

## DETERMINANTS OF FORENSIC ACCOUNTING TECHNIQUES AND THEORIES: AN EMPIRICAL INVESTIGATION

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### Abstract

*This study sought and investigated the determinants of forensic accounting techniques. The data analysed in this study were gathered from both primary and secondary sources. The 120 respondents were purposively selected, which includes forensic accountants, fraud auditors, bankers, forensic investigators, finance enthusiasts, fraud investigators, and those in academia. The data for this study were gathered electronically using an online questionnaire through Google Form. The Google Form analysis was adopted. Secondary data were the existing data, established by seasoned professionals and academics. The data were presented through pie charts, bar charts, and descriptions. The study shows that the nature of fraud under investigation which includes the level of crime perpetrated, how much involved, stages, complexity, and who is involved are the determinant of techniques to be applied to fraud examination. Also, other factors such as criminal evidence, the expertise and experience of the examiner, organisational policies, and the risks involved determine what techniques to be applied to forensic investigations. Data mining emerged as the most appropriate technique for fraud investigation, however, the combination of two or more techniques is advised for forensic accountants, forensic legal practitioners, and all other similar parties. This study recommends the need for stakeholders to engage, recruit, and employ the*

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*services of a forensic accountant to review, strengthen, reappraise records and internal control systems on a routine basis. Organizations should train employees on the dynamics and scope of financial crimes, the legal environment, fraud prevention, and ethical issues.*

**Keywords:** *forensic accounting, forensic engagement, forensic accounting techniques, forensic theories*

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### Introduction

Issues relating to the efficacy of forensic accounting and its techniques in curbing fraudulent and other criminal activities across the globe and what determines such techniques have gained the attention of scholars and practitioners in the field of forensic accounting over time. Notwithstanding the huge number of research conducted so far, there have not been any convergence as to a sufficient coverage in the meaning and what techniques of forensic accounting should be.

The difficulty in having an agreed definition of forensic accounting has afforded the researchers in this field to come up with various definitions that best suited their direction of research which are not wholistic and most often, such definitions are not well representing the intention and capacities of the roles of forensic accounting as most of the meanings adduced to the concept of forensic accounting are skewed to some aspects of the concepts that interest the scholars. Hence, it is difficult to generalise such definitions.

Furthermore, various attempts by scholars to enumerate the techniques in forensic accounting have left the researchers in doubt about the mixed results available. Mostly, what is said to be the techniques in this specialised area of endeavor are not the known true representation of what can be called techniques.

It is with this that this current research sought to interrogate what exists as forensic accounting and what truly are the techniques in forensic accounting that the skill sets of the forensic accounting should be directed.

The rest of this study is divided into five which have to do with the conceptual clarifications of the meaning of forensic account, the review of the empirical literature and theoretical framework, the methodology of conducting this research, and the discussion of evidence in the extant literature, and conclusion with recommendations.

## Literature Review

### Conceptual Clarification of the Meaning of Forensic Accounting

Forensic accounting uses accounting, auditing, and investigative skills to conduct investigations into theft and fraud. It encompasses litigation support investigative accounting. Forensic accounting, forensic accountancy, or financial forensics is the specialty practice area of accounting that describes engagements that result from actual or anticipated disputes or litigation. “Forensic means “suitable for use in a court of law”, and it is to that standard and potential outcome that forensic accountants generally have to work. Forensic accountants, also referred to as forensic auditors or investigative auditors, often have to give expert evidence at the eventual trial (ICMAI, 2014).

The Association of Certified Fraud Examiners defined the practice of forensic accounting as the application of skills in potential or actual civil or criminal disputes, including commonly accepted accounting and auditing principles in establishing losses of profit, income, property, or damage, estimations of internal controls, frauds, and other such things that involve the inclusion of accounting expertise into the legal system (ACFE, 2021). Forensic accounting is a broad category of professional practice that provides fraud investigation services. In reality, a forensic accountant plays an important role in finding, preventing, and prosecuting persons involved in criminal activities such as financial misrepresentation, money laundering, and identity fraud (Honigsberg, 2020). It is also defined as accounting principles and procedures used to legal challenges (Abdulrahman, 2019).

Forensic accounting refers to the application of analytical and investigative skills to resolve financial issues in a manner that meets the standards required by a court of law. Accounting, auditing, and investigation skills are used in forensic accounting to give expert support in legal cases (Kolawole, Salman, Durodola, Babatunde, Igbekoyi, 2018). Jugurnath, Bissessur, Ramjattan, Soondrum, and According to Seedoyal (2017), forensic accounting is a branch of accounting that deals with current, ongoing, or anticipated problems, making it suited for legal evaluation and ensuring the effective reduction of financial malpractices. To Ozumba, Ofor, and Okoye (2016), forensic accounting is the application of accounting, auditing, and investigative skills to assist in legal matters, as well as the application of a specialised body of knowledge to the evidence of economic transactions and reporting suitable for court proceedings and accountability. It is the process of applying any fraud investigation to the creation of accounting

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records once it has been discovered that they have been falsified. Forensic accountants with the necessary training, education, and experience may help agencies and departments in charge of enforcement, recovery, audit committees, regulation, and financial statement audit teams to improve their performance (Popoola, Che-Ahmad, Samsudin, & Yussof, 2013). Okoye and Gbedi (2013) see forensic accounting as a technique for fraud detection and prevention, using financial expertise and an investigative mindset to unsolved financial difficulties within the context of evidentiary rules. Okoye and Gbegi further described forensic accounting as a branch of accounting that discusses engagements that arise as a result of existing or expected conflicts or litigation. Modugu and Anyaduba (2013) also defined forensic accounting as a particular investigation technique that uses accounting, auditing, and investigative abilities to evaluate the level of financial crime in legal situations.

As a profession, forensic accounting combines financial knowledge with investigative skills and works within a legal framework that offers adequate evidence to limit fraud and maintain the trustworthiness of financial statements (Al-Jalili, 2012). Forensic accounting involves gathering information and presenting it in a way that will be accepted by a court of law against perpetrators of economic crime (Stanbury & Paley-Menzies, 2010). The America Institute of Certified Public Accountants (AICPA) describes forensic accounting as a service that requires the use of specialised knowledge and investigative abilities possessed by Certified Public Accountants (AICPA, 2010).

Forensic accounting is the art of compiling and presenting financial facts in a format that will be accepted by a court of law against perpetrators of monetary offenses (Manning, 2010). Forensic accounting is a type of thorough fraud investigation and anti-fraud control analysis that involves auditing accounting records in search of proof of fraud (Singleton & Singleton, 2010). Financial accounting, as a profession, combines financial skill, fraud awareness, and solid knowledge and grasp of business realities and the legal system's operation. According to Arokiasamy and Cristal (2009), forensic accounting is a science that deals with the application of accounting facts and concepts derived from auditing methods, techniques, and procedures to resolve legal problems, which necessitates the synthesis of investigative, accounting, and auditing skills. Forensic accounting is a valuable investigative technique for detecting fraud. In certain circumstances, it gives an accounting analysis to the court for dispute settlement, and it also provides the court with an explanation for the fraud that has been perpetrated. As a result,

forensic accounting may be crucial in discovering and decreasing accounting fraud in the corporate sector (Baird & Zelin, 2009).

Forensic accounting is a relatively new concept. Oworjori and Asaolu (2009) described it as a method by which forensic accountants provide litigation support services, which is the provision of accounting assistance in the areas of quantification of economic damages and calculating economic loss resulting from a breach of contract in existing or pending litigations. Because forensic accountants assist to win lawsuits and gain settlements, litigation support services provide substantial value to the client-attorney relationship. According to Okoye and Akamobi (2009), forensic accounting is a combination of two fundamental words: "forensic" and "accounting." While the word "forensic" refers to being fit for use in a court of law, "accounting" refers to the method of documenting, summarising, analysing, and verifying business and financial activities, as well as documenting the results.

Akintoye (2008) added that forensic accounting is a discipline appropriate for legal examination, giving the highest degree of assurance and includes the new commonly recognised connotation of having been arrived at scientifically and providing the necessary results in resolving disputes. "Forensic" means "suitable for use in a court of law," and forensic accountants must typically work to that standard and potential outcome (Crumbley, Heitger & Smith, 2007). To detect and investigate financial crimes and associated economic transgressions, forensic accounting combines the use of criminality methodologies with the integration of accounting investigation operations and legal procedures. Forensic accounting is a highly technical and specialised field of practice within the accounting profession's principles and ethics. Not every forensic accounting engagement concludes in a court of law (Damilola & Olofinsola, 2007). According to Degboro and Olofinsola (2007), forensic accounting uses criminalist methodologies and the integration of accounting investigation operations and legal procedures to detect and investigate financial crimes and associated accounting infractions.

Forensic accounting involves the application of accounting concepts and techniques (Coenen, 2005). "The application of accounting principles, theories, and discipline to facts or hypotheses at issue in a legal dispute and encompasses every branch of accounting knowledge" (AICPA, 2005). The AICPA (2005) further classifies forensic accounting into two broad categories: investigative services and litigation services. According to the AICPA, forensic accounting services usually include the use of specialist knowledge and investigation skills, Gathering,

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analysing, and assessing evidence, interpretation, and communication of findings in the courtroom, boardroom, or another legal/administrative venue.

Joshi (2003) expresses forensic accounting as the application of specialised knowledge and specific skills to stumble up on the evidence of economic transactions. Accounting, auditing, and investigation abilities are all combined in forensic accounting. Simply put, forensic accounting is accounting that is appropriate for legal scrutiny and has the now widely recognised connotation of having been arrived at in a scientific manner (Zysman, 2004). Forensic accounting is recognised as a separate type of professional knowledge with different characteristics; the recognition stems from holding a formal certification in forensic accounting, which offers symbolic significance (Williams, 2002). Bologna and Linquist (1995) understand forensic accounting as the use of financial skills and an investigative mindset to unsolved issues within the context of evidentiary rules.

Forensic auditing applies accounting processes and procedures to a problem that can or should be litigated (Appah & Inini, 2021). According to Okoye, Nwoye, Akudu, and Onyema (2020) forensic investigation is the use of forensic science on criminal or civil law issues. The study noted that it involves the use of investigative and analytical skills to investigate fraudulent practices. It involves the application of scientific methods to prove facts and evidence that would be used in criminal proceedings. Al Samara, Al-Afeef, and Al Ali (2017) viewed forensic accounting as the use of criminal methods and the inclusion of investigative accounting issues and legal processes to investigate and detect financial crime and other economic misconduct. Abdullahi and Mansor (2015) described forensic bookkeeping as the use of accounting and analytical skills at a level satisfactory by the competent court to handle disputes in terms of both criminal and civil litigation. Coenen (2005) also states that forensic accounting involves the application of accounting concepts and techniques. It requires a report if accountability or fraud is found, and the report is considered evidence in court or administrative proceedings (Joshi, 2003). Oyedokun (2013) also described forensic accounting as a scientific accounting method for the detection, resolution, analysis, and presentation of fraud cases that can be used in court. However, Oyedokun (2018) further opined that forensic accounting “is a scientific method of uncovering, analyzing, resolving and preventing fraud and white-collar crimes matters in a manner that produces admissible evidence which is capable of proving or disproving facts in issue and suitable in the court of law.

Stemming from various definitions given by various scholars, it is clear that forensic accounting scholars have divergent views as to the meaning of forensic

accounting, but it can be submitted that the scholars all agreed that it is a field of endeavour that is capable of helping in the litigation and to unravel the mystery behind hidden figures and criminal activities. It is, therefore, safe to state that, forensic accounting is not only meant to resolve an allegation of financial fraudulent activities, the techniques in forensic accounting have made it to be capable of being utilized in other walks of life.

### **Forensic Accounting and Techniques**

Forensic accounting investigation involves things wherever there are unit prospects that dishonest accounting and reportage have occurred, and there is unit misappropriation of assets (Ranallo, 2006). Forensic accounting investigation tries to spot dishonest transactions by reviewing transactions mistreatment document reviews, interviews, and examination of electronic media. The forensic accounting investigation area unit is typically timed intense and since the results could also be employed in court reviews, there's a high proof commonplace that has to be maintained once the forensic accounting investigations area unit is created.

Forensic accounting investigation typically uses interview techniques designed to get associate degree admission of guilt by the person(s) involved in the fraud theme. The investigations additionally involve elaborate document reviews (Golden, Skalak & Clayton, 2006). It's vital that forensic accountants properly structure the interview method as a result the results of the interview could also be employed in court and judgment processes.

### **Forensic Accounting Techniques**

The following among others are techniques available in forensic accounting:

#### **Data Mining**

Data mining is the use of specialised software to search for anomalies, trends, and correlations in datasets to anticipate outcomes. It makes it easier to extract hidden predictive information from massive databases and can help companies spot patterns, abnormalities, and other odd actions, allowing businesses to make proactive knowledge-driven decisions. Data mining software, which has scripting capabilities and can scan businesses' datasets for abnormalities and suspicious patterns that are indications of fraud, is particularly useful in identifying fraud. This technique depends on trying to mine a large amount of data in search of any new hidden or unexpected patterns or information, and this technique is implemented

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through computer programs designed for this purpose. There are three main activities of the data mining technique:

- i. Discovery: it is the links, trends, and differences of data that are discovered logically or legally without any prior assumption about what the pattern is, that is, without prior knowledge of the fraud.
- ii. Forecasting models: used to estimate the outputs that should be obtained from new values.
- iii. Distinctiveness analysis: we extract the variance or difference by first identifying the rule or standard, and then we find the items that depart from the standard or rule, which are called anomalies and require additional examination. The data mining technology assists the forensic accountant in the inquiry; nevertheless, the investigation process does not end with the computer screen; it also includes document analysis, interviewing, and other investigative work. In addition to the requirement to check the accuracy and completeness of the data acquired.

### **Continuous Control**

Continuous Control is regarded as one of the forensic accounting approaches used to gather evidence of fraud. Processes for continuous control are centred on audit departments, branches, customers, and agency owners.

### **Ratio analysis**

As a forensic accounting approach, ratio analysis is performed to evaluate data on a historical, industry, or benchmark basis. It detects fraud by studying data patterns to identify potentially deceptive transactions. Ratio analysis is the process of determining the links between various financial statement items as well as these items and nonfinancial data. The vertical analysis compares aspects of a financial statement to a common base item, whereas horizontal analysis is used to analyse the ratio of change in distinct financial statement items over a specific period. Vertical analysis, on the other hand, converts financial statements into percentages. Because percentages are clearly understood by anyone, the approach is particularly effective for fraud detection. When using vertical analysis to examine changes in the income statement, gross sales are set to 100% and all other values are transformed to a percentage of sales. The horizontal analysis is concerned with changes throughout time. While ratios and vertical analysis translate statements to numbers that are simpler to understand and compare the figures from period to period, horizontal analysis converts changes in quantities from period to period to percentages.

A technique like this is involved in assessing digital data ratios to uncover indications of fraud operations (Jamil, 2012).

### **Benford's Law**

One of the strategies accessible to fraud investigators is Benford's Law and it assists greatly to achieve success in the field of forensic accounting. Benford's Law describes the sequence in which multiple numbers from real-life sources can be distributed in a specific, non-uniform way (Wells, 2012). It has been established that this technique is applied in the summarization after the classification of the first digit field and the calculation of the observed count percentage (Wadhwa & Pal, 2012; Wells, 2012). This technique, which was named after Frank Benford (1883-1948) is useful to determine if the variables under study were a result of fraud or unintentional error (Yadav & Yadav, 2013). It is one of the forensic accounting approaches, as well as one of the major rules in mathematics and statistics that have been used in auditing operations. When this law is used, it is feasible to check the quality and dependability of accounting figures or data and detect abnormalities to utilise forensic accounting techniques in revealing accounting irregularities.

### **Computer-Assisted Auditing Software**

These are computer programs that forensic accountants could make use of, in the audit procedure to process data of audit significance in the client's information system and at the same time not depend on that client (Wadhwa & Pal, 2012; Yadav & Yadav, 2013). This technique assists experts in investigative and forensic accounting assignments to perform auditing procedures such as Testing transactions and balances in detail; the identification of any inconsistencies or significant fluctuations; general testing in addition to computer systems application; sampling programs in extracting data for audit testing; and the recording of the calculations performed by accounting systems (Yadav & Yadav, 2013). Technology is used and employed to perform certain auditing job that assists the forensic accountant in completing his assignment more efficiently, quickly, and at a reduced cost. The use of this technology requires the availability of all the necessary information for the process of auditing computer systems (Al-Khalidi, 2012).

### **Relative Size Factor (RSF)**

This approach is the ratio of the greatest numbers in a given set to the second-largest number, and when applied to figures, the unusual deviations may be traced

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back to fraud or actual errors (Wadhwa & Pal, 2012; Yadav & Yadav, 2013). The authors also said that if any stray case is discovered outside of the typical range, more examination may be necessary to aid in the discovery of abnormalities or patterns.

### **Net Worth Approach (NWA)**

According to Biber (2010), there are two techniques for assessing and confirming taxpayers' income: which are the Direct Method and the Indirect Method. The direct method is the specific item relied upon in verifying income and expenses by referring to the books and records used in the preparation of the relevant tax computations while the indirect method involves the determination of tax liabilities through an analysis of a taxpayer's financial affairs accumulating information beyond the taxpayer's declaration and formal books and records (Biber, 2010).

### **Net Worth Comparative Method**

Net Worth Comparative Method is like the Net Worth Approach, but in its application, the current net worth of the taxpayer will be compared with the value of the cumulative years in identifying the difference and treat as income not disclosed for the current year.

### **Expenditure Approach**

The expenditure approach involves the use of the expenditure of the taxpayer to determine the undisclosed income. This approach assumes that every expenditure must have its respective source and if this has not been included in the income disclosed by the taxpayer, then the forensic accountants and the tax authorities will treat it as undisclosed income and will be adequately taxed. Biber (2010) asserted that the purchasing of capital items by cash, personal and business loan repayments through cash, personal expenses paid with cash, in addition to increases in cash on hand should be determined through an in-depth examination of taxpayer's financial affairs.

### **Trend Analysis**

Trend Analysis is one of the most significant forensic accounting approaches for detecting fraud is trend analysis. The emphasis is on unusual transactions. Certain transactions may be difficult to recognise from current data, but when the transactions' current records are compared to past year's data entries, they can

readily be identified as fraudulent. It is simple to determine if the level of sales rises at the same pace as the level of bad debts increases in a business by comparing sales and bad debts data over time. In such a case, it is reasonable to believe that such bad debts are the result of fraudulent sales transactions or manipulations made into the system to improve turnover. Such fraudulent changes could not be detected without the use of trend analysis during a certain period.

### **Beneish Model**

The Beneish model is one of the most amazing instruments in rhetorical accounting research. Messod Daniel Beneish, an accounting professor at Indiana University, developed the Beneish model. The variables used in this model are obtained from the business entity's record and profit and loss statement (Beneish, 1999). The Beneish Model enables rhetorical accountants to evaluate corporate financial accounts from several perspectives.

According to the Beneish Model, the following variables have a high potential for detecting monetary data manipulation by business entities: days' sales in assets index; quality index; total accruals to total assets index; leverage index; sales; general and body expenses index; sales growth index; depreciation index; and margin of profit index. Beneish Model reveals that, higher days' sales in assets, higher accruals, higher declines in gross margins, and higher quality indicators of economic data manipulation (Mbasiti, Gyang & Ojaide, 2021).

### **Anonymous Communication**

Anonymous Communication denotes the sending of information, tips, and ideas that could aid the prosecution of fraudsters without the revelation of identity. Anonymous tips come in a wide variety of forms and quite several channels and are addressed to various individuals and groups within or outside the entity. Anonymous communication tip includes comments from suggestion box; email messages; anonymous phone calls and letters; posts on bulletin boards, written confirmation from debtors or/and creditors; fax messages (Ezenwafor & Udukeke, 2019).

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. The authors 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 (2012)

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maintained that tips may also be duplicated from news agencies, competitors, internet website postings, chat rooms, or government agencies. Or they may also be messages to an internal ethics hotline number.

### **Theoretical Framework**

#### **White-Collar Crime Theory**

The study is anchored on the White-collar crime theory propounded by Sutherland in 1939. White-collar criminals are opportunists, who over time take advantage of their circumstances and position to accumulate financial gain (Eze & Okoye, 2019). Sutherland was the first to coin the term and hypothesis “white-collar criminals”. The study defined his idea as a “crime committed by a person with respectability and high social status in the course of his occupation (Sutherland 1949, cited in Gbegi & Okoye, 2013). They are educated, intelligent, affluent, individuals who are qualified enough to get a job that allows them the unmonitored access to an often large sum of money. Fredrichs (2007) (cited in Mbasiti, et al. 2021) noted that a crime differs only in the backgrounds and characteristics of the perpetrators. Most, if not all, white-collar criminals are distinguished by a privileged life, a large proportion of them stemming from class inequality. It is estimated that much of white-collar crime goes undetected or, if discovered, goes undetected. Due to the high status of the perpetrators of these crimes, a highly skilled and experienced investigator or investigator like the Professional Forensic Accountant is required to prevent such high-profile fraud from occurring (Obiora, Onuora & Manafa, 2021).

Hence, the study is anchored on white-collar crime theory as the theory explains the rudiments and expectancies of forensic audit and assurance services about public funds and fraud.

#### **Review of Previous Empirical Studies**

Okoye, Adeniyi, and James (2019) conducted a study on the effects of forensic accounting on fraud management in selected firms in Nigeria. The study shows the significant influences of forensic accounting on fraud detection and prevention and also, that forensic litigation has no significant positive effect on the recovery of funds lost to fraud. The study recommended that companies in Nigeria step up their forensic accounting practices to deter fraud and also concluded that fraud investigation practices are very important for the prevention of fraud in manufacturing companies. Sule, Ibrahim, and Sani (2019) investigated the role of forensic accounting investigations in the detection of financial fraud in Nigeria. The study discovered that forensic accounting services have a substantial influence

on identifying financial crime and that forensic accounting investigations are a step forward in the finding of financial fraud and other fraudulent activities in Nigeria. According to the study, professional accounting authorities such as the Association of National Accountants of Nigeria (ANAN) and the Institutes of Chartered Accountants of Nigeria (ICAN) should encourage specialisation in forensic accounting services among the professional accountants in practice.

Eze and Okoye (2019) studied the effects of forensic accounting and fraud detection and prevention in Imo State's public sector in Nigeria. The study provided a correlation between forensic accounting and fraud detection and prevention in the public sector and advised that forensic accounting be strengthened in the public sector and that the top-level management should be committed to the program while the anti-graft agencies like the EFCC and ICPC should be repositioned to adopt forensic accounting techniques and also concluded that forensic accounting is important in the public sector given the huge amount of public fund that is rampantly embezzled or swindled. The findings and recommendations of Eze and Okoye (2019) are synonymous with that of Ibrahim and Yussuf (2019) who concluded that there is an observed influence of organisational resources and top management attitude toward change in the modern fraud investigation process and recommended that adequate budgetary allocation should be provided to the EFCC to employ competent forensic accountants, with leadership having the diverse background to lead the EFCC.

Ezenwafor and Udukeke (2019) examined the utilisation of data mining and anonymous communication techniques for fraud detection in large-scale business organisations in Delta State due to the growing incidence of frauds that are crippling businesses and socio-economic development of the state. The results showed that the accounting staff lowly utilised data mining and anonymous techniques for fraud detection. Furthermore, it was found that the types and status of organization in NSE significantly influenced respondents' ratings on the utilization of data mining but did not influence their ratings on the utilisation of anonymous communications for fraud detection. From the findings of the study, it was concluded that the accounting staff did not utilize forensic auditing investigation techniques for fraud detection in large-scale business organisations as required. Based on the findings, the researcher recommended among others, that 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, attitudes, and competencies for fraud detection.

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Hashem (2020) investigated the role of forensic accounting approaches in detecting non-numerical fraud risk variables in Amman Stock Exchange manufacturing businesses. The study recommended enhancing awareness of applying forensic accounting techniques' importance among chartered accountants. And, motivating them to use the forensic accounting techniques to detect any fraud practice and concluded that all independent variables of forensics have a high role in detecting fraud risk factors. Okoye, Nwoye, Akuchi, and Onyema (2020) examined forensic accounting techniques used to detect labor fraud in the state of Anambra, Nigeria. The result of the study suggests that there are no generally accepted forensic investigation techniques to detect fraud in the public sector and that there is a positive and significant association between forensic accounting methods and fraud detection in the public sector. The research found that data mining techniques should be fully applied in public sector fraud detection in Nigeria.

Eko, Adesola, and Eseneyen (2020) examined the use of forensic accounting techniques in preventing and identifying fraudulent activities in Nigerian commercial banks, especially evaluating the influence of commercial data mining, ratio analysis, and trend analysis approach in fraud tracking and prevention. The author recommends that commercial banks be obliged to acquire comprehensive data mining software facilities, as well as advanced training on the application of data mining and its usefulness in the banking sector. Bangura (2020) conducted a similar study in Sierra Leone, by examining forensic accounting techniques and fraud prevention in Sierra Leonean money deposit banks. The study shows the impact of forensic accounting techniques on corporate governance, internal control, and whistleblowing, which indicates that the forensic accounting techniques have a positive significant effect on corporate governance, internal control, and also on whistle blowing respectively of the surveyed Sierra Leonean deposit money banks. The study recommended that the management of Sierra Leonean deposit money banks should consider electing those with knowledge of forensic accounting techniques as members of the board and concluded that forensic accounting techniques have a significant positive effect on fraud prevention in Sierra Leone deposit money banks.

Ojukwu, Ubi, Olugbemi, Olugbemi, and Emefiele (2020) also conducted a study titled, "Forensic Accounting and Fraud Detection in Nigerian Universities (A Study of Cross River University of Technology)." This study discovered a substantial association between forensic accounting and financial fraud detection, as well as a large relationship between forensic accounting and financial reporting

quality. There was also a significant relationship between forensic accounting and internal control. The study concluded that forensic accounting services provide tertiary institutions with the necessary tools to deter fraudulent activities but do not curb fraudulent activities and recommended that the eradication of economic and financial crime through the incorporation of forensic accounting into the system will enhance the image of the universities under consideration. Another study by Mbasiti, Gyang, and Ojaide (2021) examined the extent to which forensic accounting techniques serve as a panacea for preventing revenue leakages in federal universities in Nigeria. The study revealed that forensic the use of data analysis tools has a positive impact on income leakages in Nigerian federal institutions. The study advised that forensic accounting data analysis techniques be used at Nigerian federal universities to help reduce income leakages in the system and that relevant authorities assist in ensuring that this is done. Also, forensic accounting technologies should be deployed and applied to prevent revenue leakages.

Dada and Jimoh (2020) investigated the impact of forensic accounting on the decrease of financial crimes in the Lagos State public sector. According to the findings of the study, litigation support services had a considerable but unfavourable impact (decrease) on financial crimes in the Nigerian public sector. The study advised that forensic accounting professionals be hired to provide additional litigation support services, such as serving as expert witnesses to help the court decide on problems that the court may not typically have the information to resolve. whereas more forensic accountants are engaged to reduce the rate of fraudulent cases in the Nigerian public sector and concluded that litigation support service (as a proxy for forensic accounting) is an anti-financial crime strategy that will help bring financial prudence and sanity to the Nigerian public sector's ministries, departments, and agencies The recommendations of Dada and Jimoh (2020) is in-line with that of Manhonlen, Otakefe and Osikhenaogiedu (2020) in a study which examined the role of the forensic accountants in combating economic and financial crimes in Nigeria. The study noted that forensic accounting serves as the basis for investigation, expert witness testimony, and the opinion of an expert in a lawsuit to unravel crimes and reach a resolution for recovery. The report recommends that the public and private sectors engage, recruit, and employ forensic accountants regularly to review, strengthen, and reappraise records and internal controls and also to check incidences of crime perception, as well as anti-corruption agencies saddled with the responsibility of fighting economic and

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financial crimes to employ and adopt engagement of forensic accountants regularly, among others for all-inclusiveness works.

Akinadewo and Akinkoye (2020) also investigated the unique forensic accounting procedures utilised in Nigeria to discover tax evasion. The study noted that there is no agreement as to the specific tools to be adopted for tax evasion detection and no record of it is included in the government reports. The study concluded that the techniques of forensic accounting, when applied, will reduce the rate of tax evasion, and improve the tax revenue of governments for economic development and growth. It was then recommended that the practitioners should include in the report of their tax evasion engagement to the government, the forensic accounting techniques, or the combination thereof, used along with the respective results.

Suleiman and Othman (2021) explored how forensic accounting investigations are done by authorities may aid the government in its anti-corruption measures in Nigeria. The study's findings suggested that forensic accounting techniques may be used to combat corruption in Nigeria and that technology-centric investigation is essential and that the frustration of the key players in the judiciary, such as the judges and the lawyers, is one of the causes of persistent corruption. Obiora, Onuora, and Manafa (2021) conducted an empirical analysis of forensic audit and assurance services to the Nigerian public sector. The study portrays the extent to which forensic audit & assurance services ensure performance and accountability in the Nigerian public sector organisation. The empirical analysis of the study indicates that there is a significant and positive relationship between forensic audit & assurance services and Nigerian public sector performance & accountability at a 1% significant level. Thus, the study concludes that forensic audit & assurance services do not only ensure Performance in the Nigerian public sector but also accountability in the financial records. The study recommended that the Association of National Accountants of Nigeria (ANAN) and the Institute of Chartered Accountants of Nigeria (ICAN) should promote forensic accounting formalisation and specialisation in their curricula, and academia should emphasize forensic accounting skills development through learning in a higher educational institution. Furthermore, the government should create a Public Recovery Fund (PRF) where money recovered through forensic accounting is saved and appropriately utilised to improve efficient and effective performance in the public sector.

Aminian and Tahriri (2021) intended to find out the elements affecting the quality of forensic accounting in a paper titled "creating an interpretative structural

model of the factors affecting the quality of forensic accounting in Iran." The study found that the goals and missions of forensic accounting, forensic accounting standards, professional skills, academic training, enactment of forensic accounting, and the need for a forensic accountant in organisations improve the quality of forensic accounting. The study recommended that a specialised institution related to forensic accounting be established in Iran and, based on the model presented in this research, implement the quality framework of forensic accounting in Iran in a desirable manner and also that a wide range of experts be used in future research to find factors affecting the quality of forensic accounting.

Alshurafat, Al Shbail, and Mansour (2021) evaluated the benefits and drawbacks of forensic accounting and their implications for socio-economic growth. According to the study, the strengths of forensic accounting include the benefits to students and accounting professionals, the significant need and increasing demand, the new career channels, and the reduction of fraud, while the weaknesses include a lack of regulation, inadequate control over the profession's entry, a lack of agreement on how to teach forensic accounting, and a lack of specialised research journals. The research advised raising the degree of professionalism in forensic accounting by forming ad hoc forensic accounting groups and ensuring the high quality of forensic accounting services by limiting access to the field. Sagir, et al. (2021) in a study on the impact of educational, legal, and behavioral factors on the applicability of forensic accounting in the public sector in Nigeria revealed that behavioral, educational, and legal factors are positively related to the applicability of forensic accounting in the states. The study noted that to successfully apply forensic accounting services, the educational, legal, and behavioral factors must be given special consideration. It was then recommended that all state and federal educational institutions (universities, colleges of education, and polytechnics) offering accounting and related courses should be compelled by their respective regulatory bodies to introduce courses related to forensic accounting into their curricula.

### **Discussion on Determinants of Forensic Accounting Techniques**

Drawing from the experience of the researcher and existing literature on forensics, the above conceptual model depicts the various available techniques of forensic accounting which includes the widely adopted techniques and the ones that are yet to be explored. The Data Mining technique makes use of application software in detecting fraud as it has scripting capabilities and can search organizations' databases for anomalies and suspicious patterns that are symptoms

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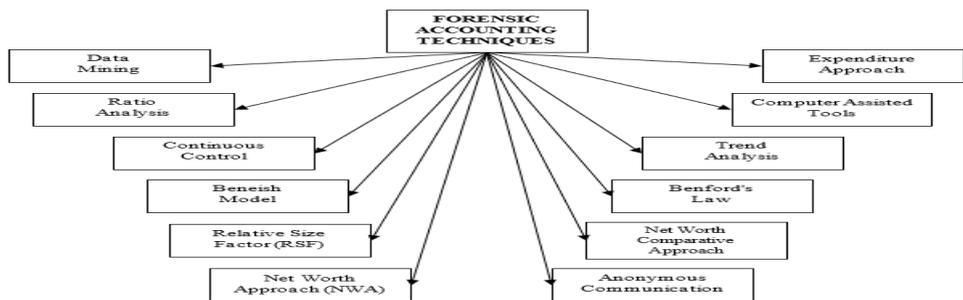
of fraud. Ratio analysis is the act of measuring the relationships among different financial statement items as well as between these items and nonfinancial data. Continuous control processes are concentrated in audit departments, branches, customers, and agency owners. It is considered one of the forensic accounting techniques that are used to obtain evidence related to fraud. The Beneish Model enables rhetorical accountants to evaluate corporate financial accounts from several perspectives. Beneish Model reveals that, higher days' sales in assets, higher accruals, higher declines in gross margins, and higher quality indicators of economic data manipulation (Mbasiti, Gyang & Ojaide, 2021).

The relative Size Factor (RSF) technique is the ratio of the largest numbers to the second largest number of a given set and when applied to figures, the unusual variations may be routed from fraud or genuine errors (Wadhwa & Pal, 2012; Yadav & Yadav, 2013). The scholars further asserted that if any stray instance is observed beyond the normal range, further investigation may be required which will assist in the detection of anomalies or routines. The Net Worth Approach (NWA) according to Biber (2010) has two methods of determining and verifying taxpayers' income. The direct method is specific, referring to the books and records used in the preparation of the relevant tax computations while the indirect method involves the determination of tax liabilities through an analysis of a taxpayer's financial affairs accumulating information beyond the taxpayer's declaration and formal books and records. Net Worth Comparative Method is like NWA, but in its application, the current net worth of the taxpayer will be compared with the value of the cumulative years in identifying the difference and treat as income not disclosed for the current year.

Benford's Law describes the sequence in which multiple numbers from real-life sources can be distributed in a specific, non-uniform way (Wells, 2012). It has been established that this technique is applied in the summarization after the classification of the first digit field and the calculation of the observed count percentage (Wadhwa & Pal, 2012). Computer-assisted auditing tools are computer programs that forensic accountants could make use of, in the audit procedure to process data of audit significance in the client's information system Trend analysis is one of the important forensic accounting techniques that can be deployed to identify frauds. Emphasis is on focusing on exceptional transactions. The expenditure approach involves the use of the expenditure of the taxpayer to determine the undisclosed income. Biber (2010) asserted that the purchasing of capital items by cash, personal and business loan repayments through cash, personal expenses paid with cash, in addition to increases in cash on hand should

be determined through an in-depth examination of taxpayer’s financial affairs. Anonymous communication denotes the sending of information, tips, and ideas that could aid the prosecution of fraudsters without the revelation of identity. Anonymous tips come in a wide variety of forms such as email messages; anonymous phone calls; posts on bulletin boards, written confirmation from debtors or/and creditors, and so on (Ezenwafor & Udukeke, 2019).

### Conceptual Model of Forensic Accounting Techniques



Source: Author 2022

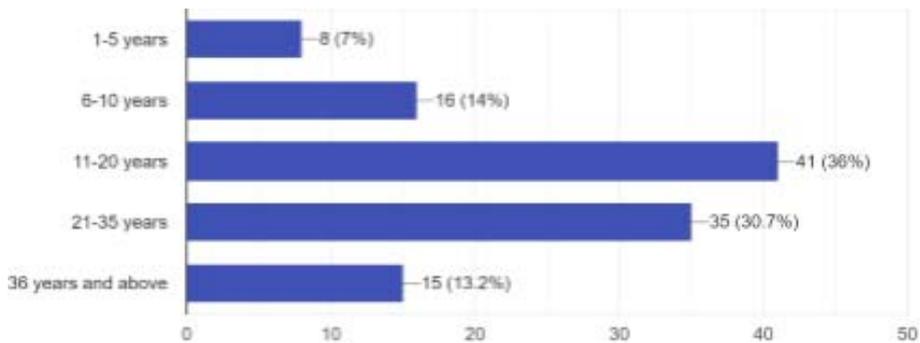
### Methodology

This study adopted both *ex-post facto* research design and descriptive survey research design. The descriptive survey research design is predicated on virtually collected primary data directly from respondents while *ex-post facto* examines already existing data to arrive at new findings. The respondents for this study were purposively selected and they include forensic accountants, fraud auditors, bankers, forensic investigators, finance enthusiasts, fraud investigators, and those in academia. The data for this study were gathered electronically using an online questionnaire through Google Forms. The researcher received 120 responses which were analysed using Google Form response analysis output and Microsoft Excel. Secondary data were also gathered from existing data, established by seasoned academics on the issue under evaluation. The literature for this study was obtained from journals, published books, reports, and articles that dealt with issues on forensic accounting, fraud examinations/investigation, forensic accounting techniques, and the roles of anti-corruption agencies in reducing fraudulent practices, both in Nigeria and abroad. The data are then presented using pie charts and bar charts. Through this approach, the researcher was able to arrive at the *Determinants of Forensic Accounting Techniques*.

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### Data Analysis and Presentation

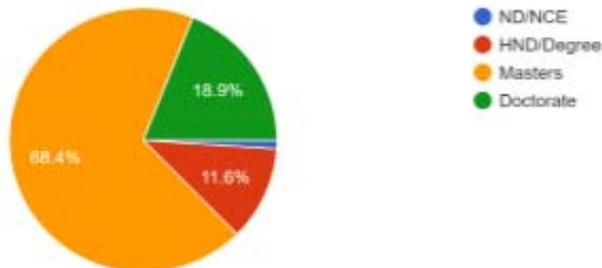
**Figure 1: Years of Experience**



Source: Field Report, 2022

Analysis from Figure 1 shows that 7% of the respondent has 1-5 years of work experience, 14% has 6-10 years of work experience, 36% has 11-20 years of work experience, 30.7% has 21-35 years of work experience, and 13.2% has work experience of 36 years and above.

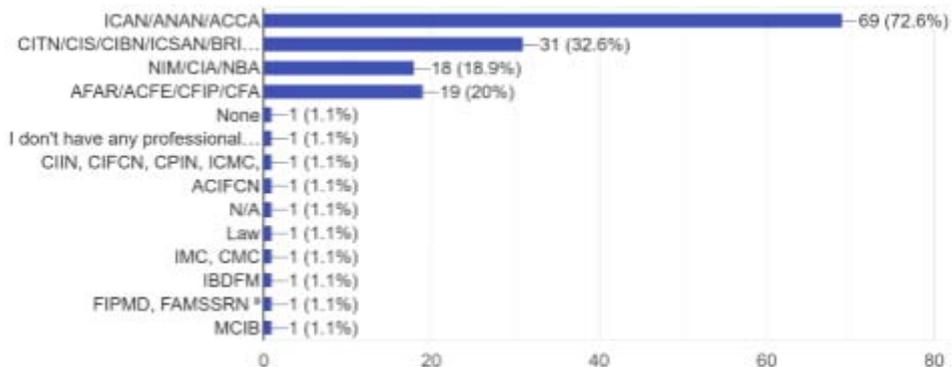
**Figure 2: The highest level of Education?**



Source: Field Report, 2022

Analysis from Figure 2 shows that 18.9% of the respondents are Doctorate holders, 68.4% of the respondents have Master’s degree, 11.6% holds HND/Bachelor’s degree and 1.1% of the respondents have ND/NCE as their highest level of education.

**Figure 3: Professional Qualification?**



Source: Field Report, 2022

Analysis from Figure 3 shows that 72.6% of the respondents have professional accounting qualifications of ICAN/ANAN/ACCA, 32.6% has professional accounting qualifications of CITN/CIS/CIBN/ICSAN/BRIPAN as a professional qualification, 18.9% have NIM/CIA/NBA as a professional qualification, 20% has AFAR/ACFE/CFIP/CFA as a professional qualification, 1.1% has CIIN, CIFCN, CPIN, ICMC as a professional qualification, 1.1% has IMC, CMC as a professional qualification, 1.1% has IBDFM as a professional qualification, 1.1% has FIPMD, FAMSSRN as a professional qualification, 1.1% has ACIFCN as a professional qualification, 1.1% has MCIB as a professional qualification, 1.1% has Law as a professional qualification.

### **Research Question One**

#### **What determines the technique(s) to be used during fraud investigation?**

The respondents have varying answers to this question, but the majority agreed that the main factor that determines the technique(s) to be adopted while investigating fraud is the nature of fraud under investigation. What makes up the nature of fraud includes the level of crime perpetrated, how much involved, the stages and complexity of the fraud, and who is involved.

According to the data gathered, the crime evidence such as documents and proof available may also determine the techniques to be adopted during the investigation. Criminal evidence may come in two different formats, verbal or/and physical. Although, this evidence can also be faked by the defendants to

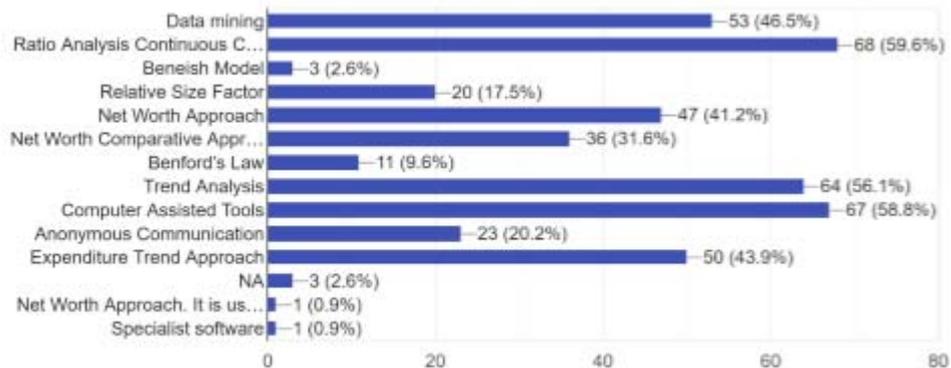
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demonstrate their innocence. The experience or expertise of the fraud examiner is involved also vital. The expertise of the examiner can be measured in terms of qualifications and certification required, while experience connotes the number of similar cases the examiner has handled and how successful the operation was.

The organisation where the fraud is committed also determines what technique(s) an examiner is to apply. An organisation could have policies/protocols stated regarding fraud. Some organisations have in-house fraud examiners, while many outsource only when a crime has been committed. Also, who committed the fraud matters (whether an insider or outsider). In situations whereby an examiner is outsourced, he/she maybe be provided with the organisation’s preferred procedure of fraud investigation.

**Research Question Two**

**Figure 4: Which of the following forensic accounting techniques are you familiar with?**



Source: Field Report, 2022

Analysis from figure 4 shows that 46.5% of the respondents are familiar with Datamining as a forensic accounting technique, 59.6 are familiar with Ratio Analysis Continuous, 2.6% are familiar with Beneish Model, 17.5% are familiar with Relative Size Factor, 41.2% are familiar with net Worth Approach, 31.6% are familiar with Net Worth Comparative Approach, 9.6% are familiar with Benford’s Law, 56.1% are familiar with Trend Analysis, 58.8% are familiar with Computer Assisted Tools, 20.2% are familiar with Anonymous Communication, 43.9% are

familiar with Expenditure Trend Approach, 0.9% are familiar with Net Worth Approach and 0.9% are familiar with Specialist software.

**Which of the above-listed techniques is the most suitable for forensic/fraud examination and why?**

In supplying an answer to this research question, the majority chose Data mining as the most suitable for forensic examination. This technique facilitates the extraction of hidden predictive information from large databases and has great potential to assist organizations to identify trends, anomalies, and other unusual activities thus allowing businesses to make proactive knowledge-driven decisions. Data mining includes the utilization of refined data analysis tools to find previously unknown, valid patterns and relationships in huge data sets. The respondents believe data mining is the most applicable because It leaves no stone unturned; it involves the inference from data that can serve as evidence; It enables the forensic auditor to get more information than what is presented; it involves most use of IT software; it can incorporate statistical models, machine learning techniques, neural networks, and mathematical algorithms; and It helps to dig out untampered information from sources.

Also, a significant number of responders see computer-assisted tools as the most suitable forensic investigation technique because it is efficient and transparent; and fact and figure can be gotten within a reasonable period. Other respondents chose computer-assisted tools because they provided more analytical reports; it is reliable and accurate; it generates reliable evidence needed for litigation; it is ICT driven, and it is easy to operate.

Trend Analysis according to a few respondents is the most suitable tool for forensic/fraud examination because it takes advantage of the periodic stamp attached to the transaction to systemize the collection of required data to prove or disprove cases. That is, it considers the use years in analysis. Trend analysis also gives broad knowledge of what happened in the previous year before the investigation by providing comparative figures. Because the Net Worth Approach is useful in determining net worth increase by considering the assets and liabilities, income, and expenses; and it takes care of both sources of funds and utilization of funds of all persons under investigation, some respondents find it appropriate.

A minority of the respondents will consider the Expenditure Trend Approach while examining fraud because it solves two things: it reviews the trend and identify abnormalities and probe further, and provides details of how funds were applied. The expenditure trend approach provides the magnitude and patterns of

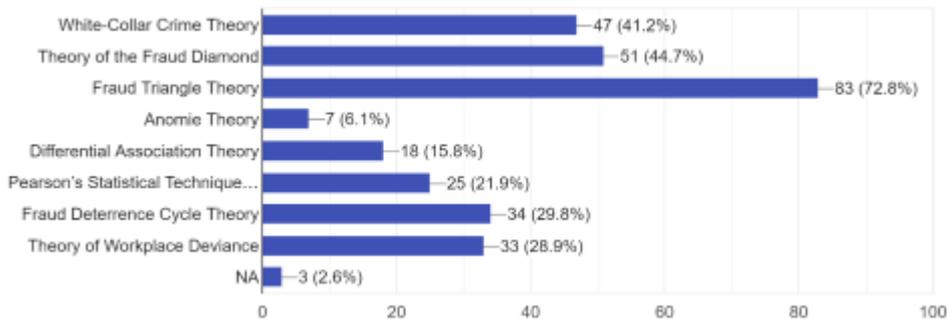
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expenses involved such that further queries can be raised to substantiate historical facts behind every expenditure incurred. Also, few respondents prefer Ratio Analysis and Continuous Control because it is the only technique that everyone or venture stakeholders will easily understand for decision making as it simplifies the identification of abnormal trends.

Also, very few numbers of respondents believe the Anonymous Communication approach can work because the investigation gives adequate information which is carried out under disguise. Using this method, facts or truth can easily gather without the element of fear. However, 1 out of the entire 114 (1.1%) respondents suggested a combination of different approaches will be better while handling fraud cases, especially when the crime committed is very complicated.

**Research Question Three**

**Figure 5: Which of the following theories or models of forensic accounting/fraud examination are you conversant with?**



Source: Field Report, 2022

Analysis from figure 5 shows that 41.2% of the respondent are conversant with White-Collar Crime Theory, 44.7% are conversant with the Theory of the Fraud Diamond, 72.8% are conversant with Fraud Triangle Theory, 6.1% are conversant with Anomie Theory, 15.8% are conversant with Differential Association Theory, 21.9% are conversant with Pearson's Statistical Technique, 29.8% are conversant with Fraud Deterrence Cycle Theory and 28.9% are conversant with Theory of Workplace Deviance.

**Which of the above theories best explain forensic accounting and why?**

Responses gathered for this research question show that the Theory of Fraud Diamond is most appropriate in forensic accounting because it guides forensic accountants on factors to watch out for while investigating fraud. The theory, assesses the four elements that influence a person to commit fraud, namely pressure, opportunity, rationalization, and capability. That is, it encompasses all the factors that make people involved in fraudulent practices. The Fraud Diamond Theory takes into consideration both accounting and non-accounting events that could lead to the conclusion that fraud has been committed and by who. Generally, records show the occurrence of the event, however, to ascertain who the perpetrators are, the principle of capability, opportunity, rationalization, and pressure comes into play.

A good number of respondents considered the Fraud Triangle Theory as the cyclical cause-effect approach to forensic accounting because it encompasses the core areas of fraud. The theory emphasizes more the three basic elements that characterise the perpetration of fraud which are opportunity, pressure, and rationalization. According to a responder, the individual who commits fraud follows a triangular sequence: a need that must be met; an opportunity to meet the need; and the ability to rationalize the fraud

Fraud Deterrence Cycle Theory according to some respondents best encapsulates forensic investigation because the best way to fight fraud is to deter its occurrence. It is when deterrence is not possible that you go to fraud prevention and then to fraud detection. Fraud deterrence. Beyond investigating fraud, forensic accounting aims at preventing its occurrence by examining processes and investigation and remediation of suspected or alleged problems. Fewer responders chose White-Collar Crime Theory as the universal foundational theory because fraud is easily being perpetuated in blue-chip companies without any early detection

Other respondents chose Pearson's Statistical Technique Theory because it measures the strength of the relationship between two variables and their association; Anomie Theory because most people attempt to achieve culturally acceptable goals; Expenditure Theory since fraud is mostly expenses or payable and trend analysis over a period will determine the further investigation; and finally, Theory of Workplace Deviance because it analyzed any significant violation of organisational norms

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### Discussion of Findings

This study discussed various scholarly definitions of forensic accounting, forensic accounting techniques, and fraud investigation. The study also highlighted the various techniques which can be applied in fraud investigation. From the empirics, forensic accounting was found to be the application of analytical and investigative skills to resolve financial issues in a manner that meets standards required by a court of law. Forensic accounting is a scientific accounting method for the detection, resolution, analysis, and presentation of fraud cases that can be used in court. (Oyedokun, 2013; Oyedokun, 2018; Kolawole, et al. 2018).

Analysis from this study shows that 36% of the respondents have between 11 and 20 years of work experience in their various fields. This shows that the respondents have enough experience which makes them suitable for this research and their responses can be assumed to be valid. The analysis also shows that 31.6% of the respondent have attended training or/and hold a certificate in Forensic and Fraud Examination while 68.4% of the respondent does not. It can then be concluded that the majority of the respondents have not been trained in forensic accounting and fraud investigation. The majority of the respondents are master's degree holders and are a member of relevant professional institutes/associations such as ICAN, ANAN, ACCA, CITN, CIS, CIBN, NIM, CIA, NBA, AFAR, ACFE, CFA, and so on.

Research question 1 sought to find the determinants of forensic accounting and fraud investigation techniques. The data gathered shows the nature of fraud under investigation which includes the level of crime perpetrated, how much involved, the stages and complexity of the fraud, and who is involved as the major determinant of techniques to be applied to fraud examination. Also, other factors such as criminal evidence, the expertise and experience of the examiner, organisational policies, and the risks involved.

Research question 2 was set to ascertain the various techniques with which forensic examiners are familiar and find out the most suitable for forensic/fraud examination. According to the data gathered, Data mining, Ratio Analysis Continuous, Trend Analysis, Computer Assisted Tools, Expenditure Trend Approach, and Net Worth Approach are the most popular among professional fraud examiners.

Data mining in this study emerged as the most suitable for forensic examination. This is because it involves the inference from data that can serve as evidence; It enables the forensic auditor to get more information than what is presented; it involves most use of IT software; it can incorporate statistical models,

machine learning techniques, neural networks, and mathematical algorithms; and it helps to dig out untampered information from sources. Also, computer-assisted tools are suitable forensic investigation techniques because they are efficient and transparent; and facts and figures can be gotten within a reasonable period. Computer-assisted tools have also been proven to provide more analytical, reliable, and accurate reports because it is ICT driven.

Trend Analysis takes advantage of the periodic stamp attached to the transaction to systemize the collection of required data to prove or disprove cases. That is, it considers the use years in analysis. Trend analysis gives broad knowledge of what happened in the previous year before the investigation by providing comparative figures. The Net Worth Approach is also useful in determining net worth increase by considering the assets and liabilities, income, and expenses; and it takes care of both sources of funds and utilization of funds of all persons under investigation, some respondents find it appropriate. Other techniques such as Expenditure Trend Approach, Ratio Analysis, and Continuous and Anonymous Communication come after the aforementioned.

The third research question seeks to ascertain the theories or models with which forensic examiners are conversant and to find out which of the theories or models best explain forensic accounting techniques. Analysis of the data gathered revealed White-Collar Crime Theory, Theory of the Fraud Diamond, and Fraud Triangle Theory are the most applicable theories that buttress forensic investigation.

The results show that the Theory of Fraud Diamond is most appropriate in forensic accounting because it guides forensic accountants on factors to watch out for while investigating fraud. The theory, assesses the four elements that influence a person to commit fraud, namely pressure, opportunity, rationalization, and capability. That is, it encompasses all the factors that make people involved in fraudulent practices. The Fraud Diamond Theory takes into consideration both accounting and non-accounting events that could lead to the conclusion that fraud has been committed and by who. The Fraud Triangle Theory was found to encompass the core areas of fraud. The theory further reveals that for fraud to occur, there is pressure in form of one need or the other that cannot be met and there is a window to exploit in form of opportunity and a rationale which is otherwise known as justification to engage in the act.

White-Collar Crime, Pearson's Statistical Technique Theory, Anomie Theory, Expenditure Theory, and Theory of Workplace Deviance were also found applicable to fraud investigation but not as known as the ones explained above.

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From the empirical studies, the use of forensic accounting skills and techniques was found to be a viable tool for investigating and detecting cases of corruption, bribery, financial fraud, and other fraudulent exercises both in the public and private sectors (Dada, et al, 2013; Gbegi & Adebisi, 2014; Sidharta & Fitriyah 2015; Dauda, et al. 2016; Oyedokun, 2018; Sule, et al. 2019; Okoye, et al, 2020; Ojukwu, et al. 2020). In addition, Ogbeide, et al. (2017) revealed that the perceived benefits and perceived risks of using forensic accounting services were largely significant in influencing organizations' intention to use forensic accounting in fraud detection and prevention in the Nigerian context. However, the study of Dada and Jimoh (2020) shows that litigation support services had a significant but negative effect (reduction) on financial crimes in the Nigerian public sector. They opined that forensic accounting experts be employed to carry out more litigation support services to serve as an expert witness that will assist the court to conclude issues that the court may not ordinarily have the knowledge to decide, while more forensic accountants are engaged to reduce the rate of fraudulent cases in the Nigerian public sector. Similarly, Manhonlen, Otakefe, and Osikhenaogiedu (2020) also noted that forensic accounting serves as the basis for investigation, expert witness testimony, and opinion of an expert in a lawsuit to unravel crimes and reach a resolution for recovery.

Furthermore, the legal factor constitutes the most significant hindrance to the use of forensic accounting techniques, followed by educational factors and political factors (Inyang & Effiong 2016). Sagir, et al. (2021) revealed that behavioral, educational, and legal factors are positively related to the applicability of forensic accounting in the states. He noted that to successfully apply forensic accounting services, the educational, legal, and behavioral factors must be given special consideration. Kolawole, et al. (2018) also noted that information technology (IT), auditors' independence, training and development, and banking policy have a positive relationship with the application of forensic accounting in Nigerian deposit money banks and also revealed that forensic accounting and banking policy reduces asset misappropriation in Nigerian deposit money banks.

Alshurafat, Al Shbail and Mansour (2021) stated the strengths of forensic accounting to be of benefits to students and accounting professionals, the significant need and increasing demand, the new career channels, and the reduction of fraud, and that the weakness factors are the lack of regulation, the lack of control over the profession entry, the lack of agreement on how to teach forensic accounting, the lack of specialized research journals. Ojukwu, et al. 2020 concluded that forensic accounting services provide tertiary institutions with the

necessary tools to deter fraudulent activities but do not curb fraudulent activities and recommended that the eradication of economic and financial crime through the adoption of forensic accounting in the system will improve the image of the universities under review. Another study by Mbasiti, et al.(2021) revealed that forensic data analysis techniques have positive effects on revenue leakages in Nigerian federal universities. The study of Suleiman and Othman (2021) recommended that the Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN) should promote forensic accounting formalization and specialization in their curricula, and academia should emphasize forensic accounting skills development through learning in a higher educational institution.

The study of Akinadewo and Akinkoye (2020) is of the view that there is no agreement as to the specific tools to be adopted for tax evasion detection and no record of it is included in the government reports. They opined that the techniques of forensic accounting, when applied, will reduce the rate of tax evasion, and improve the tax revenue of governments for economic development and growth. Also, Suleiman and Othman (2021) revealed that forensic accounting techniques are useful to curb corruption in Nigeria, that technology-centric investigation is essential and that to the frustration of the key players in the judiciary, such as the judges and the lawyers, is one of the causes of persistent corruption. They advocated that forensic bookkeeping minimised the level of fraudulent practices in Indonesia and Nigeria's public sector, their view was also corroborated by the study of Sidharta and Fitriyah (2015) and that of Igweonyia, (2016).

### **Conclusion and Recommendations**

This study is an in-depth evaluation of the various forensic accounting techniques which apply to fraud prevention. The data gathered shows the nature of fraud under investigation which includes the level of crime perpetrated, how much involved, the stages and complexity of the fraud, and who is involved as the major determinant of techniques to be applied to fraud examination. Also, other factors such as criminal evidence, the expertise and experience of the examiner, organisational policies, and the risks involved.

Although there is no “one size fit all” approach to fraud prevention, detection, and deterrence, this study affirmed, confirmed, and adduced the relevant forensic accounting techniques to be Data mining, Ratio Analysis Continuous, Trend Analysis, Computer Assisted Tools, Expenditure Trend Approach, and Net Worth Approach are the most popular among professional fraud examiners. However, the

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combination of two or more of the above-identified techniques is advised for forensic accountants, forensic legal practitioners, and all other similar parties as it gives them the flexibility to test different methods in the practice of forensic accounting and fraud investigation.

Also, this study ascertained the theories and models with which forensic examiners are conversant and which of the theories or models buttresses forensic accounting techniques. Analysis of the data gathered revealed White-Collar Crime Theory, Theory of the Fraud Diamond, and Fraud Triangle Theory as the most applicable theories that best explain forensic investigation.

From the findings of this study, therefore, the following are recommended:

1. that forensic accounting techniques should be deployed to help prevent and reduce fraudulent activity;
2. the need for corporations to engage the services of forensic accountants as forensic accounting now appears as one of the strategic and dynamic tools for the management of all types of corruption;
3. public and private sectors should engage, recruit, and employ the services of a forensic accountant to review, strengthen, reappraises records and internal control systems on a routine basis;
4. there is the need to focus on training and updating the skills of the internal control and audit staff in forensic accounting techniques, for their effective services deliveries;
5. the investigative legal system should be strengthened to be able to effectively handle forensic accounting and fraud cases;
6. educational and training institutions should consider the inclusion of forensic accounting curriculum in the relevant executive training;
7. governments at all levels should have the political will to prosecute offenders and institutionalize policies and employ the application of forensic accounting techniques;
8. Professional bodies should continue to encourage specialization in forensic accounting among the professional practices; and
9. the use of anonymous communication methods should be encouraged as well as extensive awareness should be put in place for the use by the public as well as quick responses to queries should be encouraged;

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