, cash skimming, among others. Ehioghiren and Atu (2016) contended that owing to the incessant cases of frauds in Delta State, many LSBOs have resorted to

continuous downsizing of workforce for lack of sufficient profit to meet up with important financial obligations such as payment of salaries, corporate taxes, audit fees, dividend and others. Due to this situation, many people have lost their jobs and many more will continue to be affected adversely if the situation is not reversed.

Blessing (2015) noted that the first and most convoluted means of carrying out fraudulent activities in many organisations is through financial records. Blessing further reported that the management of Enron (the celebrated energy company in the United States of America) defrauded the company through the use of creative accounting. Fraud is a clog in the wheel of success of business organisations. The Association of Certified Fraud Examiners in Okoye, Maimako, Jugu and Jat (2017) defined fraud as the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organisation's resources or assets. A broader view of fraud may include non-monetary benefits such as misuse of company's time or asset. It is the intentional deception made for personal gain in order to obtain unauthorized benefits (cash and non-cash). It includes unauthorized access to protected information stored in electronic device(s) with the intent to obtain property or service by false pretense; embezzlement or larceny or conversion of the property of another for personal use. The body explained computer related fraud as the causing of loss of property to another by any input, alteration, deletion or suppression of computer data, interference

with the functioning of a computer system with fraudulent or dishonest intent to procure without right, an economic benefit for oneself or another person.

The incidence of fraud and fraudulent activities in many LSBOs in Delta State is alarming and unacceptable. Fraud has infested and invaded the fabrics of many businesses in the state leading to their liquidation. It has now become a normal way of life among employees at various levels (top, middle and lower) and is against global best practices. Fraud impairs the integrity, virtue or moral principle of employment and requires innovative methods such as forensic auditing to detect it.

Forensic auditing can be effective in fraud detection and control. Okoye, Maimako, Jugu and Jat (2017) posited that forensic auditing is the application of auditing skills to situations that have legal consequences. It is the examination of evidence regarding an assertion to determine its correspondence to established criteria carried out in a manner suitable to the court. It involves the gathering and presentation of financial information in a form that will be acceptable by a court of jurisprudence against perpetrators of economic crimes. Forensic auditing offers a toolset for managers of businesses to investigate, detect and prevent various forms of white-collar financial impropriety and inappropriate or inefficient use of resources. It is carried out to produce evidence by utilizing specialized investigative skills to carry out an inquiry in such a manner that the outcome will have implication to a court of law. A forensic investigation can be conducted in different types of business

organisations including manufacturing, trading, mining outfit, entertainment outfit and financial institutions, among others. The ultimate goal of forensic auditing is to obtain a confession from fraudsters, if a fraud has actually occurred. For this reason, the auditors are tactful and avoid deliberate confrontation of an alleged fraudster(s) until they have gathered sufficient evidence using various investigation techniques.

Forensic auditing investigation techniques are used to identify and gather evidence to prove, for example, how long a fraud has been carried out or how it was conducted and concealed by the perpetrators. Forensic auditing investigation techniques refer to the different inquiry methods adopted by auditors for the purpose of providing evidence of fraud against an individual in the court of law. Some of the techniques of forensic auditing investigation, according to Golden, Skalak and Clayton (2015) are data mining, anonymous communication, background investigation, analytic procedure, investigative interview, substantive test, case building and criminal prosecuting techniques.

Data mining is an analysis process used by forensic auditors to examine data sets or metadata to identify patterns, anomalies and trends to answer business questions and provide predictive values for future events. Unusual transactions (those falling outside expected norms) may signal the need for an investigation by forensic auditors who apply their experience in data mining and in investigative processes. According to Stilltow (2016), data mining automates the detection of relevant patterns in a database using defined

approaches and algorithms to look into current and historical data that can then be analysed to predict future trends. Because data mining tools predict future trends and behaviours by reading through databases for hidden patterns, they allow auditors to make proactive, knowledge-driven decisions and answer questions that were previously too time-consuming to answer. Essentially, the process is carried out electronically through the installation of various gadgets into the computer systems of an organisation for the purpose of detecting anomalies. To obtain more information, anonymous communication can also be adopted.

Anonymous information is received in the corporate world through various media. Receipt of anonymous information could suggest the existence of fraudulent practices within or outside an organisation. It usually relies on a broad range of allegations. Anonymous tips may take various forms including post-letter, telephone call, fax message, text message or e-mail. Anonymous tips may contain allegations that are factually correct. On the other hand, anonymous information may also include embellishments, inaccurate information or widely emotional allegations (Gojko, Nenad & Natasa, 2013). Business organisations could look for effective ways of receiving and handling a whistle-blower's information that would have effect on their operations and continued existence. In a bid to obtain more information or ascertain the veracity of the information received, background investigation could also be embarked upon.

Forensic auditors use background investigation for a variety of purposes. Sometimes, a background investigation is used to seek direct evidence of fraud, digging deeply into related party transactions. At other times, a background investigation can help to identify investigative leads, locate interviewees and perform asset search. Okoye and Gbegi (2013) averred that the enormous growth of information resources available on the internet and through commercial online services has revolutionalised auditing investigation processes. Background information that can help to stem the tide of fraudulent practices could be sourced from government agencies, commercial media database providers, local and international bodies among others. Data and information obtained from different sources need to be analysed.

An analytic procedure has the overall objective of identifying the unexpected relationship that seems not to make sense initially. Because of this attribute, it may be useful at the start of an investigation to aid in developing a logical scope. As an investigation progresses and more becomes known about schemes and perpetrators, an analytic procedure can be used to identify areas for further review and inquiry. Okoye, Maimako, Jugu and Jat (2017) asserted that the number of transactions in a business often prohibits the ability to examine every piece of paper and underlying action taken in relation to a particular transaction. Analytic technique will therefore be needed to focus on the problem areas in certain segments of the financial statements to detect and

prevent fraud. Apart from this technique, forensic auditors can make use of interview to obtain fraud evidence.

An investigative interview is a conversation with a purpose. The purpose is to obtain information and, in some cases, an admission or confession. Golden, Skalak and Clayton (2015) stated that there is no more compelling proof of a crime than a perpetrator's voluntary admission. In the later twentieth century, interviewing also emerged as a science, drawing on decades of psychological and sociological researches, including a great deal that had been learned from wartime interrogation. The interviewer must be ready to assume a variety of stances, modes or roles; can be sympathetic, logical, confrontational, accusatory or intimidating. Generally, in dealing with white-collar thieves, intimidation is less successful than the softer, sympathetic approaches, but that does not mean that a hard line is never appropriate. A forensic auditor could also do a substantive test for the purpose of obtaining a firsthand evidence of fraud cases in a business organisation.

Substantive tests could help in detecting fraud in different aspect of business transactions in a LSBO. According to Adeniyi (2012), the areas of substantive test include debentures, loan stock, bank loans, finance lease, accruals, provisions and contingencies. Substantial fraud could be detected through substantive test. Substantive tests are intended to create evidence that a forensic auditor will assemble to support the assertion that there are no material misstatements as regard the completeness, validity and accuracy of

the financial records of an entity. Thus, substantive procedures are performed by an auditor to detect whether there are material misstatements in financial transactions. Millichamp and Taylor (2012) explained that a substantive test is the process, step or procedure that creates conclusive evidence regarding the completeness, existence, disclosure, valuation of assets or accounts in the financial statements.

Substantive tests include testing classes of transactions, account balances and disclosures, comparing financial statements and accompanying notes to the underlying accounting records, journals entries and other adjustments made during the preparation of the financial statements. It is against this background that the study was conceived to determine the level of utilisation of forensic auditing investigation techniques for fraud detection in LSBOs in Delta State, Nigeria.

The subjects used for this study are accounting staff of the LSBOs who have the responsibilities of collecting, recording, classifying, analyzing and communicating economic events for informed decision-making by relevant stakeholders. Accounting staff work in different organisations including manufacturing, trading and service. A manufacturing entity deals with the conversion of raw materials into finished or semi-finished goods while a trading entity engages in the buying and selling of goods at a profit. Relatedly, a service organisation renders services at a price with a view to making profit. Whether an entity is a manufacturing, trading or service, it may be quoted or

unquoted in the Nigerian Stock Exchange. A quoted company is a joint-stock company (public company) whose shares are traded either on the main stock exchange or related secondary market. Unquoted company is a publicly-traded company that was previously traded on the stock exchange but no longer does. A company may become unquoted if its market capitalization falls to the point that it no longer meets exchange listing requirements. The type of organisation and its status in the Nigerian Stock Exchange (NSE), where securities are bought and sold can have influence on the level of utilisation of forensic auditing investigation techniques for fraud detection by the accounting staff (Akpala, 2016). Therefore, the level of utilisation of these variables was determined in the study.

Statement of the Problem

The occurrence of fraud in large scale business organisations in Nigeria and Delta State in particular has become rampant and persistent, as shown by several reported cases of bribery, embezzlement, cash theft, inventory theft, cheque tampering, payroll scheme, swindle, forgery and kickbacks in recent times. This has resulted in huge financial scandals and bankruptcies of even large-scale business organisations such as Enron and Worldcom, Xeror, Global-crossing and a number of others. It is sad to say that no business is immune to fraud. Despite the fact that Nigerian government has set up two key anti-graft agencies: the Economic and Financial Crimes Commission (EFCC) d the Independent Corrupt Practices d Other Related Offences Commission

(ICPC) to fight fraud and corruption in the country, significant change in their activities is yet to be seen as the business environment is still soaked in and characterised by fraud.

It is worrisome that the incidences of fraud have become widespread and systemic in Nigeria generally and Delta State in particular (Osisioma, 2012). Criminally minded individuals (within and outside businesses) have continued to groom their tactics and sophistications towards fraudulent practices using information and communication technology and other devices. Some of these activities have thrived well in different levels of business organisations because employees who are entrusted with key positions of responsibilities such as auditing, accounting, purchasing, marketing among others are cooperating with fraudsters.

The problem of this study is that high level frauds are occurring persistently in Large Scale Business Organisations (LSBOs) in Delta State leading to the downsizing and complete winding-up of many such organisations due to financial insolvency. This results in loss of substantial investment by investors in the organisations, retrenchment of workers and increase in the level of unemployment with related vices such as armed robbery, kidnapping and youth restiveness. If this ugly trend is not urgently reversed, the state will lose its attraction to investors, standard of living will fall and Delta State will lag behind in socio-economic development. Fraudsters have continued to wax stronger in LSBOs in Delta State despite the application

of traditional auditing practices. This poses a great problem and hence the need for wide utilisation of forensic auditing techniques to prevent or reduce fraud to the barest minimum. This provided a fertile ground for the determination of the level of utilisation of forensic auditing investigation techniques for fraud detection in large-scale business organisations in Delta State, Nigeria.

Purpose of the Study

The main purpose of the study was to determine the level of utilisation of forensic auditing investigation techniques for fraud detection in large-scale business organisations in Delta State, Nigeria. Specifically, the study determined the level of utilisation of:

1. data mining for fraud detection in large-scale business organisations in Delta State;
2. anonymous communication for fraud detection in large-scale business organisations in Delta State;
3. background investigation for fraud detection in large-scale business organisations in Delta State;
4. analytic technique for fraud detection in large-scale business organisations in Delta State;
5. investigative interview for fraud detection in large-scale business organisations in Delta State;
6. substantivetest for fraud detection in large-scale business organisations in Delta State.

Significance of the Study

Findings of the study will be of immense benefit to owners of business organisations, managers of business organisations, anti-graft agencies (ICPC and EFCC), professional bodies, researchers as well as students. Owners of business organisations will become enlightened on different forensic auditing investigation techniques such as anonymous communication and background investigation. They will be able to formulate and implement whistle blowing policy and obtain necessary information from different sources such as government agencies, commercial database providers,home page of websites and unique internet sources. These will help detect and prevent fraudulent activities in their various organisations to permit growth. Managers will find the findings on data mining and analytic procedure useful in that they will gain in-depth knowledge of vertical analysis, horizontal analysis, ratio analysis, computer forensics, text-document mining, transaction scanning, asset and liability verification and the likes. This will help them to detect and prevent fraud in their various businesses in order for them to thrive well.

Anti-graft agencies such as the Independent Corrupt Practices and other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) will benefit from the study in that they will be enlightened on the various forensic auditing investigation techniques and how they are carried out in practical terms in different sectors of the Nigerian economy. Armed with the knowledge of interview, for example, officers of

these agencies could pay attention to non-verbal cues, use suitable environment for suspect interview, ask probing and leading questions during interview and determine the psychology of a fraudster in order to obtain confession. This will help in carrying out the current anti-corruption campaign in a more effective manner in order to stem the tide of fraudulent activities to a manageable level in the Nigerian business environment. The findings of the study will help professional bodies such as the Institute of Chartered Accountants of Nigeria (ICAN), Chartered Institute of Bankers of Nigeria (CIBN) and Association of National Accountants of Nigeria (ANAN) to prepare study packages that will help members and other individuals to update their knowledge in the area of forensic auditing techniques and embrace global best practices in the field of accounting. This will help in improving the capacities of practising auditors.

Researchers and students, especially those in business related areas, will benefit immensely from the findings of this study. They would gain from the literature review on the various forensic auditing investigation techniques which would serve as useful reference material for their studies. The findings and suggestions of this study are likely to constitute the bases for generating related problems for further investigations by other researchers.

Scope of the Study

The focus of this study was to determine the level of utilisation of forensic auditing investigation techniques for fraud detection in large-scale business organisations (LSBOs) in Delta State, Nigeria. The content scope is delimited to the utilisation of data mining, anonymous communication, background investigation, analytic procedure, investigative interview and substantive techniques for fraud detection in LSBOs. The moderator variables were type of organisations (manufacturing, trading and service) and organisation status in the Nigeria Stock Exchange (quoted and unquoted). The study only focused on the above mentioned variables because they are the ones directly related to the work of a forensic auditor in a business organisation, while case building and criminal prosecuting techniques are done in collaboration with legal practitioners in courts of law. Only accounting staff of the LSBOs took part in the study.

Research Questions

The following research questions guided the study:

1. What is the level of utilisation of data mining for fraud detection in large-scale business organisations in Delta State?
2. What is the level of utilisation of anonymous communication for fraud detection in large-scale business organisations in Delta State?
3. What is the level of utilisation of background investigation for fraud detection in large-scale business organisations in Delta State?
4. What is the level of utilisation of analytic procedure for fraud detection in large-scale business organisations in Delta State?

5. What is the level of utilisation of investigative interview for fraud detection in large-scale business organisations in Delta State?
6. What is the level of utilisation of substantive test for fraud detection in large-scale business organisations in Delta State?

Hypotheses

The following null hypotheses were tested at .05 level of significance.

1. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of data mining for fraud detection.
2. Respondents do not differ significantly in their mean ratings on the level of utilisation of data mining for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
3. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of anonymous communication for fraud detection.
4. Respondents do not differ significantly in their mean ratings on the level of utilisation of anonymous communication for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
5. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of background investigation for fraud detection.

6. Respondents do not differ significantly in their mean ratings on the level of utilisation of background investigation for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
7. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of analytical technique for fraud detection.
8. Respondents do not differ significantly in their mean ratings on the level of utilisation of analytical technique for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
9. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of interview for fraud detection.
10. Respondents do not differ significantly in their mean ratings on the level of utilisation of interview for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
11. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of substantive tests for fraud detection.
12. Respondents do not differ significantly in their mean ratings on level of utilisation of substantive tests for fraud detection based on the status of organisation in the Nigerian Stock Exchange.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The literature related to this study was reviewed in this chapter under the following sub headings:

Conceptual Framework

Utilisation

Forensic Auditing

Investigation Techniques

Fraud Detection

Large-scale Business Organisation

Theoretical Framework

Fraud Triangle Theory (1953)

Fraud Diamond Theory (2004)

Fraud Box Key Model (2014)

Differential Reinforcement Theory (1965)

Theoretical Studies

Contributions of Large-scale Business Organisations to Economic Development

Types of Frauds and their Impacts in Public and Private Organisations

Forensic Auditing and its Relevance in Business Organisations

Forensic Auditing Investigation Techniques for Fraud Detection in Business Organisations

Empirical Studies

Utilisation of Data Mining for Fraud Detection

Utilisation of Anonymous Communication for Fraud Detection

Utilisation of Background Investigation for Fraud Detection

Utilisation of Analytical technique for Fraud Detection

Utilisation of Investigative Interview Technique for Fraud Detection

Utilisation of Substantive Test for Fraud Detection

Summary of Review of Related Literature

Conceptual Framework

Relevant concepts in the title of the study are presented in a pictorial framework before they were clarified as follows:

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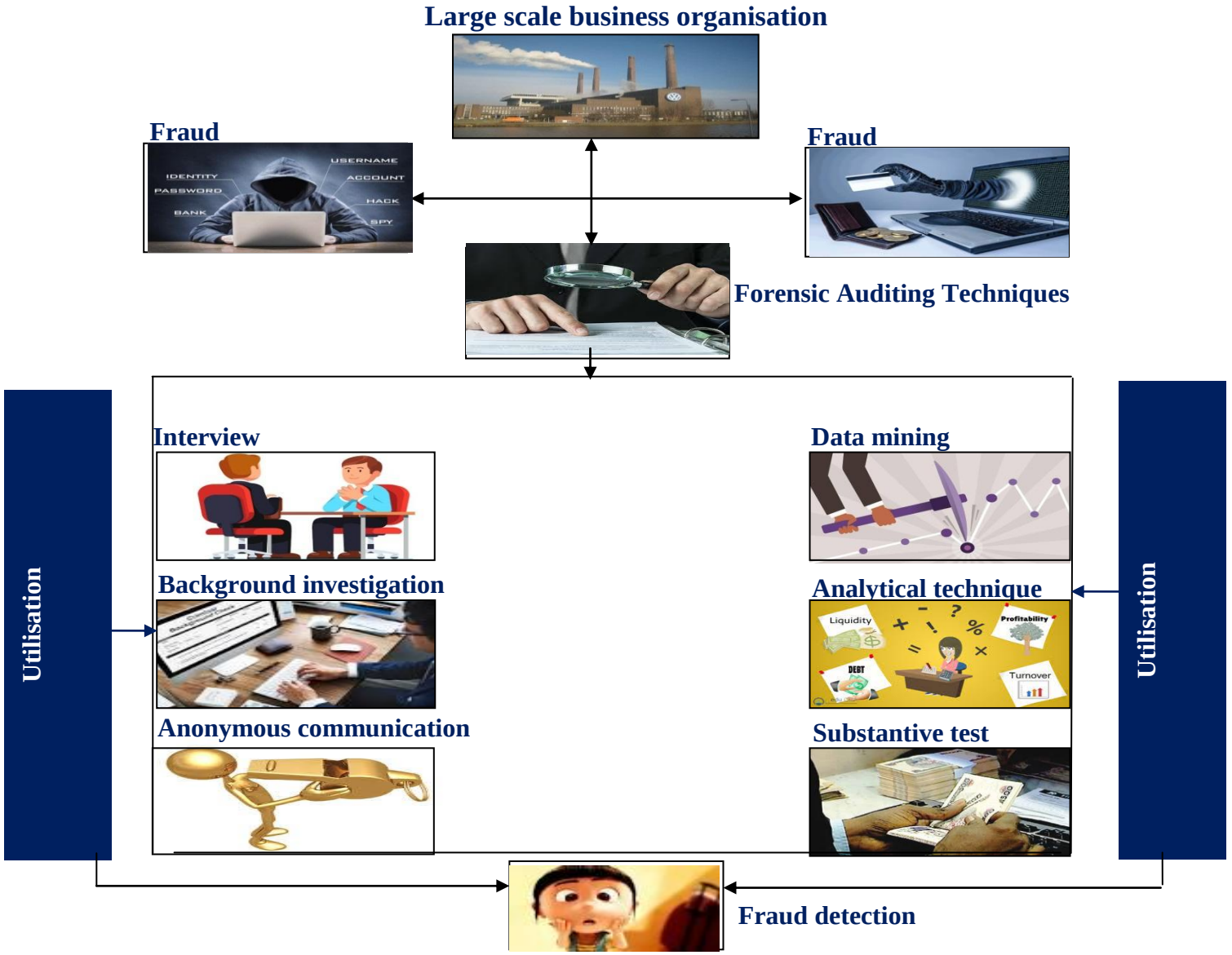

Fig. 1: Conceptual Framework

Source: Researcher's Conceptualisation, 2018

The pictorial framework in fig.1 depicts how forensic auditing techniques could be used to detect fraud in a large scale business organisation. When fraud such as cash theft, inventory theft, asset misappropriation, fraudulent reporting, payroll scheme, understatement of receipts, overstatement of expenses and others occur in a business organisation, the forensic auditor could utilise data mining, anonymous communications, background investigation, analytical, interview and substantive test techniques to ensure that such frauds are detected.

Utilisation

Utilisation refers to the act of making practical use of something. According to Hornby (2010), utilisation means to take hold or deploy (something) for a purpose. It is the act of using something in an effective way (Merriam-Webster, n.d). It can be represented with such phrases as to make use of, turn to practical use, to put to use, turn to profitable account. Utilisation is the action of using something practically and effectively.The term refers to the use of something or the process of using it effectively. Firbas (2015) stated that utilisation means to use something for a particular purpose. Therefore, utilisation is defined as a systematic way of using something of value to achieve a particular purpose. In this study, the level of utilisation of forensic auditing techniques for fraud detection in large scale business organisations was determined.

Forensic Auditing

The term audit is derived from the Latin verb *audire*, which means to hear. Auditing is defined as a process carried out by an appointed and qualified person or body, whereby the records and financial statements of an entity are subjected to independent examination in such a way that will enable the person or body form an opinion as to the truth and fairness of the financial statements. The Institute of Chartered Accountants of Nigeria (2014) defined auditing as an official examination of accounts (or accounting systems) of an entity by an auditor. The American Accounting Association Committee on Basic Auditing in Adeniyi (2012) defined auditing as a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between the assertions and established criteria and communicating the result to interested users.

According to Agbawe (2012), auditing is an independent examination and inquiry into statements of account, the underlying records, documents, assets and liabilities by an independent person with a view to expressing an opinion as to the accuracy and correctness of the financial statements. Auditing is defined as an independent examination of the books of account and vouchers of business. The examination is aimed at forming an opinion as to whether books of accounts have been kept properly in accordance with applicable laws and whether the financial statements drawn therefrom portray a true and fair view of the state of affairs in the business as at a given date (Ogbu, 2017).

Audit is performed in order to ascertain the fairness, integrity and authenticity of financial statements. Auditing is an independent examination of financial records with the aim of passing a judgment on the figures presented (Ekpo, 2010). It is an independent verification of financial reports or financial statements by an independent accountant. Operationally, auditing can be defined as the independent examination and investigation of the evidence from which financial statements have been prepared with a view to enabling the independent examiner to report whether in his opinion and according to the best of his knowledge as regard the information and explanation obtained by him, the statements are properly drawn up and give a true and fair view of what they purport to show and, if not, to report in what respect.

The term 'forensic' is derived from the Latin word *forensis*, which means in open court or public (Peisert, Matt & Marziello, 2016). Forensic audit is the application of auditing skills to situations that have legal consequences (Bhagwan, 2013). In 2015, Weaver stated that "forensic auditing" covers a broad spectrum of activities with the terminology not strictly defined in regulatory guidance. Crumbley (2010) saw forensic audit as the process of gathering, analysing and relying on data, for the purpose of finding facts for evidence in the context of financial and legal disputes, in order to give preventive advice in this area. It is an examination of evidence regarding an assertion to determine its correspondence to established criteria carried out in a manner suitable to court. Weaver (2015) further stated that

forensic auditing refers to the specific procedures carried out to produce evidence.

Forensic auditing involves the critical assessment throughout the audit of all evidential matters and maintaining a high degree of professional skepticism that, for example, fraud or financial irregularity may have occurred, is occurring or will occur in the future. Kabir (2016) opined that forensic thinking is a mind shift where the auditor believes that the possibility of fraud or financial irregularity may exist and the control may be overridden to accomplish that possibility. Forensic audit procedures are more specific and geared toward detecting the possible material misstatements in financial statements resulting from fraudulent activities or errors. Auditors need to be alert to situations, control weaknesses, inadequacies in record keeping, errors and unusual transactions or results which could be indicative of fraud, improper or unlawful expenditure, unauthorized operations, waste, inefficiency or lack of probity (Okoye, Maimako, Jugu & Jat, 2017).Therefore, forensic auditing is a type of special investigation often employed when a fraud is suspected to have been committed in a business organisation.

Investigation Techniques

The word ‘investigation’ is derived from the Latin word *‘vestigere’*, which means ‘to track or trace’, and encompasses a patient, step-by-step inquiry. Investigation is akin to research conducted in the academic arena. It is a multi-disciplinary field of study encompassing law, sciences,

communications, and a host of others. Investigation requires an inquisitive or skeptical (unbelieving until proved) mind coupled with an attention to details. Okoye, Maimako, Jugu and Jat, (2017) saw investigation as a systematic fact-finding and reporting process conducted by investigators employed or appointed by the management of a corporate organisation or recognised business or non-business organisation for a specific purpose, after which, upon the attainment of the investigation objectives, the investigation engagement ceases to exist. Fraud investigators are usually responsible for the detection of fraud and the recovery of assets. The lead investigator usually determines the knowledge, skills and other competencies needed to carry out the investigation effectively and assigns competent and appropriate people to the team.

Albrecht and Albrecht (2011) posited that investigation is the utilisation of specialised skills in carrying out an enquiry in such a manner that the outcome will have application to a court of law. According to Goss (2014), investigation is the gathering of facts to assist in resolving crimes and other irregularities. Nickell and Fisher (2009) maintained that forensic investigation involves the scientific investigation of crime with the aim of bringing criminals to justice. Lambrechts and Theart (2016) submitted that investigation means to collect facts that can be used as evidence for court purposes, through which the associative part of an accused in the commission of a crime can be proved. Therefore, an investigation is an inquiry into an

event that has occurred or is suspected to have occurred for the purpose of gathering pertinent evidence to prove or disprove it.

Technique is the manner and ability with which an artist, writer, dancer, athlete or the like employs the technical skills of a particular act or field of endeavour (Hornby, 2010). According to Mclntosh (2013), technique is a way of carrying out a particular task especially the execution or performance of an artistic work or a scientific procedure. It is the process of performing a skillful activity or the skill needed to do it. It is a systematic procedure, formula or routine by which a task is accomplished. Also, it is a method of accomplishing a desired aim (Merriam-Webster n.d.). A technique in the context of this study is a particular method of doing an activity, usually a method that involves practical skill.

Investigation technique is a method of enquiry that concentrates on identifying red flags that might substantiate allegations (Idowu, 2009). According to the Institute of Internal Auditors (2014), investigation techniques are methods or procedures used to identify and to gather evidence to prove or disprove an event. Investigation technique refers to the practical steps that a person takes in order to gather evidence relevant to an alleged activity (Songer, 2016). In the context of this study, investigation technique is seen as the systematic procedures or ways of conducting an enquiry into an alleged event(s) for the purpose of gathering evidence which can be used to prove or disprove the alleged event(s).

Fraud Detection

Fraud is a menace whose potential impact is devastating to any business, social and economic well-being of a nation. Fraud encompasses a wide range of irregularities and illegal acts characterised by intentional deception or misrepresentation. The Institute of Internal Auditors (2014) defined fraud as any illegal act characterised by deceit, concealment or violation of trust. Fraud is perpetuated by parties and organisations to obtain money, property or service; to avoid payment or loss of services; or to secure personal or business advantage. According to the American Institute of Certified Public Accountants (2016), fraud is any intentional act or omission designed to deceive others, resulting in the victim suffering a loss and the perpetuator achieving a gain.

Economic and Financial Crimes Commission in Ehioghiren and Atu (2016) defined fraud as the non-violent criminal and illicit activity committed with the objective of earning wealth illegally either individually, in a group or an organised manner thereby violating existing legislation governing the economic activities of a country. Similarly, Idolor (2010) viewed fraud as an intentional misrepresentation of existing material facts, made by one person to another, with the intention of inducing the other person to act and upon which the other person relates with resulting injuries or damages. Udoayang and James, in 2014, concluded that fraud is simply stealing by tricks. It could be

any action taken by management at any level with the intention to deceive, con, swindle or cheat investors or other stakeholders.

In the context of the study, fraud is the intentional misrepresentation, alteration, omission, suppression, falsification and manipulation of an organisation's information for the purpose of obtaining illegal and unmerited advantage. It is vital for a large-scale business organisation to establish an effective fraud detection measure because it will help in reducing the opportunities of fraud occurrence.

Fraud detection seeks to identify anomalies or red flags that may indicate potential fraud in the general ledger, inventory transactions, employees' master data, vendor client data, time and expense reporting and client system (Klynveld Peat Marwick Goerdeler (KPMG), 2014). Davia, in 2011, maintained that fraud detection, unlike financial statement audit, requires unique skill set and forensic techniques developed for the sole purpose of detecting the evidence of fraud. Specifically, it requires individuals who are skilled in the application of investigative and analytical tools related to the areas of accounting records, gathering and evaluating financial statement evidence, interviewing all parties related to an alleged fraud situation, and serving as an expert witness in fraud case (Singleton, 2015). According to the Association of Certified Fraud Examiners (2012), a survey was carried out on fraud detection as applied to the United States economy, and it was shown that

lack of adequate internal controls was the most commonly cited factor that allowed fraud to occur.

Proactive detection of potential fraud requires continuous monitoring of an organisation's transaction data. Continuous monitoring increases the possibility of detecting fraudulent activities. The traditional or manual audit approach is limited because it reviews only a small percentage of a large population of transactions. Large accounting data files with several thousands of transactions are difficult to analyse or monitor manually in real-time. The alternative therefore is to automate this process by using information technology (Singh, 2012).Therefore, fraud detection is the systematic process of uncovering or unravelling fraudulent activities in a business organisation.

Large Scale Business Organisation (LSBO)

An organisation is considered as any arrangement of two or more people who work together in order to achieve a specific set of goals or objectives. An organisation generally exists to accomplish certain objectives and provide some services to the public and its members. Okandu, Azubuike, Onuoha and Emelike (2013) contended that an organisational setting makes it easy for objectives which could not be achieved by an individual member working alone to be achieved collectively. Through the collective action of members, an organisation can provide synergistic effect. Peretomode and Peretomode (2008) defined an organisation as a formally organised enterprise; an association of persons with a relative degree of permanency, grouped

together with a basic framework that enables them to work together effectively to pursue and achieve predetermined goals through integrated group efforts.

Dapper (2014) defined an organisation as a group of people brought together to achieve a specific purpose whose activity is ordered in terms of the achievement of that purpose and which is perceived as self-contained in the light of that purpose. It is the rational coordination of the activities of a number of people for achievement of some explicit purposes or goals. Omoile (2015) defined an organisation as the composition of individuals who come together to pursue a common interest or goal.

An organisation is characterised by clearly defined roles, jobs, hierarchical structures, rules and procedures. According to Anugwom (2013), an organisation is a structure or network of relationship among individuals and positions in a work setting and the process by which the structure is created, maintained and used. Organisations are set up for different purposes and to meet different needs. For example, a school is usually setup to facilitate teaching and learning activities which often provide the skilled manpower need of a nation. A manufacturing organisation is set up to produce goods at a profitable level. Similarly, a hospital is set up to render medical services. In this study, an organisation is considered as a social structure designed to co-ordinate the activities of two or more people through rules and regulation for the achievement of a common goal.

Apart from the public corporations and the non-governmental organisations that provide essential services to the public without profit motive, other organisations are set up for the purpose of making profit. Any organisation that is set up for the primary purpose of marking profit is called a business. Business is the activity of making money by producing or buying and selling products (such as goods and services) (Hornby, 2010). Simply put, it is any activity or enterprise entered into for profit. It refers to the production, distribution, and sale of goods and services for a profit. Firbas (2015) defined business as an organisation that engages in commercial, industrial or professional activities. The term 'business' also refers to the organised efforts and activities of individuals to produce and sell goods and services for profit. A business is an organisation which produces and sells goods or which provides a service. It is a commercial or mercantile activity engaged in as a means of livelihood. It is a process where goods and services are exchanged for one another or for money (Merriam-Webster, n.d). In the context of this study, a business is seen as any economic and legal activity engaged in by two or more persons for the primary purpose of making profit.

An organisation may be macro, small-scale, medium-scale or large-scale. According to Accounting Technicians Scheme of West Africa (ATSWA) (2009), a large-scale business organisation is an enterprise with fixed assets exceeding ten million naira (₦10,000,000.00). ATSWA added that in terms of size of employment, a large-scale business organisation is an enterprise with employees of more than three hundred (300). In the context of

this study, a large-scale business organisation refers to an enterprise that has one hundred employees and above.

Theoretical framework

Three theories and a model form the theoretical framework of the study and are reviewed as follows:

Fraud Triangle Theory (1953)

The fraud triangle theory was propounded by Cressey in 1953. The theory holds that employees commit fraud because of interaction among perceived pressures (usually financial), perceived opportunity and rationalisation, and that for fraud to occur, the three elements of the fraud triangle (pressure, incentive and motive) must be present. This interaction is shown in the model below.

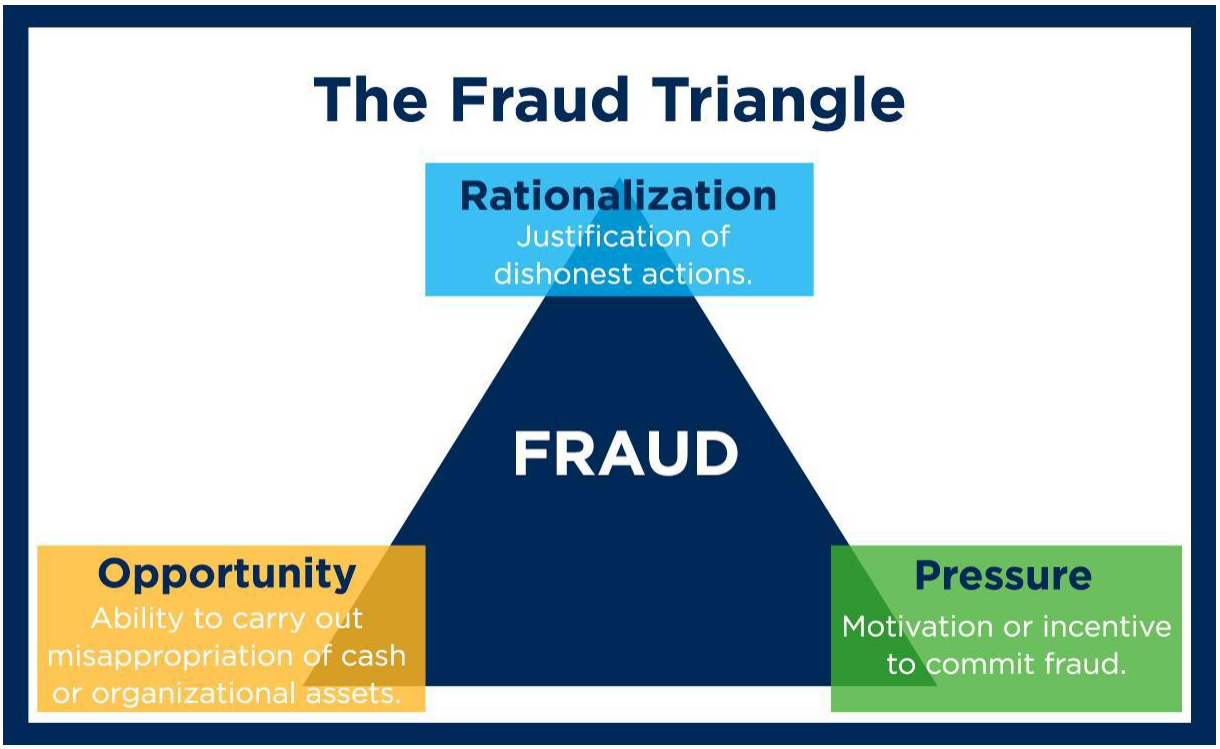

Fig. 2: Fraud Triangle Model

Source: (Association of Certified Fraud Examiners, 2013)

Most pressures come from a significant financial need or problem. Pressure is frequently what causes a person to commit fraud. This can be prompted by family situations, medical bills, expensive tastes or addiction problems. Often, the person believes for whatever reason that his problem must be solved in secret. Pressure also relates to the perceived need for assets and it could be as a result of greed. Pressure needs to be perceived only in the mind of the perpetrator to motivate the commission of fraud. This pressure needs not to be visible to a third party observer. Pressure results from an immediate need for cash or assets to support a lavish lifestyle, pay debts, or purchase necessaries. More so, factors that can cause financial pressure include: economic hard times associated with high personal debt, decreasing earnings, rising costs or downsizing of an organisation, expensive habits (gambling, use of drugs or alcohol), illicit sexual relationships and living beyond one's means.

Opportunity facilitates the ability to commit fraud. Opportunity is created by a weak internal control environment, poor management oversight or the misuse of position or authority. Failure to establish adequate procedures to detect fraudulent activities also increases the opportunity of occurrence.

In addition, rationalisation is another cause of fraud. An individual does not commit fraud unless he can justify it as consistent with his own personal code of ethics. Rationalisation is a crucial component in most cases of fraud. It occurs when employees justify why they should commit or committed fraud. Rationalisation involves a person reconciling his fraudulent behaviour with the

commonly accepted notions of decency and trust. Some common rationalisations for committing fraud according to the theorist are:

1. The person believes committing the fraud is justifiable enough for saving a family member or loved one.
2. The person believes that he will lose everything – family, home, car, if he does not commit the fraud.
3. The person believes that no reliable help is available.
4. The person labels the theft as borrowing and intends to pay the stolen money back to the entity fully later.
5. The person, because of job dissatisfaction (salaries, job environment and ill-treatment by managers), believes that something is owed him.
6. The person is unable to understand or does not care about the consequences of his actions.
7. A desire to seek revenge.
8. The person believes that rank has its privileges.
9. The person feels that everybody is doing it.
10. The person believes that he is being overworked.
11. The person feels that he is underpaid.

In the application of the tenet of this theory, managers need to build processes, procedures, implement strong internal controls and strong work ethics that do not needlessly put employees in a position to commit fraud. When this is done, fraudulent activities in large-scale business organisations

could be reduced. This theory did not cover capacity as an element of fraud, hence, the need for diamond theory.

Fraud Diamond Theory (2004)

The fraud diamond theory was propounded by Wolfe and Hermanson in 2004. It is generally viewed as an extended version of fraud triangle theory. In this theory, an element termed capability was added to the three initial fraud elements of the fraud triangle theory. Wolfe and Hermanson argued that although perceived pressure or incentive might coexist with an opportunity to commit fraud and a rationalisation for doing so, it is unlikely for fraud to take place unless the fourth element (capability) is also present. In other words, the potential perpetrators must have the skills and ability to commit fraud.

According to Wolfe and Hermanson (2004), opportunity opens the doorway to fraud, incentive (pressure) and rationalisation can draw a person toward it. However, the person must have the capability to recognise the open doorway as an opportunity and to take advantage of it by walking through, not just once, but repeatedly. The theorists saw capacity as the situation of having the necessary traits, skills and abilities to commit fraud. It is where a fraudster recognises a particular fraud opportunity and ability to turn it into reality. The additional element as postulated by the theorists is shown in the model below.

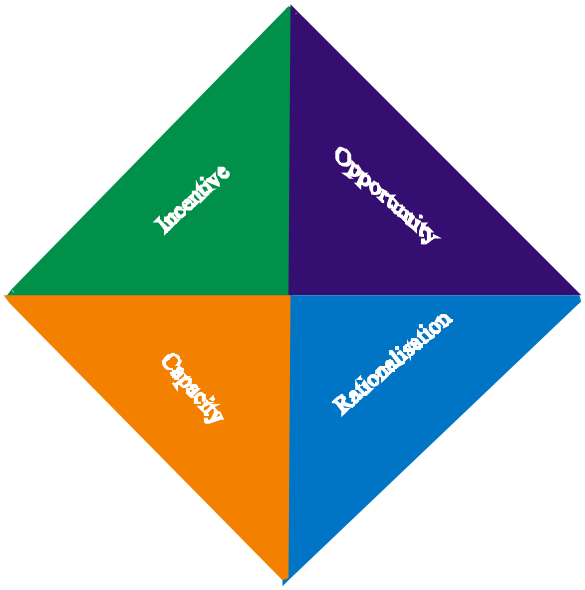

Fig. 2: Fraud Diamond Model

Source: (Wolfe& Hermanson, 2004)

Position, intelligence, ego, coercion, deceit and skill are the supporting elements of capacity. However, Wolfe& Hermanson (2004) stressed that not every person who possesses motivation, opportunity and foresees possible realisation of same may commit fraud due to lack of the capacity to carry it out or to conceal it. Thus, this element is particularly important when large-scale or long-term fraud is at stake. This is because the person or employee who has such extremely high capacity in an entity should be able to control situations in the company in terms of possible existing weaknesses, where they are obtainable in the business and how much internal control lapses could be exploited in planning the implementation of a fraud scheme against a business.

The relevance of this theory to the present study is that, with the knowledge of the additional fraud element – capacity affecting individuals' decisions to commit fraud, forensic auditors need to understand employees' individual traits, skills and abilities in order to assess their potentials and

possibilities in engaging in fraudulent behaviours in a particular business organisation and get them nipped in the bud at the nick of time. This theory only explained why people commit fraud without identifying ways of discouraging fraudulent behaviours among employees, hence the need for differential reinforcement theory.

Differential Reinforcement Theory (1966)

The differential reinforcement theory was propounded by Burgess and Akers in 1966.Burgess and Akers incorporated psychological principles of operant conditioning. Reinforcement is a neutral term and refers, in general to any process by which some response tendency is strengthened by presentation of a reinforcer (reward). A reinforcer is anything, be it a stimulus or material object that strengthens or increases the frequency of behaviour (that is, increases the probability that a desired behaviour will be repeated).

On the other hand, punishment weakens undesirable behaviour. Burgess and Akers came up with nine propositions as follows: criminal behaviour is learned according to the principles of operant conditioning; criminal behaviour is learned both in social and non-social situations; the principal parts learning occurs in groups; the learning of criminal behaviour includes specific techniques, attitudes and avoidance procedures; is a function of effective and available reinforcers, and existing reinforcement contingencies; the specific class of behaviours which are learned and their frequency of occurrence are a function of the reinforcers which are effective and available, and the rules or

norms by which these reinforcers are applied. Criminal behaviour is a function of norms which are discriminative for criminal behaviour and the strength of criminal behaviour depends on the frequency and probability of its reinforcement.

The relevance of this theory to the present study is that management of large-scale business organisation will be resolute in meting out appropriate punishment on employees with fraudulent behaviours irrespective of their economic status, connection and ethnicity. On the other hand, they will reward employees with desirable behaviour (acts or provision of information that can lead to fraud detection). With this arrangement in place, fraud could be reduced in large scale business organisations. However, this theory fails to proffer solution to fraud incidences in business organisations in modern times, hence, the need for Fraud Box Key Model.

Fraud Box Key Model (2014)

The fraud box key model was propounded by Okoye and Onodi in 2014. Okoye and Onodi have tried to proffer solution to fraud incidences in business organisations in modern times. This they achieved by transforming the fraud diamond model into a Fraud Box Key model by adding a fifth perspective ‘Corporate Governance’, in order to show the overbearing function of corporate governance on the four other perspectives, that is, pressure, opportunity, rationalisation and capability of the previous Fraud Diamond and Fraud Triangle Models. Corporate governance dysfunction was added since it

is the master key response to pressure, opportunity, rationalisation and capability. The theorists believed that the fraudster's thought process will amount to thinking inside the box if there is good corporate governance.

Corporate governance dysfunction, when carelessly handled, unlocks the fraudster's thought process thereby opening the doorway for fraud to occur. Irrespective of the level of pressure on an individual to commit fraud in an organisation, fraud may not occur unless corporate governance unlocks it. The theory emphasised that the key of good corporate governance is firmly used to lock down the functionalities or by-product effects of the four other elements of the fraud triangle and fraud diamond theories in the Fraud Box Key Model. The fraud box key model is shown below.

Fig. 3: Fraud box key model

Source: (Okoye & Onodi, 2014)

The relevance of this model to the present study is that when the position of the proponents of this model on corporate governance is up-held by managers of large scale business organisations, management of business organisation will be set up strict control and act in accordance with the interest of shareholders. This will reduce fraudulent activities to the barest minimum as it will be extremely difficult for fraudsters to break the walls of the key control established by management to commit fraud.

Theoretical Studies

This section reviews theoretical studies that are related to the current study as follows:

Contributions of Large Scale Business Organisations to Economic Development

A large-scale business organisation was defined by the Australian Bureau of Statistics (ABS) (2008) as any organisation that has over 200 employees. Such an organisation must have substantial value of asset, revenue and large market share. As regards the definition of what constitutes a large-scale business organisation, ATSWA (2009) emphasised that time, country and general economic conditions are key factors to be considered. Corroborating this fact, Okandu, Azubuike, Onuoha, Chukwu and Emelike (2013) affirmed that what constitute a large-scale business organisation in Nigeria may not be in the United States of America.

More so, with the advancement in technology, most work processes in large entities have been automated and simplified such that the number of employees required to complete a specific job keeps on declining. Even robots and some special computers are now carrying out the jobs that were originally done by people. Hence net worth of an entity's assets could also be used as a yardstick for identifying large business organisations.

A large-scale business organisation may be a public or private company, which must be duly registered with the Corporate Affairs Commission (CAC). In Nigeria, a company is formed under the Companies and Allied Matters Act (Federal Republic of Nigeria, 2004) by being registered with the CAC and obtaining a certificate of incorporation from the commission. All the activities of these business organisations are carried out by humans who act as agents in consideration of financial and non-financial rewards.

When large-scale business organisations are compared with small and medium-scale businesses, their uniqueness becomes clear as a result of the context in which they operate. Due to the size, large-scale business organisations have a great deal of political and economic power. Telsang, in 2009, observed that some organisations are so large that they have more influence on the economy than the government in power. In another development, Shubin (2007) stated that the sales and revenues of some big companies are bigger than the economies of several small countries. Large-scale business organisations are able to produce goods and render services in

bulk and at low cost, because they have the financial means to pay for the required technology and large number of qualified staff needed to produce the goods or render the services.

Unlike small and medium scale businesses, the owners of large-scale businesses have little to do with the day-to-day operations of the business. In the light of this, Chikere (2014) asserted that the operations of these business organisations are left in the hands of employed managers who make day-to-day decisions and undertake both short and long term planning to achieve corporate objectives. Similarly, Okandu, Azubuike, Onuoha, Chukwu and Emelike (2013) added that large companies can raise capital from the organised financial markets through the issuance of prospectus for public subscription. This has helped in boosting the equity base of big businesses. Meanwhile, Osuala (2006) stated that large companies are under legal obligation to publish their audited annual accounts, and as well hold statutory meeting – Annual General Meeting (AGM) within the time stipulated by law.

Large-scale business organisations contribute immensely to the economic development of a nation. According to Eshiotse (2012), large companies help in the utilisation of local raw materials in their production processes. Some of these local raw materials include maize, yam, cassava, palm oil, plantain, palm kernel and so on. Eshiotse added that they provide employment for Nigerians. Many people earn their living from working for large-scale business organisations as employees. In a related manner, Jimah

(2010) averred that big companies provide revenue to the government through payment of taxes such as company income tax. Such taxes are used for the provision of social amenities like good road network, stable electricity supply, pipe-borne water, low-cost housing units and the likes for the benefit of the general public.

Indubitably, large-scale business organisations help in the conservation of foreign exchange and raising of standard of living. In 2010, Jimah posited that business enterprises help in the provision of quality goods and services. Some of the quality goods produced locally are often consumed within the country, while others are exported to other countries for the purpose of earning foreign exchange. Egboh (2009) asserted that business organisations help in the reduction of inflation rate by providing goods and services at affordable prices. Egboh stated further that business organisations facilitate the redistribution of income within an economy. Large-scale business organisations attempt to satisfy the varied interests of their stakeholders by paying salaries, dividends and in meeting other financial obligations as at when due. These expenses are usually matched against the revenue of the same accounting period.

Types of Fraud and their Impacts in Public and Private Organisations

Literature is satiated with different types of fraud. This may be because as one discovers a particular fraud, the fraudster must have come up with other ways of committing fraud. This view has been supported by Hamilton and

Gabriel (2012) who averred that the list of frauds is inexhaustive because fraudsters are forever devising new methods. In addition, as businesses and societies become more complex and enlightened, methods of perpetrating fraud become more sophisticated (Egbunike, 2011). This situation has been aided by the advancement in information and communication technology which has made fraud to be a global issue.

There are many types of fraud in large-scale business organisations. Udoayang and James (2014) classified fraud into two types viz; bite fraud and nibble fraud. Bite fraud occurs when assets are taken and the individual who took it disappeared. This type of fraud usually involves large assets hence it can be detected quickly. To avoid being tracked down, the biter absconds to a protected colony. On the other hand, nibble fraud involves small assets, usually taken in piecemeal. Here, the possibility of being detected at the early stage is quite low, hence the fraud occurs on many occasions. In 2015, Adewale also classified fraud broadly into two main groups, the internal and the external frauds. When employees identify an opportunity to commit any acts of fraud, it is classified as an internal fraud, whereas when outsiders, such as suppliers, and service providers involve in acts of fraud against an organisation, it is classified to be an external fraud. Based on this classification, when fraud is perpetrated by both staff and outsiders it is termed as mixed fraud. More so, the Association of Certified Fraud Examiners (ACFE) (2014) classified fraud into three major categories as indicated in figure 4.

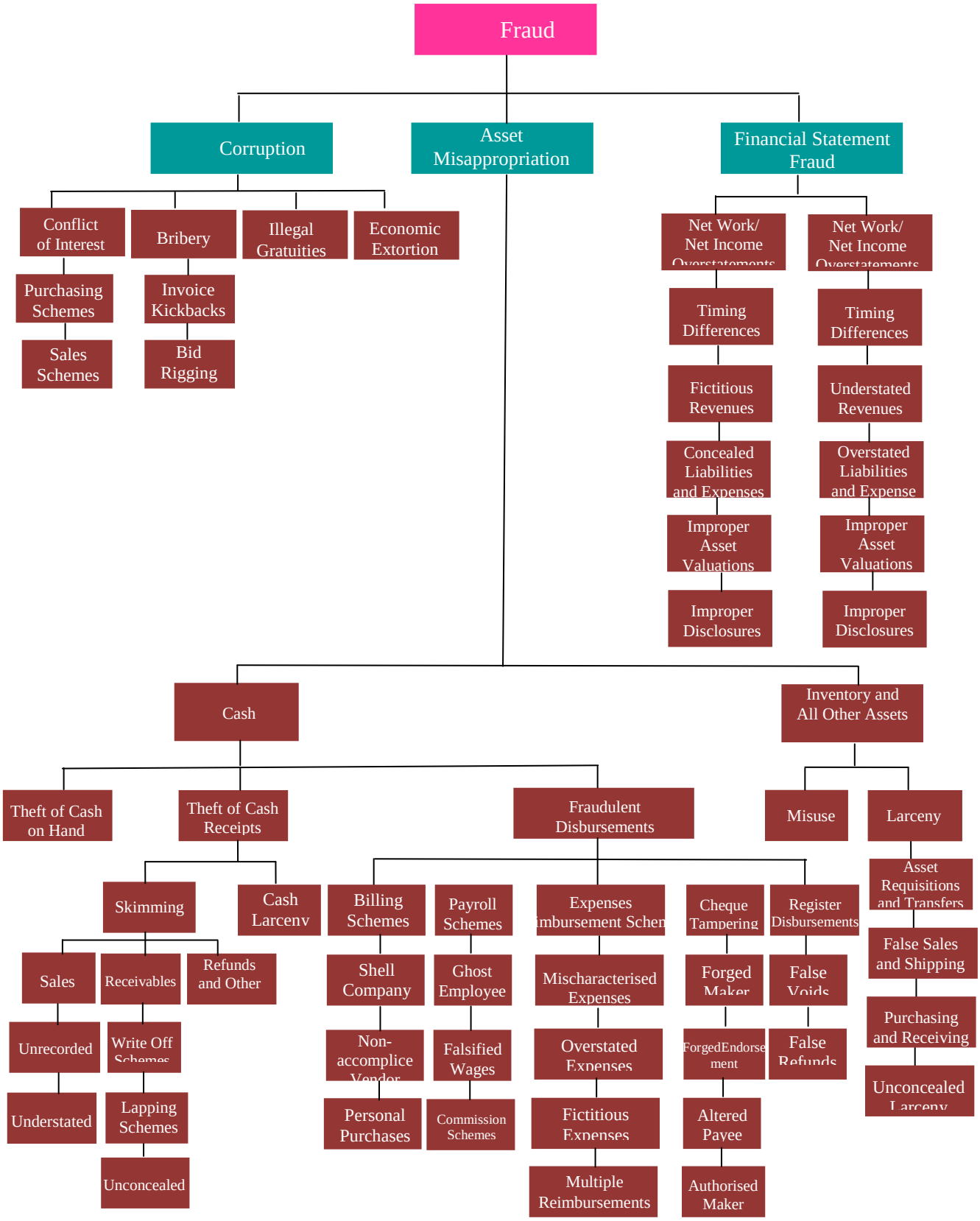

Fig. 4: Fraud Tree

Source: (Association of Certified Fraud Examiners, 2016)

Corruption is the act whereby a person uses the powers due to the position he is occupying in a firm to get some business transactions in order to gain some financial benefits either to himself or others in a firm. Corruption schemes involve employees using their influence or official position in organisations to unlawfully obtain benefits for themselves or other persons, contrary to the rights of others (ACFE 2010; Wells, 2008). Okoye, Maimako, Jugu and Jat (2017) maintained that corruption is depravity, perversion or taint, an impairment of integrity, virtue or moral principle of a person by bribery. It means dishonesty and illegal behaviour by people in authority. According to Kimuyu as cited by Mobolaji and Omotoso (2017), corruption is abuse of entrusted power for private benefit.

Corruption schemes are divided into bribery, conflict of interest, economic extortion and illegal gratuity. Bribery involves offering something of value in order to influence a business decision. Relatedly, Okoye, Maimako, Jugu and Jat (2017) affirmed that bribery is a form of corruption that involves offering and acceptance of money or favours for some kind of preferential treatment or to influence another party for specific desired treatment. Illegal gratuities involve giving an employee something of value to reward a decision rather than to influence it. Extortion involves the threat by an individual to another for money. Enofe, Omagbon and Ehigiator (2016) added that economic extortion occurs when one person demands payment from another, for example, an employee demands payment from a supplier before awarding

them a contract. Conflicts of interest arise when an employee has an undisclosed economic or personal interest in a transaction that adversely affects an organisation. For example, if an employee has a stake in a company that his employer is transacting with possibly through a family relationship, that is, spouse, uncle, cousin, and so on, there is the likelihood that purchase scheme or sales scheme may occur.

It is detrimental to a business growth and the propensity to produce and export, as many businesses spend a significant proportion of their earning on informal payment. The figures presented in plates 1, 2 and 3 depict various aspects of corruption.

Plate 1: Bribery

Source: (Kabir, 2016)

Plate 2: Extortion Plate 3: Misuse of assets

Source: (Researcher's Conceptualization, 2018)

Asset misappropriation involves the theft, misuse and appropriation of company assets for personal gain. It is divided into two sub-categories: misappropriation of cash, and misappropriation of inventories and other assets that can usually be turned into cash. Cash schemes involve larceny, skimming and fraudulent disbursements (ACFE 2010; Albrecht, Albrecht & Albrecht, 2009; Coenen, 2008; Wells, 2008). Larceny involves taking an employer's cash or other assets without the consent and against the will of the employer, after it has been recorded in the company's record. The two main methods of this category of cash misappropriation are: theft of cash in hand, and theft from the cash at bank deposit (Peisert, Matt and Marzullo, 2016). In order to prevent detection, the fraudster will have to create or modify accounting documents explaining the cash shortage. Skimming is a scheme where cash is stolen before a book entry is made (Association of Certified Fraud Examiners, 2014).

This may involve not recording or understating of sales. Receivable schemes involve write-off and lapping schemes. In write-off schemes, an employee collects money from receivables but writes off the receivables instead of recognising them as paid. In lapping schemes, an employee steals one client's payment and later covers it by paying their account with another client's payment. This type of fraud is difficult to perpetrate as it requires on-going maintenance.

Fraudulent disbursements are methods where the misappropriation of funds appears to be for legitimate business events. There are five groups under fraudulent disbursements. These are: billing schemes, payroll schemes, expense reimbursement schemes, cheque tampering and register disbursements. Billing schemes involve making payments for inaccurate or false expenses or payments for personal purchases (Albrecht & Albrecht, 2009). The aim of false or inaccurate payments is to redirect the money back to oneself. Billing schemes may involve the use of a shell company (that is, a company created for the sole purpose of committing fraud) which submits fictitious invoices for payment (Pednerauth, Sheets & Rudewicz, 2012). The fraudster must be able to influence approval of vendors and invoices. Non-accomplice vendors may also be used by intercepting payments to them, intercepting refunds or by stealing legitimate payments made to them. Purchasing (credit) card is another method of making personal purchases at the company's expense. Payroll schemes may involve ghost employees being

entered into the payroll system of an organisation. This scheme is similar to shell vendors.

Alternatively, Albrecht and Albrecht (2009) observed that employees may falsify the amount of hours they work or inflate the commission they should be paid for sales. Another method involves claiming compensation for fictitious injuries. Wells (2008) stated that expense reimbursement schemes involve submitting false expenses and then being reimbursed for them. Methods include expense schemes, overstated expenses, fictitious expenses, and multiple reimbursement schemes. In cheque tampering scheme, a perpetrator is actually involved in the issuing of a cheque.

The signature of the person(s) that normally approves a cheque is forged. Another method is to claim to be the party written on a legitimate cheque or to change the payee written on the cheque. In the concealed cheque technique, the perpetrator submits a fraudulent cheque among legitimate cheques so that the cheque will be 'rubber stamped' and signed. In authorised marker schemes, a fraudster is the person who can approve and issue cheques (ACFE, 2014). This situation makes it quite easy to issue cheques to a perpetrator as it relies on weak and ineffective controls. In register disbursement schemes, cash is removed from a cash register and recorded in the system using techniques such as false voids or false refunds. This kind of fraud occurs in cash businesses such as retails, restaurants or bars where

employees may void an order, provide customers with ordered goods and keep monies for themselves.

Non-cash assets such as inventory and equipment may be misappropriated in a number of ways that could range from taking home a carton of pens to theft of property worth millions of naira. Company assets may be misused ('borrowed') or stolen. Assets such as company vehicles, supplies, computers and other office equipment may be misused by employees to do personal work using company time (Enofe, Omagbon & Ehigiator, 2016). Costs of non-cash asset misuse are difficult to quantify. Company assets may also be stolen. Employees may create false documentation to ship company merchandise to personal addresses, or they may simply take company assets without trying to account for their absence. For clarity sake, cash theft and inventory in large-scale business organisations are depicted in the plates 4 and 5.

Plate 4: Cash theft
Source: (Kabir, 2016)

Plate 5: Inventory theft
Source: (Kabir, 2016)

Fraudulent financial statement has to do with the falsification of the statement of accounts. These financial statements include: statement of comprehensive income, statement of financial position, value added statement, statement of the source and application of fund, director's report, notes to the accounts, five-year financial summary and, in the case of a holding company, the group financial statement. This may be to either understate or overstate the financial statements to meet the perpetrators' desires (Hopwood, Leiner & Young, 2012).Financial statement fraud is the intentional misstatement or omission of material information from an organisation's financial statements with the intention of deceiving investors, tax authorities, creditors, and the general public (ACFE 2010; Wells 2008). It involves intentional misstatements or omissions of amounts or disclosures in financial reporting to deceive financial statements users (Modugu & Anyanduba, 2013).

More specifically, financial statements fraud involves manipulation, falsification, or alteration of accounting records or supporting documents from which financial statements are prepared. Common schemes involve recording of fictitious revenues, concealment of liabilities or expenses and artificially inflating reported assets. It also refers to the intentional misapplication of accounting principles to manipulate results. The Association of Certified Fraud Examiners (2017) added further that financial statement fraud includes back-dating agreements, recognizing revenue on product not shipped by period end, or channel stuffing. Some fraudulent financial reporting schemes are common

across all organisations, for example, setting aside unsupported reserves for use in future periods and fraudulent top-side entries.

There are various causes of fraud in business organisations. Nwaze (2008) categorised causes of fraud into two factors viz: the institutional factors and the environmental factors. Institutional factors are those that are traceable to the internal environment of organisations (Nwaze, 2008). The common institutional causes of fraud that are identified in the literature include: poor internal control and checks, inadequate training and retraining on both the technical and theoretical aspects of the job leading to poor performance that breeds malpractices, poor supervision, poor salaries, poor condition of service, protection of defaulting staff, god-fatherism, poor attitudes toward audit queries and follow-up of audit recommendations (Idowu, 2009). Many organisations fail to report cases of fraud to appropriate authorities for fear of negative public image. Such attitude encourages fraud. These factors are generally within the control of management in an organisation. Others are poor security arrangement, staff negligence, pressure, bad management practices, poor personnel policies and poor book keeping and accounting culture.

On the other hand, environmental/societal factors include social values, where the possession of wealth determines the reputation and recognition ascribed to a person; indiscipline, where there is minimum level of conformity, orderliness and moderate behaviour below which an individual or society is not able to function effectively; and personality profile of fraudsters, where

people are bent on getting it by hook or crook. To such people, the end justifies the means (Kasum, 2009). In 2009, Idowu asserted that fraud is observed to be firmly established in a materialistic societywhere wealthy people are recognised and honoured without question of source.

In an organisation, there are always pointers to the fact that fraud may be occurring or likely to occur. These pointers are called red flags. A red flag is an event or set of circumstances that ought to alert an entity to the presence of risk. It is only a warning sign that can indicate a high risk of fraud (Zachariah, Masoyi, Ernest, & Gabriel, 2014). However, if multiple red flags are present and accounting irregularities are identified, the situation should be closely reviewed (Okoye, Maimako, Jugu & Jat, 2017). Within an organisation, individuals need to be alert to a red flag – what to look out for in fraud detection process.

As noted by Okoye, Maimako, Jugu and Jat, red flags include: recognition of revenue before a product is sold, much higher revenue than expenses at the balance, growth in inventory and in sales does not match; reported growing earnings, while cash flow is decreasing; unusual increase in the book value of assets, written off loans to a related party; unexplained changes in receivable accounts; unusual number of reversed transactions and individuals often working excessively beyond the closing hours. Others are sudden spending spree, individuals carrying unusual amounts of physical cash; creditors and debtors frequently at work place; unauthorised payments made

for goods and services than what is obtainable in the market; credit limits allowable to customers exceeded without top management's approval; suppliers not being paid timely or being paid sooner than other suppliers; extraordinarily close relationship with customers or suppliers and variation in discount given to suppliers of similar or the same inventory.

Fraud is a toxic virus that has characterised both private and public institutions globally. Fraud is a complex social, political and economic phenomenon that is ubiquitous in both public and private sectors in varying degrees and magnitudes. Skalak and Sellitto (2015) asserted that fraud is a feature of every organised culture in the world. It is difficult to quantify the magnitude of fraud losses since majority of fraud cases go undetected and unreported (Bhasin, 2013). It affects many organisations, regardless of size, location or industry.

According to ACFE (2010), approximately $160 billion was lost by United States' companies in 2004 due to occupational fraud and abuse, and nearly one in six cases cost the organisation in excess of 1 million dollars. By the same token, 42.5 percent of European companies fell victim to fraud in 2000 and 2001 and the average cost of fraud was 6.7 million pounds (Skalak,& Sellitto, 2015). Globally, fraud accounts for 5% of Gross Domestic Product (GDP), equivalent to about 3.8 trillion dollars (ACFE, 2015), while organisations around the world lose an estimated 5% of their annual revenue to fraud, a figure that translates to a potential total fraud loss of more than 4

trillion dollars (Transparency International, 2016). Okoye (2016) stated that fraud is a problem that has impacted on both large and small business organisations. Fraud affects the general public who indirectly pay for the losses arising from fraudulent activities through the increased cost of goods and services.

Bhasin (2013) presented a list of numerous financial frauds and scandals with historical significance from both the developed and developing nations. Some of these scandals include Global Crossing (Bermuda), Nortel Network (Canada), Vivendi Universal (France), Adelphia Communication, IBM, Enron, Xerox, Lehman Brothers (USA), United Engineers Bhd (Malaysia), Wiggins, Versailles (UK), Samsung Electronics (Korea), Halliburton (Nigeria) among others.

The fraud problem continues to plague organisations and stakeholders around the world (Ravisankar, Ravi, Raghava, Rao& Bose 2011). The Association of Certified Fraud Examiners (ACFE, 2010) in its report to the nations on occupational fraud and abuse, found that financial statement fraud, though less than 5 per cent of total fraud cases reported, averaged about 1.7 million dollars per incident. This was by far the most costly of all types of fraud. By implication, the figure translated to an annual loss of more than 3.5 trillion dollars when applied to the 2011 Gross World Product. Similarly, the Committee for Sponsoring Organisations of the Treadway Commission Fraud Report (2010) in their report of 347 cases of fraud from 1987 to 2007

discovered that an average dollar amount of each occurrence of fraud had increased from 4.1 million dollars in 1999 to 12 million dollars in 2007. In the United Kingdom, the scale of loss in 2012 against a victim is about 73 billion pounds annually and has been on the increase (National Fraud Authority (UK), 2012).

In India, fraud losses amounted to $66 billion between 2011 and 2012 (The Ernest & Young's India Fraud Indicator), while fraud loss in Nigeria for 2012 alone was more than 1.5 billion dollars (KPMG, 2012). The damage done by fraud can better be imagined than experienced and when fraud is discovered, it is always a surprise for the business to believe because it is always so much that it may be forced to believe that such a loss did occur. In most cases, fraud is rarely reported due to the negative impact or the risk of embarrassment and reduction in the level of confidence by customers or shareholders (KPMG, 2012). This may lead to inability to say emphatically how much has been lost to fraud. However, the estimated amount of fraud related losses reached $650 billion in 2006 (Wells, 2007).

Nigeria is deeply soaked in and characterised by fraud. Fraud has been described as the worst enemy of businesses both in the past and in the present (Hamilton & Gabriel, 2012). There is rarely a week that passes without the report of fraud or other fraudulent activities being reported in the Nigerian newspapers. Comprehensive fraud statistics are difficult to come by in Nigeria because government agencies and companies tend to keep records of only

those frauds that affect their area(s) of interest. All fraud statistics are based on known frauds and any number that is quoted is considered to be only a tip of the iceberg (Silverstone & Sheetz, 2007). Below are some of the fraud headlines in national dailies in very recent times. Outrage over High Level of Fraud in Nigeria's Financial System (Bassey, 2012); Nigeria Lost N16tr to Scams in Oil and Gas Sector, says report (Ogidan, 2012); KPMG: Nigeria, Most Fraudulent Country in Africa (Efiong, 2013); Banks Recorded ₦28bn Fraud Case in 2011 (Onuba, 2012); Powerful Nigerian "Godfathers" Behind Pension Scam (Efiong, 2013); Pension Scam in Nigeria: Role of Regulators(Takor, 2012); Ajudua Remanded in Prison over Alleged $1.69m Fraud (Nwannekanma, 2013); ₦32 Billion Pension Fraud: What a Country! (Austine, 2013).

Aigienohuwa, Okoye and Uniamikogba (2017) averred that fraud is an economic and social menace with adverse multiplier consequences on individuals, organisations and society at large. The costs of fraud are passed on to society in the form of increased customer inconveniences, loss of jobs, opportunity costs, abandoned projects, unnecessarily high prices of goods and services and criminal activities funded with fraudulent gains (Ijeoma & Aronu, 2018).

In Nigeria, acts of fraud have become the main source of accumulating quick wealth by many, both young and old (Okoye, 2016). Osisioma (2012) contended that fraud has penetrated the warp and woof of the Nigerian society.

The boss and his messenger, the police officer and the recruit, the classroom teacher and his students, the politician and the voters, the judge and the lawyer, the pastor and the parishioner – only a negligible few can remain untainted by fraud. Some of the fraud cases in Nigeria are presented in Table 1.

Table 1: Total Amount Involved in Fraud and Forgeries

Year	Total No of Fraud Cases	Total Amount Involved (₦'Bn)	Proportion of Expected Loss to Amount Involved (%)	No of Staff involved
2002	796	12,919.55	10.06	85
2003	850	9,383.67	9.14	106
2004	1,175	11.754.00	22.21	383
2005	1,229	10,606.18	52.82	378
2006	1,193	4,832.17	57.3	331
2007	1,553	10,005.81	28.69	273
2008	2,007	53,522.86	32.78	313
2009	1,764	41,265.50	18.29	656
2010	1,532	21,291.41	54.85	357
2011	2,352	28,400.86	14.33	498
2012	3,380	17,965.50	25.14	531
2013	3,756	21,291.41	26.41	682
2014	10,612	25.61	6.196	465
2015	12,279	18.02	3.17	425
2016	16,751	8. 68	0.760	231
2017	26,182	12.016	0.682	320
Total	**87,411**	**244.06**	**72.17**	**6034**

Source:(Nigerian Deposit Insurance Corporation, 2018)

As depicted in the Table 1, a total of 87,411 cases of fraud were reported by the Nigerian Deposit Insurance Corporation from 2002 – 2017 and perpetrated by a total of 6,034 staff of various designations. It is noteworthy that the year 2008 witnessed the highest number of fraud cases with ₦53.52

billion. The data also indicated that 2013 has the highest number of staff of banks involved in fraud.

Fraud affects the economic development of a nation. Basin (2013) submitted that fraud affects local, national and international economies. The primary effect of fraud is the loss of money or property by the victim. Osisioma (2012) opined that many of the businesses in liquidation have suffered a great deal of fraud. As a result, some businesses record monumental losses which rock their foundations. Fraud does not only dampen economic growth and development, but also affects the inflow of Foreign Direct Investment (FDI) negatively (Lee and Oh, 2007). Fraud has the capacity of reducing a business organisation's patronage and reputation. When fraudulent practices thrive in an organisation, there will be the tendency that customers will be dissatisfied. The Institute of Internal Auditors (2016) asserted that fraud negatively impacts organisations in many ways including financial, reputational, psychological with social implications. The Institute of Internal Auditors stated further that the full cost of fraud is immeasurable in terms of time, productivity, reputation and customers' relationship. Depending on the severity of the loss arising from fraud, an organisation can be irreparably harmed. Fraud in public organisation has the capacity to affect the social well-being of the general public; it dwindles the fortunes of public organisations and takes resources away from the needy. To detect fraud in business

organisations, forensic auditing investigation could be conducted using various techniques.

Forensic Auditing and its Relevance in Business Organisations

Forensic auditing has taken an important role in business organisations since the dawn of the 21st century, especially in the advanced economies. Forensic auditing is an activity that consists of gathering, verifying, processing, analysing and reporting on data in order to obtain facts and evidence in a predefined context in the area of irregularities, preventive advice, legal and financial disputes (Igweonyia, 2016). According to the Institute of Chartered Accountants of Nigeria (ICAN) (2014), forensic auditing is the process of gathering, analyzing and reporting on data, much of it, financial in nature, in the pre-defined context of legal dispute or investigation into suspected irregularities and in some cases, giving preventive advice. Forensic auditing may arise in fraud investigation, violation of accounting regulations, tax evasion, bankruptcy, negligence, insurance claims and assessment of loss (Institute of Chartered Accountants of Nigeria, 2014).

A forensic auditor's ability to detect fraud may be significantly enhanced by personal understanding of an enterprise and the environment in which it operates (Kenyon & Tilton, 2015). With this knowledge, the auditor may be able to identify anomalies or other potential red flags such as nonsensical analytic relationships, control weaknesses, transactions that have no apparent business purpose, related parties and unexpected financial

performance. Kenyon and Tilton stated further that it is important to understand the business, the control procedures in place, the budgeting process, the accounting policy, the industry and the general economic climate affecting a business.

According to Enofe, Ekpulu and Ajala (2015), to understand a business and how money flows in and out of it, it is important to identify the key business partners (customers, suppliers, creditors, debtors and so forth) and understand the corporate culture and organisational structure. Dada, Owolabi and Okwu (2013) added that to understand an industry, auditors need to identity competitors or comparable businesses, determine how the competitors and comparable businesses perform, consider changes in the competitive structure such as mergers and new entrants to a market, changes in business' market share, trend and overall issues affecting the business.

In a bid to detect fraud, the auditor's attitude is one of professional skepticism. Igweonyin (2016) affirmed that the auditor needs to conduct the investigation with a mind-set that recognises the possibility that a material misstatement due to fraud could be present, regardless of any past experience with the entity and regardless of the auditor's belief about the management's honesty and integrity. A mind-set of professional skepticism may result in taking additional steps while performing analytic procedures and testing to corroborate management's assertions.

The perception of some users of accounting information is that auditors should have the responsibility, as part of their normal audit and not by any special one-off review, to detect substantial fraud if it exists in the accounts. However, Okoye, Maimako, Jugu and Jat (2017) submitted that it is generally agreed that the primary responsibility for the prevention of fraud and fraudulent practices rests on management of an organisation, administrative and regulatory authorities, the police and other investigative institutions, and cannot be counted among the main tasks of auditors.

Nevertheless, Gojko, Nenad and Natasa (2013) opined that most auditors see their main goal in the area of fraud prevention than in the field of actually detecting such illegal activities. That notwithstanding, auditors need to be alert to situations, control weaknesses, inadequacies in record keeping, errors and unusual transactions or results which could be indicative of fraud, improper or unlawful expenditure, unauthorised operations, waste, inefficiency or lack of probity.

The primary objective of auditing the financial statements of business organisations according to Adeniyi (2012) is to enable the auditor to express an opinion as to whether the financial statements are prepared, in all material respect, in accordance with established or applicable financial reporting framework and that the financial statements give a true and fair view. The secondary objectives include:

1. to detect errors, fraud and irregularities.
2. to help the organisation (client) to improve upon its accounting and internal control systems.
3. to advise on financial matters for efficient decision making by management.
4. to ascertain and ensure that an enterprise conforms to statutory and professional requirements. The auditor is not bound to be a detective.

In large-scale business organisations, auditing has various needs. Some of these needs were enumerated by Adeniyi (2012) and The Institute of Chartered Accountant of Nigeria (2014) as follows:

1. The owners (shareholders) who are not part of the day-to-day management of the business need to ensure that the report presented to them by managers (directors) are not misleading, contain no errors and all relevant information are disclosed because they will serve as a basis for decision making by interested parties.
2. Financial statements are required to comply with various legislations, standards, conventions, policies and control systems. Therefore, compliance with these requirements can be assured if audit is efficiently and effectively carried out on the financial statement.
3. Section 375 of the Companies and Allied Matters Acts 2004, provides that every company shall at each Annual General Meeting (AGM)

appoint an auditor or auditors to audit the financial statements of the company.

The relationship that exits among various parties in audit assignment can be explained using the following diagram.

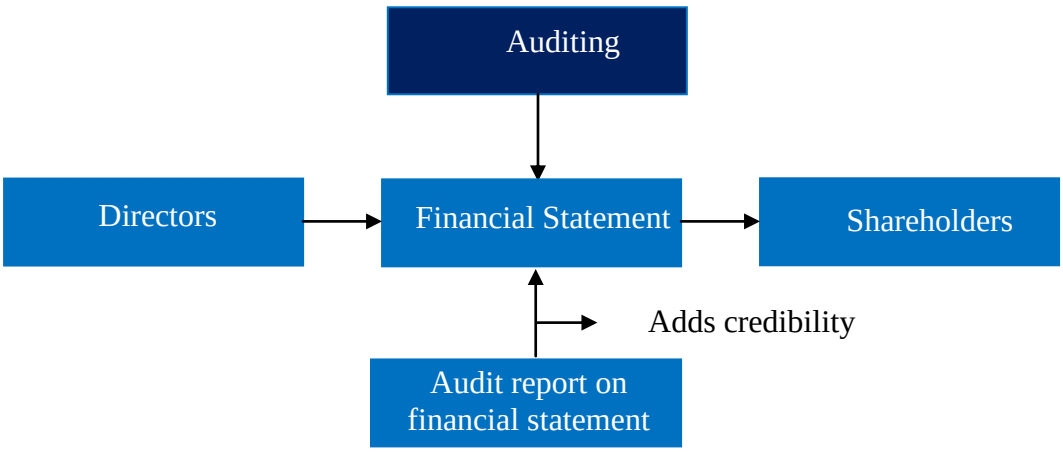

Fig 5: Auditing Engagement

Source: (Researcher's Conceptualization, 2018)

The fig 5 shows that in an audit engagement, the auditor examines the financial statements prepared by the directors whether they comply with regulatory framework and report to the directors and shareholders on the truth and fairness of the financial statement so examined. More so, the auditor's report adds credibility to the financial statements. However, several instances of corporate scandals and failures of traditional audit expectations in detecting sophisticated fraud in recent times call for a more effective method such as forensic auditing.

Forensic Auditing Investigation Techniques for Fraud Detection in Large-scale Business

Forensic audit investigations are associated with situations where disputes arise or wrong doing has occurred such that criminal or civil action is being taken in a court of law. The utilisation of specialised investigative skills in carrying out an inquiry conducted in such a manner that the outcome will have application to a court of law. Usually, forensic investigations seek to prove or disprove suspicion of wrong doing and provide evidence for legal proceedings. Gray (2016) believed that those who are qualified to handle forensic investigations are forensic accountants who are a combination of auditors and private investigators. Forensic investigation requires the knowledge and skills of accounting, law, criminology, computer science, research, among others. In forensic auditing, specific procedures are carried out in order to produce evidence. Evidence may also be gathered to support other issues which will be relevant in the event of a court case (Cressey, 2012).

A forensic auditor needs knowledge and in-depth understanding of fraudulent financial activities, legal procedures, fraud and criminological concepts, and above all, investigative skills (Singleton, 2015). However, in 2016, Popoola, Ahmad & Samsudin, acknowledged that a forensic auditor should have well-developed professional skepticism (sniffer attitude and investigative mind), analytical and logical mind, personal integrity, expertise in internal controls, and acumen in interviewing techniques.

Albecht and Albrecht (2011) identified the following key functions of forensic auditing:

1. to prevent, detect and investigate issues of fraud and financial abuse within an organisation.
2. identification of causative factors and collection of facts for individual investigations leading the evaluation of internal control weaknesses that allow unethical business behaviours and practices to occur and go undetected.
3. lead internal and external resources in an effort to address allegations of fraud raised within the system.
4. provision of help in the development of fraud awareness, training and analysing fraud trends and internal control procedures.
5. performance of comprehensive analyses of investigations across the enterprise to identify pervasive control issues.
6. oversee the investigations, planning and forensic report writing processes for forensic auditors, investigations and presentation of findings through reports and exhibits.
7. work closely with financial training function to enhance fraud auditing skills.
8. development of a fraud prevention, detection and investigation programme and management of company's fraud risk assessment programme.

9. conduct complex and extremely sensitive investigations.
10. promote education and awareness on fraud risk management throughout the organisations
11. testifying in the court of law as an expert witness.

Detecting fraud is difficult, especially frauds involving material misstatement, which occur only in about 2 percent of all financial statement frauds. Fraud is generally concealed and often occurs through collusion. Normally, the documents supporting omitted transactions are not kept in the company's files.

False documents are often created or legitimate documents are altered to support fictitious transactions. While fraud detection techniques will not identify all fraud, the use of sound techniques can increase the likelihood that misstatement or defalcations will be discovered on a timely basis (Golden, Skalak & Clayton, 2015). Knowing where to look is the first step in fraud detection; understanding the motivations of those committing fraud and knowing the particular account in which fraud is more likely to exist, based on a risk assessment, helps in identifying the areas that might be subject to greatest scrutiny. Similarly, being aware of the transactions that warrant further review, as well as other potential red flag indicators, may alert the auditors as to the areas that might require a closer look (Modugu & Anyaduba, 2013).

Forensic auditors need training in order to identify red flags in large-scale business organisations. Cressey (2012) stated that such training would equip them with skills, knowledge, and competences needed for finding hidden data, capturing images, examining encrypted files, identifying, collecting and preserving computer evidence. Others include: knowledge and skills of data mining, anonymous communication, analytic procedure, investigative interview, background investigation and substantive test,

Data Mining and Fraud Detection in Large-Scale Business Organisations

Data mining, which originated from forensic science, can be described as the application of data mining techniques and scientific tools to investigative process for good and sound evidence (Adeyemo and Oriola, 2010). The term ‘data mining’ is very descriptive. Data mining involves digging down into a database (data warehouse) and looking for gold nuggets of valuable information. Most of the searches result in finding nothing, but occasionally a very valuable and unexpected item of data is found. It is possible to ‘strike gold’ in unexpected places. According to the ICAN (2014), data mining is a variety of techniques to identify nuggets of information or decision-making knowledge in bodies of data, and extract these in such a way that they can be put to use in areas such as decision support, prediction, forecasting and estimation. It is the hidden information in the data that is useful.

Data mining refers to the non-trivial extraction of implicit previously unknown and potentially useful information in databases (Adegbie, & Fakile, 2012). It is a key step of knowledge discovery in databases. In other words, data mining involves the systematic analysis of large data sets using automated methods. By probing data in this manner, it is possible to prove or disprove an existing hypothesis or idea regarding data or information while discovering new or previously unknown information. It is noted for its pattern recognition and ability to ensure that information is obtained from vague data (Barker, 2009).

In recent years, database technology has advanced in stride in business organisations. Vast amounts of data have been stored in the databases. Databases can be mined for the purpose of detecting frauds. Data mining is a set of computer-assisted techniques designed to automatically mine large volumes of integrated data for new, hidden, unexpected information or patterns. Data mining is sometimes known as Knowledge Discovery in Databases (KDD) (Sirikulvadhand, 2012). It is the use of sophisticated procedures and technologies to identify concealed patterns in financial, non-financial and textual data that would not otherwise be detectable due to the size and complexity of data. Data mining is the process of analysing data to identify relationship, the analysis of data for relationships that have not previously been discovered and analysis of data for relationships and analysing

data to discover pattern and relationships that are important in decision making (Okoye, Maimako, Jugu & Jat, 2017).

Patterns that can be identified in data mining include numeric, time, name and geographic patterns. These patterns can be got from: corporate and personal emails, minutes of board meetings, company document collections, employees' reviews and performance appraisal, corporate telephone records, public information records and personnel files, interactive activities and computer hard drives (Manning, 2012).

Data mining, according to Golden, Skalak and Clayton (2015), might include the following:

1. scanning transaction lists
2. identifying gap in cheque runs or shipping documents
3. identifying duplicate invoice numbers, payments or payroll transactions to the same payee
4. matching return dates and credit memos to test for proper cut-off
5. comparing recent invoice prices with costs on the perpetual inventory records
6. filtering to identify all new suppliers, non-standard journal entries, accounts under dispute, and the like
7. stratifying or grouping customer accounts by balance size or employees by overtime pay.

Data mining has many benefits in a business organisation. Golden, Skalak and Clayton (2015) provide the following benefits of data mining;

1. The forensic auditor is able to analyse a large number of transactions, identify trends, spot documents that need further review, and gain initial insights without waiting for the cumbersome process of collecting documents by traditional means.
2. Data mining is often a more cost-effective and comprehensive approach than hard copy document review.
3. Computerised information can assist in providing reasonable check of findings based on documents, especially in situations in which document sets may be incomplete. It also enables the investigating team to check 100 percent of an entity's transactions for certain characteristics such as data, time, naira amount, approval, and payee, depending on the nature of the computer record.
4. With data anlaysis linked to presentation software, findings can be more clearly summarised for board, audit committee, or management presentations.

In recent times, auditors have recognised the dramatic increase in volume and complexity of accounting and non-accounting records in large-scale business organisations. In addition, Golden, Skalak and Clayton (2015) stated that fraudsters necessarily make use of the computer systems that business organisations depend on for day-to-day operations. Goss (2014)

opined that tech-savvy fraudsters often make use of emails and instant messages; they access networks; they create and manipulate all sorts of files, and they work with databases and general ledger systems. They may also use printing, scanning, and fax technology to create all types of fictitious documents many of which have the look and feel of the original. In many cases, traditional frauds, confidence games, and embezzlement schemes are also cybercrimes. Consequently, data mining tools and techniques are deployed for analyses.

Specifically, unique or valuable relationship between and within data can be identified and used proactively to detect and prevent fraudulent practices. Through the use of exploratory graphics in combination with advanced statistics, machine learning tools and artificial intelligence, critical nuggets of information can be mined from large repositories of data for the purpose of fraud detection. Mining of data often makes use of intricate rules or algorithms that look for patterns and associations (Nickell & Fisher, 2009). According to Golden, Skalak and Clayton (2015), data mining techniques can be divided into broad two categories – directed (or top-down approach) and undirected (or bottom-up approach). With directed data mining, there is identification of a specific variable of audit interest. On the other hand, with undirected data mining, there is no specific targeted variable; instead, the objective is to find any relationship between variables in a population of data.

Advancement in technology has impacted on data mining techniques in business organisations. The introduction of microcomputers and networks, and the evolution of middle wares, protocols, and other methodologies that enable data to be moved seamlessly among programmes and other machines, allow companies to link certain data questions together (Stilltow, 2016). The development of data warehousing and decision support systems, for instance, has enabled companies to extend queries from: “what was the total number of sales in Beta Grass Plc. in April?” to “what is likely to happen to sales in Beta Grass Plc and why?”

However, the major difference between previous and current data mining efforts is that organisations now have more information at their disposal. Given the vast amounts of information that companies collect, it is not uncommon for them to use data mining programmes that investigate data trends and process large volumes of data quickly. Users can determine the outcome of the data analysis by the parameters they choose, thus providing additional value to business strategies and initiatives. It is important to note that without these parameters, the data mining programme will generate all permutations or combinations irrespective of their relevance.

Forensic auditors in business organisations need to pay attention to details because data mining programmes lack the human intuition to recognise the difference between a relevant and an irrelevant data correlation. It is important they review the results of mining exercises to ensure results provide

needed information (Gray, 2016). For example, knowing that people who default on loans usually give a false address might be relevant, whereas knowing they have blue eyes might be irrelevant. Auditors, therefore, need to monitor whether sensible and rational decisions are made on the basis of data mining exercises, especially where the results of such exercises are used as input for other processes or systems. Auditors also need to consider the different security aspects of data mining programmes and processes. A data mining exercise might reveal important customer information that could be exploited by an outsider who hacks into the rival organisation's computer system and uses a data mining tool on captured information (Gupta & Nasib, 2012).

Large-scale organisations that wish to use data mining tools can purchase mining programmes designed for existing software and hardware platforms, which can be integrated into new products and systems as they are brought online, or they can build their own customised mining solution. For instance, feeding the output of a data mining exercise into another computer system, such as a neural network, is quite common and can give the mined data more value. This is because the data mining tool gathers the data, while the second programme (neural network) makes decisions based on the data collected.

Different types of data mining tools are available in the market place, each of which has its own strengths and weaknesses. Internal auditors need to

be aware of the different kinds of data mining tools available and recommend the purchase of a tool that matches the organisation's current detective needs. This should be considered as early as possible in the project's lifecycle, perhaps even in the feasibility study. Most data mining tools can be classified into one of the three categories: traditional data mining tools, dashboards, and text-mining tools. Below is a description of each of the mining tools according to Stilltow (2016):

1. Traditional Data Mining Tools: Traditional data mining tools help companies establish data patterns and trends by using a number of complex algorithms and techniques. Some of these tools are installed on the desktop to monitor the data and highlight trends and others capture information residing outside in a database. The majority are available in both Windows and Universal Network Information Exchange (UNIX) versions of operating system, although some specialise in one operating system only. In addition, while some may concentrate on one database type, most will be able to handle any data using online processing or a similar technology.
2. Dashboards: These are tools installed in computers to monitor information in a database. Dashboards reflect data changes and updates onscreen – often in the form of a chart or table which enables the user to see how the business is performing. Historical data can also be referenced, enabling the user to see where things have changed (for

example, increase in sales between two periods). This functionality makes dashboards easy to use and particularly appealing to managers who wish to have an overview of the company's performance.

3. Text-mining Tools: The third type of data mining tool sometimes is called a text-mining tool because of its ability to mine data from different kinds of text – from Microsoft Word and Acrobat personal data file documents to simple text files. These tools scan content and convert the selected data into a format that is compatible with the tool's database, thus providing users with an easy and convenient way of accessing data without the need to open different applications. Scanned content can be unstructured (that is, information is scattered almost randomly across the document, including e-mails, Internet pages, audio and video data) or structured (that is the data's form and purpose is known, such as content found in a database). Capturing these inputs can provide organisations with a wealth of information that can be mined to discover trends, concepts and attitudes.

Forensic auditors can use spreadsheets to undertake simple data mining exercises or to produce summary tables. Some of the desktop, notebook, and server computers that run operating systems such as Windows, Linux, and Macintosh can be imported directly into Microsoft Excel (Olasanmi, 2013). Using pivotal tables in the spreadsheet, auditors can review complex data in a simplified format and drill down where necessary to find the underlying

assumptions or information. When evaluating data mining strategies, companies may decide to acquire several tools for specific purposes, rather than purchasing one tool that meets all needs. Although acquiring several tools is not a mainstream approach, a company may choose to do so if, for example, it installs a dashboard to keep managers informed on business matters, a full data-mining suite to capture and build data for its marketing and sales arms, and an interrogation tool so auditors can identify fraud activity.

In addition to using a particular data mining tool, forensic auditors can choose from a variety of data mining techniques. The most commonly used techniques include artificial neural networks, decision trees, and the nearest-neighbour methods. Each of these techniques analyses data in different ways, according to Nickell and Fisher (2009).

1. Artificial neural networks: These are non-linear, predictive models that learn through training. Although they are powerful predictive modeling techniques, some of the power comes at the expense of ease of use and deployment. One area where auditors can easily use them is when reviewing records to identify fraud and fraud-like actions. Because of their complexity, they are better employed in situations where they can be used and reused, such as reviewing credit card transactions every month to check for anomalies.
2. Decision trees: These are tree-shaped structures that represent decision sets. These decisions generate rules, which are used to classify data.

Decision trees are the favoured technique for building understandable models. Auditors can use them to assess, for example, whether the organisation is using an appropriate cost-effective marketing strategy that is based on the basis of targeted profit.

3. The nearest-neighbour method: This method classifies dataset records based on similar data in a historical dataset. Auditors can use this approach to define a document that is interesting to them and ask the system to search for similar items.

Each of these approaches brings different advantages and disadvantages that need to be considered prior to their use. Neural networks, which are difficult to implement, require all input and resultant output to be expressed numerically, thus needing some sort of interpretation depending on the nature of the data-mining exercise. The decision tree technique is the most commonly used methodology, because it is simple and straightforward to implement. Finally, the nearest-neighbor method relies more on linking similar items and, therefore, works better for extrapolation rather than predictive enquiries (Desand & Deshmukh, 2013).

A good way to apply advanced data mining techniques is to have a flexible and interactive data mining tool that is fully integrated with a database or data warehouse. Using a tool that operates outside of the database or data warehouse is not efficient. Using such a tool will involve extra steps to extract, import, and analyse the data (Bozkurt, 2013). When a data mining tool is

integrated with the data warehouse, it simplifies the application and implementation of mining results. Furthermore, as the warehouse grows with new decisions and results, the organisation can mine best practices continually and apply them to future decisions. Regardless of the technique used, the real value behind data mining is modeling – the process of building a model based on user-specified criteria from already captured data. Once a model is built, it can be used in fraud detection. Apart from data mining, anonymous communication could also be used for fraud detection in business organisation.

Anonymous Communication and Fraud Detection in Large-Scale Business Organisations

Anonymous tips are by no means new phenomena in the world of business. In Nigeria, however, recent cases of fraud both in public and private sectors have popularised and created awareness on the importance of anonymous communication mechanism. Scott and Rains (2015) supported that anonymous communication is not a new issue because suggestion boxes, whistle blowing and certain types of feedback involving anonymity today, with the variability of new communication technologies availability in business organisations, have aided anonymous communication. Anonymous communication, as used in this work, denotes the sending of information, tips and ideas that could aid the prosecution of fraudsters without revelation of identity.

Anonymous tips come in a wide variety of forms and quite a number of channels and are addressed to various individuals and groups within or outside the entity. Henderson and Greaves (2015) stated that recipients of anonymous communications within a business organisation include legal counsel, audit committee members, senior management, departmental supervisors and the compliance or ethics officer. Henderson and Greaves further added that a tip may take the form of a typical business letter addressed to the company, an e-mail usually from a non-traceable account or an official internal complaint. Agbawe, in 2012, maintained that tips may also be duplicated from news agencies, competitors, Internet website postings, chat rooms or government agencies. They may also be messages to an internal ethics hotlines number.

In some situations, allegations aired in an anonymous tip may be known within specific business organisations but may be labeled as rumours or gossip (Ogbu, 2017). However, some whistle-blowers are neither gossip hounds nor disgruntled employee, but frustrated employees who try to inform management about a problem and have gone unheard. Only then do they file a complaint by sending a letter or e-mail or making a phone call. Ayagre and Aidoo-Buameh (2014) buttressed further that one of the dangers of ignoring an anonymous tip is that a situation that can be satisfactorily addressed with prompt action at lower levels, or locally, within the business may become escalated to higher levels or third parties and regulatory authorities outside the business because

the whistle blower believes that communication has been shunted aside. This can have damaging consequences for an organisation's reputation and brand, if the allegations become public or attract media attention and a cover-up appears to have recurred, however well-intentioned the organisation may have been.

Supporting the fact, the Institute of Internal Auditors (2016) contended that ignoring an anonymous tip also may negatively impact staff morale and motivation, if suspicions or impropriety are widespread among staff and it appears that the employer is uninterested or doing nothing to rectify the situation ultimately. Fargler (2012) maintained that management may leave itself open to criticism or perhaps the danger of regulatory censure or legal action by stakeholders or authorities if it cannot demonstrate that it has given due consideration to the issues raised in an anonymous communication.

Evidence obtained from sources outside a business organisation (external source) is more reliable than evidence obtained from a business' own record. For example, a forensic auditor may receive written confirmation from a customer of the client that the customer is owing a stated amount of money (Fargher, 2013). In this regard, a whistle blowing policy can be put in place by the management of an organisation to help obtain evidence of fraud from outside sources.

The term'whistle blowing' is thought to have its roots in two different but related activities: first, the term flows from the practice of police or bobbieswho blew their whistle when attempting to apprehend a suspected

criminal. Second, it is thought to follow from the practice of referees during sporting events who blow whistle to stop an action (Ogbu, 2017). The basic assumption in both cases is that the whistle blower perceives something that he or she believes to be unethical or illegal and reports it to authorities so that corrective measures may be taken (Hoffman & Menutty, 2010). According to Gillan (2013), whistle-blowers are persons (usually workers) who, at their own risk, having been motivated by a sense of personal or public duty, may expose what they perceive as specific instances of wrong doing, which may be within the private or public sector (Taiwo, 2015). Bucka and Kleiner (2011) referred to a whistle blower as a person who exposes falsehood and corruption. A whistle blower is a person who tells the public or someone in authority about alleged dishonest or illegal activities recurring in a government department, a public or private organisation or a company.

In a large-business organisation, fraud can be detected and prevented through the establishment of a whistle blower policy. According to Henderson and Greaves (2015), once notified by a client of the receipt of an anonymous tip, the forensic audit investigator should obtain an understanding of all of the circumstances of that receipt. Bolton and Hand (2016) noted that while the circumstances may appear unremarkable and trivial, that information is often a key factor in determining the best approach to dealing with a tip and, more broadly, often provides cues that are helpful in other areas. Henderson and

Greaves (2015) argued that the forensic investigator needs to evaluate the receipt of anonymous tips with the following questions:

1. How: This refers to how the information was conveyed–for example, whether it was in a letter, phone call, or e-mail and whether the letter was hand written or type-written. Additionally, the forensic investigator seeks to determine whether the message includes copies of corporate documents or references to specific documents and whether the tip is anonymous, refers to individuals, or is signed.
2. When: This includes establishing the date on which the message was received by the entity, the date of the tip, and in the case of a letter, the postmark date and postmark location.
3. Where: This involves establishing where the tip was sent from, be it a post office, overseas, a private residence, within the office, with a sender's fax number, or an e-mail account.
4. Where: To whom was the tip sent: was it a general reference such as "To Whom it may Concern", a specific individual or a department such as the head office or internal audit or a competitor? Sometimes an anonymous notification will indicate that another entity has been copied on the document; this requires verification.
5. What: This refers to understanding the allegations and organising them by issue. Often, a tip will contain a number of allegations that have variations on the same issue or that link to a common issue. For this

reason, it is often helpful to summarise the tip by issues and related sub-issues

6. Why: What is the possible motivation for the tip, issues with misreporting financial information, ethical decisions, disgruntled employee or former employee airing grievances?

The forensic audit investigator needs to initially take enough time to understand the allegations. All allegations should be taken seriously but viewed objectively and without preconceptions (Kabir, 2016). The allegations may be close to the truth but not absolutely correct, perhaps owing to the likelihood that the statements are clouded by emotion or limited by the individual's somewhat incomplete grasp of the facts. Hillston (2016) added that it is a helpful exercise to consider the possible motivation for the tip and to think through how the alleged activities, actions or incidents could have occurred. Hillston suggested that it may be helpful to discuss with the client the nature of business processes in the area of alleged wrongdoing to assess the credibility of the allegations.

The initial assessment of the tip needs to focus on whether or not any aspect of the allegations poses an immediate threat to the safety of employees or property. The question as to whether the alleged activity may involve criminal or civil liability will also affect the forensic audit investigators' approach and should be considered carefully in consultation with legal counsel (Alao, 2016). The investigation should be planned in such a way that if

circumstances warrant, immediate actions may be taken to protect the individuals and assets involved and to safeguard the integrity of evidence and information that may be exposed to destruction, alteration or removal.

In each particular set of circumstances, consideration must be given to the need to protect the identity of the whistle-blower if known or to take steps to ensure the safety and welfare of the individual identified in the tip or otherwise thought to be at risk based on the allegations. These tips can be used to detect and prevent fraudulent activities in business organisations. In addition to the use of anonymous communication for fraud detection in large-scale business ogranisations, background investigation could also be conducted.

Background Investigation and Fraud Detection

Background investigation is a crucial activity in a bid to detect and prevent fraud in a business organisation. Jonny and Gregory (2015) observed that background investigation is used to seek direct evidence of a fraud. Relatedly, Chianese, Hairnoff, Mcswain and Wiseman (2012) opined that background investigation can help to identify investigative leads, locate interviewees, and perform asset search. Songer (2016) posited that enormous growth in information resources available on the Internet has revolutionised the investigative process. Songer further explained that in a matter of hours, a skilled forensic audit investigator can develop critical leads and make connections that may never be found through traditional investigation. Okoye and Okaro (2012) opined that forensic investigators need to identify data-bases

or Internet sites most likely to contain information relevant to the target of the investigation.

The Internet provides links to information vendors that can provide private records such as credit card statements, bank statements, telephone records, tax returns and others. Jonny and Gregory (2015) submitted that most valuable sources of information fall into two main categories, news and media coverage and public record. In Nigeria, financial dailies and law reports give information on various cases of financial misappropriation and developments in the business world. Media can provide historical and background information regarding entities and individuals. According to the author, this source includes: local, national and international newspapers, magazines, trade publications, radio and television broadcasts. A high profile subject's legal, financial or business trouble are often published in news media in well-researched and thoughtful articles. Okoye Mainmako, Jugu and Jat (2017) stressed that the media can also be helpful in identifying a subject's employment history and personal history as well as charitable and philanthropic relationships. Hence, information obtained from these sources can be used to facilitate admission from a fraudster in a business organisation.

Public records can support the investigation process in fraud cases. Jonny and Gregory (2015) stated that records such as birth, marriage and divorce certificates can help in an investigation process. These records could be helpful in locating sources, as well as providing information about the

subject under investigation. More so, professional registration board provides information on the status of a registered business or person. Business registration board such as Corporate Affairs Commission could provide information that can help in detecting fraudulent activities that are related to the use of Shell Company in fraudulent activities. Some states have central repositories that need to be searched manually for each type of vital record.

The home page of a business organisation website can provide a wealth of information. Jonny and Gregory (2015) stated that a business website may list sales information, geographic territory, the biographical information of corporate officers, joint venture partners and other relevant information. A company may provide on its home page a detailed history or corporate information which could aid fraud investigation processes.

Undisclosed related-party transactions are common. In some nations and industries, doing business with friends and relatives is commonplace. For global entities, even though there may be a requirement to disclose related-party transactions and business interests, there is no guarantee that the practice is being followed or even communicated at remote locations. Agbawe (2012) stressed that what may be a sound policy in the handbook may not be practised. Related-party transactions bear a higher risk of including sham transactions. Transactions between related parties are often difficult to audit because they are not always accounted for in a manner that communicates their substance and effect with transparency. Adeniyi (2012) argued that the

possibility of collusion always exists given that the parties are, by definition, related. Internal controls, moreover, might not identify the transactions as involving related parties. While related-party transactions may involve improper revenue recognition, they may also involve other parts of the statement of financial position or income statement.

International Accounting Standard (IAS) 24, on related-party disclosures in Adeniyi (2012), stated that parties are said to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions. The Companies and Allied Act, 2004, mandated the disclosure of information and transactions as regard related parties as follows:

1. the names and registered addresses of:
    - i all subsidiary companies;
    - ii all associated companies;
    - iii all other companies in which at least ten percent of the allotted shares is held.
2. the identity of the class of shares held in the companies mentioned in (i) above.
3. the proportion of the nominal value of the shares of the companies held.
4. the accounting policy in relation to the investment in associated companies.
5. details of loans to directors and officers of the company.

Forensic auditors may encounter related parties that are known to some members of the company, even if the relationships are not properly disclosed in the books and records. Sytel (2016) opined that the auditor may inquire about an individual's outside business interests– and then tries to determine whether they are properly disclosed–and the volume of transactions, if any, occurring between the entities. If certain entities are under scrutiny, the auditor may consider requesting a public records check of the entity to see whether there are indicators of undisclosed ties to particular individuals. Jonny, David, Jamal and Daniel (2015) added that a forensic investigator may also focus on the relationship and identity of the other party to the transaction and on whether the transaction emphasises form over substance. Common indicators of such related-party sham transactions, according to Jonny, David, Jamal and Daniel include:

1. borrowing or lending either interest free or significantly above or below market rates
2. selling real estate at price that differs significantly from appraised value
3. exchanging property for similar property in a non-monetary transaction
4. loans with no scheduled terms for when or how the funds will be repaid
5. loans with accruing interest that differs significantly from market rates
6. loans to parties lacking the capacity to repay
7. loans advanced for valid business purposes and later written off as uncollectible

8. non-recourse loans to shareholders
9. agreements requiring one party to pay expenses on the other's behalf
10. round-tripping sales arrangements
11. business arrangements whereby the entity makes or receives payments of amounts other than market values
12. failure to disclose adequately the nature and amounts of related-party relationships and transactions as required by generally accepted accounting principle
13. consulting arrangements with directors, officers, or other members of management
14. land sales and other transactions with buyers that are marginal credit risks
15. monies transferred to or from the company from or to a related party for goods or services that were never rendered
16. goods purchased or sent to another party at less than cost
17. material receivables or payables to or from related parties such as officers, directors, and other employees
18. discovery of a previously undisclosed related party
19. large unusual transactions with one party or a few other parties at period end
20. sales to high-risk jurisdictions or jurisdictions where the entity would not be expected to conduct business
21. unusual or complex transactions occurring close to the end of a reporting period.

22. significant bank accounting or operations for which there is no apparent business purpose.
23. transactions which have abnormal terms of trade, such as unusual prices, interest rates, guarantees and repayment terms.
24. transactions which appear to lack a logical business reason for their occurrence.
25. transactions in which substance differs from form.
26. transactions processed or approved in a non-routine manner or by personnel who do not ordinarily deal with such transactions.
27. unusual transactions which are entered into shortly before or after the end of the financial period.
28. sales of goods, services or fixed assets to a related party.
29. purchase of inventories, services or fixed assets from a related party.
30. loan to directors or other related parties.
31. purchase of the company’s shares or loan stock by a director or other related party.

The following model exemplifies how related-party analysis can be done:

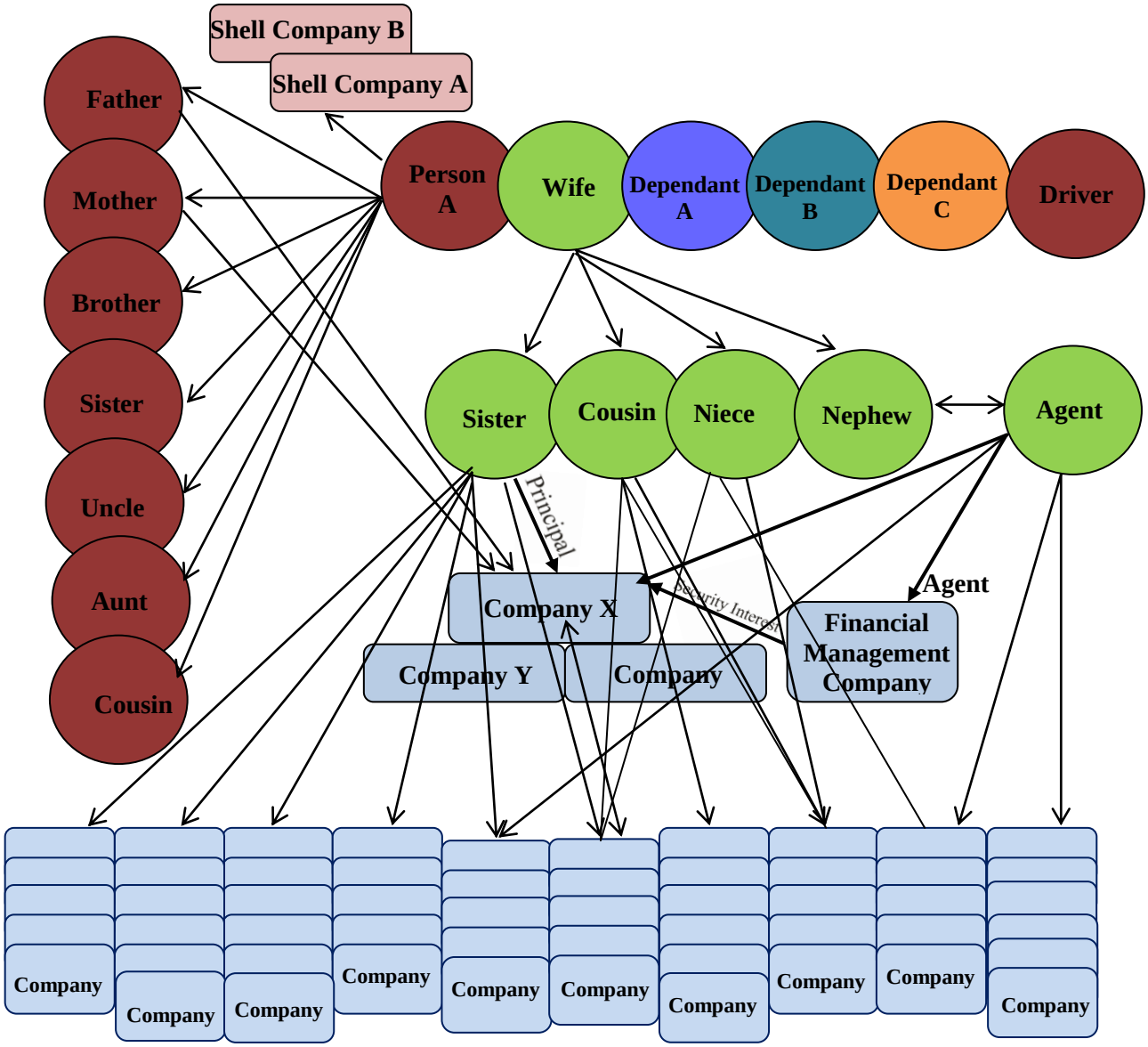

Fig. 6: Related Party Transaction Analysis

Source (Researcher's Conceptualisation, 2018)

From the above model on related party transaction analysis, a forensic auditor needs to analyse transactions that involve employees and their relations or Shell companies in a bid to detect fraud in a large-scale business organisation. Bhasin (2013) argued that Shell companies can be created by employees in key positions with the intent to defraud the organisation. In the

same vein, Kabir (2016) stressed that a company's transactions with relation of employees must be investigated carefully. More often than not, there is the likelihood that employees will engage in various fraudulent activities in related party transactions. These may include bid rigging, inflated contract sum, invoice kickbacks, among others. To detect and prevent this type of fraud in large enterprises, the auditor has to investigate transactions that involve relations of employees (father, mother, brother, sister, uncle, aunty and others).

Review is vital for an auditor to detect fraud in large-scale business organisations when related-party transactions are identified. Ekpo, in 2010, maintained that an auditor needs to review information provided by those charged with governance and management, identify the names of all known related parties and should perform the following audit procedures in respect of the completeness of this information:

1. review the nature and level of business transacted with major suppliers, customers, borrowers, and lenders to look for previously undisclosed relationships.
2. review confirmations of loans receivable and payable for indications of guarantees.
3. review material cash disbursement, advances, and investments to determine whether the company is funding a related entity.
4. test supporting documentation for contracts and sales orders to ensure that they have been appropriately recorded.

5. inquire whether management, owners, or certain individuals conduct business with related parties.
6. inquire about side agreements with related parties for right of return or contract cancellation without recourse.

Background investigation could facilitate fraud detection and also act as a deterrent to criminally minded individuals who may want to engage in fraudulent activities in the future. The above review activities could help to expose related-party fraudulent activities, thereby nipping them in the bud. Relatedly, an analytic procedure could also be helpful in fraud detection in large scale business organisations.

Analytical Technique and Fraud Detection in Large-Scale Business Organisations

Analytical procedure could be a useful technique when the subject matter of forensic auditing investigation comes up in the business circle. According Ehioghiren and Atu (2016), analytic technique has the overall objective of identifying the unexpected relationship. The use of analytic technique on financial information is fairly pervasive in business environment (Ogutu & Ngahu, 2016). Auditors often use this technique to identify areas of fraud risk and to determine whether financial statements are stated fairly or not. However, it is up to the auditors to use their appropriate firm audit methodology in assessing and identifying such risk. The particular procedure

to be adopted must be appropriate to the circumstances of the organisation (Kou, Lu, Sirwongwattana & Huang, 2014).

Analytic procedure is the name used for a variety of techniques the forensic auditor can use to assess the risk of material misstatement in financial records (Othman, Aris, Mardziyah, Zainan & Amin, 2015). This procedure involves the analyses of trends, ratios, and reasonableness tests derived from an entity's financial and operating data. Statement of Accounting Standard (SAS) No 56 requires that analytic procedure be performed in planning the audit with the objective of identifying the existence of unusual events, amounts, ratios and trends that might indicate matters that have financial and audit planning implications (Nia, 2015). For example, scanning a numerical sequence may bring to light certain gaps that merit investigation, while scanning payment amounts may yield evidence of duplicate payments. The expectation in searching for large and unusual items is based on the forensic auditor's assessment of what constitutes normal financial records in an organisation (Enofe, Omagbon & Ehigiator, 2016). In order to detect fraud in large-scale business organisations, the following analysis of financial relationship depicted in the figure 7 can carried be out.

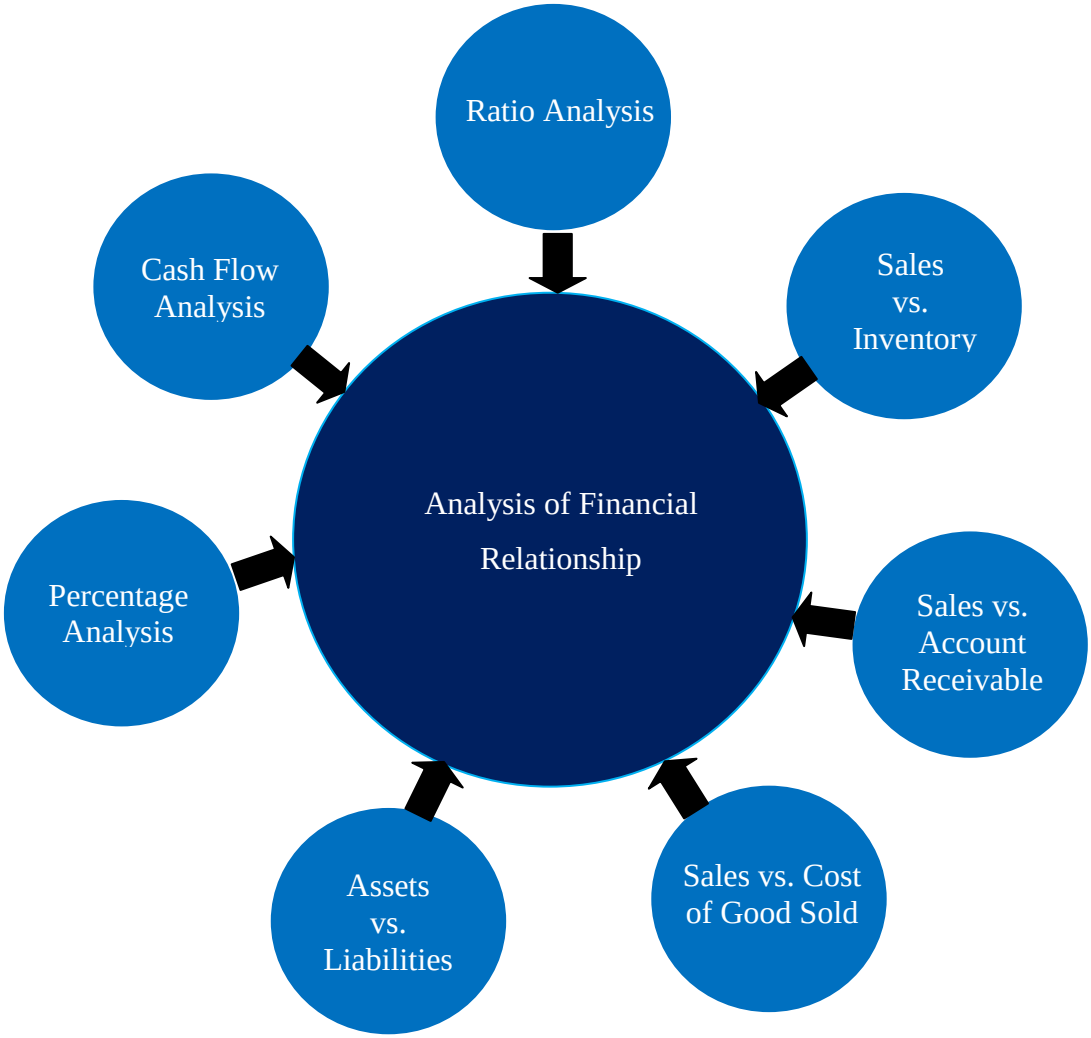

Fig. 7: Analysis of Financial Relationship

Source: (Researcher's Conceptualisation, 2018)

In a large-scale business organisation, relationships among financial data that do not appear reasonable need to be investigated forensically in order to detect or prevent fraud. An understanding of general relationships between certain financial statement balances is necessary to identify relationships that appear unusual: for example, how sales increase will affect cost of sales, how decrease in expenses will affect sales revenue among others. The Association

of Certified Fraud Examiners (2016) opined that fraud examiners can employ the following techniques to help them identify such relationships:

1. Compare current period financial information to prior period financial information, budgets and forecasts.
2. Examine relationships among financial information. For instance, cost of goods sold is expected to vary directly in relation to sales.
3. Study relationships of financial information with related non-financial information.
4. Compare an enterprise's information with that of other organisational units or entities within the same industry.

Under normal circumstances, a financially healthy company tries to maintain a consistent balance between assets and liabilities. By keeping a certain minimum balance, a company displays its solidity to lenders or equity investors and keeps financing costs down. A sudden change from historical norms means something has changed with management's view of its business. It could also indicate that management is trying to hide something. A sudden increase in the ratio could mean that liabilities such as long-term debts have been hidden in off-balance sheet entities. If the value of liabilities rises and the ratio spikes downward, it could reveal that the company is borrowing heavily to finance operations and that the risk of fraud is acute (American Certified Fraud Examiners, 2011).

More so, if a large company deals in merchandise, they must be purchased, manufactured, or both, all of which entail a cash outlay for

material, labour, and so on. Therefore, for each sale, there must be a cost associated with it. If sales increase, then the cost of goods sold generally increases proportionally. Of course, there are cases where a company could adopt a more efficient method of producing goods, thus reducing their costs, but there are still costs associated with the sales that are recognised upon the sale of the goods. Similarly, Ahmad, Jansen and Frank (2016) noted that when a company makes a sale to a customer, the company generally ships the merchandise to the customer before the customer pays, resulting in an account receivable for the company. Therefore, auditors should note that the relationship between the sales and the accounts receivable is directly proportional in this scenario. If sales increase, then accounts receivable should increase at approximately the same rate. However, when this relationship is not proportional, it could signal occurrence of fraudulent activities.

Generally, a company tries to anticipate future sales, and in doing so, tries to meet these demands by having an adequate supply of inventory. Therefore, inventory usually reflects the growth in sales. In this light, Sevda and Balafer (2015) contended that, if sales increase, then inventory should increase to meet the demand of sales. Inventory that grows at a faster pace than sales might indicate obsolete, slow-moving merchandise or overstated inventory. Large-scale businesses generate sales revenue by selling products or providing services. They incur direct and indirect costs related to production or acquisition of the products they sell, or providing services for their customers. From these operations, gross, operating, net profit margin or

loss are shown on the income statement. Igben (2016) argued that profit margins should stay consistent as the company targets a certain profit in order to stay in business. If the company encounters increased competition and must reduce the price for its products, it has to find ways to cut down expenses. On-going pressure on profit margins indicates pressure on management, which could ultimately lead to fraud in the financial report.

When analytic procedure uncovers an unexpected relationship among financial data in a large business organisation, the forensic auditor must investigate the results (Jovan, 2009). The evaluation of the results should include inquiries and additional procedures. Before asking the company's employees and management about the variations, the auditor should first establish expectations for the causes of the variances. From expected causes, the fraud examiner will be better suited to ask meaningful questions when interviewing a company's personnel. Explanations derived from employees should then be tested through examination of supporting evidence (Bhasin, 2013). For example, if the sales manager indicates that the increase in sales is due to a new advertising campaign, the auditor needs to examine the advertising expense account to verify that a campaign did occur. If the advertising expense is not similar to the prior year, the relationship is not reasonable and fraud may exist.

Forensic auditors employ several techniques to manipulate plain, unconnected numbers into solid and informative data to interpret a company's

financial standing. Supporting this fact, the Association of Certified Fraud Examiners (2010) affirmed that investigating relationships between numbers offers deep insight into the financial well-being of an organisation. Association of Certified Fraud Examiners stressed further that, by comparing these relationships with other industries or businesses within the same industry, a fraud examiner can extrapolate viable evidential matter and gain a greater comprehension of the company's financial condition. Financial statement analysis includes the following: percentage analysis, vertical and horizontal analysis.

The following hypothetical statement of financial position and statement of comprehensive income will be used in explaining the various financial statements analyses.

Statement of Financial Position

	Year One		Year Two		Change	% Change
Assets						
Current Assets						
Cash	45,000	14%	15,000	4%	(30,000)	-67%
Accts Receivable	150,000	45%	200,000	47%	50,000	33%
Inventory	75,000	23%	150,000	35%	75,000	100%
Fixed Assets (net)	60,000	18%	60,000	14%	-	0%
Total	330,000	100%	425,000	100%	95,000	29%
Accts Payable	95,000	29%	215,000	51%	120,000	126%
Long-term Debt	60,000	18%	60,000	14%	-	0%
Stockholder's Equity					-	
Common Stock	25,000	8%	25,000	6%	-	0%
Paid-in Capital	75,000	23%	75,000	18%	-	0%
Retained Earnings	75,000	23%	50,000	12%	(25,000)	-33%
Total	330,000	100%	425,000	100%	95,000	29%

Statement of Profit or Loss

	Year One		Year Two		Change	% Change
Net Sales	250,000	100%	450,000	100%	200,000	80%
Cost of Goods Sold	125,000	50%	300,000	67%	175,000	140%
Gross Margin	125,000	50%	150,000	33%	25,000	20%
Operating Expenses						
Selling Expenses	50,000	20%	75,000	17%	25,000	50%
Administrative Expenses	60,000	24%	100,000	22%	40,000	67%
Net Income	15,000	6%	(25,000)	-6%	(40,000)	-267%
Additional Information						
Average Net Receivables	155,000		210,000			
Average Inventory	65,000		130,000			
Average Assets	330,000		425,000			

Traditionally, there are two methods of percentage analysis of financial statements: vertical analysis and horizontal analysis. Gojoko, Nenad and Natasa (2013) stated that vertical analysis is a technique for analysing the relationships between the items on any one of the financial statements in one reporting period. The analysis results in the relationships between components expressed as percentages that can then be compared across periods. This method is often referred to as “common sizing” financial statements. In the vertical analysis of an income statement, net sales are assigned 100 percent; for a statement of financial position, total asset is assigned 100 percent on the asset side, and total liabilities and equity are expressed as 100 percent on the other side. All other items in each of the sections are expressed as a percentage of these numbers.

Horizontal analysisis a technique for analysing the percentage change in an individual financial statement item from one year to another (Nia, 2015). The first period in the analysis is considered the base, and the changes in the

subsequent period are computed as a percentage of the base period. If more than two periods are presented, each period's changes are computed as a percentage of the preceding period. The resulting percentages are then studied in detail. It is important to consider the amount of change as well as the percentage in horizontal comparisons. A 5 percent change in an account with a very large naira amount may actually be much more of a change than a 50 percent change in an account with much less activity. Like vertical analysis, this technique does not detect small, immaterial frauds. However, both methods translate changes into percentages, which can then be compared to highlight areas of top concern.

As illustrated in the above example, vertical analysis of the income statement uses total sales as the base amount, and all other items are then analysed as a percentage of that total. Vertical analysis emphasises the relationship of statement items within each accounting period. These relationships can be used with historical averages to determine statement anomalies.

In the above example, the forensic auditor can observe that accounts payable is 29 percent of total liabilities and stockholders' equity. Historically, the forensic auditor may find that this account averages slightly over 25 percent. In year two, accounts payable rose to 51 percent. Although the change in the account total may be explainable through a correlation with a rise in sales, this significant rise might be a starting point for an auditor examination.

Source documents should be examined to determine the rise in this percentage. With this type of examination, fraudulent activity may be detected and prevented.

The same type of change can be seen as selling expenses decline as a part of sales in year two from 20 to 17 percent. Again, this change may be explainable with higher volume of sales or another bonafide explanation. But close examination may possibly cause an auditor to uncover fictitious sales, since there was no corresponding increase in selling expenses. Horizontal statement analysis uses percentage comparison across accounting periods, or in a horizontal manner. The percentage change is calculated by dividing the amount of increase or decrease for each item by the prior period amount (Okoye & Gbegi, 2013). In the previous example, cash declined by ₦30,000 from year one to year two, a 67 percent drop. Further analysis reveals that the 80 percent increase in sales has a much greater corresponding increase in cost of goods sold, which rose to 140 percent. This is an unusual increase and displays a deteriorating financial condition. If management employed fraudulent accounting in the period, it might mean that revenues were understated for some reasons. Management might have wanted to avoid a high tax bill or to shift revenues to the next period for some reasons. It might also mean that the cost of goods is rising, which might pressure management to improve the appearance of the company's finance by engaging in fraudulent accounting in future periods.

Ratio analysis is a means of measuring the relationship between two different financial statement amounts. Ratios are calculated from current year numbers and are then compared with previous years, other companies, the industry, or even the economy to judge the performance of the company overtime (Chaudhary, Yadav & Mallick, 2012). This form of financial statements analysis can be very useful in detecting red flags for a fraud examination (Efiong, 2013). Many professionals, including bankers, investors, business owners, and investment analysts, use this method to better understand a company's financial health. Bhagwan (2013) maintained that ratio analysis allows for internal evaluations using financial statement data.

More so, Adeniyi (2012) believed that ratio is that relationship between two or more statistical data in a financial statement or management account. It may be expressed as a percentage or in relation to another figure or group of figures in the same financial statement. The relationship and comparison are the keys to forensic analysis. For further insight, Gale, in 2012, averred that financial statements ratios are used in comparison with an entity's industry average. As the financial ratios present a significant change from one year to the next, or over a period of years, it becomes obvious that there might be a problem. Mpamugo (2013) agreed that ratios and the results of financial statement analysis provide the means of assessing the financial, economic and managerial conditions of the firm. The financial analyst or manager combines and transforms the entries in the financial statements to an extract which is

useful to the investors and creditors of the firm who need them to determine the firm's ability to meet their objectives (Riley, 2012).

As in all other analyses, specific changes are often explained by changes in the business operations. Hillstrom (2016) stated that when a change in a specific ratio or several related ratios is detected, the appropriate source documents should be researched and examined in detail to determine if fraud has occurred. For instance, a significant decrease in a company's current ratio might point to an increase in current liabilities or a reduction in assets, both of which could be used to cover fraud.

In a large-scale business organisation, accounting ratios aid in interpreting accounting information that could aid forensic auditing investigation. It is an aspect in which the forensic auditor can use to acquaint himself with the true picture of an organisation's financial standing. Generally, ratios help in communicating and interpreting financial information for use by interested person(s) (EideBailly, n.d). Information and data are organised for a purpose. Information contained in financial statements is meant to draw conclusions concerning the financial well-being and performance of the reporting entity or an entity under investigations. In the case of the financial statement of companies, even independent auditors review the manner in which the data have been presented and provide a filter mechanism attesting to the reliability of the information presented.

In the analysis of financial statements, the forensic examiner will determine which portions of the statements are most important. These ratios may also reveal frauds other than financial statement frauds such as corruption and assets misappropriation (Okoye, Maimako, Jugu & Jat, 2017). If an employee is embezzling from the company's accounts, for instance, the amount of cash will decrease disproportionately and the current ratio will decline. Alao (2015) maintained that liability concealment will cause a more favourable ratio. A cheque-tampering scheme will usually result in a decrease in current assets, namely cash, which will, in turn, decrease the current ratio. In fact, these frauds might be more easily detected with ratio analysis because employees other than management would not have access to accounting cover-ups of non-accounting frauds. Bolton and Hand (2016) contended that anomalies in ratios could point directly to the existence of fraudulent actions. Accounting frauds can be much more subtle and demand extensive investigation beyond the signal that something is out of the norm. Some of the ratios that could be deployed by a forensic auditor include: current ratio, quick ratio, debt-to-equity ratio, profit margin ratio, receivable turnover ratio, collection ratio, inventory turnover ratio, average-number-of-days-inventory-is-in-stock ratio and asset turnover ratio.

Current Ratio

The current ratio, which is determined by current assets divided by current liabilities, is probably the most frequently used ratio in financial

statement analysis (Okoye, Maimako, Jugu & Jat, 2017). This comparison measures a company's ability to meet short-term obligations from its liquid assets. Wanogho (2014) opined that the number of times that current assets exceed current liabilities has long been a measure of financial strength. In detecting fraud, this ratio can be a prime indicator of manipulation of accounts involved. Embezzlement will cause the ratio to decrease. Wanogho stated further that liability concealment will cause a more favorable ratio. In the preceding example, the drastic change in the current ratio from year one (2.84) to year two (1.70) should cause a fraud examiner to look at these accounts in detail.

Quick Ratio

The quick ratio, often referred to as the acid-test ratio, compares assets that can be immediately liquidated to liabilities that will be due in the next year. This calculation divides the total cash, securities and receivables by current liabilities. This ratio is a measure of a company's ability to meet sudden cash requirements (Adeniyi, 2012). In turbulent economic times, it is used quite prevalently, giving the analyst a worst-case look at the company's working capital situation (Igben, 2016). A forensic auditor in a large-scale enterprise analyses this ratio for fraud indicators. In year one of the hypothetical figures, the company's statement of financial position reflects a quick ratio of 2.05. This ratio drops in year two to 1.00. In this situation, a closer review of accounts receivable shows that they are increasing at an

unusual rate, which could indicate that fictitious accounts receivable have been added to inflate sales. Of more concern, perhaps, is the increase in accounts payable that might require, at a minimum, a closer review to determine why. If the drop in the ratio indicates a problem customer or significant slowing in the time to collection, it might reflect a general decline in company prospects. That, in turn, would be a red flag that management could feel pressured to report fraudulent financials.

Debt-to-Equity Ratio

The debt-to-equity ratio is computed by dividing total liabilities by total equity. It indicates the proportion of equity and debt a company uses to finance its assets. Because the ratio provides a picture of the relative risk assumed by the creditors and owners, it is heavily considered by lending institutions (Abohi, 2010). The higher the ratio, the more difficult it will be for the owners to raise capital by increasing long-term debt, and the greater the risk assumed by creditors. Debt-to-equity requirements are often included as borrowing covenants in corporate lending agreements (Wanogho, 2014). The hypothetical figures display a year one ratio of 0.89. This is very favourable, as it shows that the company is financed more by equity than by debt. However, year two shows a ratio of 1.84, meaning that debt is greatly increasing relative to equity. In this case, the increase in the ratio corresponds with the rise in accounts payable. Sudden changes in this ratio may signal a fraud examiner to look for fraud.

Profit Margin Ratio

The profit margin ratio is net income divided by sales. This ratio is often referred to as the efficiency ratio, in that it reveals profits earned per naira of sales. This percentage of net income to sales examines not only the effects of gross margin changes, but also changes in selling and administrative expenses (Okoye, Maimako, Jugu & Jat, 2017). Wanogho (2014) argued that if fraud is committed, net income may be artificially overstated, resulting in a profit margin ratio that is abnormally high compared to other periods. False expenses cause an increase in expenses and a decrease in the profit margin ratio. This ratio should be fairly consistent over time. In the hypothetical case, the profit margin analysis is already calculated in the vertical and horizontal analyses. While revenues increased by 80 percent, the cost of goods sold increased by 140 percent; this, in turn, dropped profit margins from 6 percent to –6 percent. Further investigation could uncover fraudulent accounting that shifted costs from one period to another, or might reveal another type of fraud in which inventory is being stolen so costs appear to jump.

Receivables Turnover Ratio

Receivable turnover is defined by Institute of Chartered of Accountants of Nigeria (2014) as net sales on account divided by average net receivables. It measures the number of times the receivables balance is turned over during the accounting period. In other words, it measures the time between sales on account and the collection of funds. Horgreen (2012) affirmed that the ratio

uses both income statement and balance sheet accounts in its analysis. If fictitious sales have been recorded, this bogus income will never be collected. As a result, the turnover of receivables will decrease. If the fraud is caused from fictitious sales, this bogus income will never be collected. In the example, the accounts receivable turnover jumps from 1.61 to 2.14. The forensic auditor in a large-scale business organisation can use this ratio as an indicator that revenues might be fake, thus requiring further examination of source documents.

Collection Ratio

Accounts receivable aging is measured by the collection ratio, which divides 365 days by the receivable turnover ratio to arrive at the average number of days to collect receivables (Riley, 2012). In general, Mpanmugo (2013) maintained that the lower the collection ratio, the faster the receivables are collected. A forensic auditor in a large-scale business enterprise may use this ratio as a first step in detecting fictitious receivables or larceny and skimming schemes. Normally, this ratio stays fairly consistent from year to year, but changes in billing policies or collection efforts may cause a fluctuation (Okoye & Gbegi, 2013). In the hypothetical case, it shows a favourable reduction in the collection ratio from 226.3 in year one to 170.33 in year two. This means that the company is collecting its receivables more quickly in year two than in year one.

Inventory Turnover Ratio

The relationship between a company's cost of goods sold and its average inventory is shown through the inventory turnover ratio. This ratio measures the number of times the inventory is sold during the period (Okoye, Maimako, Jugu and Jat, 2017). This ratio is a good determinant of purchasing, production, and sales efficiency. In general, Mpanmugo (2013) stated that a higher inventory turnover ratio is considered more favourable. For example, if cost of goods sold has increased due to theft of inventory (ending inventory has declined, but not through sales), then this ratio will be abnormally high. In the example, inventory turnover increases in year two, signaling the possibility that an embezzlement is buried in the inventory account. An auditor could look at the changes in the components of the ratio to determine a direction in which to discover possible fraud.

Average-Number-of-Days-Inventory-is-in-Stock Ratio

The average-number-of-days-inventory-is-in-stock ratio is a restatement of the inventory turnover ratio expressed in days. This rate is important for several reasons. An increase in the number of days that inventory stays in stall causes additional expenses, including storage costs, risk of inventory obsolescence, and market price reductions, as well as interest and other expenses incurred due to tying up funds in inventory (Gale, 2012). Inconsistency or significant variance in this ratio is a red flag for fraud investigators. In large-scale business organisation, forensic auditors may use

this ratio to examine inventory accounts for possible larceny schemes. Purchasing and receiving inventory schemes can affect the ratio. Understating the cost of goods sold results in an increase in the ratio as well. Significant changes in the inventory turnover ratio are good indicators of possible fraudulent inventory activity.

Asset Turnover Ratio

Net sales divided by average operating assets is the calculation used to determine the asset turnover ratio. This ratio measures the efficiency with which asset resources are used. The case above displays a greater use of assets in year two than in year one.

Cash Flow Analysis

Cash flow analysis is a specific application of horizontal analysis that helps highlight possible areas of fraudulent accounting (Okoye, Maimako, Jugu & Jat, 2017). Since the cash flow statement most directly reports how money flows into and out of the company, cash flow analysis often helps detect misstatements (Adeniji, 2016). The statement of cash flow details the sources and uses of the company's cash. Earnings show up in operating cash flows; purchases and sales of plant assets show up in investing cash flows; and changes in equity and debt show up in financing cash flows. It covers areas such as: receipts from sales of goods or services, interest and dividends received, payments to employees and suppliers, payments of interest and

payments of taxes. For the purpose of detecting fraud in large-scale business organisations, interview could also be conducted.

Investigative Interview and Fraud Detection in Large-Scale Business Organisations

Interview is a conversation process aimed at obtaining information for a specific purpose. Golden and Dyer (2015) opined that auditors should approach inquiries related to fraud risk with special care in order to ensure that any underlying issue or unethical behaviour is uncovered. Golden and Dyer contended further that an auditor without investigative skills may find fraud detection through interview to be particularly challenging. Effective interview is more than a well-executed analytical exercise: it requires great sensitivity to the subject's feelings and thoughts. By the same token, the American Institute of Chartered Public Accountants (2016) stated that inducing someone to make an admission is a difficult task indeed. To obtain admission in a fraud case in an organisation, various persons who are directly or indirectly involved could be interviewed. These include: current employees, suspects, suppliers, vendors, customers, relatives, accountants, stock brokers and significant others. For the purpose of fraud detection, there are two types of interview an auditor can conduct in an organisation. They include information-seeking interview and admission-seeking interview.

Not everyone interviewed in a fraud investigation is a suspect. In 2015, Basel argued that some individuals may be interviewed because they have

information about the business, the industry or the accounting records at issue. Basel stated further that such interviews are a necessary part of forensic investigation, providing knowledge that will sustain further inquiry. Kranacher, Riley and Wells (2011) added that the forensic investigator starts interviewing at the periphery of all possible interview candidates and moves toward the ones who are appearing more involved in the allegation, that is, the subject of the investigation. Kranacher, Riley and Wells stated further that the more pertinent the information obtained during the information-seeking interviews, the more likely it is that the admission-seeking interview will be successful. The information-seeking interview is usually non-confrontational and not particularly stressful, but the interviewer must take it seriously.

In information-seeking interview, there are various barriers which could impede the flow of information. Okoye, Maimako, Jugu and Jat (2017) further buttressed this point when they stated that witnesses and victims of fraud often fail to provide candid information for a number of reasons. Some may not want to be involved in an adversarial process in which they may eventually testify against a neighbour, a loved one or other close acquaintance. Others may be reluctant because they themselves are hiding information. Yet others may be afraid of reprisal attack from the suspect. On the other hand, a former employee of an organisation may have animosity or an axe to grind with the suspect, as a result, may tend to embellish or fabricate information that they think the investigator wants to hear. A current employee can just be deceptive,

often for different reasons. As an investigator, it is ultimately important to break these barriers and distill all superfluous information down into a set of facts that can be used to prove or disprove the case (Sytel, 2016).

Admission-seeking interview can prove to be a challenge in fraud cases.In relation to this, Hopwood, Leiner and Young (2012) stated that admission seeking interview requires substantial skills to complete successfully. In planning the interview, the forensic auditor should be confident that the suspect has committed the crime under investigation or has knowledge of the fraudulent act. Coenen (2009) opined that the interviewer must consider what may persuade the subject to provide information the subject has no intention of relinquishing. Coenen added that a successful interview often depends more on the interviewer's ability to craft persuasive arguments than the ability to craft precise questions. Even in cases where guilt can be established through evidence and testimony from others, an admission is extremely useful because the suspect may admit to fraudulent act previously unknown to the forensic auditor and is likely to be more cooperative in any subsequent civil, criminal or administrative action.

Okoye (2016) contended that to extract an admission of guilt, interviewers may need to make clear that they know the suspect is lying. People react to this accusation in different ways: some become emotional, breakdown, and confess everything; some respond aggressively; others grow silent. Experienced interviewers know they must first find ways to obtain an

initial admission of wrong doing and then continue questioning to expand that admission into all pertinent areas. To be successful, the interviewer must be well versed in and comfortable with varieties of approaches including the following as recommended by Golden and Dyer (2015):

1. The logical approach: This direct approach begins by laying out the evidence of guilt that has been found and explains the futility of not confessing to the suspect.
2. Silent approach: After asking specific questions, stop talking and wait for a response from the interviewee.
3. The rationalisation approach: The interviewer's effort in this approach is to give the subject a moral or psychological excuse,helping the interviewee place the crime into a rational context – one implying that, under similar situation, others will do the same thing. This can unlock the needed admission.
4. Asking questions to which one knows the answer: This approach is best in determining a subject's credibility. If one can determine the validity of the subject's response, the process of the interview could be facilitated.

By and large, certain areas must be given due consideration in carrying out fraud investigation in a large-scale business organisation. The location and setting of an interview are as important as the questions asked during an interview. In this light, Kamal and Tanim (2016) submitted that a suitable

interview location and setting can help to leverage the initial psychological pressure in a subject. Auditors need to interview suspect and witness in a setting that minimizes distractions and sets a tone of confidentiality. Ringing phones, beeping e-mails, and co-worker interruptions can hinder meaningful information-gathering.

Aigienohuwa, Okoye and Uniamikogba (2017) suggested that, if possible, subject can sit with the investigator in an empty office or conference room with the door closed. For the comfort of the subjects, the auditor needs to allow them freedom to choose where they sit and also ensure that the exit door is not blocked. This simple gesture allows the subject to feel that he or she can leave at any time, reducing the impression of a police-style interrogation. Mukoro, Yamusa and Faboyede (2013) stated that the investigator needs to convey to the subject that their privacy is important to him and that he is interested in what they have to say. In addition to eliminating distractions, a private setting allows for a more candid discussion. A subject may be more reluctant to express fraud-related concerns if he or she feels that a co-worker or boss might overhear his/her testimony.

At the onset of the interview, the most effective method for fraud detection is to develop a rapport. Izedonmi and Ibadin (2012) averred that the British are known for starting a conversation by discussing the state of the weather, not necessarily because it is a profound topic, but because it is a neutral subject of conversation to broach with a stranger. It can also be the

perfect ice-breaker in difficult situations, such as discussing potential fraud. Relatedly, in Nigeria, conversation can be started with warm inquiry about family members. According to Isa (2012), the rapport building process can be used to set expectations about the purpose, the topic to be covered, and how the interviewee can add value to the conversation. The researcher contended further that investing a few minutes to build a relationship with the interviewee can make later discussions of a sensitive topic less daunting. One of the simplest ways to create a personal connection is to ask about the interviewee's role in the organisation.

Forensic investigators often use jargon such as "internal controls," "criteria," "segregation of duties," and "root cause." For a person from a different industry, these terms can be confusing and may create a barrier to fraud detection. Krstic, in 2009, suggested that the investigator needs to take cues from the language used by the interviewee to describe their work process. One approach is to ask a general background question about what they do in their position and how they do it. This acquaints the investigator with the terminologies that the interviewee is comfortable using. That vocabulary can be plugged into other interview questions. For instance, instead of "segregation of duties," the auditor can ask: who is responsible for doing 'X' in your department? Instead of "internal controls," the auditor can ask about what standard procedures are in place for this particular process? Understanding the

workplace jargonwill allow the auditor to build a picture of the internal controls environment without alienating the interviewee.

Appropriate pausing and silence can prove to be useful in fraud investigation in a large scale business organisation. Golden and Dyer (2015) opined that a forensic investigator needs to ask questions meant to elicit information, identifying possible fraud and deliberately prolong the silence after the interviewee gives a response. He/she also needs to maintain eye contact and look at the other person as though he expects them to say something else. They are likely to offer additional details just to fill the silence.

The key to identifying fraud via interviews is to determine when to follow-up on answers and when to move on to the next question. Interviewees tend to provide non-verbal and verbal cues that indicate matters of potential concern (Osuala & Okeke, 2009). Joyner (2011) stressed that an investigator needs to look for an opportunity to establish the subject's "baseline" of behaviour or physical bahaviour. In specific terms, Joyner suggested that the investigator needs to take note of how the subjects behave when they are providing factual answers to simple questions. The authors went further to say that the auditor needs to watch for patterns of response and asks test questions to confirm the patterns. For example, answering a question by asking another question is typically an attempt to deceive. More so, saying 'to the best of my knowledge' often indicates such an attempt as well. Coenen (2009) averred

that when asking fraud-related questions, attention should be paid to any behaviour that deviates from the subject's baseline. The adage, "it is not what you said, but how you said it" offers a testimony to the fact that non-verbal communication is a very powerful tool. Deviations are clear non-verbal signals that the interviewer needs to follow up on the subject's answer. However, not all non-verbal responses indicate truth or deception, so expect and allow for nervous behaviour.

Forensic auditors and subjects alike may feel awkward discussing potential fraud in the workplace. Bolton and Hand (2016) stated that auditors must not let their discomfort of asking the "tough questions" get in the way of obtaining useful information. A superficial treatment of the topic of possible fraud in an audit interview will not uncover anything. Avoid generalised, catch-all or double-barrelled questions. Golden and Dyer (2015) pointed out that while forensic auditors are trained at asking questions, the various subjects are most likely not trained in providing answers. Even if they are cooperative, they may not be efficient and may not be aware of what information is important. The forensic auditor's task is to draw them out with the right questions. It is rare for a subject to provide all the information sought without the help of probing questions. A common tactic of fraudsters is to give honest but incomplete answers. An innocent subject may also have difficulty assembling a full set of information for the interviewer. Bhagwan (2013) observed that instead of a one-liner, the investigator can ask a variety of

questions without resorting to jargon, including the term fraud itself. Questions can be tailored to attack the integrity of the controls. The investigator can use hypothetical situations and avoid accusing the subject of wrongdoing.

More importantly, the interview can be audio-taped, videotaped or stenographically recorded. Okoye, Maimako, Jugu and Jat (2017) stated that recording will protect the investigator as there will be no room for “he said” when an accurate record of the interview exists. Accusations that the investigator made threats or offered promises to entice suspect to confess will be easier to disprove when review of the tape shows otherwise. This process can help to detect fraud and as well act as a deterrent to others, hence preventing fraud in a large-scale business organisation.

The directors or managers of an organisation who are responsible for the preparation of financial statements make various assertions about the statement. They may assert that transactions have been recorded in the correct accounting period; transaction are recorded in the proper account; there is no over-statement of the amount of transactions reported in the financial statement; assets, liabilities and equity reported in the statement of financial position did exist and were disclosed appropriately. To have reasonable assurance that the assertions made by management are correct and in line with financial regulatory framework, forensic auditors need to carryout substantive tests.

Substantive Tests and Fraud Detection in Large-Scale Business Organisations

Substantive tests are audit procedures performed to detect material misstatements in the figures, presentation and disclosures reported in the financial statements (Institute of Chartered Accountants of Nigeria, 2014). Substantive tests are designed to generate evidence about the financial statement assertions. They include test of detail on transactions, account balances and disclosures reconciling the financial statements with the underlying accounting records, examinations of material journal entries and examination of other adjustments made during the course of preparing the financial statements.

According to Agbawe (2012), substantive tests are tests the auditors carry out on transactions and balances to enable them form an opinion as to the completeness, accuracy, reliability and validity of the information contained in the accounting records and the financial statements. In 2012, Imoniana, Antynes, Mattos, and Maciel maintained that substantive tests are audit procedures designed to obtain reasonable and competent corroborative evidence of validity and ownership of the accounting treatment of transactions, balances and evidence to detect material misstatement in the financial statements. Imoniana, Antynes, Mattos, and Maciel added that substantive tests are tests with the exception of internal controls.

Beuren and Cunlia (2012) stated that the substantive procedures in audit are used to establish the reasonableness or otherwise of transactions and account

balances. Some tests are conducted to verify all records, documents and intangible assets. For instance, one may in addition to the test of controls, adopt a confirmbalance. Substantive test is inversely related to the test of controls. The higher the confidence found in internal control, the lower the level and depth in the application of substantive testing; moreover, the greater the application of substantive tests, when the auditor found weakness in internal controls. Substantive tests could be conducted in various areas as depicted in the diagram below.

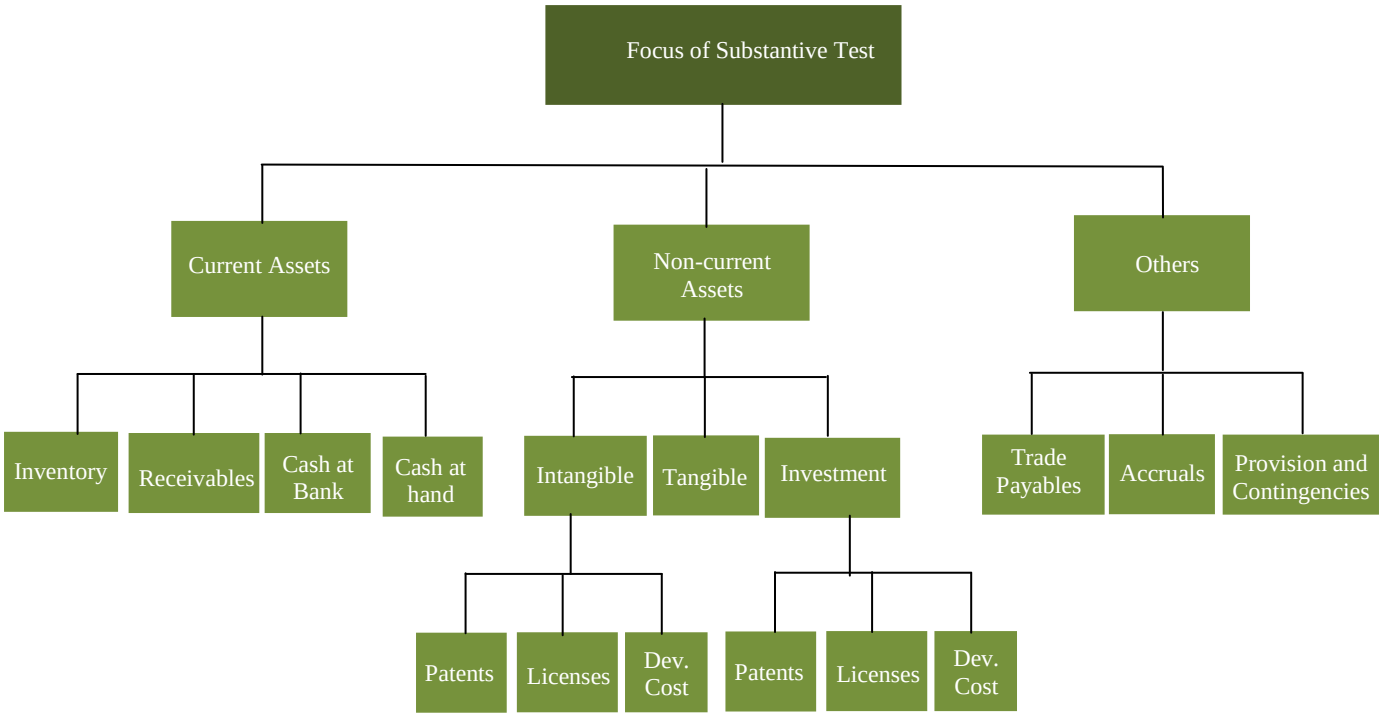

Fig. 8: Focus of Substantive Test

Source: (Researcher's Conceptualization)

There are innumerable tests that can be used by the forensic auditor to review a business operation to detect fraud and in that respect. It depends on the auditor to choose which will be more useful to verify certain accounts and thereby ensure the veracity of the accouation of individuals and legal

entities which hold some knowledge of company operations. According to Millichamp and Taylor (2012), substantive techniques include:

1. reviewof exception reports: The forensic auditor will attempt to confirm the facts of the report with other available data. An example is the comparison of an outstanding dispatch note listings with actual dispatch notes.
2. totaling: Relevant totals, for example, debtors and creditors can be manually verified to ascertain their veracity.
3. performance: The forensic auditor may re-perform a sample of computer generated calculations.For example, stock extensions, depreciation or interest.
4. reconciliation: This will include reconciliation of computer listing with creditors' statements, bank statements, and actual inventory, among others.

In the course of carrying out substantive test, the forensic auditor can use audit software. According to the Institute of Chartered Accountants of Nigeria (2014), audit software is a computer programme used by the auditor to extract information from a computer-based information system for use in an audit process. The main types of audit software include:

1. interrogative programmes, which is used to assess the client's files and records and extract data for auditing;

2. interrogative software, which is used in interrogation of on-line information technology systems;
3. residentcode or embedded software, which is used to monitor and review transactions as they are being processed by the client's programmes.

Audit software may be used in several ways in testing the receivable balance, sales and receivable accounting systems. Agbawe (2012) averred that software can be used to total the balance on the account in the receivable ledger, for comparison with the balance on the receivables control account. It can also be used to check the balance on each account in the receivable ledger with the credit limit for a specific customer, to check whether a credit limit has not been exceeded.

In the same vein, Ekpo (2010) maintained that there may be a computerised reasonable check on the balances in each current asset. Current assets are described by the International Accounting Standard as those assets which are expected to be sold or consumed in the course of the operating cycle of the business; they are assets which are primarily held for trading purposes. Specifically, this check looks for unusually high or low balances in individuals' accounts, given the total volume and value of transactions in the accounts. Substantive tests can be applied to current assets, non-current assets and other areas expected to be realized within twelve months of the reporting date, or cash equivalents.

Current assets are those assets that are easily convertible into cash and vice versa. As such, they can easily be misstated, stolen, or manipulated. Some of these current assets are inventory, trade receivables, cash at hand and cash at bank. As regards inventory misstatement, the Institute of Chartered Accountants of Nigeria (2014) stated that the principal risks of inventory being misstated are due to the following:

1. not all inventories that are in the financial statements are owned by the reporting entity;
2. inventory in the financial statements are not actually in existence;
3. inventory being incorrectly valued;
4. inventory being included in the financial statement which actually belongs to third parties; and
5. inventorybeing incorrectly disclosed in the financial statements.

In order for the forensic auditor to detect and prevent fraud, a number of reviews and confirmation needs to be carried out. According to Adeniyi (2012), the auditor needs to:

1. review and test the procedures in place for comparing Net Realisable Value (NRV) with cost for each item of inventory;
2. review inventory records and order books for evidence of slow-moving items, whose selling price might need to be reduced and whose NRV may therefore be less than cost;

3. review prices at which goods have been sold after the reporting period for evidence that NRV is not higher than cost;
4. follow up any information obtained from other audit work suggesting that in a certain item of inventory, NRV may be lower than cost;
5. obtain schedules showing the makeup of the cost figures for each item of work-in-progress and finished goods; and
6. conduct a physical count of inventories.

The balance of receivable and payment are usually a material amount in a business' statement of financial position. Adeniyi (2012) stated that a significant amount of audit work on trade receivable and payment is needed to check the reliability of the amounts included in the financial statements. This is because there could be material misstatement of the trade receivables and payment balances with the sole aim of defrauding the business. Millichamp and Taylor (2012) provided the following suggestions on how to unravel fraudulent activities as regard trade receivables and payment.

1. Review the business procedures for identifying irrecoverable and doubtful receivables.
2. Review aged listing of receivable balances
3. Review any correspondence of the client company with customer's lawyers and collection agencies that deal with unpaid or disputed debts.
4. Review the calculation of any allowance against doubtful receivables.

5. Examine credit note issued after the year end, as evidence that some balances were overstated at the year-end.
6. Obtain or prepare a list of payments with supporting calculations.
7. Check the calculations if the list has been prepared by the client's staff,
8. Apply analytical procedures (for example, by comparing the balances for payments with the balances at the end of the previous financial year).
9. Review the list of payments for any obvious errors or omission, based on the investigator's knowledge of the business.

Asset held as bank and cash balances can be at risk of loss. This may be due to fraudulent activities or misappropriation of money by employees or others, particularly when many individuals have authority for dealing with receipts and payments (Adeniyi, 2012). According to Agbawe (2012), the principal risks of misstatement of the bank and cash balances in the financial statements are that:

1. not all bank balances owned by the client are disclosed;
2. reconciliation of the differences between bank statements and the clients' cash book balances are incorrectly dealt with;
3. materialcash balances are omitted.

For the purpose of detecting fraud in a large-scale business organisation as regards bank and cash balances, Ekpo (2012) suggested the following actions for a forensic auditor:

1. obtain or prepare a bank reconciliation statement for each bank account;

2. if the reconciliation is prepared by the business, check it for arithmetical accuracy;
3. check the balances confirmed in the bank's confirmation letter against the balances used in the bank reconciliation statement;
4. relate other information contained in the confirmation letter to other areas of the audit (for example, accrued bank charges must be provided for in the financial statements);
5. check items appearing in the bank reconciliation statement against any available supporting evidence (for example, unpresented cheques in the bank statement should be shown as being presented in a subsequent bank statement);
6. review the cash book and bank statements for unusual items, including unusual delays between cash book and bank entries; investigate the reasons for any unusual item;
7. review the confirmation letter from the bank for any information to be disclosed in the financial statements (for example, changes on assets and security for loans);
8. count cash at all locations simultaneously and in the presence of a company's officials; and
9. checkthe balances obtained from the count against the client's cash records and cash balances in the draft financial statement.

Non-current assets have the fundamental characteristics that they are held for use in the business and not for resale (Adeniyi, 2012). Non-current assets include: building, premises, fixtures, furniture and others. Several frauds can be perpetrated through non-current assets in a large-scale business organisation. The Institute of Chartered Accountants of Nigeria (2014) stated that the principal risk of non-current asset balances in the financial statements being misstated relates to:

1. assets owned by the reporting entity not included in the financial statement;
2. assets reported in the financial statement do not actually exist;
3. assets have been incorrectly valued;
4. assets reported are not actually owned by the entity;
5. assets have not been correctly presented and disclosed in the financial statements.

Non-current assets fraud can be detected and prevented using various activities. Chiu (2007) suggested the following steps for the detection of non-current asset fraud in an organisation:

1. obtain or prepare a schedule of non-current assets, showing cost or valuation, depreciation and carrying amount;
2. reconcile this list with the corresponding opening balances;
3. select sample of assets that physically exist and trace these assets to the asset register;

4. obtain or prepare a reconciliation of ledger balance for tangible non-current assets with the asset register and investigate any difference;
5. review depreciation rates for reasonableness in the light of the nature of the assets, its estimated useful life and residual value;
6. ensure that consistent depreciation methods are in use;
7. review gains or losses on sales disposal (and the accumulated depreciation and impairment at the time of disposal);
8. check the depreciation calculations for accuracy, using the entity's stated policy;
9. ensure that fully depreciated asset is not subjected to further depreciation;
10. verify the total charge for depreciation;
11. confirm the consideration paid for the business acquired;
12. check the calculation of the purchase of goodwill; and
13. Check the amortisation calculations for accuracy, using the entity's stated policy.

Substantive test could also be carried out on liabilities, income and equity. The Institute of Chartered Accountants of Nigeria (2014) stated that auditing liabilities involves testing for completeness. Auditing liabilities is often more difficult than auditing assets (where the emphasis of audit testing is on overstatement and existence). According to the body, the principal risk of misstatement in respect of liabilities are:

1. not all liabilities of the reporting entity are being included in the financial statements;
2. cut-off between goods inwards and liability recording being incorrect;
3. inclusion of non-existent liabilities in the financial statement; and
4. liabilitiesnot being properly disclosed in the financial statement.

Specifically, there are various areas of liabilities in which the auditor needs to carryout substantive test. These include payables, non-current liabilities (debentures, loan and finance lease obligations). According to Adeniyi (2012), the following substantive tests can be used to obtain audit evidence on trade payables:

1. obtaining a list of balances on suppliers' accounts in the payable ledger and checking for arithmetical accuracy;
2. checking a sample of balances from supplier that they are correctly included in the list;
3. checking whether the total of the balances in the list agree with the balance for total trade payables in the payable control account;
4. reviewing the list of account balances for suppliers who are not in the list of trade payables, but who would be expected to be in the list;
5. comparing the list of trade payable balances with the list that was prepared for previous year's audit;
6. obtaining explanations for any significant difference identified from the testing exercise.

In relation to accruals, Millichamp and Taylor (2012) suggested the following procedures:

1. obtain or prepare a list of accruals as at the end of the reporting period and check for arithmetical accuracy;
2. compare the list of accruals with the list that was prepared at the same time in the previous financial year and inquire about items not listed in the current year's that were in the list in the previous year;
3. consider what items should be accrued for at the end of the reporting period such as unpaid wages, overtime, holiday pay, bonuses;
4. check the amounts for accrued wages and salaries by comparing them with personnel records and payroll records; and
5. confirmthat any additional costs (such as employer's payroll taxes) have been accounted for.

More so, the Institute of Chartered Accountants of Nigeria (2014) suggested the following substantive procedures for the purpose of obtaining evidence for provision.

1. Obtain a list of provisions that the client has included in the financial statement.
2. Review the changes in the provision for the period during the financial period.

3. Review the measurement of the dosing balance for each provision and discuss this with management if appropriate.
4. Review the cost of possible omissions based on the auditor's knowledge of the business and industry in which it operates.
5. Compare provisions for the current financial year with provisions in previous years and investigate major difference or omission.

In respect of contingencies, the body suggests the following approach for gathering evidence:

1. ascertain the approach taken by the client's management to identify contingencies;
2. review the minutes of board meetings (where such matters are likely to be discussed);
3. review relevant sections of the business press and trade journals for areas in which possible industry-wide contingencies may arise;
4. review the client's correspondence with layers and invoices for legal services; and
5. considerdirect confirmation from lawyers of matters handled on behalf of the entity under audit.

In addition, substantive test in respect of non-current liabilities (debentures, loan and finance cease obligation) can be carried out using the following procedures, as suggested by Agbawe in 2012:

1. obtain or prepare a list of long-term borrowing, non-current liabilities and check it for accuracy;
2. compare the opening balances on the list with the amount for non-current liabilities in previous year's statement of financial position;
3. check whether new borrowing during the year has been authorised in accordance with correct business procedures;
4. agree the details of each loan with the loan agreement and documentation;
5. confirm loan repayments in the list with payments recorded in the cash book, bank statements and also with any correspondence, receipts or statement from lenders;
6. check the interest calculations and confirm that the correct accounting entries for interest have been made, recognising any opening of and closing accruals for interest expenses;
7. obtain direct information from lenders of amount outstanding;
8. confirm the correct allocation of the total amounts outstanding between current liabilities and non-current; and
9. reviewcash book entries for universal cash receipts that may represent new loans taken during the period.

Indeed, substantive test helps the auditor to detect fraud in a large-scale business organisation.

Empirical Studies

Related empirical studies to this study are reviewed in this section as follows:

Utilisation of Data Mining for Fraud Detection

Okoye and Gbegi (2013) examined forensic accounting as a tool for fraud detection and prevention in the public sector organisations in Kogi State. The specific objectives of the study include the examination of the possibility of reducing the occurrence of fraud cases using data mining and the difference between forensic accountants and external auditors. Two research questions were answered and two hypotheses were tested in the study at .05 level of significance. Data for the study were collected using questionnaire and oral interviews. Simple percentage was used to answer the research questions while the hypotheses were tested at .05 level of significance using Analysis of Variance (ANOVA).

It was found, among others, that the use of data mining significantly reduces the occurrence of fraud in the public sector. Based on the oral interview, it was discovered that Kogi State public sector organisations do not use the services of professional forensic accountants. It was concluded that the use of data mining can help in detecting fraud occurrence. It was recommended that Kogi State public sector organisations should embrace the practice of forensic accounting and appropriate sanctions should be applied when fraud is detected. Both studies are related because data mining is a sub-variable in both studies. More so, the reviewed study made use of

questionnaire for data collection and the current study will make use of questionnaire as well. However, this study is different from the present study in that the reviewed study focused on the use of data mining as a tool for the reduction of fraud occurrence in public sector organisations, while the current study focused on the level of utilisation of data mining technique for fraud detection in large-scale business organisations which is private sector.

Also, Akenbor and Oghoghomeh (2013) carried out a study on forensic auditing and financial crime in Nigerian banks: A proactive approach. The study investigated the relationship between computer forensic tools and financial crimes in Nigerian banks. Three research questions were answered and three hypotheses were tested in the study at .05 level of significance. The survey research design was adopted for the study. The population of the study consisted 23 recapitalised banks in Port Harcourt, the Rivers State capital. The major instrument used for data collection for the study was the questionnaire, which was designed in 5-point likert scale.

The data generated for the study were analysed with frequencies and percentages, while the stated hypotheses were statistically tested with the use of Pearson Product Moment Correlation Co-efficient. The study's findings showed that there is significant relationship between proactive forensic auditing and managers' financial crime in Nigerian banks. It was recommended that computer forensic should be made compulsory for businesses and organisations. The two studies are similar in focus as Akenbor

and Ogboghomeh (2013) focused on computer forensic tools which encompasses data mining technique in the present study but differ in scope, location and type of organisations. The previous study was conducted in commercial banks in Rivers State, while the present study covered large-scale business organisations in Delta State.

Blessing (2015) empirically analysed the use of forensic accounting techniques in curbing creative accounting. Three research questions guided the study and three hypotheses were tested in the study. The study was conducted in Awka, Anambra State. The descriptive survey design was adopted for the study. The population comprised 133 professional accountants. A sample of 100 professional accountants was selected from the total population using simple random sampling technique. The questionnaire was used in eliciting responses from respondents. Kruskal-wallis test and chi-square were used to anlayse the data obtained. The findings of the study showed that techniques used by forensic accountants have highly helped in curbing creative accounting. Blessing's study is related to this study because both studies use descriptive survey design and forensic techniques used in the previous study encompass data mining used as a variable in the present study. Nonetheless, both studies are different in that the reviewed study empirically analysed the use of forensic accounting techniques in curbing creative accounting, while the current study will focus on the level of utilisation of data mining for fraud

detection. In addition, the reviewed study was carried out in Awka, whereas the present was conducted in Delta State.

Utilisation of Anonymous Communication for Fraud Detection

Lee and Fargher (2013) conducted a study on companies' use of whistle-blowing to detect fraud: An examination of corporate whistle-blowing policies. The specific objective of the study included the identification of various whistle blowing media, their effects and level of implementation in S&P. Two research questions were answered and two hypotheses were tested in the study at .05 level of significance. The descriptive survey design was adopted for the study. The population of the study comprised employees from 200 companies listed on the S&P index in Australia. Frequency table, mean and percentage were used in analysing the data obtained for the study through a questionnaire that was adapted from check list of matters to be addressed in a whistle blowing protection programme as recommended by standards in Australia. The result of the study showed that the use of hotline and email was identified as an effective way of detecting fraud in S&P.

This study is related to the present study in that the reviewed study examined the use of hotline and email as techniques in whistle blowing for fraud detection and the present study considered anonymous communication techniques which included email, hotlines and others, for fraud detection. However, the two studies are different because the reviewed study was limited to the use of email and hotline, while the present study went beyond that scope

to include suggestion box, fax messages, phone calls, and written letters as anonymous communication techniques. In addition, the reviewed study was carried out in Australia, whereas the current study was carried out in Delta State of Nigeria.

More so, Akenbor and Ironkwe (2014) conducted a study on the relationship between forensic auditing and fraudulent practices in Nigerian public institutions. The purpose of the study included the determination of the relationship between whistle blowing and fraudulent practices in public institutions. From this objective, two research questions were answered and two hypotheses were tested in the study. The survey research design was used in the study. The population of the study consisted of 12 public institutions in Rivers State, Nigeria. In order to gather the data for the study, a structured questionnaire was administered on the internal auditors and chief accountants of the selected public institutions. The data for the study were analysed with frequencies and percentages, while the stated hypotheses were statistically tested with Pearson Product Moment Correlation (PPMC). The findings of the study showed that whistle blowing has a negative significant relationship with fraudulent practices in Nigerian public institutions. The reviewed is related to the present study because whistle blowing in the reviewed study and anonymous communication in the present study are similar concepts in forensic auditing parlance. However, the reviewed study was carried out in Rivers State while this study was conducted in Delta State.

Taiwo (2015) conducted a study on the effects of whistle blowing practices on organisational performance in the Nigerian public sector, with empirical facts from selected local governments in Lagos and Ogun States. The main purpose of the study was to determine the relationship between whistle blowing practices, protection of whistleblowers, disclosure of unethical practices and the performance in public sectors. Three research questions were answered and three hypotheses were tested in the study at .05 level of significance. The descriptive survey research design was adopted in the study. Data for the study were gotten from both primary and secondary sources. Out of the total of 700 questionnaire administered, 672 were retrieved and found useful for data analysis. Simple frequency table and Pearson's Product Moment Correlation (PPMC) were used for various analyses in the study.

The result of the study revealed that there is a significant relationship between whistle blowing practices, protection of whistleblowers, disclosure of unethical practices and the performance in public sectors. It was also found that respondents disagreed on the fact that employees feel confident to report unethical practices within organisation to external bodies. It was concluded that whistle blowing policy is important for effective performance in public sector. It was recommended that trained experts like the professional forensic auditors should conduct the investigation, where there is evidence of fraud in the public sector.

The two studies are related because whistle blowing is an aspect of anonymous communication which is one of the variables in the present study. More so, the reviewed study adopted questionnaire for data collection and made use of descriptive survey design and, by the same token, the current study applied the descriptive survey research design and collected data with the use of questionnaire. Nonetheless, the reviewed study was different from this present study in that it focused on whistle blowing practice as a way of enhancing performance of civil servants, while the current study focused on anonymous communication as a technique for detecting fraud in large-scale business organisations. More so, the study was carried out in Lagos and Ogun States, while this study was carried out in Delta State.

Utilisation of Background Investigation for Fraud Detection

Okunbor and Obaretin (2010) undertook a study on effectiveness of the application of forensic accounting services in Nigerian corporate organisations and came up with something different. The main objectives of their study were to establish whether the application of forensic accounting services by corporate organisations is effective in deterring fraudulent practices and to find out the perception of the users of forensic accounting services in Nigeria. Two research questions were answered and two hypotheses were tested in the study at .05 level of significance. The research was conducted using the mixed methods approach, involving the combination of structured interviews and questionnaire.

Ten companies were selected as the sample for the study from the population of companies quoted on the Nigerian Stock Exchange. Simple percentage, mean and frequency counts were used in analysing data for the study. Their study revealed that the application of forensic accounting services by corporate organisations in Nigeria is not effective in curbing fraudulent activities. It was recommended that forensic accountants should be trained regularly. Both studies are related because they centered on corporate organisations and background investigation as a variable in the present study is part of forensic service. Conversely, the reviewed study is different from the present study in that the reviewed study focused on whether the application of forensic services is effective in corporate organisations, while the current study focused on the level of utilisation of background investigation technique for fraud detection in large-scale business organisations. More so, the former study used both questionnaire and structured interview, while the current study made use of only questionnaire.

Modugu and Anyaduba (2013) investigated forensic accounting and financial fraud in Nigeria adopting an empirical approach. The objective of the study was to examine if there is significant agreement among stakeholders on the effectiveness of forensic accounting in financial fraud control, financial reporting and internal control quality. Three research questions were answered and three hypotheses were tested in the study at .05 level of significance. The survey design was used in the study. A sample size of 143 consisting of

accountants, management staff, practising auditors and shareholders from business organisations in Benin City was selected for the study using simple random sampling technique, while the binomial test was employed in the data analysis. The finding of the study indicated that there was significant agreement among stakeholders on the effectiveness of forensic accounting in fraud control, financial reporting and internal control quality. It was recommended that organisational staff should be adequately trained. This study is related to present study because both studies focused on how to use forensic auditing in curbing financial fraud. The reviewed study is different from the present study because of its area and the use of binomial analysis.

Utilisation of Analytical Technique for Fraud Detection

Imoniana, Antynes, Mattos, and Maciel (2012) conducted a study on the analytical review procedures in audit: An exploratory study. This study was carried out in Brazil. The ex-post facto was used in the study. The major purpose of the study was to examine the effects of analytical and substantive procedures on business organisations. The study adopted an exploratory design. Three research questions were answered in the study. A total of two hundred third year, final year and master's degree students were sample for the study. To collect the data for the study, a semi-structured questionnaire directed to the groups was used. Percentages and frequency counts were used for data analysis in the study. The result of the study revealed that analytical procedure is an effective technique in auditing. That study is related to the

present study in that both studies focused on analytical review. However, the reviewed study used exploratory design and was conducted in a different area.

Onodi, Okafor and Onyali (2015) conducted a study on the impact of forensic investigative methods on corporate fraud deterrence in banks in Nigeria. Three research questions were answered and three hypotheses were tested in the study at .05 level of significance. The study adopted a survey research design and data were collected from primary sources through interviews and administration of questionnaires, while secondary sourcesconsist of reports on fraud and forgery in the banking sector. Statistical tools used to analyse the data obtained include percentages, mean score, frequency tables, regression analysis and z-test.

The findings of the study revealed that there is a significant relationship between the forensic investigative methods and corporate fraud deterrence. It was further revealed that expert services of forensic investigators are normally required in the prosecution of fraudsters, but majority of the audit and accounting personnel in Nigeria are suffering from poor perception and knowledge of forensic investigative methods. The study recommended the institutionalisation of forensic auditing. Relatedly, the current study had analytic procedure as a variable, which is a forensic method. It also adopted survey research design and questionnaire just like the reviewed study.

The reviewed study is different from the present study in that it focused on the relationship between forensic investigative methods and corporate fraud

deterrence, while the current study determined the level of utilisation of forensic investigation techniques for fraud detection in large-scale business organisations. In addition, the reviewed study used interview as one the instruments for data collection, whereas the current study used only questionnaire to elicit responses from respondents.

Ogutu and Ngahu (2016) carried out a study on the application of forensic auditing skills in fraud mitigation: A survey of accounting firms in the county government of Nakuru, Kenya. Two research questions were answered in the study. The descriptive survey research design was adopted for the study. The target population consisted of 25 respondents from 25 accounting firms. Questionnaire was used as an instrument for data collection. Quantitative data were analysed using frequency counts, means and percentages, while qualitative data were analysed by tallying the numbers of similar responses. The study found that areas that needed forensic accounting included fraud prevention and detection at 97%, bankruptcy, insolvency and reorganisation at 79.4%, financial statements misrepresentation at 76%, economic damage calculations (57.6%) among others. The study also found that forensic accountants are required to have auditing skills (89%), investigative skills (81%), fraud skills (79.8%) as well as legal skills at 58%.Both studies are related in the areas of design and method of data collection.

Conversely, the reviewed study is different from the present study in that it focused on the various skills required by forensic accountants in fraud

mitigation, while the current study has analytical technique as a variable, which requires forensic accounting skills to be applied. More so, the reviewed study was carried out in Nakuru, Kenya, while the present study was carried out in Delta State of Nigeria.

Sharma (2017) investigated forensic accounting and its application in selected industries in Mumbai: An analytical study. Six research questions were answered and six hypotheses were tested in the study at .05 level of significance. The population of the study comprised 300 graduates, postgraduate students and professionals. Primary data were collected for the study through the use of questionnaire. The data obtained in the study were analysed using percentage. The findings of the study showed among others that forensic accountants have better accounting, investigative and analytical skills to identify fraud than traditional auditors. This study is related to the present study because it focused on analytical skill which is crucial in carrying out analytical technique which is an independent variable in the current study. However, this study was carried out in India (Mumbai) while the present study was undertaken in Delta State.

Utilisation of Investigative Interview for Fraud Detection

Alao (2016) investigated forensic auditing and financial fraud in Nigerian Deposit Money Banks. The core objective of the study was to ascertain the effect of forensic auditing on fraud detection in Nigeria Deposit Money Banks (DMBs). The purpose of the study was to examine the effect of

forensic auditing report on fraud control and adjudication on financial fraud in deposit money banks. Three research questions guided the study. The study adopted cross sectional survey design. The population of the study comprised the staff of banks and audit firms in Abeokuta, Ogun State. The study used purposive sampling technique for questionnaire administration, while linear regression analysis was used for data analysis.

The results of the study showed that forensic audit has significant effect on financial fraud control in Nigerian Deposit Money Banks and that forensic audit report significantly enhances court adjudication on financial fraud. The two studies are related because admissible evidence of fraud obtained through investigative interview which is a variable in the present study can be used for financial fraud adjudication. Alao's (2016) study is different from the present study in that the reviewed study focused on the effect of forensic audit on adjudication of financial fraud in deposit money banks, while the current study focused on various investigative interview techniques in forensic auditing and their level of utilisation forfraud detection in large-scale business organisations.

In addition, Ehioghiren and Atu (2016) carried out a study on forensic accounting and fraud management with evidence from Nigeria. Two research questions were answered and two hypotheses were tested in the study at .05 level of significance. The descriptive survey design was adopted for the study. The population of the study comprised four diverse groups: auditors (internal

and external), those involved in financial statement compilation, users and academics. A total sample of five hundred and seventy-two (572) respondents which consisted of the public and private companies' accountants, internal and external auditors, top management staff, shareholders as well as academics in Edo and Delta States was selected for the study. The sample was selected using simple random sampling technique. Primary data were used in the study. The data were generated using well-structured likert scale questionnaire with 5 points.

The t-test and Analysis of Variance were used for data analysis. The result of the study showed that forensic accounting significantly influences fraud control and management. The study recommended that management should train staff in the various areas of forensic auditing. The two studies are related because the reviewed study was partially carried out in Delta State, while the current study was completely carried out in Delta State. More so, investigative interview is an aspect of forensic accounting. The reviewed study is different from the present study in that it focused on forensic accounting, while the current study looked at various investigative interviews in forensic auditing which could be used for fraud detection.

Utilisation of Substantive Test for Fraud Detection

Efiong (2013) conducted a study on exploration of forensic accounting education and practice for fraud prevention and detection in Nigeria. Three research questions were answered and three hypotheses were tested in the

study at .05 level of significance. The study adopted the survey research design. The total population of this was 2,553 (academics – 166, students – 1411 and Federal civil servants – 976). From this population, a sample of 1195 (academics – 83, students – 624 and federal civil servants – 488) was obtained using simple random sampling technique. A questionnaire was used in eliciting responses from respondents. The research questions were answered using frequency distribution, mean and standard deviation, while t-test and factorial analysis were used for testing the hypotheses at .05 level of significance. The study identified several fraud prevention and detection mechanisms that are currently used in Nigeria, such as a system of internal controls, operational audits and corporate code of conduct. More so, the t-test indicated a significant difference between the perceived effectiveness and actual usage of fraud prevention and detection mechanisms in Nigeria.

The recommendations include that accounting practitioners should be aware of the benefits of forensic accounting in detecting fraud in their establishments and educational institutions in Nigeria. The universities, especially, should be aware of the high rate of financial fraud in the environment and review their curriculum to reflect courses that would provide solution to this problem. Relatedly, the reviewed study adopted survey research design and the current study adopted the survey design as well. This study also focused on substantive test which is also a forensic auditing practice. The reviewed study is different from the present study in that it

explored forensic accounting education and practice for fraud prevention and detection.

Bhasin (2013) conducted a study on the relevant skills of forensic accountants: the experience of a developing economy. Four research questions were answered and four hypotheses were tested in the study at .05 level of significance. The survey design was adopted, which focused on three states in the national capital region of India (Delhi, Gurgaon and Ghaziabad). A sample of 120 practising accountants, accounting academics and users of forensic accounting services (lawyers and anti-graft agencies personnel) was selected for the study. A 5-likert scale structured questionnaire was administered on the respondents. The study used tables of frequencies and percentages, Analysis of Variance (ANOVA), t-test and chi-square for answering research questions and in testing the three hypotheses. The findings of the study showed that forensic accountants need auditing skills, communication skills, investigative skills, research skills, organising skills, legal skills, among others. The study recommended training and adoption of forensic auditing skills by accounting firms and as well as internal auditors. Both studies are related because questionnaire was used for data collection in the reviewed study and questionnaire was also used for the same purpose in the current study. However, the study under review is different from the current study in that it identifies skills needed by forensic accountants, accounting academics, whereas the current study determined the level of utilisation of forensic

investigation techniques such as substantive test and its level of utilisation for fraud detection in large-scale business organisations. In addition, the former study was conducted in India, while the current study was conducted in Delta State.

Enofe, Omagbon and Ehigiator (2016) carried out a study on forensic auditing and corporate fraud. The study was conducted in Benin City. Three research questions were answered and three hypotheses were tested in the study at .05 level of significance. The purpose of the study included the determination of the impact of the utilisation of substantive test on corporate fraud detection. The survey design was adopted for the study. The primary data for the study were collected with the aid of a well-structured questionnaire administered on one hundred and twenty five (125) respondents in the management cadre spread across various disciplines to solicit their opinions.

The data were analysed using ordinary least square regression technique. The findings of the study showed that the utilisation of forensic techniques such as substantive test significantly helps in the detection, prevention as well as reduction of incidences of fraud in business organisations. It was concluded that substantive test is a useful tool for fraud detection in any organisation. The two studies are related because they both have substantive test as a variable. Furthermore, questionnaire was used in the present study just like in the reviewed study. The reviewed study is different from the current study in that it was carried out in Benin City, while the current study was carried out in Delta State.

Summary of Review of Related Literature

Literature for this study was reviewed under conceptual framework, theoretical framework, theoretical studies and empirical studies. The conceptual framework reviewed the key concepts of utilisation, forensic auditing investigation techniques, fraud detection and Large Scale Business Organisation (LSBO). A large-scale business organisation is an enterprise that has more than one hundred employees and a total cost and working capital, less cost of land of more than two hundred million naira. One of the problems militating against large-scale business organisations is fraud which is considered as the intentional deception made in order to obtain unmerited benefit.

Three theories and a model namely: fraud triangle theory, fraud diamond theory, differential reinforcement theory and fraud box key model were reviewed under the theoretical framework. The fraud triangle theory postulated that people commit fraud in an organisation due to pressure, opportunity and rationalisation. Relatedly, the fraud diamond theory identified the above three elements as the reasons why people commit fraud but with the addition of a fourth element, capacity. As a measure to nip fraudulent activities in the bud in an organisation, the differential reinforcement theory recommended punishment for financial crime perpetrators, while employees with desirable behaviours in line with the interests of the shareholders should be rewarded. In addition, the fraud box key model submitted that modern fraudsters' thinking could be locked down using corporate governance.

Theoretical studies were reviewed under contributions of large-scale business originations to economic development, types of frauds and their impacts in public and private organisations, forensic auditing and its relevance in business organisations and forensic auditing investigation techniques for fraud detection in large-scale business organisations. The authors and researchers highlighted the impacts of frauds on large-scale business organisations and the need to utilise forensic auditing investigation techniques for their detections.

Several empirical studies were reviewed under utilisation of data mining, anonymous communication, background investigation, analytical technique, investigative interview and substantive for fraud detection and were carefully related to the study. Although the studies were on the use of forensic auditing, some of them covered only one or two out of the six techniques in the present study and were conducted in different areas and organisations. None of the studies reviewed was on the levelof utilisation of forensic auditing investigation techniques for fraud detection in large-scale business organisations in Delta State. This created a gap in the body of knowledge which this study filled.

CHAPTER THREE

METHOD

In this chapter, the method that was used in carrying out the study is described, covering: design of the study, area of the study, population of the study, sample and sampling technique, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection and method of data analysis.

Research Design

The descriptive survey design was adopted for this study. According to Esene (2015), descriptive survey design is a technique for obtaining data from people through the use of a questionnaire, observations and interviews. In agreement, Osuala in Udukeke (2015) explained that descriptive survey design is suitable for collection of data based on the opinion of people. Therefore, the descriptive survey design is considered suitable for the study since questionnaire was used to collect data from accounting staff on the levelof utilisation of forensic auditing investigation techniques for fraud detection in large-scale business organisations in the area of the study.

Area of the Study

The study was conducted in Delta State. Delta State was created out of the former Bendel State on August 27, 1991 with its capital in Asaba. The state has boundaries with Edo and Ondo States to the northwest, Imo and Anambra States to the north east, Rivers and Bayelsa States to the south east, and on the

southern flank, the Bight of Benin. Delta State lies between longitude $5^{O}00$ and $6^{O}45$' East and latitude $5^{O}00$ and $6^{O}30$' North. The state has 4,098,391 people (2,674,306 males and 2,024,084 females) (National Population Commission, 2006) residing in 25 local government areas. The state is stratified into three senatorial districts namely: Delta North, Delta Central and Delta South. The land mass of the state is 18,050 square kilometres.

There are various natural resource deposits within the state, such as industrial clay, silica, lignite, kocoline, tarsand, decorative rocks, limestone, crude oil, among others. The state has some historical, cultural, and socio-political tourist centres that attract visitors from around the globe. These include Nana's Palace, River Ethiope, Araya Bible Site, Demas, Nwoko Edifice, Mongo Park House, Lander Brothers Anchorage, Warri Kingdom, Royal Cemetery among others. The major occupation of the people is small and medium scale business which includes farming, trading, fishing, catering services and others; only a little percentage of the population work in the civil service and for large-scale business organisations. The major languages spoken in the state are Urhobo, Ijaw, Ibo, Isoko and Itsekiri.

The choice of Delta State for this study was informed by the fact that many large-scale business organisations operating there have wound-up in recent times and it appears that increase in fraudulent activities is one of the major factors responsible for this ugly situation.

Population of the Study

The population for the study comprises all the 268 accounting staff (manufacturing organisations – 108, trading organisations – 75 and service organisations – 85) in all the 30 registered large-scale business organisations in Delta State (Corporate Affairs Commission/Managers of Large-Scale business organisations, 2018). The population distribution is attached as Appendix C on page 211. The rationale for using accounting staff is that they are responsible for the effective and efficient utilisation of financial resources in the organisations. As a result, they should be more familiar with the level of utilisation of forensic auditing investigation techniques on fraud detection in their respective organisations.

Sample and Sampling Technique

The sample size of 160 (manufacturing organisations – 62, trading – 50, service – 48) was used for the study. This sample size was derived statistically using Taro Yamane formula. The application of Taro Yamane formula for the determination of sample size is attached as Appendix D on page 212. According to Uzoagulu (2011), sample size computed statistically is more reliable and tolerable than the one determined by mere approximation. The simple random sampling technique was adopted in drawing the already determined sample size using ballot system. For this purpose, the researcher prepared a rapped paper for each member of the population of 268, folded them and put them in a basket, shuffled and picked the 160 members of the

sample one after the other withreplacement but with reshuffling preceding each lucky dip. This method ensured that all the elements in the population were given an equal opportunity of being selected.

Instrument for Data Collection

A structured questionnaire titled "Utilisation of Forensic Auditing Investigation Techniques for Fraud Detection Questionnaire (UFAITFDQ)" was used for data collection for the study. The instrument was developed by the researcher based on the research questions guiding the study and insight from reviewed literature. It contains 64 items in two sections: Sections A and B. Section A contains three items on the personal data of the respondents while section B was split into six clusters of B1, B2, B3, B4, B5, and B6 with 10, 8, 10, 12, 11 and 11 items respectively. Section B is a four-point response scale of Highly Utilised (HU) – 4points, Moderately Utilised (MU) – 3 points, Lowly Utilised (LU) – 2points and Not Utilised (NU) – 1point.

Validation of the Instrument

To ascertain the face validity of the research instrument for the study, the researcher submitted it together with the research topic, purpose of the study, research questions and hypotheses to three experts. One of these experts is from Nnamdi Azikiwe University, Awka, Faculty of Education, Department of Technology and Vocational Education and the other two were from University of Uyo; One from Department of Accounting and the other one from the Department of Educational Foundations. These experts were

requested to examine the instrument relative to the appropriateness of the structure, instructions, item statements and content coverage and to freely make modifications as they deem fit. As a result of the validation, double-barrelled items were separated and some item statements were recast. The inputs of the experts led to reduction in the questionnaire items from 85 in the original to 62 items. The experts' inputs are attached as Appendix on page 314.

Reliability of the Instrument

To ascertain the internal consistency of the instrument, the researcher conducted a pilot test whereby copies of the instrument were administered on 32 accounting staff from five large scale business organisations in Edo State who are not part of the population of the study. The application of Cronbach Alpha using Statistical Package for Social Sciences (SPSS) version 20 yielded reliability coefficient values of 0.85, 0.80, 0.83, 0.91, 0.88, and 0.84 for the six clusters with an overall reliability value of 0.85. This high coefficient value indicated that the instrument is reliable for the study as recommended by Uzoagulu (2011); that the coefficient value of 0.70 and above is considered reliable for survey studies. The computation is attached as Appendix E on page 213.

Method of Data Collection

The questionnaire was administered on the respondents by the researcher with the help of two research assistants who were briefed on the procedures to follow. Copies of the instrument were delivered to the respondents in their offices and a period of five working days was allowed for

those who could not complete their instrument immediately. The research team collected the contacts of the respondents for reminders before revisiting them to collect completed copies of the questionnaire. This procedure was to ensure that a high response rate is achieved. Out of the 160 copies of questionnaire administered on the respondents, 156 copies were retrieved representing 98% of the total copies of the questionnaire administered.

Method of Data Analysis

Mean and standard deviation were used to answer the research questions and ascertain the closeness of the respondents' means. Decision on the research questions were based on the cluster mean relative to the real limits of numbers shown below:

Response Options	**Values**	**Real Limit**
Highly Utilised (HU)	4	3.50 – 4.00
Moderately Utilised (MU)	3	2.50 – 3.49
Lowly Utilised (LU)	2	1.50 – 2.49
Not Utilised (NU)	1	0.50 – 1.49

Analysis of Variance (ANOVA) and independent t-test were used to test the null hypotheses at 0.05 level of significance. A null hypothesis was rejected where the P-value was less than or equal to the alpha level of 0.05, otherwise it was not rejected. In statistical significance testing, P-value is the probability of obtaining a sample statistic as extreme or more extreme than the one that was actually observed under the assumption that the null hypothesis is true (Stigler, 2008).

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

In this chapter, data for this study were analysed and presented based on the research questions and hypotheses that guided the study. The analyses are presented in Tables below:

Research Question 1

What is the level of utilisation of data mining for fraud detection in large-scale business organisations in Delta State?

Analysis of data relating to this research question is presented in Table 1.

Table 1
Respondents' mean ratings on the level of utilisation of data mining for fraud detection in large-scale business organisations in Delta State.

n= 156

S/N	Data Mining Techniques	Mean	SD	Remarks
1	Installation of dashboard in organisation's computers to monitor information in database	2.58	1.00	MU
2	Comparing data patterns from various periods.	2.38	1.01	LU
3	Mining of text documents from database.	2.63	.60	MU
4	Use of artificial neural networks when reviewing data	2.63	1.11	MU
5	Classification of data based on similarity in a historical data set.	2.26	1.09	LU
6	Use of decision trees to facilitate decision in effective decision making.	2.13	1.16	LU
7	Scanning of transaction list for the purpose of identifying gaps	2.32	.91	LU
8	Comparison of recent invoice prices with the cost on the perpetual inventory records.	2.33	1.10	LU
9	Matching of returns dates memos to test for proper cut-off.	2.19	.96	LU
10	Checking for complete processing of transactions.	2.75	.67	MU
	Cluster Mean	**2.42**		**LU**

Table 1 shows that four of the items with mean ratings ranging between 2.58 and 2.75 are moderately utilised while six items with mean ratings ranging between 2.13 and 2.38 are lowly utilised. The cluster mean score of 2.42 shows that thelevel of utilisation of data mining for fraud detection in large-scale business organisations in Delta State is low. The standard deviation range is low showing that the respondents were homogeneous in their views.

Research Question 2

What is the level of utilisation of anonymous communication for fraud detection in large-scale business organisations in Delta State?

Analysis of data relating to this research question is presented in Table 2.

Table 2
Respondents' mean ratings on the level of utilisation of anonymous communication for fraud detection in large-scale business organisations in Delta State.

n= 156

S/N	Anonymous Communication techniques	Mean	SD	Remarks
1	Comments from suggestion box	2.92	.66	MU
2	Anonymous Phone calls	1.29	.46	NU
3	Anonymous Letters	1.37	.48	NU
4	Emails messages	1.76	.67	LU
5	Posts on bulletin boards	2.79	1.08	MU
6	Written confirmation from debtors	1.62	.49	LU
7	Written confirmation from creditors	1.51	.50	LU
8	Fax messages	2.02	.70	LU
	Custer Mean	**1.91**		**LU**

Table 2 shows that two items have mean ratings of 2.79 and 2.92 meaning that they are moderately utilised while the remaining six items have mean scores ranging from 1.29 – 2.02 showing that they are lowly utilised. The cluster mean score of 1.91 shows that anonymous communication is lowly

utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation range for all the items is low and indicates that the respondents' views were not widespread.

Research Question 3

What is the level of utilisation of background investigation for fraud detection in large-scale business organisations in Delta State?

Analysis of data relating to this research question is presented in Table 3.

Table 3
Respondents' mean ratings on the level of utilisation of background investigation for fraud detection in large-scale business organisations in Delta State.

n = 156

S/N	Background Investigation Techniques	Mean	SD	Remarks
1	Information from home page of business website	1.76	.43	LU
2	Information from public records	1.98	.70	LU
3	Information from private records	1.49	.62	NU
4	Inquiry of transaction with private companies of employees	2.01	1.33	LU
5	Investigation of transactions with relations of employees	1.92	.82	LU
6	Search of details of conflict among employees of the company	1.68	.75	LU
7	Search of transactions with parties lacking capacity	3.14	.99	MU
8	Search of transactions with employees' spouses	2.37	.93	LU
9	Search of transactions with employees' driver	1.98	.70	LU
10	Inquiry into transactions that deviate from business culture	2.72	1.15	MU
	Cluster Mean	**2.11**		**LU**

Table 3 shows that two items have mean ratings of 3.14 and 2.72, meaning that they are moderately utilised while the remaining eight items have mean scores ranging from 1.49 – 2.37, showing that they are lowly utilised. The cluster mean score of 2.11 shows that background investigation is lowly utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation range for all the items is low and indicates that the respondents' views were not dispersed.

Research Question 4

What is the level of utilisation of analytical technique for fraud detection in large-scale business organisations in Delta State?

Analysis of data relating to this research question is presented in Table 4.

Table 4
Respondents' mean ratings on the level of utilisation of analytical technique for fraud detection in large-scale business organisations in Delta State.

n = 156

S/N	Analytical Techniques	Mean	SD	Remarks
1	Comparison of current period financial information with prior period using ratio analysis	3.09	.82	MU
2	Examination of relationships of financial information of many years.	3.12	.79	MU
3	Comparison of firms' financial information with other firms in the same industry	3.01	.94	MU
4	Benchmarking the results recorded in the financial statements against an independent expectation	1.86	.77	LU
5	Determination of percentage change in individual's financial statement item over a period of time.	2.72	.98	MU
6	Comparison of elements of financial statements with a common base item.	2.15	.69	LU
7	Analysis of receipts from sales of goods	3.02	.79	MU
8	Comparison of dividend received in different periods	2.96	.81	MU
9	Analysis of payments to suppliers	2.63	.68	MU
10	Analysis of payment of taxes	2.93	.96	MU
11	Writing to bank to confirm account balances	3.38	.70	MU
12	Analysis of bad debts written-off	1.86	.77	LU
	Cluster Mean	**2.73**		**MU**

Table 4 shows that 10 of the items with mean ratings ranging between 2.63 and 3.38 are moderately utilised while two items with mean ratings of 1.86 and 2.15 are lowly utilised. The cluster mean score of 2.73 shows that analytical technique is moderately utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation range is low showing that the respondents were homogeneous in their views.

Research Question 5

What is the level of utilisation of investigative interview for fraud detection in large-scale business organisations in Delta State?

Analysis of Data relating to this research question is presented in Table 5.

Table 5
Respondents' mean ratings on the level of utilisation of investigative interview for fraud detection in large-scale business organisations in Delta State.

n = 156

S/N	Investigative Interview Techniques	Mean	SD	Remarks
1	Paying attention to non-verbal cues of fraud suspect	2.83	.87	MU
2	Interrogation of fraud suspects at the most suitable time	3.24	.75	MU
3	Records of conversation between the interviewer and the interviewee	3.13	.49	MU
4	Conduct of interview in a suitable environment	2.99	.79	MU
5	Asking of leading questions	2.56	.50	MU
6	Friendly posture during the interview process	2.67	.98	MU
7	Commendation of interviewee on his positive contributions in the organisation	3.38	.61	MU
8	Asking some questions to which the interviewer already knows the answer	2.44	.71	LU
9	Use of simple language in the interview process	3.00	.80	MU
10	Interview of different fraud suspectsat different times	2.89	.78	MU
11	Use of probing questions	2.94	.91	MU
	Cluster Mean	**2.92**		**MU**

Table 5 shows that 10 of the items have mean ratings between 2.56 and 3.38, meaning that they are moderately utilised while the remaining one item has mean score of 2.44, showing that it is lowly utilised. The cluster mean score of 2.92 shows that investigative interview is moderately utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation for all the items is low and indicates that the respondents' views were not widespread.

Research Question 6

What is the level of utilisation of substantive test for fraud detection in large-scale business organisations in Delta State?

Analysis of Data relating to this research question is presented in Table 6.

Table 6
Respondents' mean ratings on the level of substantive test for fraud detection in large-scale business organisations in Delta State.

n = 156

S/N	Substantive tests	Mean	SD	Remarks
1	Test of procedures in place for determining carrying amount of non-current assets	3.73	.87	HU
2	Check of amortisation calculations for accuracy	3.51	1.13	HU
3	Check of calculation of the purchase of goodwill	3.98	.87	HU
4	Confirmation of consideration paid for the business acquired.	3.33	.77	MU
5	Verification of total charge for depreciation	3.61	.92	HU
6	Check of depreciation calculations for accuracy.	2.94	.83	MU
7	Review of gains on sales disposal	3.80	.81	HU
8	Review of depreciation rates for reasonableness	2.93	.81	MU
9	Check of balances obtained from the count against the client's cash records	3.98	.79	HU
10	Comparing cashbook balance with bank statement balance	3.70	.46	HU
11	Checking for right in respect of non-current assets	3.72	.98	HU
	Cluster Mean	**3.57**		**HU**

Table 6 shows that eight of the items with mean ratings ranging between 3.51 and 3.98 are highly utilised while three of the items with mean ratings

ranging between 2.93 and 3.33 are moderately utilised. The cluster mean score of 3.57 shows that substantive test is highly utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation range is low showing that the respondents were homogeneous in their views.

Hypothesis 1

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of data mining for fraud detection.

Summary of the testing of hypothesis 1 is presented in Table 7.

Table 7
ANOVA summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of data mining for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	26.224	2	13.112	167.180	.000	S
Within Groups	12.000	153	.078			
Total	**38.224**	**155**				

*scheffe's test of Sig. = Mgf - -.40000, Ser. – 1.000 & Tra. -.40000

Table 7 shows that the P-value of .000 is less than the α-level of .05 with the degrees of freedom of 2 and 153 respectively. The null hypothesis was, therefore, rejected. This means that there is a significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of data mining for fraud detection. The scheffe's test shows that ratings of respondents from service organisations were responsible for the observed difference.

Hypothesis 2

Respondents do not differ significantly in their mean ratings on the level of utilisation of data mining for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 2 is presented in Table 8.

Table 8
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of data mining for fraud detection based on the status of organisation in the Nigerian Stock Exchange

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	16.90	1.26				
				154	-19.82	.000	S
Unquoted X_2	135	29.71	5.17				

Table 8 shows that the P-value of .000 at 154 degree of freedom is less than the alpha level of .05. Hence the null hypothesis was rejected. This means that respondents differ significantly in their mean ratings on the level of utilisation of data mining for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange. A quoted business organisation is a company whose shares can be bought or sold on the floor of the stock exchange while unquoted company's share cannot be bought and sold on the flow of the stock exchange.

Hypothesis 3

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of anonymous communication for fraud detection.

Summary of the testing of hypothesis 3 is presented in Table 9.

Table 9
ANOVA Summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of anonymous communication for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	11.690	2	5.845	1.313	.229	NS
Within Groups	168.330	153	1.100			
Total	**180.019**	**155**				

Table 9 shows that the P-value of .229 is greater than the alpha level of .05 with the degrees of freedom of 2 and 153 respectively. The null hypothesis was therefore not rejected. This means that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of anonymous communication for fraud detection.

Hypothesis 4

Respondents do not differ significantly in their mean ratings on utilisation of anonymous communication for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 4 is presented in Table 10.

Table 10
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of anonymous communication for fraud detection based on the status of their organisations in the Nigerian Stock Exchange

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	1.7313	.71	154	-.407	.685	NS
Unquoted X_2	135	1.7753	.64				

Table 10 shows that at .05 level of significance with 154 degree of freedom, the P 5-value of .685 which was higher than the alpha level of .05 is obtained. The null hypothesis was, therefore, not rejected. This shows that respondents do not differ significantly in their mean ratings on utilisation of anonymous communication for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange.

Hypothesis 5

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of background investigation for fraud detection.

Summary of the testing of hypothesis5 is presented in Table 11.

Table 11
ANOVA summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of background investigation for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	122.029	2	61.015	114.75	.221	NS
Within Groups	81.561	153	.533			
Total	**203.590**	**155**				

Table 11 reveals that at .05 level of significance for 2 and 153 degrees of freedom, the P-value of .221 which is greater than the alpha level of .05 is obtained. Hence the null hypothesis was not rejected. This shows that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of background investigation for fraud detection.

Hypothesis 6

Respondents do not differ significantly in their mean ratings on utilisation of background investigation for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 6 is presented in Table 12.

Table 12
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of background investigation for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	21.64	2.15				
				154	1.93	.055	NS
Unquoted X_2	135	20.63	3.86				

Table 12 shows that the P-value of .055 at 154 degree of freedom is greater than the alpha level of .05. The null hypothesis was, therefore, not rejected. This means that respondents do not differ significantly in their mean ratings on utilisation of background investigation for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange.

Hypothesis 7

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of analytical technique for fraud detection.

Summary of the testing of hypothesis 7 is presented in Table13.

Table 13
ANOVA summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of analytical technique for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	75.418	2	37.709	210.664	.115	NS
Within Groups	27.268	153	.179			
Total	**102.686**	**155**				

Table 13 shows that the P-value of .115 is greater than the alpha level of .05 with the degrees of freedom of 2 and 153 respectively. The null hypothesis was, therefore, not rejected. This means that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of analytical technique for fraud detection.

Hypothesis 8

Respondents do not differ significantly in their mean ratings on utilisation of analytical technique for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 8 is presented in Table 14

Table 14
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of background investigation for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	3.30	.46	154	-1.33	.186	NS
Unquoted X_2	135	3.45	.84				

Table 14 shows that at .05 level of significance for 154 degree of freedom, the P-value of .186 which is greater than the alpha level of .05 is

obtained. The null hypothesis was, therefore, not rejected. This means that respondents do not differ significantly in their mean ratings on utilisation of analytical technique for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange.

Hypothesis 9

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of investigative interview for fraud detection.

Summary of the testing of hypothesis 9 is presented in Table 15.

Table 15
ANOVA summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of interview for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	6.011	2	3.006	4.169	.054	NS
Within Groups	110.316	153	.721			
Total	**116.327**	**155**				

Table 15 shows that at .05 level of significance for 2 and 153 degrees of freedom, the P-value of .054 which is greater than the alpha level of .05 was obtained. Hence the null hypothesis was not rejected. This shows that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of investigative interview for fraud detection.

Hypothesis 10

Respondents do not differ significantly in their mean ratings on utilisation of investigative interview for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 10 is presented in Table 16.

Table 16
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of investigative interview for fraud detection based on the status of their organisations in the Nigerian Stock Exchange

Status in NSE	N	$\bar{X}$	SD	Df	t-cal	P- value	Decision
Quoted X_1	21	2.72	.87	.10592	-1.39	.168	NS
Unquoted X_2	135	2.91	.86	.09130			

Table 16 shows that the P-value of .168 is greater than the alpha level of .05 with the degree of freedom of 154. The null hypothesis was, therefore, not rejected. This means that respondents do not differ significantly in their mean ratings on utilisation of investigative interview for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange.

Hypothesis 11

There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of substantive tests for fraud detection.

Summary of the testing of hypothesis 11 is presented in Table 17.

Table 17
ANOVA summary of the difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of substantive tests for fraud detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	4.832	2	4.433	.936	.235	NS
Within Groups	83.392	153	.544			
Total	**88.224**	**155**				

Table 17 shows that the P-value of .235 is greater than the alpha level of .05 with the degrees of freedom of 2 and 153 respectively. Hence the null hypothesis was not rejected. This means that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the level of utilisation of substantive tests for fraud detection.

Hypothesis 12

Respondents do not differ significantly in their mean ratings on utilisation of substantive tests for fraud detection based on the status of organisation in the Nigerian Stock Exchange.

Summary of the testing of hypothesis 10 is presented in Table 18.

Table 18
t-test analysis of the difference in the mean ratings of respondents on the level of utilisation of substantive tests for fraud detection based on the status of their organisations in the Nigerian Stock Exchange.

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	3.03	.94	154	1.15	.054	NS
Unquoted X_2	135	2.88	.74				

Table 18 reveals that at .05 level of significance with 154 degree of freedom, the P-value of .054 which is greater than the alpha level of .05 is

obtained. Hence the null hypothesis was not rejected. This means respondents do not differ significantly in their mean ratings on utilisation of substantive tests for fraud detection based on the status (quoted/unquoted) of their organisations in the Nigerian Stock Exchange.

Summary of Findings

Findings of the study are summarised as follows:

1. The level of utilisation of data mining for fraud detection in large-scale business organisations in Delta State is low.
2. Anonymous communication is lowly utilised for fraud detection in large-scale business organisations in Delta State.
3. Background investigation is lowly utilised for fraud detection in large-scale business organisations in Delta State.
4. Analytical technique is moderately utilised for fraud detection in large-scale business organisations in Delta State.
5. Interview is moderately utilised for fraud detection in large-scale business organisations in Delta State.
6. Substantive test is highly utilised for fraud detection in large-scale business organisations in Delta State.
7. Respondents differ significantly in their mean ratings on utilisation of data mining for fraud detection based on types and status of their organisations in the Nigerian Stock Exchange.

8. Respondents do not differ significantly in their mean ratings on utilisation of anonymous communication, background investigation, analytical technique, interview technique and substantive tests for fraud detection based on types and status of their organisations in the Nigerian Stock Exchange.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter focuses on discussions of findings, conclusion, and implications of the study, recommendations and suggestions for further research**.**

Discussion of Findings

The findings of this study are discussed under the six variables in the study as follows:

Utilisation of data mining for fraud detection

The finding of the study shows that data mining is lowly utilised for fraud detection in large-scale business organisations in Delta State. This finding is in consonance with the findings of Okoye and Gbegi (2013) who found that Kogi State public sector organisations do not use the services of professional forensic accountants. However, Blessing (2015) reported that techniques used by forensic accountants have highly helped in curbing creative accounting in business organisations. In view of the above finding, the low level of utilisation of data mining in large scale business organisations in Delta State could account for the high incidences of fraud perpetrated without the notice of management which may crumble their going concerns. Obviously, adequate utilisation of data mining techniques would enable a large-scale business organisation dive into data sets and visually find new trends, patterns and threats that could expose it to fraud risks. Data mining technique could

help a forensic auditor to check the completeness and accuracy of business transactions with a view to discovering fraud.

The finding further showed that there is a significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted on the level of utilisation of data mining for fraud detection. However, Akenbor and Oghoghomeh (2013) found a significant relationship between proactive forensic auditing and managers' financial crime detection in Nigerian banks. This observed difference in the results could be due to various reasons. Unlike the unquoted large-scale business organisations, quoted company needs to comply with the requirements of the Nigerian Stock Exchange, Securities and Exchange Commission, Companies and Allied Matters Act (CAMA) and other applicable laws and regulations, which could make them utilise data mining technique more than unquoted companies to ensure the security of shareholders' investments and maintain a good standing in the stock market.

More so, the service organisations that were responsible for the observed difference may have deployed more sophisticated computer programmes, devices, employed more qualified staff and provided requisite training for their staff on the use of data mining techniques for fraud detection in their organisations. Employment of qualified staff and regular training will help understand employees' individual traits, skills and abilities in order to assess their potentials and possibilities in engaging in fraudulent behaviour and

this is in consonance with the tenets of the Fraud Diamond theory as postulated by Wolfe and Hermanson in 2004 which emphasised capacity as the major reason why people commit fraud.

Utilisation of Anonymous Communication for Fraud Detection

The finding indicates that anonymous communication is lowly utilised for fraud detection in large-scale business organisations in Delta State. The finding of Taiwo (2015) who found that respondents disagreed on the fact that employees feel confident in reporting unethical practices within an organisation to external bodies supported the finding of this study. Also, Akenbor and Ironkwe (2014) found that whistle blowing has a negative relationship with fraudulent practices in Nigeria in public institutions. The difference in the finding could be due to difference in business environments. Even though anonymous communication could be effective in unraveling fraudulent practices in a large-scale business organisation, its utilisation could be marred by fear of victimisation (including loss of job), cultural influence, ethnic sentiment, overriding of fraud detection system by management and lack of protection of the anonymous communicator. In spite of the availability of suggestion boxes and hotlines in many organisation, data obtained from boxes or calls through hotlines are hardly acted upon.

The finding from the study showed that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations (quoted or unquoted) on the utilisation of

anonymous communication for fraud detection. Relatedly, Lee and Fargher (2013) found the use of hotline and email as effective ways of detecting fraud. Indubitably, the effective utilisation of comments from suggestion boxes, anonymous phone calls, email messages, posts on bulletin boards and anonymous text messages could facilitate fraud detection in business organisations in no mean way. It is vital that management put a reward and punishment system in place where employees who act or provide information that can lead to fraud detection will be rewarded and those who aid, abet or suppress fraud detection processes will be punished. This is in conformity with the tenets of the differential reinforcement theory by Burgess and Akers in 1966.

Utilisation of Background Investigation for Fraud Detection

The finding of the study reveals that background investigation is lowly utilised for fraud detection in large-scale business organisations in Delta State. This finding is related to the finding of Okunbor and Obaretin (2010) whose finding showed that the application of forensic accounting services by corporate organisations in Nigeria is not effective in curbing fraudulent activities. In Nigeria, the ethics of secrecy and confidentiality enshrined in work place could frustrate fraud detection efforts of organisations. In some cases, it could be taunting when trying to get information that could support fraud detection from public and private records due to bureaucracy. More often than not, the forensic auditor is seen as a watchdog and a witch-hunter, such

that some employees who have committed or aided fraud will do everything possible to deny the auditor complete access to background information that could lead to fraud detection.

It is worth noting that the primary responsibility for the detection of fraud rests with those charged with governance of an entity and management. It is important that management, with the oversight of those charged with governance, place a strong emphasis on fraud prevention, which may reduce opportunity for fraud to take place and persuade individuals not to commit fraud because of the likelihood of detection and punishment. This is in line with the tenets of the fraud box key model by Okoye and Onodi in 2014 that explained that corporate governance will help to lock the thinking of fraudsters in a box and reduce fraud occurrence to the barest minimum.

The finding further showed that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted, on the level of utilisation of anonymous communication for fraud detection in large-scale business organisations in Delta State. This finding is in line with the finding of Modugu and Anyanduba (2013) whose finding indicated that there is significant agreement among stakeholders on the effectiveness of forensic accounting in fraud control, financial reporting and internal control quality. The utilisation of anonymous communication needs to be done with care to ensure that the

identity of a whistleblower is protected and information is used for the purpose for which it was given.

Utilisation of Analytic Procedure for Fraud Detection

The finding showed that analytic procedure is moderately utilised for fraud detection in large-scale business organisations in Delta State. This finding is supported by the finding of Imoniana, Antynes, Mattos, and Maciel (2012) who found analytical procedure to be an effective technique in auditing. In addition, Ogutu and Ngahu (2016) found fraud prevention and detection to be an area that requires forensic accounting. The moderate utilisation of analytical procedure can be attributed to what Onodu, Okafor and Onyali's (2015) finding revealed which is poor knowledge and perception of accounting personnel. Utilisation of analytic procedure involves evaluating and comparing financial and non-financial data for plausible relationships and investigating unexpected fluctuation. Previous year's gross profit percentage could be compared with current year's and it must be ensured that change is in line with expectation. It can also involve analysis of bad debts written off, assets, receipts from goods and tax paid.

The finding further showed that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted on the level of utilisation of analytic technique for fraud detection. This finding is related to the finding of Onodi, Okafor and Onyali (2015) which showed that there is a significant

relationship between forensic investigation methods and corporate fraud deterrence. This means that the application of analytical technique can be used to detect fraud in large-scale business organisations.

Utilisation of Investigative Interview for Fraud Detection

The finding indicated that investigative interview is moderately utilised for fraud detection in large-scale business organisations in Delta State. This finding is similar to the finding of Alao (2016) who found that forensic audit has significant effect on financial fraud control in Nigerian Deposit Money Banks and that audit reports significantly enhance court adjudication on financial fraud detection. This shows that investigative interview can be helpful in uncovering fraudulent activities in large-scale business organisations. Such an interview may extend beyond the employees of the organisations for the sole aim of getting confession or information that could lead to fraud detection.

The finding also showed that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted on the level of utilisation of investigative interview for fraud detection in large-scale business organisations in Delta State. The finding are in line with the finding of Ehioghiren and Atu (2016) who found that forensic accounting significantly influences fraud control and management. Investigative interview as a technique in forensic

auditing could be used to unearth material misstatement, fraudulent financial reporting and asset misappropriation in a business organisation.

Utilisation of Substantive Test for Fraud Detection

The finding revealed that substantive test was highly utilised for fraud detection in large-scale business organisations in Delta State. This finding is in agreement with the finding of Enofe, Omagbon and Ehigiator (2016) who found that the utilisation of substantive test significantly helps in detection, prevention as well as reduction in incidences of fraud in business organisations. Substantive test is often deployed to ascertain occurrence, completeness, accuracy, cut-off, classification, existence, right, obligations and valuation in respect of classes of transactions, account balances, presentation and disclosure of financial transactions.

The finding also showed that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted, on the level of utilisation of substantive test for fraud detection. However, the finding of Efiong (2013) showed a significant difference between the perceived effectiveness and actual usage of fraud prevention and detection mechanisms in Nigeria. Substantive test, when adequately performed, enables a large-scale business organisation to detect material misstatement in figures, presentation and disclosures made in the financial statements.

Conclusion

From the findings of the study, it was concluded that the inadequate utilisation of forensic auditing investigation techniques by accounting staff in large scale business organisations in Delta State, Nigeria is the major factor that accounts for the incessant cases of fraud that crippled many of such organisations.

Implications of the Findings

The findings of the study revealed that different forensic auditing investigation techniques are not adequately utilised in large scale business organisations in Delta state. The findings have far reaching implications for educational institutions, shareholders and directors of large-scale business organisations, accountants and business regulatory bodies. First, the findings imply that educational institutions that offer courses in business education (accounting) do not emphasise innovative forensic auditing investigation techniques that would ensure efficient and effective performance of their graduates in the business world. This emphasises the need for constant review of the curriculum in the light of the changing need of the contemporary society. When this is done, prospective accountants will be equipped with the relevant forensic auditing investigation knowledge, skills, competences and attitude required to detect sophisticated fraud in business organisations.

Second, the study found that anonymous communication was lowly utilised for fraud detection in large-scale business organisations in Delta state.

This finding has an implication for shareholders and directors of business organisations as they need to provide regular training and re-training for accountants in their employments to update and upgrade their knowledge, skills and competences in installing the necessary controls that will safeguard their assets as well as detect and nip fraud in the bud. Shareholders and directors also need to develop a code of conducts, monitor compliance and take action against non-compliance. This finding implies that emphasis needs to be placed on strong commitment to fraud prevention and detection by establishing a culture of honesty and ethical behaviour within an entity with clearly communicated policies on corporate attitude to fraud.

Third, the low utilisation of background investigation found in the study implies that practising accountants need to maintain professional knowledge and skill at a suitable level that the employer receives a satisfactory service based on current developments and techniques in practice.

On the whole, it was found that forensic auditing techniques are not effectively utilised for fraud detection. This implies that professional regulatory bodies need to do more in providing guidelines, standards and training for their members in such a way that will make them perform as expected.

Recommendations

Based on the findings of the study, the following recommendations are therefore made:

1. Shareholders and directors of large-scale business organisations should provide regular training on data mining techniques to equip their accounting staff with the relevant and up-to-date skills, abilities, attitude and competences for fraud detection.
2. The Institute of Chartered Accountants of Nigerian should organise regular conferences, seminars and workshops for their members where emerging trends in anonymous communication are highlighted to help professional accountants and auditors detect and prevent frauds or at least reduce the incidence to save their employers.
3. Employees of large-scale business organisations should endeavour to support forensic auditors with relevant background information that could lead to fraud detection to ensure that the occurrence of fraud is minimised to the barest minimum.
4. Managers of large scale business organisations in Delta State should provide regular training for their accounting staff on analytical technique and other forensic auditing techniques to enable them detect and nip fraud in the bud.
5. Accounting staff of large scale business organisations should always avail themselves of any training opportunity on forensic auditing

investigation techniques in order to be more alert to fraudulent activities and prevent them.

6. Shareholders in large scale business organisations should insist that the techniques used in the study and other forensic auditing techniques are adequately utilised by holding the management accountable for fraud occurrences

Suggestions for Further Studies

Based on the findings of the study, the following topics are suggested for further studies:

1. Assessment of forensic auditors' skills need for fraud detection in large-scale business organisations in Delta state.
2. Influence of forensic accounting on fraud detection in large scale business organisations in Delta state.
3. Level of utilisation of computer forensic tools for fraud detection in large-scale business organisations in Delta state.
4. Replication of the present study in another state for the purpose of comparison.

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APPENDIX A

LETTER OF TRANSMITTAL

Department of Vocational Education
Nnamdi Azikiwe University
Awka
20th August, 2018.

Sir/Madam,

REQUEST TO COMPLETE A QUESTIONNAIRE

I am a postgraduate student of the above named institution carrying out a research study on the utilization of Forensic Auditing Investigation Techniques for Fraud Detection in Large-Scale Business Organisations in Delta State.

You have been identified as one of those whose inputs will facilitate the achievement of the purpose of this study. Therefore, I humbly request you to assist me in completing the questionnaire on the assurance that your input will be treated confidentially and used solely for the stated academic purpose.

The attached questionnaire is designed for data collection for the study.

Thank you immensely for your anticipated assistance.

Signed,

Frank Owhajutome Udukeke
2016197006F

APPENDIX B

UTILISATION OF FORENSIC AUDITING INVESTIGATION TECHNIQUES FOR FRAUD DETECTIONQUESTIONNAIRE (UFAITTFDPQ)

SECTION A: Respondent's Personal Data

Introduction: Please tick (✓) in the boxes for items1 to 3 below as they relate to you.

Form of Business: Quoted [ ] Unquoted [ ]

Nature of Business: Manufacturing [ ] Trading [ ] Service [ ]

SECTION B: Utilisation of forensic auditing investigation techniques for fraud detection

Instruction: Please tick (√) the option for all items in sections B1 to B6 to indicate the level of their utilisation for fraud detection in large-scale business organisations using the following keys to the codes:

Codes		**Keys**
HU	-	Highly Utilised
MU	-	Moderately Utilised
LU	-	Lowly Utilised
NU	-	Not Utilised

Section B1: Level of Utilisation of Data Mining Techniques for Fraud Detection

S/N	Data Mining Techniques	Options			
		HU	MU	LU	NU
4	Installation of dashboard in organisation's computers to monitor information in database				
5	Comparing data patterns from various periods				
6	Mining of text documents from database.				
7	Use of artificial neural networks when reviewing data				
8	Classification of data based on similarity in a historical data set.				
9	Use of decision trees to facilitate decision in effective decision making.				
10	Scanning of transaction list for the purpose of identifying gaps				
11	Comparison of recent invoice prices with the cost on the perpetual inventory records.				
12	Matching of return dates memos to test for proper cut-off.				
13	Checking for complete processing of transitions				

Section B2: Level of UtilisationofAnonymous CommunicationforFraud Detection

S/N	Anonymous communication	Options			
		HU	MU	LU	NU
14	Comments from suggestion box				
15	Anonymous Phone calls				
16	Anonymous Letters				
17	Emails messages				
18	Posts on bulletin boards				
19	Anonymous text messages				
20	Anonymousfinancial reports				
21	Fax messages				

Section B3: Level of Utilisation of Background Investigation for Fraud Detection

S/N	Background investigation	Options			
		HU	MU	LU	NU
22	Information from home page of business website				
23	Information from public records				
24	Information from private records				
25	Inquiry of transaction with private companies of employees				
26	Investigation of transactions with relations of employees				
27	Search of details of conflict among employees of the company				
28	Search of transactions with parties lacking capacity				
29	Search of transactions with employees' spouses				
30	Search of transactions with employees' driver				
31	Inquiry into transactions that deviate from business culture				

Section B4: Level of Utilisation of Analytical Investigation Techniques forFraud Detection

S/N	Analytical Techniques	Options			
		HU	MU	LU	NU
32	Comparison of current period financial information with prior period using ratio analysis				
33	Examination of relationships of financial information of many years.				
34	Comparison of firms' financial information with other firms in the same industry				
35	Benchmarking the results recorded in the financial statements against an independent expectation				
36	Determination of percentage change in individual's financial statement item over a period of time.				
37	Comparison of elements of financial statements with a common base item.				
38	Analysis of receipts from sales of goods				
39	Comparison of dividend received in different periods				
40	Analysis of payments to suppliers				
41	Analysis of payment of taxes				
42	Writing to bank to confirm account balances				
43	Analysis of bad debts written-off				

Section B5: Level of Utilisation of Investigative Interview for Fraud Detection

S/N	Investigative Interview Techniques	Options			
		HU	MU	LU	NU
44	Paying attention to non-verbal cues of fraud suspect				
45	Interrogation of fraud suspects at the most suitable time				
46	Records of conversation between the interviewer and the interviewee				
47	Conductof interview in a suitable environment				
48	Asking of leading questions				
49	Friendly posture during the interview process				
50	Commendation of interviewee on his positive contributions in the organisation				
51	Asking some questions to which the interviewer already knows the answer				
52	Use of simple language in the interview process				
53	Interview of different fraud suspectsat different times				
54	Use of probing questions				

Section B6: Level of Utilisation of Substantive Tests for Fraud Detection

S/N	Substantive tests	Options			
		HU	MU	LU	NU
55	Test of procedures in place for determining carrying amount of non-current assets				
56	Check of amortization calculations for accuracy				
57	Check of calculation of the purchase of goodwill				
58	Confirmation of consideration paid for the business acquired.				
59	Verification of total charge for depreciation				
60	Check of depreciation calculations for accuracy.				
61	Review of gains on sales disposal				
62	Review of depreciation rates for reasonableness				
63	Check of balances obtained from the count against the client's cash records				
64	Comparing cashbook balance with bank statement balance				
65	Checking for right in respect of non-current assets				

APPENDIX C

POPULATION AND SAMPLE DISTRIBUTION

S/N	Business Organisations	Accounting Staff			Pop Total	Sample			Sample Total
		M	T	S		M	T	S	
1	Summit Furniture Ltd, Asaba	14			14	4			4
2	Raibow Feed, Sapele	5			5	2			2
3	Zumax Nigeria Limited			11	11			6	6
4	Inter-Ibua Construction Ltd			13	13			5	5
5	Anudu plastic Nigeria Ltd, Asaba	5			5	3			3
6	Witchtech Industries Limited	7			7	3			3
7	S. I. O. Industries Ltd	7			7	4			4
8	Lafenax Nig. Ltd, Asaba		13		13		7		7
9	Nestoil Plc		9		9		6		6
10	Life Flour Mill, Sapele	5			5	2			2
11	Ciscon Nigeria Limited			9	9			3	3
12	AT & P Plywood Industries Ltd, Sapele	5			5	3			3
13	Obedafe Holding Company Ltd, Ughelli		12		12		6		6
14	Neconde Energy Limited			13	13			9	9
15	Python Engineering Company Ltd.			11	11			7	7
16	Belta Glass Factory, Ughelli Plc	25			25	21			21
17	DeltaLift Resources Nigeria Ltd			9	9			6	6
18	Imoniyame Holding Company Ltd, Ughelli		8		8		4		4
19	Kasal Engineering Ltd			5	5			2	2
20	Azabadudu Oil, Sapele		9		9		7		7
21	Nefkom Aluminium Company Ltd	11			11	4			4
22	Lym Consults Nigeria Ltd			9	9			6	6
23	Surelife Pharmaceutical Inc. Ltd, Asaba		7		7		4		4
24	Fenog Nigeria Limited		7		7		7		7
25	Kings Knight Industrial Co. Ltd.	6			6	5			5
26	Mandemous Company, Sapele		10		10		9		9
27	Donasulu Ltd, warri			5	5			4	4
28	Permolit Paint Nigerian Ltd	7			7	3			3
29	Olite manufacturing Company	6			6	4			4
30	Southwood Nigerian Ltd	5			5	4			4
	Total	**108**	**75**	**85**	**268**	**62**	**50**	**48**	**160**

Source: Corporate Affairs Commission/ Managers of Large Scale Business Organization

Note: Only Belta Grass Plc was listed in the Nigerian Stock Exchange as at 2018.

M – Manufacturing

T – Trading

S – Service

APPENDIX D

SAMPLE SIZE DETERMINATION USING TARO YAMANE FORMULA

$$S = \frac{e}{1 + e\,(0.05)^2}$$

$$S = \frac{268}{1 + 268\,(0.0025)}$$

$$S = \frac{268}{1 + 0.555}$$

$$S = \frac{268}{1.555}$$

$$S = 160$$

APPENDIX E

RELIABILITY

Cronbach's Alpha Reliability Estimates of Research Instrument

S/N	Scale	No. of Items	No. of Respondents	Cronbach's Alpha
1	Data mining techniques	10	32	.849
2	Type of anonymous communication	8	32	.796
3	Types of background investigation	10	32	.825
4	Analytical techniques	12	32	.913
5	Investigative interview techniques	11	32	.884
6	Substantive tests	11	32	.843
	Overall reliability			0.85

SPSS output of Cronbach's Alpha Reliability Estimates

Data mining techniques

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.849	10

Type of anonymous communication

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.796	8

Types of background investigation

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.825	10

Analytical techniques

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.913	12

Investigative interview techniques

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.884	11

Substantive tests

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistic

Cronbach's Alpha	N of Items
.843	11

APPENDIX F

SPSS OUTPUT

RESEARCH QUESTION 1

```
DESCRIPTIVES VARIABLES=VAR00001 VAR00002 VAR00003 VAR00004 VAR00005
VAR00006 VAR00007 VAR00008 VAR00009 VAR00010
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
Installation of dashboard in organisation's computers to monitor information in database	156	2.5769	1.00347
Establishment of data patterns using algorithms technique.	156	2.3782	1.05551
Mining of text documents from database.	156	2.6346	.60200
Use of artificial neural networks when reviewing data	156	2.6346	1.10767
Classification of data base on similarity in a historical data set.	156	2.2564	1.08878
Use of decision trees to facilitate decision in effective decision making.	156	2.1346	1.16445
Scanning of transaction list for the purpose of identifying gaps	156	2.3205	.90865
Comparison of recent invoice prices with the cost on the perpetual inventory records.	156	2.3269	1.09641
Matching of return dates memos to test for proper cut-off.	156	2.1923	.95792
Grouping of customer accounts by size to identify fictitious payments.	156	2.7500	.66841
Valid N (listwise)	156		

RESEARCH QUESTION 2

```
DESCRIPTIVES VARIABLES=VAR00011 VAR00012 VAR00013 VAR00014 VAR00015
VAR00016 VAR00017 VAR00018
  /STATISTICS=MEAN STDDEV.
```

Descriptives

[DataSet2]

Descriptive Statistics

	N	Mean	Std. Deviation
Comments from suggestion box	156	2.9231	.65784
Anonymous Phone calls	156	1.2949	.45745
Anonymous Letters	156	1.3718	.48484
Emails	156	1.7564	.66596
Posts on bulletin boards	156	2.7885	1.07769
Written confirmation from debtors	156	1.6218	.48650
Written confirmation from creditors	156	1.5064	.50157
Fax messages	156	2.0192	.70456
Valid N (listwise)	156		

RESEARCH QUESTION 3

```
DESCRIPTIVES VARIABLES=VAR00019 VAR00020 VAR00021 VAR00022 VAR00023
VAR00024 VAR00025 VAR00026 VAR00027 VAR00028
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
Information from home page of business website	156	1.7628	.42672
Information from public records	156	1.9808	.70456
Information from private records	156	1.4936	.61693
Inquiry of transaction with private companies of employees	156	2.0128	1.33435
Investigation of transactions with relations of employees	156	1.9231	.82336
Search of details of conflict among employees of the company	156	1.6795	.75338
Search of transactions with parties lacking capacity	156	3.1410	.99319
Search of transactions with employees' spouses	156	2.3718	.93130
Search of transactions with employees' driver	156	1.9808	.70456
Inquiry into transactions that derivate from business culture	156	2.7179	1.14607
Valid N (listwise)	156		

Research Question 4

```
DESCRIPTIVES VARIABLES=VAR00029 VAR00030 VAR00031 VAR00032 VAR00033
VAR00034 VAR00035 VAR00036 VAR00037 VAR00038 VAR00039 VAR00040
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
Comparison of current period financial information with prior period using ratio analysis	156	3.0897	.82205
Examination of relationships of financial information of many years.	156	3.1282	.79285
Comparison of firms' financial information with other firms in the same industry	156	3.0128	.93662
Benchmarking the results recorded in the financial statements against an independent expectation	156	1.8590	.77417
Determination of percentage change in individual's financial statement item over a period of time.	156	2.7179	.97580
Comparison of elements of financial statements with a common base item.	156	2.1474	.68913
Analysis of receipts from sales of goods	156	3.0192	.79084
Comparison of dividend received in different periods	156	2.9551	.81393
Perusing of payments to suppliers	156	2.6346	.68237
Analysis of payment of taxes	156	2.9295	.95790
Analysis of asset	156	3.3846	.70447
Analysis of bad debts written-off	156	1.8590	.77417
Valid N (listwise)	156		

Research question 5

```
DATASET ACTIVATE DataSet1.
DATASET CLOSE DataSet5.
NEW FILE.
DATASET NAME DataSet6 WINDOW=FRONT.
DESCRIPTIVES VARIABLES=VAR00041 VAR00042 VAR00043 VAR00044 VAR00045
VAR00046 VAR00047 VAR00048 VAR00049 VAR00050 VAR00051
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
Paying attention to non-verbal cues of fraud suspect	156	2.8269	.86631
Interrogation of fraud suspects at the most suitable time	156	3.2372	.75445
Records of conversation between the interviewer and the interview	156	3.1282	.49145
Conduct of interview in a suitable environment	156	2.9936	.79105
Asking of leading questions	156	2.5577	.49826
Friendly posture during the interview process	156	2.6731	.98481
Commendation of interviewee on his positive contributions in the organisation	156	3.3846	.60601
Asking some questions to which the interviewer already know the answer	156	2.4423	.71157
Use of simple language in the interview process	156	3.0000	.79515
Interview of different fraud suspect in different time	156	2.8910	.78349
Use of probing questions	156	2.9359	.90646
Valid N (listwise)	156		

RESEARCH QUESTION 6

```
DESCRIPTIVES VARIABLES=VAR00052 VAR00053 VAR00054 VAR00055 VAR00056
VAR00057 VAR00058 VAR00059 VAR00060 VAR00061 VAR00062
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
Test of procedures in place for determining net realizable value of assets	156	3.7346	.86574
Check of amortization calculations for accuracy	156	3.5128	1.13301
Check of calculation of the purchase of goodwill	156	3.9872	.86500
Confirmation of consideration paid for the business acquired.	156	3.3269	.77179
Verification of total charge for depreciation	156	3.6064	.92630
Check of depreciation calculations for accuracy.	156	2.9423	.82884
Review of gains on sales disposal	156	3.8013	.80658
Review of depreciation rates for reasonableness	156	2.9295	.81210
Check of balances obtained from the count against the client's cash records	156	3.9872	.78689
Counting of cash at all locations simultaneously	156	3.6987	.46029
Review of confirmation letter from the bank for any information to be disclosed in the financial statements	156	3.7179	.97580
Valid N (listwise)	156		

HYPOTHESIS 1

Oneway

[DataSet1]

ANOVA

FORM OF BUSINESS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26.224	2	13.112	167.180	.000
Within Groups	12.000	153	.078		
Total	38.224	155			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: FORM OF BUSINESS

Scheffe

(I) NATURE OF BUSINESS	(J) NATURE OF BUSINESS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Service	Trading	-.60000*	.05690	.000	-.7406	-.4594
	Manufacturing	-1.00000*	.05475	.000	-1.1353	-.8647
Trading	Service	.60000*	.05690	.000	.4594	.7406
	Manufacturing	-.40000*	.05383	.000	-.5331	-.2669
Manufacturing	Service	1.00000*	.05475	.000	.8647	1.1353
	Trading	.40000*	.05383	.000	.2669	.5331

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

FORM OF BUSINESS

Scheffe

NATURE OF BUSINESS	N	Subset for alpha = 0.05		
		1	2	3
Service	47	1.0000		
Trading	50		1.6000	
Manufacturing	59			2.0000
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 51.524.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Hypothesis 2

T-Test

[DataSet1]

Group Statistics

	FORM	N	Mean	Std. Deviation	Std. Error Mean
Data mining	QUOTED	21	16.8955	1.25691	.15356
	UNQUOTED	135	29.7079	5.17468	.54852

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Data mining	Equal variances assumed	153.881	.000	-19.817	154	.000	-12.81234	.64654	-14.08958	-11.53511
	Equal variances not assumed			-22.493	101.503	.000	-12.81234	.56960	-13.94222	-11.68247

Hypothesis 3

Oneway

[DataSet2]

ANOVA

Anonymous Communication

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	11.690	2	5.845	1.313	.229
Within Groups	168.330	153	1.100		
Total	180.019	155			

Hypothesis 4

T-Test

[DataSet2]

Group Statistics

	FORM	N	Mean	Std. Deviation	Std. Error Mean
Anonymous Communication	Quoted	21	1.7313	.70886	.08660
	Unquoted	135	1.7753	.63520	.06733

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Anonymous Communication	Equal variances assumed	2.392	.124	-.407	154	.685	-.04394	.10801	-.25730	.16943
	Equal variances not assumed			-.401	133.360	.689	-.04394	.10970	-.26091	.17303

HYPOTHESIS 5

Oneway

[DataSet3]

ANOVA

Background Investigation

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	122.029	2	61.015	114.475	.221
Within Groups	81.561	153	.533		
Total	203.590	155			

Hypothesis 6

T-Test

[DataSet3] C:\Users\PROF.UDUS\Documents\background investigation.sav

Group Statistics

	form of business	N	Mean	Std. Deviation	Std. Error Mean
Background Investigation	Unquoted	21	21.6418	2.15112	.26280
	Quoted	135	20.6292	3.85646	.40878

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Background Investigation	Equal variances assumed	156.453	.000	1.934	154	.055	1.01258	.52365	-.02189	2.04705
	Equal variances not assumed			2.084	143.166	.039	1.01258	.48597	.05197	1.97319

Hypothesis 7

Oneway

[DataSet4]

ANOVA

Analytical technique

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	75.418	2	37.709	210.664	.115
Within Groups	27.268	152	.179		
Total	102.686	155			

Hypothesis 8

T-Test

[DataSet4]

Group Statistics

	FORM	N	Mean	Std. Deviation	Std. Error Mean
Analytical technique	Quoted	21	3.2985	.46106	.05633

	Unquoted	135	3.4494	.83952	.08899

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Analytical Procedure	Equal variances assumed	40.385	.000	-1.328	154	.186	-.15093	.11366	-.37547	.07361
	Equal variances not assumed			-1.433	142.204	.154	-.15093	.10532	-.35912	.05726

Hypothesis 9

Oneway

[DataSet5]

ANOVA

Interview

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.011	2	3.006	4.169	.054
Within Groups	110.316	153	.721		
Total	116.327	155			

Hypothesis 10

T-Test

[DataSet5]

Group Statistics

	FORM	N	Mean	Std. Deviation	Std. Error Mean
Interview	Quoted	21	2.7164	.86700	.10592
	Unquoted	135	2.9101	.86129	.09130

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Interview	Equal variances assumed	.782	.378	-1.386	154	.168	-.19369	.13971	-.46968	.08229
	Equal variances not assumed			-1.385	141.797	.168	-.19369	.13984	-.47013	.08274

Hypothesis 11

Oneway

[DataSet6]

ANOVA

Substantive Tests

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.832	2	2.416	4.433	.235
Within Groups	83.392	153	.545		
Total	88.224	155			

Hypothesis 12

T-Test

[DataSet6]

Group Statistics

	FORM	N	Mean	Std. Deviation	Std. Error Mean
Substantive Tests	Quoted	21	3.0299	.93695	.11447
	Unquoted	135	2.8764	.73578	.07799

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Substantive Tests	Equal variances assumed	18.997	.000	1.146	154	.054	.15345	.13393	-.11112	.41801
	Equal variances not assumed			1.108	121.814	.070	.15345	.13851	-.12076	.42765