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Effect of audit committee attributes on earnings quality of listed oil and gas companies in Nigeria

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Abstract
This quantitative study investigates the influence of audit committee size, expertise, and gender diversity on earnings quality for publicly quoted oil and gas firms on the Nigerian Stock Exchange (NSE) from 2016 to 2020. The objective of this research is to evaluate how these factors affect the earnings quality of these firms. The study employed a correlational research design and developed three hypotheses. After applying a filter, three unqualified firms were excluded, and secondary data was gathered from the annual reports of eight companies. The data was subsequently analyzed using generalized least squares regression. The findings demonstrate that gender diversity, audit committee size, and financial expertise all have a positive and significant influence on the earnings quality of listed Nigerian oil and gas firms. As a result, the study suggests that oil and gas firms should prioritize maintaining an adequately sized audit committee, appointing members with financial expertise, and promoting gender diversity.

Keywords: Audit Committee Size, Earnings Quality, Financial Expertise, Gender Diversity, Oil and Gas

1. Introduction

Academic discourse has shifted its focus to earnings manipulation as a result of the global accounting scandals that have involved major corporations such as Enron, Lehman Brothers, Toshiba, worldCom, Palmat, and Nortel. It has been reported that some companies intentionally manipulate their profits downward to avoid taxes (Goncharov & Zimmermann, 2006), while others manipulate their profits upward to mislead investors and other stakeholders (Shivakumar, 2000). Likewise, the recent cases of the Oando Oil PLC and Arik Airlines scandals in 2017 have raised concerns among researchers, investors and policymakers in Nigeria. This is because earnings manipulation can have detrimental effects on stakeholders. According to Abubakar et al. (2021), there were 1,639 cases in Nigeria in 2012 with losses of US$18.5 million, in 2013 there were 3,380 cases with losses of US$314.5 million and in 2014 there were 3,756 cases with losses of US$254.5 million US dollars. To minimize such manipulative scandals and uncertainties in the future, investors demanded high-quality and reliable earnings information that reveals the true nature of company performance (Subramanyam & Wild, 2014).

There is an ongoing debate among researchers regarding the influence of audit committee characteristics on the earnings quality. While some studies, such as those by Ud Din *et al.* (2019), Hamdan (2020), Ngo and Le (2020), Masmoudi and Makni (2020) and Akebsee *et al.* (2022) have examined this relationship, however, these have not provided consistent results, and most of them have been conducted in developed countries. Even the few studies conducted in Nigeria (Mustapha *et al, 2019*; Nwoye, Anichebe, & Osegbue, 2020; Emmanuel & Emem, 2020) have focused on the food and beverage, manufacturing, and financial services industries, neglecting the oil and gas sector. This study aimed to explore the effect of Audit committee size, Audit financial expertise, and Audit committee gender diversity on earnings quality in companies listed in the Nigerian oil and gas industry.

In order to achieve the stated objective, three hypotheses were formulated in null form:

H_{o1}: audit committee size has no significant impact on the earnings quality of Nigerian listed oil and gas companies.

H_{o2}: the financial expertise of the Audit Committee has no significant effect on the earnings quality of Nigerian listed oil and gas firms.

H_{o3}: diversity on audit committees has no significant influence on the earnings quality of Nigerian listed oil and gas firms.

2. Literature Review and Hypotheses

2.1 Concept of Earnings Quality

According to Ohlson and Feltham (1995), earnings quality refers to investors' ability to use current financial information to predict a company's future earnings. Alarussi and Alhaderi (2018) describe earnings quality as the reliability and credibility of a company's reported earnings, and its ability to forecast future earnings. This is evaluated by assessing the consistency and sustainability of its earnings. Earnings quality influences the importance of profit in evaluating a company's performance (Subramanyam & Wild, 2014), earnings quality is that which is honestly and fairly disclosed by the companies as their actual earnings report to the shareholders of the client organization. Earnings quality on the relevance of profit in measuring company performance (Subramanyam & Wild, 2014). It is considered high quality if the likelihood of errors and misstatements is minimal or non-existent (Ewert & Wagenhoper, 2010). For the purpose of this study, earnings quality refers to the earnings that reflects actual and reliable data to make informed decisions.

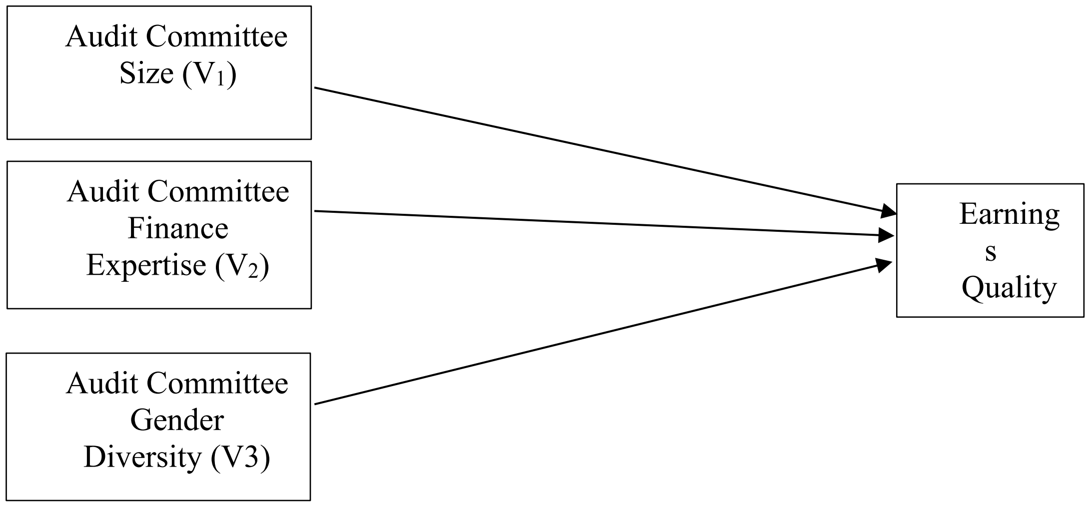
2.1.1 Earnings Quality Proxy

Researchers used several of proxies for measuring earnings quality, such as discretionary accruals (Dechow & Schrand, 2010). For the purpose of this study discretionary accruals is adopted for measuring earnings quality.

2.2 Audit Committee

The Audit Committee is responsible for monitoring and assessing the audit reports and annual financial statements audited by the auditor. It ensures that these financial statements comply with all relevant accounting standards, ethical principles, and other regulatory requirements. Therefore, Section 404(2) of CAMA 2020 requires all Nigerian public companies to form an audit committee to review the company's financial reports for compliance with legal requirements and ethical principles. The audit committee works closely with the internal audit department, external auditors, management, and the Chief Financial Officer to fulfill its duties. The audit committee plays a vital role in ensuring the effectiveness of a company's internal control system, as part of its management (Ammer & Ahmad-Zaluki, 2017).

2.3 Conceptual framework



The relationship between the three independent variables (ACS, ACFE, and ACGD) and the dependent variable (EQ) is illustrated in the diagram above.

2.4 Theoretical Framework

This study adopted two (2) theories.

2.4.1 Agency Theory

Berle and Means first introduced the concept of agency in 1932 to clarify the relationship between agents and clients, which focuses on the contractual agreement between principals and Agents. The Audit Committee acts as a representative of shareholders and is tasked with reviewing the accuracy and completeness of the firm's financial statements and audit reports. This is crucial in ensuring the reliability of the financial reports presented to shareholders and preventing potential misstatements or fraudulent activities. These measures effectively minimize agency costs and uphold the accuracy of the firm's earnings reports.

2.4.2 Resources Dependence Theory

Resource Dependence Theory (RDT) explains how organizations rely on a variety of resources, including materials, employees, and financing, in order to operate efficiently. Pfeffer and Salancik's pioneering work in the 1970s brought prominence to this theory in academic research. Since then, scholars have applied this concept to diverse disciplines, including finance, accounting, management, economics, and sociology. This illustrates the wide applicability and relevance of this theory in various fields of study.

2.3 Empirical Studies

2.3.1 Audit Committee size and Earnings Quality

Hamdan (2020) conducted a research on the effect of different factors, such as the audit committee size on the earnings quality of listed firms in the Gulf Cooperation Council (GCC). The study collected data from 23 selected firms that were listed in the financial markets of GCC countries from 2014 to 2018. The study utilizes panel fixed effects regression for analysis. The study found that larger audit committee size is positively improve earnings quality of firms in the GCC countries.

Abubakar, Usman, Anuforo, and Alhaji (2021) conducted a study to investigate the impact of audit committee size and two other explanatory variables on real earnings management. The researchers gathered data from a sample of 72 non-financial firms from 2014 to 2018 and analyzed it using Panel-Corrected Standard Error (PCSE) statistical tools. The study concluded that a larger audit committee can effectively prevent earnings manipulation. This study is in line with the findings of Ngo and Le (2021), which was conducted in Vietnam and reached similar conclusion.

2.3.2 Audit Committee financial expertise and Earnings Quality.

Ngo and Le (2021) conducted a study to investigate the impact of audit committee attributes on earnings management in companies listed on the Vietnamese Stock Exchange. The study collected data from 216 listed companies in Vietnam over a four-year period, from 2015 to 2018. The researchers used multiple regression analysis with Stata 15 software to analyze the data. The findings of the study revealed that having a financially experienced audit committee has a significant positive effect on the quality of earnings.

Akebsee et al. (2022) conducted a study to examine the effect of the audit committee's financial expertise on the quality of financial reporting, focused on earnings management as a proxy. The researchers collected data from 2010 to 2017 and included all listed firms on Chinese stock exchanges. The fixed effects method was used to test the data. The outcomes shown that there is no significant evidence to support the assumption that the audit committee's financial expertise has an impact on accrual earnings management these findings consistent with Setiawan et al. (2020).

2.3.3 Audit Committee Gender Diversity and Earnings Quality

Ud Din et al. (2021) conducted a study to investigate the impact of female expertise on financial reporting quality in audit committees. The study collected data from a sample of 302 companies listed on the Pakistan Stock Exchange from 2010 to 2016. The researchers utilized a generalized least squares regression model (GLS) for their analysis and found that female members with accounting knowledge had a significantly positive influence on financial reporting quality compared to male members.

Masmoudi and Makni (2020) conducted a study to investigate the impact of audit committee attributes, specifically gender diversity, on earnings management in the Dutch context. The researchers utilized secondary data from 80 non-financial companies listed on the Amsterdam Stock Market between 2010 and 2017. Panel data multiple regression analysis was used to analyze the data. The results showed a statistically significant negative relationship between the proportion of women on the audit committee and earnings management. Concur with Damak (2018) and Zalata et al. (2018) in France and USA respectively.

3. Methodology

3.1 Research Design

The researcher utilizes a correlational research design to investigate the between audit committee attributes (ACS, ACFE, and ACGD) and earnings quality. The study focused on oil and gas firms listed on the Nigerian Stock Exchange from 2016 to 2020.

3.2 Population of the study

The population of the study comprised all eleven oil and gas firms listed on the NSE However, we excluded three firms - Japaul Gold and Venture PLC, Rak Unity Petroleum PLC, and Seplat Energy PLC - from the analysis due to insufficient financial data in their annual reports. As a result, data from secondary sources was extracted and presented in Table 1 for the remaining eight companies.

Table: Sample Size **of the study**

Name of Company	Date of Incorporation	Date of Listening
Ardova PLC	1964	1978
Capital oil PLC	1985	1989
Conoil PLC	1970	1989
Eterna PLC	1989	1998
MRS oil Nigeria PLC	1969	1978
Oando PLC	1969	1992
Total Energy Nigeria PLC	1956	1979
11 PLC	1951	1991

Source: ***Generated by the author 2023 from*** **NSE websites**

3.3 Technique for Data Analysis

This study employed multiple regressions statistical tool to analyses the panel data. Because the issue of linearity full filled. Moreover, after necessary tests is found Generalized Least Square (GLS) method appropriate for this study.

3.4 Model Specification

This study utilizes the Jones model (1991), which has been modified by Dechow et al. (1995). Which is popular for measuring earnings quality as follows:

$TACCit/Ait\text{-}1 = \beta 1\ 1/Ait\text{-}1 + \beta 2\ (\Delta REVit - \Delta ACRit)/Ait\text{-}1 + \beta 3\ PPEit/Ait\text{-}1 + \varepsilon it$ – – (1)

$DACCit = TACCit/Ait\text{-}1 - [\beta 1\ 1/Ait\text{-}1 + \beta 2\ (\Delta REVit - \Delta ACRit)/Ait\text{-}1 + \beta PPEit/Ait\text{-}1]$--(ii).

Whereas:

$TACC_{it}$ = the firm's Total accruals

A_{it}-1 = total assets for firm lagged

ΔREV_{it} = change in net sale for company

ΔACR_{it} = change in accounts receivables for company.

PPE_{it} = company's gross property, plant and equipment.

ε_{it} = Residual

it=Panel indicators

The regression model used to test the correlation between the study's variables is presented below:

Y = A + BX.

Y stands for outcome variable

A stand for constant value

B stands for parameter

X stands for input variable

The model for earnings quality is depicted as follows:

$EQ = f\ (AC)$ (i)

$EQ = f\ (ACS, ACFE, ACGD)$ (ii)

$\mathbf{DAC = \beta 0 + \beta 1ACSit + \beta 2ACGDit + \beta 3ACFEit + \varepsilon_{it}}$ 1

$\mathbf{EQit = \beta 0 + \beta 1ACSit + \beta 2ACGDit + \beta 3ACFEit + \varepsilon_{it}}$ 2 (iii)

DAC stand for Discretionary Accruals proxy of EQ

EQ stands for Earnings quality

ACS stands for Audit committee size

ACGD stands for Audit committee gender diversity

ACFE stands for Audit committee financial expertise

ε_{it} stands for error term (residual)

β0=constant

β_1-β_3=limitations

it = panel indicators
i= firm
t=time

4. Results and Discusion

Table 3: Descriptive Statistics

Variables	obs	mean	std. dev.	Min.	Max.
DAC	40	.36863	.4847	-.0562	.8798
AC	40	5.75	.6699	4	6
ACFE	40	.2002	.05884	.1 67	.333
ACGD	40	.1127	.08772	0	.333

Source: stata 14 output (2022)

Above table showed the DAC proxy of (EQ) dependent variable of the study, which ranges from -0.0562 to 1.8798. The standard deviation (SD) and mean are 0.4847 and 0.3686, respectively. This reveals that the data deviates from the mean by 36.9%. The closeness of the standard deviation to the mean indicates relatively small differences between the sample firms (11.6%). Also, the results show that ACS has a minimum of 4 members and a maximum of 6 members, with mean of 5.75 and a standard deviation (SD) of 0.6699. ACFE has a minimum of 0.167 proportional members and a maximum of 0.333 proportional members, with a mean of 0.2002 and a SD of 0.05884. Finally, ACGD has a minimum value of 0, indicating that some firms have no female members on their audit committee, and a maximum proportion of female members of 0.333. On mean, the proportion of ACGD is 0.1127, with a SD of 0.08772. These show significant differences among the sample firms.
The correlation matrix serves as a tool for evaluating the interrelationships between three or more variables within research, as shown in

Table 4: correlation matrix

Variables	DAC	ACS	ACFE	ACGD
DAC	1.0000			
ACS	-0.5773	1.0000		
ACFE	0.0872	- 0.3240	1.0000	
ACGD	-0.4671	0.3461	-0.6058	1.0000

Source: stata 14 output (2022)

Table 3 reveals the relationship between the DAC and ACS, ACFE & ACGD, as well as the associations among the independent variables themselves. It also, reveals a significant weak-positive correlation coefficient of 0.0872 between DAC and ACFE, indicating that they are moving in the same direction. However, ACS and ACGD are positively related to DAC, meaning they are moving in the opposite direction. In terms of the association among the explanatory variables themselves, the table indicates that ACS and ACFE, as well as ACFE and ACGD, are negatively correlated. Moreover, ACS and ACGD are also negatively related. Since all the correlation coefficient among explanatory variables are < 0.80 there are no multicolinerity (Gujarati, 2004)

Table 5: Multicollnearity Test

Variable	VIF	1/VIF
ACS	1.640	0.6079
ACFE	1.62	0.6181
ACGD	1.16	0.8596
Mean VIF	**1.48**	

Source: stata 14 output (2022)

Table 6: Regression Results
Study dependent variable: EQ Method: GLS

DAC	Coef.	Std. err.	t.	p>|t|	[95% Conf.	Interval]
ACS	-.3797	.090546	-4.19	0.000	-.563298	-.196028
ACFE	-3.329	1.21559	-2.74	0.010	-5.79421	-.863539
ACGD	-2.931	.82226	-3.56	0.001	-4.59826	-1.26302
Constant	3.548	.621815	5.17	0.000	2.28732	4.80952
R^2	0.5154					
Adjusted R^2	0.4750					
Prob>F	0.0000					

Source: Stata 14 output 2022

Since result of GLS regressions obtained showed negative sign to discretionary Accruals as a proxy for earnings quality. Therefore, it can be present mathematically as follows:

$$DAC_{It} = 3.548 - 0.3797ACS_{it} - 3.329ACFE_{it} - 2.931ACGD_{it}$$

$$EQ_{it} = 3.548 + 0.3797ACS_{it} + 3.329ACFE_{it} + 2.931ACGD_{it}$$

Based on the study's findings, the ACS has negative impact on DAC is significant at 1%. This explains that if ACS increase by one member EQ will be improve by 0.3797 with the econometric assumption of all other things remain constant. Therefore, based on the findings, Ho1, which states that the size of the audit committee has no significant impact on the earnings quality of Nigerian listed oil and gas firms, is rejected. The results are consistent with previous studies by Hamdan (2020), Abubakar et al. (2020), and Ngo and Le (2021), which have also found a correlation between committee size and earnings quality. This result is supported by resource dependence theory and contradicts the perspective of agency theory.

The result shows ACFE has negative impact on DAC and significant at 5 %. This explains that an increase of one financial expert member in the audit committee leads to earnings quality improve by 3.329 with the econometric assumption of all other things remain constant. Thus, based on findings the H_{o2}, which states that audit committee financial expertise has no significant impact on earnings quality of Nigerian listed oil and gas firms is rejected. This implies that addition of one audit committee financial expertise would enhance earnings quality this result contrary to Al-absy et al (2018) and agency theory.

The result indicates ACGD has a negative impact on DAC and significant at 1%. This entails that an increase of one female member in the audit committee improves the earnings quality by 2.931 with the econometric assumption of all other things remain constant. Thus, based on findings the H_{o3}, which states that audit committee gender diversity has no significant impact on earnings quality of Nigerian listed oil and gas firms is rejected. The finding of this study agreed with (Uddin et al 2019; Masmoudi & Makni, 2020). Also, it is agreed with resource dependency theory and contrary to agency theory which means that an audit committee with gender variation can improve earnings quality of listed Nigeria oil and gas firms.

The value of R^2=0.52 shows that, explanatory variables; ACS, ACFE and ACGD can explain 52% of the dependent variables, while the remaining 48% (adjusted R^2) can be clarify by error terms.

5. Conclusion and Recommendations

Conclusively, the study found that each of the three explanatory variables - the size of the audit committee, the extent of financial expertise, and the level of gender diversity had significantly improved the earnings quality of listed Nigerian oil and gas firms. The study suggests that Nigerian oil and gas firms should have a larger size, individuals with accounting or financial expertise, and representation of female members on their audit committee. These variables have been found to significantly enhance earnings quality.

Finally, future studies must consider including specific variables, controlled variables, and moderating factors to fully understand earnings quality. This will enhance our understanding of the factors influencing earnings quality.

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