

## **AN INVESTIGATION INTO THE EFFECT OF FORENSIC ACCOUNTING PREDICTORS AND PROCUREMENT FRAUD IN OIL AND GAS COMPANIES IN NIGERIA**

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### **ABSTRACT**

*This study investigated the forensic accounting predictors on procurement fraud in Nigeria's Oil and Gas sector. This study adopted a survey research design. The target population for this study was 206 staff of 8 major marketers in oil and gas company in Nigeria. The study collected primary data from the partakers through a structural questionnaire. The Primary data was obtained from the use of structured questionnaires. The population was two hundred and six (206) employees of the Audit and finance/Account department s from the 8 major marketers oil and gas company in Nigeria. The sample size was one hundred and thirty-six (136) respondents using stratified Sample technique with the use of Taro Yamane (1967) Model. Data were obtained through the use of a well-structured questionnaire. Descriptive and inferential (regression) statistics were used for data analysis. The findings revealed that there is a significant effect of forensic accounting techniques on procurement fraud in the oil & gas company in Nigeria with the Model fitting information telling how well model fit the data resulting in ( $P = 0.001$ ) which is below the significant level. The study concluded that only forensic accounting technology knowledge reduces procurement fraud in the oil and gas companies in Nigeria, significantly. It is recommended that there should be continuous enforcement of anti-fraud laws by the established anti-fraud agencies such as the Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices and Other Related Offences Commission (ICPC), the Code of Conduct Bureau (CCB).*

*Keywords: Forensic accounting predictors, Forensic accounting technical knowledge, Forensic accounting analytical technique, Procurement fraud*

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### **1.0 Introduction**

Globally, there existed various instances of fraudulent activities, for instance the cases of Enron, Bernie Madoff Scandals, Lehman Brothers, WorldCom, Tyco International Limited, Parmalat Crises in Italy, Adelphia Communications Corporation in the United States of America, the Bank of Credit and Commerce International (BCCI) and Polly Peck in the United Kingdom, among others. These cases revealed wide failures and fraud both fraudulent financial reporting and misappropriation of assets causing huge loss of money by investors (Kennedy, 2012). In

Nigeria, instances of such cases were that of Afribank Plc, Cadbury Nigeria Plc, Oceanic bank PLC, African Petroleum Plc, among others. These cases were caused by massive fraudulent activities (Okafor, 2013).

International Monetary Fund (2017) argued that crimes are aggravated by financial needs caused by lack of self-control, indiscipline, greed, drugs addiction, gambling, debt, peer and family pressure, poor investment decision or living above one's means. Financial crimes such as fraud in oil and gas sectors are perpetrated by the rank and file depending on their capacity,

capability, and intelligence in consonance with government agencies in order to avoid its consequences such as prosecution and by the law. It has become difficult to curb financial crimes committed in all sectors of the economy due to bureaucracy and a high level of corruption (Adebisi, 2016) and billions of naira are lost every year as a result of fraudulent activities (Akinbowale, 2018; Amake and Ikathua, 2016). IMF further argued that such an amount of money represents only the amount that is made public. Akinbowale (2018) citing Rivady (2006) said corruption in Nigeria has a negative impact on the economy and national identity as individuals, government, institutions, countries, and the society as a whole were the victims in one way or the other. All these led to the low ranking of the country by Amnesty International (Gbegi & Adebisi, 2014)

According to Efosa and Kingsley (2016), forensic accountants are experienced auditors, accountants, and investigators that are hired to look into legal and financial documents to detect fraud and prevent a recurrence of sharp practices. These professionals also provide services in areas such as criminal investigation, shareholders' and partnership disputes, business economic loss, mediation and arbitration, professional negligence, personal injury claim/motor vehicle accident, accounting, damages, analysis, evaluation, and general consulting (Oluyombo & Okunola, 2018). Forensic accountants, law enforcement personnel, and lawyers work together during investigations and often appear as expert witnesses during trials (Oyedokun, 2015; Rabiou and Noorhayati, 2015; Suleiman et al., 2018). Essentially, forensic accountants are saddled with the responsibility of correcting the effects of fraud and technical errors made by the human (Oyedokun, 2015).

In the view of the Nigerian Institute of Advanced Legal studies (2010), oil and gas sectors of the economy should be involved in the forensic investigation initiative since it is one of the biggest sector in the Nigerian economy and it is the victim of most of financial crimes and corrupt practices. This was also the call of Efosa and Kingsley (2016) when they identified forensic accounting techniques as the initiative which can help the traditional auditor in order to properly validate their opinion on the financial Statement of entities audited. This researcher is however motivated by this call and the alarming rate of financial crimes in the oil and gas sector of the economy as reported, thus, this study focused on examining the influence of forensic accounting on financial crimes in the Oil and Gas Sector of the Nigerian Economy.

### **Statement of the Problem**

However, most of the recent studies on the influence of forensic accounting technique were not specifically on oil and gas sector of Nigeria's economy but some (Okoye, Adeniyi & Igbojindu, 2020; Sule, Ibrahim, Sanni, 2019) focus on Nigeria's Deposit Money Banks while others (Samuel & Fatai, 2020; Abdulrahman, 2019) focus on Nigeria's public sector. As argued, Akinbowale (2018) and Efosa and Kingsley (2016) saw forensic accounting technique as capable of stemming the tide of financial malfeasance in all sectors while Ozumba, et al. (2016) and Akanni and Ogbeide (2017) argued that forensic accounting technique only cannot be effective in tackling financial malfeasance if other factors such as fair playing ground, professionalism in the act of using such technique, etc. are not available.

In Nigeria's oil and gas sector, the statutory audit has previously been the legal and authorized financial reporting practice

but its limitations are generally acknowledged by ISA 240 (International Standard of Auditing) and NSA (Nigerian Standards on Auditing No 5) (Sule, Ibrahim & Sanni, 2019). it is therefore imperative to look at the influence of forensic accounting technique on the oil and gas sector specifically amidst the different arguments on its effectiveness (in various sectors) and the increased rate of corruption being reported in the Oil and Gas sector since the sector is the mainstay of the nation's economy. Specifically, in this study, financial crimes refer to fraud, electronic crime, money laundering, terrorist financing, bribery and corruption, market abuse and insider dealing, Information Security and Bunkering.

### **Objective of the Study**

To assess the effect of forensic accounting techniques on procurement fraud in the oil and gas companies in Nigeria.

### **Hypothesis**

H<sub>01</sub>: Forensic accounting techniques have no significant effect on procurement fraud in the oil and gas companies in Nigeria.

## **2.0 Literature Review**

### **2.1 Conceptual Review**

#### **Procurement Fraud**

Procurement fraud is a deliberate deception with the intention of influencing any stage of the procure-to-pay life cycle so as to maximise financial gain or cause a loss (UK National Fraud Authority, 2017). It can be perpetrated by contractors or sub-contractors to the organisation as well as the staff within the organisation (UK National Fraud Authority, 2017). According to Kolawole, et al. (2018), procurement fraud can be divided into two, namely; during the time before a contract is awarded and after the contract has been awarded.

Procurement fraud before the contract is awarded includes fraud during the submission process, such as; premature opening of bids, falsifying bid logs, unjust extension of the time limit, leakage of bid information (leaking bid information to a particular bidder for him to get an advantage), altering bids and document bid-rigging schemes (UK National Fraud Authority, 2017).

On the other hand, procurement fraud after awarding the contract includes; accounting mischarge schemes, labour mischarge schemes, product substitution schemes, conflict of interest, Single source supplier schemes, and false invoicing schemes. Essentially, accounting mischarge schemes are those involving charging buyers unallowable costs, misrepresenting or hiding the allowable cost from the buyers and concealing the unallowable cost in accounts which are unlikely to be detected (UK National Fraud Authority, 2017). Labour mischarge schemes involves situations where contractors falsify staff strength, inflate invoices and payments received, and falsify staff working hours. Product Substitution Scheme involves supplying supplies/products that are of inferior quality, once the contract for products and supplies has been awarded, so as to save cost (UK National Fraud Authority, 2017).

#### **Forensic Accounting Technique**

Rezaee, Wang, and Brian (2018) noted that the objectives of forensic accounting include: assessment of damages caused by an auditor's negligence, fact-finding to see whether embezzlement has taken place, in what amount, and whether criminal proceedings are to be initiated; a collection of evidence in criminal proceedings; and computation of asset values in divorce proceedings. They argued that the primary

orientation of forensic accounting is explanatory analysis (cause and effect) of a phenomenon- including the discovery of deception (if any), and it's effects-introduced on the accounting domain.

According to Rezaee, et al. (2018), forensic accountants are trained to look beyond the numbers and deal with the business realities of situations. Analysis, interpretation, summarization, and the presentation of complex financial business-related issues are prominent features of the profession. They further reported that the activities of forensic accountants involve: investigating and analysing financial evidence; developing computerized applications to assist in the analysis and presentation of financial evidence; communicating their findings in the form of reports, exhibits, and collections of documents; and assisting in legal proceedings, including testifying in courts as an expert witness and preparing visual aids to support trial evidence.

As posited by Oyedokun (2019), some forensic accountants, of course, specialize in certain areas such as information technology. However, all well-trained forensic accountants should possess an array of skills, among which are: auditing skills, good accounting knowledge, knowledge of information technology (IT), knowledge of criminology and Communication skills. Meanwhile, Bronner (2014) concluded that Forensic Accounting Techniques such as interviewing, computer assisted reviews, like data mining, and document review techniques are also useful to detect fraud. Also, there are special auditing protocols that must be followed because of the legal sensitivity of forensic accounting since audit findings and conclusion can be challenged in court of law or in an adjudication proceeding (Rechman, 2020).

### **Forensic Accounting Technical Knowledge**

Onodi, Okafor, and Onyali (2015) are of the opinion that forensic investigative skills are required to uncover and establish the occurrence of financial crimes. In the work of Oluyombo (2016), forensic audits are more intensive than regular audits and are usually conducted in a series of steps to determine if allegations can be substantiated and to identify the nature of any further work needed. Important first steps are to ensure that the allegation or complaint has merit, adequate evidence is available and that a department has the authority to investigate or audit. This is particularly important when a recipient of a grant, contribution, or other transfer payment receives resources from sources other than the department. In this regard, it is also important that the records of the recipient allow for the investigation or audit to trace how a department's funds were used.

To Rezaee, et al. (2018), forensic accounting requires a clear and detailed audit plan that is designed to obtain information on how, when, and where a wrongdoing occurred and who committed such a wrongdoing. Normally, a preliminary examination would be conducted to allow for the assessment of the allegations or complaints in terms of specified criteria such as materiality and impact. An audit plan should have clear objectives and timeliness; identify the skills needed, the estimated costs, and any limitations on the scope of the examinations. Contractors should have statement of work (engagement letter) detailing their roles and responsibilities.

### **Forensic Accounting Analytical Technique**

Onodi, Okafor and Onyali (2015) are of the opinion that forensic accounting analytical skills are required to analyze the occurrence of financial crimes due to the

incidence of fraud and misappropriation of funds. According to them, the analytical technique is required in recent time where there is a threat to traditional auditing as a branch of accounting profession. The analytical skill is concerned with the careful examination of evidence and nature of accounting data to perform risk assessment and detect financial misrepresentation as well as financial statement fraud (Rick & Iyer, 2015).

To enhance analytical technique, a forensic accountant must possess the following characteristics/qualities: curiosity, persistence, creativity, discretion, organization, confidence, and sound professional judgement (Onodi, Okafor & Onyali, 2015). A Forensic Accountant must be open to consider all alternatives, scrutinize the fine details and at the same time see the big picture. In addition, a Forensic Accountant must be able to listen effectively and communicate clearly, calmly and concisely.

### **Forensic Accounting Investigation Technique**

Amahalu, Ekechukwu and Obi (2017) defined forensic investigation as the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law. It is the integration of accounting, auditing and investigative skills (Dada, Owolabi & Okwu, 2013). According to Okoye, et al (2020), forensic investigation are essential to the legal system, providing expert services such as fake invoicing valuations, suspicious bankruptcy valuations, and analysis of financial documents in fraud schemes. Wada & Crumbley (2021) defined forensic science as the application of laws of nature to the laws of man. He described forensic scientists as examiners and interpreters of evidence and facts in legal

cases that also offers expert opinions regarding their findings in court of law.

Dhar and Sarkar (2010) defined forensic accounting as the application of accounting concepts and techniques to legal problems. It demands reporting, where accountability of the fraud is established and the report is considered as evidence in the court of law or in administrative proceedings. Forensic accounting is a discipline that has its own models and methodologies of investigative procedures that search for assurance, attestation and advisory perspective to produce legal evidence.

### **Litigation Support Services**

Litigation support skills take into cognizance the interpretation and representation of problems that are connected to helping current or imminent litigation. In this aspect of knowledge, the forensic accountant might be told to attach a supposed value for the loss caused by those involved in the legal conflict and also asked to help in providing solution to conflicts even before they go to court. Due to the knowledge of forensic accountants, they are usually intended to be proficient consultants and expert witness. Litigation support skill is employed in the instance of financial crime in order to ascertain the extent of damage to the organisation and also investigate impending inherent losses.

Litigation support is provided throughout all phases of a dispute; with extensive experience conducting licensing and royalties, there is a need to provide expert testimony involving disputes between clients and their business partners, such as, preparation of damage calculations, in addition to other related services involving licensing of intellectual property. Litigation Support skill experience with funds is meant to resolve claims, and also render advice



throughout the process of evaluating and calculating damages, preparing for tax issues triggered by a settlement or judgment, and supporting receivers and bankruptcy trustees (Popoola et al., 2019).

## **2.2 Theoretical Framework**

### **The Fraud Diamond Theory**

The Fraud Diamond Theory (FDT) was propounded by Wolfe and Hermanson (2004). The theory is seen as an expansion of the Fraud Triangle Theory. Like the Fraud Triangle Theory, FDT do not only tell us that fraud exists but also explain and give insights into why and how fraud exists. While Fraud Triangle Theory identifies three elements that enhances perpetration of financial fraud, FDT added another element, which is capability (Asumka, 2018). Wolfe and Hermanson (2004) argued that although perceived pressure might coexist with an opportunity and a rationalization, it is unlikely for fraud to take place unless the fourth element (i.e., capability) is also present. In other words, the potential perpetrator must have the skills and ability to commit fraud.

Wolfe and Hermanson (2004) maintained that opportunity opens the doorway to fraud, and incentive (i.e. pressure) and rationalization lead a person toward the door. However, capability enables the person to recognize the open doorway as an opportunity and to take advantage of it by walking through repeatedly. According to Hooper and Pornelli (2010), the theory proposes that pressure can lead one to seeking opportunity, while both pressure and opportunity can encourage rationalization. Meanwhile, none of them alone or together can cause an individual to engage in activities that could lead to fraud until the fraudster has the capability to do so.

### **2.3 Empirical Review**

Donwa, Mgbame and Julius (2015) examined corruption in the oil and gas industry as implication for economic growth. Library research method was adopted for the study and the authors discovered that the level of corruption in Nigeria has a significant impact on economic growth. They highlighted the implication of this finding to be that the economy cannot grow fast without zero tolerance in corruption. Thus, they concluded that despite the efforts of ICPC and EFCC, corruption still remains a central problem to Nigeria's economy. The finding of this study is similar to that of Nwankwo (2014) who empirically investigated the impact of corruption on the growth of Nigerian economy using granger causality and regression techniques. His investigation revealed that the level of corruption in Nigeria over the years has had a significant negative impact on economic growth in Nigeria. The implication, according to him, being that the economy cannot grow fast without zero tolerance in corruption.

Samuel, Aju and Elaigwu (2014) evaluated the implication of Economic and Financial Crimes Commission and Corruption on the Consolidation of Democracy and Sustainable Development and Growth in Nigeria from 2004-2008. Frequency Distribution tables and Percentages were utilized as the data analysis technique. Findings showed that EFCC can curb corruption in Nigeria; and that the Economic and Financial Crime Commission has saved billions of Naira for the government through monies retrieved from its culprits. Odubunmi and Agbelade (2014) investigated the causality between corruption and economic growth in Nigeria. Johansen cointegration test, ADF unit root test, Granger causality test and Ordinary Least Square methods were employed on time series (secondary) data, covering 1990 and 2010. The results of their

analyses indicated that corruption exhibited a significant positive relationship with economic growth (GDP).

The result of Granger causality tests showed that corruption Granger cause FDI inflow, government expenditure, gross capital formation, openness and globalization of the economy. Also, there is unidirectional causality from corruption to Economic growth (GDP). This confirms the existing arguments that the level of corruption in a country is a relevant determinant of the level of economic growth. Olurankinse and Bayo (2014) assessed the effectiveness of External Control Institutions on Public Funds Management, taking evidence from Ondo State Nigeria. The empirical analysis carried out in the study employed the Censored Logistic Regression of the Maximum Likelihood Technique. The result of the study shows that there is mismanagement of funds in our public sectors identified by fraud and corruption.

Igbokwe-Ibeto and Okoye (2014) examined the structural basis of corruption in the country and efforts being made by anti-graft agencies to combat the scourge. The authors employed a contextual and

theoretical approach in the study and affirmed that corruption has become a way of life in Nigeria; and that this explains why it has been difficult to combat its rising profile even with the existence of the anti-graft agencies. The simple implication of this position by the authors is that so far the operations of the anti-graft institutions in Nigeria has not made any remarkable (significant) impact in curbing corruption in the nation.

### 3.0 Methodology

This study employed survey research design. The Population of this study consisted of 206 employees of Finance and Audit departments of 8 major marketers (Mobil Oil, Total, Oando, Conoil, Capital Oil, Eternal Oil, Forte Oil, MRS Oil) in the oil and gas companies of downstream sector which were listed on the Nigeria Stock Exchange as at 31st December, 2021. The sample size consisted of 136 staff/employees of both Account and Audit departments of 8 major marketers of oil and gas company listed on Nigeria Stock Exchange operating at downstream sector using Taro Yamane Formula. Data was analyzed using inferential statistics.

Taro Yamane (1967) formula as:

$$n = \frac{206}{(1 + 206(0.05)^2)}$$

$$n = \frac{206}{(1 + 206(0.0025))}$$

$$n = \frac{206}{(1 + 0.515)} \quad n = \frac{N}{(1 + N(e)^2)}$$

$$n = \frac{206}{(1.515)}$$

$$n = 135.9$$

$$n \square 136$$

n =

where N = population size, n = the sample size, e is the margin error, which could be at 10%, 5% or 1%.

**Model Specification**

$$PF = \beta_0 + \beta_1 \text{FAIT} + \beta_2 \text{FATK} + \beta_3 \text{FAAT} + \beta_4 \text{LSS} + \mu$$

**Where**

$\beta_0$  = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$  = Parameter estimates

PF = Procurement Fraud

FAIT = Forensic Accounting Investigation Technique

FATK = Forensic Accounting Technical Knowledge

FAAT = Forensic Accounting Analytical Technique

LSS = Litigation Support Services

$\mu$  = Error term

**4.0 Results and Analysis****Regression Analysis for Hypothesis**

Ordinal Regression Analysis								
		Coefficients	Std. Error	Wald	Df	Prob	95% Confidence Interval	
							Lower Bound	Upper Bound
Location	FAIT	.022	.036	.366	1	.545	-.049	.093
	FATK	.100	.029	11.750	1	.001	.043	.157
	LSS	-.090	.071	1.585	1	.208	-.229	.050
	FAAT	.025	.034	.518	1	.472	-.042	.092
<b>Diagnostic Tests</b>	Statistics		Prob					
Model Fitting	616.085		0.001					
Goodness of Fit								
Deviance	1708.711		0.993					
Pearson	616.085		1.000					
Pseudo R-Square	0.202							
Test of Parallel line	585.397		0.999					

Dependent variable: PF

**\*significant at 5%**

**Source: Author's Computation (2024)**

**Interpretation**

$$PF = \beta_0 + \beta_1 \text{FAIT} + \beta_2 \text{FATK} + \beta_3 \text{LSS} + \beta_4 \text{FAAT} + \mu$$

$$PF = \beta_0 + 0.022 \text{FAIT} + 0.100 \text{FATK} - 0.090 \text{LSS} + 0.025 \text{FAAT} + \mu$$



The result of the analysis indicates that Forensic accounting techniques proxy by Forensic Accounting Technology Knowledge (FATK), Forensic Accounting Investigation Technique (FAIT), and Forensic Accounting Analytical Technique (FAAT) are positive predictors while Litigation Support Skills (LSS) is a negative predictor of procurement fraud in the oil and gas companies in Nigeria.

For every one unit increase in Forensic Accounting Investigation Technique (FAIT) there is a predicted increase of 0.022 in the log odds of falling at a higher level in the procurement fraud in the oil and gas companies in Nigeria. This indicate that Forensic Accounting Investigation Technique (FAIT) were likely to indicate greater prevention of procurement fraud. Although the probability of Wald statistic is 0.545, this indicates that Forensic Accounting Investigation Technique (FAIT) was not a significant predictor in the model.

The second Predictor variable is Forensic Accounting Technology Knowledge. The result indicates that for every one unit increase in Forensic Accounting Technology Knowledge (FATK) there is a predicted increase of 0.100 in the log odds of falling at a higher level in the procurement fraud in the oil and gas companies in Nigeria. This indicate that Forensic Accounting Technology Knowledge were likely to indicate greater prevention of procurement fraud. Also, the probability of Wald statistic is 0.001, this indicates that Forensic Accounting Technology Knowledge (FATK) was a significant predictor in the model.

Also, the Fourth Predictor variable is Forensic Accounting Analytical Technique, for every one unit increase in Forensic Accounting Analytical Technique (FAAT) there is a predicted increase of 0.025 in the log odds of falling at a higher level in the procurement fraud in the oil and gas companies in Nigeria.

This indicate that Forensic Accounting Analytical Technique (FAAT) were likely to indicate greater prevention of procurement fraud. Although the probability of Wald statistic is 0.472, this indicates that Forensic Accounting Analytical Technique (FAAT) was not a significant predictor in the model.

The third Predictor variable is Litigation Support Skills. The result indicates that for every one unit increase in Litigation Support Skills (LSS) there is a predicted increase of 0.090 in the log odds of falling at a lower level in the procurement fraud in the oil and gas companies in Nigeria. This indicate that Litigation Support Skills (LSS) was likely to indicate lower prevention of procurement fraud. Although the probability of Wald statistic is 0.208, this indicates that Litigation Support Skills (LSS) was not a significant predictor in the model.

To determine how well the model fits the data, the parameter of the model fit information will be used. The model fitting information tells how well model fit the data. The result is 0.001 which is below the significant level. Significant value indicates that the model fit the data set. Hence, we accept the alternative that state that there is significant effect of forensic accounting techniques on procurement fraud in the oil & gas companies in Nigeria.

### **Discussion of Findings**

Relating the findings with the evidence reported by previous studies, these results digress from the conclusion of Raimi, Suara and Fadipe (2013) that explored the role of both anti-graft agencies of ICPC and EFCC in ensuring accountability and corporate governance in Nigeria in the face of endemic financial indiscipline in both public and private sector organizations. Adopting the narrative-textual case study (NTCS) as the methodological approach for their study, it

was discovered that both agencies have been hindered by administrative and judicial bureaucracy from performing creditably well. It was also discovered that the role of both agencies have been functionally duplicated, as they go after the same culprits. Meanwhile, the result of the present study corroborates the findings of Donwa, Mgbame and Julius (2015) that examined corruption in the oil and gas industry as implication for economic growth.

Library research method was adopted for the study and the authors discovered that the level of corruption in Nigeria has a significant impact on economic growth. They highlighted the implication of this finding to be that the economy cannot grow fast without zero tolerance in corruption. Thus, they concluded that despite the efforts of ICPC and EFCC, corruption still remains a central problem to Nigeria's economy. The finding of this study is similar to that of Nwankwo (2014) who empirically investigated the impact of corruption on the growth of Nigerian economy using granger causality and regression techniques. His investigation revealed that the level of corruption in Nigeria over the years has had a significant negative impact on economic growth in Nigeria. The implication, according to him, being that the economy cannot grow fast without zero tolerance in corruption.

### 5.0 Conclusion and Recommendations

The study concluded that only forensic accounting technology knowledge reduces procurement fraud in the oil and gas companies in Nigeria, significantly. It is recommended that to reduce the level of deliberate deception of procure-to-pay lifecycle fraud among oil and gas companies in Nigeria, there should be continuous enforcement of anti-fraud laws by the established anti-fraud agencies such as the Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices and Other Related Offences Commission (ICPC), the Code of Conduct Bureau (CCB)

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