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FIRM CHARACTERISTICS AND DISCRETIONARY CASH FLOW IN LISTED OIL AND GAS FIRMS

Firm Characteristics and Discretionary Cash Flow in Listed Oil and Gas Firms in Nigeria

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Abstract

Research Purpose: In Nigeria's oil and gas sector, this study explores how firm characteristics influence discretionary cash flow among listed firms. With governance reforms shaping financial practices, understanding this relationship is crucial for enhancing transparency and accountability in the industry.

Methodology: Employing a longitudinal approach, the study focuses on 12 oil and gas companies listed on the Nigerian Exchange Group. Secondary data from 2002 to 2021 annual reports form the basis of analysis, utilising Pooled Ordinary Least Square (OLS) regression.

Findings: The study reveals a significant negative relationship between firm characteristics and discretionary cash flow in Nigerian oil and gas firms. Abundant operating cash flow reduces the inclination towards earnings management, highlighting the importance of transparency and accountability.

Conclusion: This study concludes that robust governance reforms, such as enhanced scrutiny and early detection protocols for earnings management, are essential for listed oil and gas firms on the Nigerian Exchange Group. Transparency and accountability are vital for sustainable growth and investor confidence.

Recommendations: Listed firms on the Nigerian Exchange Group (NGX) should adhere to existing governance reforms, ensuring thorough assessment and scrutiny of financial statements. Implementing protocols for early detection of earnings management practices can bolster investor trust and strengthen the integrity of the industry.

Key words: *Discretionary cash flow, Firm characteristics, Oil and Gas firms in Nigeria.*

Introduction

Financial reporting's main objective is to provide information about a company that can help a range of users make financial decisions. Yet, because of the potential impact of earning management on the information contained in these reports, many users of corporate financial reports are contesting the validity of this goal. Thus, the confidence of the accounting and auditing functions is threatened by earnings management's developing issue. Throughout the 1980s, one of the main issues in corporate finance and corporate governance was earnings management (Abdullahi & Ibrahim, 2017). Earnings management has evolved globally in terms of practice, complexity, language, and form. By the early 1990s, it was widely acknowledged as one of the main difficulties of financial reporting by both national and international regulators. Managers were discovered to have exercised discretion in financial reporting and direct dealings to alter financial statements for the purpose of earnings management, either by manipulating contractual terms dependent on reported accounting or by deceiving specific stakeholders about the company's true economic performance, according to statistics (Healy & Whalen, 1999).

Earnings management, according to Lin (2006), comprises both sophisticated (off-balance-sheet financing) and publicly presented (window dressing) strategies. Earnings management was described by Merchant and Rockness (1994) as any managerial action that constitutes the privilege of financial engineering and diverted profits, independent of the state of the economy. The financial statements of potential investors are therefore presented by the economic entity to the investor after being filtered by a few processes that can produce a more favourable image on the market, but it also conveys the illusion of some more appealing outcomes. A company may purposefully change reported financial results such as the income and cash flow statements or reported financial positions such as the balance sheet in a desired amount and direction.

In Nigeria, the oil and gas sector is a key player in economic growth. According to the Central Bank of Nigeria (CBN, 2020), around 90% of the country's foreign exchange revenues come from this industry. Despite its importance, the operations of the oil industry have been associated with allegations of scandalous financial practices, instances of funds not being transferred to the federation account, and excessive spending of oil earnings by the Nigerian National Petroleum Corporation (NNPC). Similar claims are linked to Nigerian listed oil and gas marketing firms, such as the case of African Petroleum (Forte Oil) Plc, where the companies' financial statements failed to disclose a credit facility of 24 billion naira (Ibrahim & Abubakar, 2019). It is noteworthy that a Big 4 audit firm was overseeing this significant omission, which is meant to prevent such fraudulent practices, raising concerns about the potential for serious earnings manipulation in this industry. This study is set to determine the relationship between firm characteristics and discretionary cash flow in listed oil and gas firms in Nigeria.

Literature Review

Earnings Management

The issue of earnings management has emerged as a prominent concern in the current discourse on unethical activity by corporations. According to Research, earnings management is a widespread practice that has sparked a lot of discussion and debate (Santana & Sarquis, 2021).

Earnings management is defined by Healy and Wahlen (1999) as the use of managerial judgement in financial reporting and transaction structuring to alter financial reports to either influence contractual outcomes that depend on reported accounting numbers or mislead certain stakeholders about the company's underlying economic performance. Therefore, according to this definition, management is the factor in charge of making decisions that are under the general management umbrella of earnings. There are two flaws in this definition, though: it does not draw a clear distinction between routine actions that result in earnings and earnings management, which is not always dishonest. Ana (2018) defined earnings management as a collection of managerial choices that lead to the underreporting of the real, value-maximising, short-term earnings that management is aware of. She believes that earnings management can be neutral—it exposes genuine performance in the short term, pernicious—it hides short- or long-term value—and Beneficial—it signals long-term worth. When production or investment decisions are made before earnings are realised, managed earnings are the result. She classifies the many interpretations of earnings management into three categories: grey, black, and white. White earnings management is advantageous since it raises the openness of reports; black earnings management, which is evil and entails total deception and fraud; and grey earnings management, which comprises report manipulation that stays within the bounds of bright-line standards compliance but may be either strategically advantageous or economically beneficial.

Earnings management is not always said to be wrong, though. There have also been arguments in favour of it (Rudra & Bhattacharjee, 2021). According to Ojo, Oyedokun and Ugoh (2020), there is a benefit to earnings management, and it may be used as a tool to tell the market about insider information, which helps the share price more accurately reflect the company's future. The accounting community has also come to terms with the fact that not all methods of earnings management are dishonest. Currently, though, standard setters, regulators, and accountants all agree that earnings management is detrimental and harmful. It misleads investors and lowers the financial reporting's trustworthiness.

Earnings management, according to Burdeos (2021), is the deliberate manipulation of earnings to achieve a predefined goal by recording accounting entries without any event to support the accounting or failing to record transactions accurately or at all to change the outcome. It is clear from the definitions that changing the outcome is a common topic. According to some (Dang, Le, Nguyen, & Henry, 2021; Cudia & Dela Cruz, 2018), publicly traded companies engaged in a rather widespread practice of earnings management. The main way to manage earnings is through management actions that facilitate the use of generally available accounting options to help reach targeted earnings levels through operating decisions and generally accepted accounting principles (GAAP). As a result, standard-setters and the accounting community are gravely concerned about the negative effects of earnings management on financial reporting.

Discretionary Cash Flow

Numerous previous studies have explored revenue recognition as a practice of earnings management, but the existing literature is quite limited. Shah and Wan (2024) investigated discretion in earnings management using distributional tests and found that firms managed earnings upwards to meet earnings forecasts by overstating revenues and understating operating expenses, without framing their findings in the context of discretionary revenue recognition.

Ahmed and Sulong (2023) analysed the unexpected portion of earnings and discovered that firms with poor reported earnings tended to underestimate special items and use discretion in revenues to increase earnings before management buyouts, without overstating revenues. They examined the use of discretionary revenues to avoid reporting negative and surprising earnings in forecasts. He found that management used discretionary revenues affecting accounts receivable and deferred revenue to smooth income.

The study by Stubben (2010) provided evidence of the reliability of discretionary revenues and various measures of discretionary accruals by assessing their ability to detect both simulated and actual manipulation. The results indicated that the revenue model was less biassed and better specified than accrual models, and that estimates from revenue models could be useful as a measure of revenue management or as a proxy for earnings management. Sohn (2016) decomposed the actual CFO into the normal (expected) portion and the abnormal (unexpected) portion by estimating an equation for each industry and year, where the normal CFO was assumed to be a linear function of sales and changes in sales.

Consistent with the results presented by Rünger (2018), revenue recognition and the lock-in effect are often connected with capital gain taxation, where capital gains are taxed upon realisation, creating a distortional effect that reflects the practice of deferring tax payments by deferring the asset disposal. Stubben (2010) described discretionary revenue as the difference between the actual change in receivables and the predicted change in receivables based on the model. Abnormally high or low receivables indicate revenue management. To benchmark against existing models, he compared the ability of the revenue model and commonly used accrual models (Jones 1991; Dechow et al. 1995; Dechow and Dichev 2002; Kothari et al. 2005) to detect combinations of revenue and expense management. His findings indicated that measures of discretionary revenues produced estimates with substantially less bias and measurement error than those of accrual models. Using simulated manipulation (Kothari et al. 2005), he found that the revenue model produced estimates of discretion that were well specified for growth firms. Each of the accrual models tested exhibited substantial misspecification. The results for growth firms indicated a bias of over two percent of total assets for each of the accrual models.

The results further indicated that discretionary revenues could detect not only revenue management but also earnings management (via revenues), whereas accrual models could not. Consistent with this idea, Stubben (2010) found evidence of earnings management to meet several earnings targets using estimates of discretionary revenues, despite the estimates of discretionary accruals being too noisy to produce significant results.

Firm Characteristics

Firm characteristics encompass various aspects, including nationality, size, age, ethnicity, education, financial leverage, ownership, and gender. Ghosh and Ansari (2018) define firm characteristics as the representation of ethnic differences on board diversity, reflecting social and cultural identities among people. It can also be defined in a work or market setting, with social and cultural identity referring to personal affiliations with groups that have a significant impact on individuals' major life experiences. These affiliations include gender, race, national origin, religion, age cohort, size, financial leverage, ownership, and work specialisation, among others. Primary categories of firm characteristics include age, race, and ethnicity, while secondary categories include education, experience, income, and marital status. In the Nigerian context, the secondary category of firm characteristics is often best qualitatively analysed and reported.

According to Chemweno (2016), a firm's structure, capital, and market-related elements make up its characteristics. Size, ownership, and age of the firm are among the structures associated with them. Structures relating to the capital include capital intensity and liquidity, whereas structures related to the market include industry type, market conditions, and environmental uncertainties. Therefore, this study's focus is specifically on firm size, board composition, firm age, and audit firm size as firm characteristics.

The maturity of firms is often defined by their age. Age refers to the length of time a being or thing has existed. Ilaboya and Obaretin (2015) defined firm age as the number of years since the company's incorporation. Listing age is economically significant as listing marks a defining moment in the company's life. Firm age is measured by the number of years a firm has been incorporated. Firms that have been in the market for an extended period tend to exhibit lower levels of earnings management than new entrants. Established companies are well-known, hold significant market value, and have a reputation to uphold. They are also familiar with the rules and codes governing their practices. Moreover, long-established firms may have improved their financial reporting practices over time and aim to enhance their reputation and image in the market. Therefore, older firms are less likely to engage in earnings management practices (Saleh, Afifa, & Haniah, 2020).

Theoretical Review

The agency theory suggests that managers are often motivated by their own gains and work to exploit their interests rather than considering shareholders' interests and maximising shareholder value. To effectively mitigate agency costs caused by the separation of ownership and control, Fama and Jensen (1983) proposed that firms need a system that can separate decision management from decision control. This would limit agency costs by controlling the power of management and ensuring the proper consideration of shareholder's interests. Morck, Shleifer, and Vishny (1988) argued that there is a good separation between the ownership and power of operational management if corporate shares are spread widely over a great number of small shareholders and when the managers act as the agents for the shareholders. Jensen and Meckling (1976) proposed the agency theory to illustrate the conflict between firm managers and shareholders. To reduce this problem, monitoring is required, and the cost of monitoring is part of the agency's cost.

Exchange rate fluctuations present a risk to the cash flows and reported earnings of firms. Despite this, many US firms do not use risk-hedging facilities (Barton 2001). To mask the negative impacts, firms engage in earnings management when foreign exchange movements are not in their favour (Pincus and Rajgopal, 2002). However, there is limited literature on the relationship between exchange rate movements and earnings management.

According to Fama (1976), and Jensen and Meckling (1976), managers may prioritise personal interests over those of shareholders if they do not own a significant percentage of shares. This creates an agency problem, particularly when managers own a significant number of shares through stock options, pyramidal ownership structures, or crossing holdings. The agency theory suggests that both the principal and the agent are motivated by self-interest, leading agents to pursue objectives that conflict with those of the principal.

Empirical Review

Egbunike and Odum (2018) used listed manufacturing firms in Nigeria to investigate the association between board leadership structure and earnings quality. The results demonstrate that the size and makeup of the board had a favourable and significant impact on the quality of earnings. On the other hand, there is a positive and substantial association between CEO duality and earnings quality, but the proportion of non-executive directors was negative and significant.

Using data from China, Chen, Cheng, Hao and Liu (2020) investigated if and how government incentives to increase GDP growth impact firm-level earnings management. It was discovered that companies in target provinces or those with GDP growth incentives are more prone than those in other provinces to manipulate results. They discovered, specifically, that these companies have a higher propensity to overproduce, inflate their revenues, and postpone their asset impairment losses. These are the three main ways that corporate accounting numbers can influence the GDP calculation; for this reason, GDP growth must be controlled using the natural log of the total gross domestic product, adjusted for inflation.

Orbunde, Bemshima, Lambe, Isaac, Joel, and Kabra (2020) contrary to priori expectations, reported a positive and significant relationship between audit firm size and earnings management. The result implied that audit firm size is not able to constrain earnings management practices of listed consumer companies in Nigeria. According to a priori expectations, audit firm size is negatively associated with earnings management because large audit firms have more resources to conduct high quality audits than small audit firms. Also, big audit firms have a large client base which makes them less dependent on any one client that could make them compromise their audit quality. Big audit firms also have more investment in reputation capital which is at stake if they are found to have compromised audit quality than small audit firms. Based on the result, the null hypothesis of the study which states that audit firm size has no significant effect on earnings management of listed consumer goods companies in Nigeria is rejected and the alternative hypothesis is accepted that audit firm size has significant effect on earnings management of listed consumer goods in Nigeria.

Mohamed, Hazem, and Ahmed (2020) analysed a UK panel data set consisting of 1675 Chief Executive Officer (CEO) year observations and 1540 Chief Financial Officer (CFO) year observations to investigate the link between CEO and CFO equity incentives and earnings management. They also explored how corporate governance mechanisms moderate the relationship between executives' equity incentives and earnings management. Using 38 multivariate regression models, they concluded that CEO equity incentives are associated with higher absolute and income-increasing earnings management, supporting the managerial power theory. In contrast, there was no significant relationship found between CFO equity incentives and any of the earnings management proxies. Additionally, corporate governance quality did not impact the relationship between executives' equity incentives and earnings management, suggesting that while some corporate governance mechanisms can reduce earnings management in general, they do not affect wealth-driven incentives to manipulate accruals. Overall, the results raise questions about the effectiveness of the corporate governance system in mitigating opportunistic behaviour driven by executives' compensation structures.

The question of whether the composition of a board of directors is related to earnings management was examined by Kalantonis, Schoina, and Kallandranis (2021) in their studies. Using a sample of companies listed on the Athens Stock Exchange between 2008 and 2016, and the application of two distinct models of earnings management (Dechow's '96 and DeAngelo's '86), it was possible to investigate the existence of earnings management through discretionary accruals. Surprisingly, no evidence of any kind of impact from the investigated board characteristics except for CEO duality was found. The exceptional impact of the sovereign debt crisis on Greek firms is confirmed by this research. Four Since the required approval of the corporate governance legislation, the framework for the 2005 Athens Stock Exchange listed enterprises, at least, adhered to the International Accounting Standards. The companies' financial reports for the last ten years now contain more thorough corporate governance information in accordance with the new regulations.

Khuong, AbdulRahman, Thuan, Liem, Anh, Thuy, and Ngoc (2022) utilised income data to inform economic decisions and predict future revenues. The quality of earnings, or the effectiveness of earnings in decision-making, was determined by actual economic performance. Companies with stronger performance are expected to have higher earnings quality on average. Managers, investors, and scholars are keen on understanding the impact of earnings management (EM) on earnings persistence (EP). This study examined the relationship between these variables in relation to accrual, real EM, board composition, and EP. They conducted quantitative research using a generalised method of moments (GMM) regression on a sample of 228 listed companies in the Vietnamese stock market from 2014 to 2017. The results showed that accrual earnings management (AEM) is negatively associated with EP, while real earnings management (REM) has a mixed association with EP. Furthermore, the data suggests that boards of directors (BODs) play a crucial role in EP. The research adds to the existing knowledge base by laying the groundwork for future research in this area and by proposing practical options for government agencies and business management interested in improving EP.

Hoang and Khuong (2023) results showed that audit quality (proxied as Big 4 or non-Big 4) has no statistical meaning. This is in contrast to a huge amount of current research indicating that the lower level of earnings management is observed in Big N's clients. However, this supports the prior study of Piot and Janin (2007) in which no difference between big N and non-big N in mitigating real earnings management was observed. The explanation for the Vietnam market is relatively like Piot and Janin (2007). Despite the rapid development, the stock market in Vietnam is still in its infancy. Therefore, the effectiveness of investor's rights protection mechanisms are still limited, which provides no pressure on higher risk firms to appoint Big 4 auditors for external audit engagement. Additionally, in such market conditions, the litigation risk of the auditor is considered lower. Thus, the differentiation of Big 4 compared to non-big 4 may not affect the level of real earnings management in emerging markets. The coefficients of firm size are negative and significant in both regressions using discretionary cash flow, discretionary expenses and discretionary production cost. This suggests that larger firms in Vietnam are less likely to engage in real earning management through manipulations in sales, discretionary expenses and production costs than smaller firms.

Methodology

The study employed a longitudinal research approach and made use of secondary data from the 2002–2021 annual reports of oil and gas companies listed on the Nigerian Exchange Group. Population of the study comprises the 12 oil and gas companies that were listed as of the last quarter of 2021 on the Nigerian Exchange Group (NGX). These companies operate in the downstream sector of the oil and gas industry. A simple random sampling technique was used to select nine firms out of the twelve firms for the study. Annual reports filed with the Nigeria Exchange Group by the listed oil and gas companies provided the secondary data that was used. The study's time frame is from 2002 to 2021, and the data for the variables were produced via content analysis. The data analysis method adopted in this study was Pooled Ordinary Least Square (OLS) regression analysis.

Results and Presentation of Data

Presentation of Data

Hypotheses Testing

Hypothesis One

Ho_1 There is no significant relationship between firm characteristics and discretionary cash flow in listed oil and gas firms in Nigeria.

Effects of Firm Characteristics on Discretionary Cash Flows

Discretionary cash flow is another proxy for earnings management. This aspect of earnings management is the abnormal capital that can be used to pay cash dividends, provide bonuses to employees, buy back common stock, and pay down debt withdrawal by investors, once all capital projects have been funded, and required payments such as wages have been made.

Table 1: Panel OLS results showing effects of firm characteristics on earnings management.

Discretionary Cash Flows

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FAGE	-0.941***	0.16	-5.76	0.00
AUFSIZE	-0.304*	0.16	-1.87	0.08
BODCOMP	0.716***	0.05	13.46	0.00
FSIZE	-3.563**	1.499	-2.376	0.02
LEV	0.739**	0.36	2.05	0.05
ROA	-6.501	13.72	-0.47	0.64
FER	-0.083*	0.03	-2.55	0.01
GDPG	-0.583	0.32	-1.81	0.10

*Note: *,**,*** indicates significant at 10%, 5% and 1% respectively;*

Independent variables: *FAGE AUFSIZE BCOMP FSIZE indicates Firm Age, Audi Firm dichotomous, Board Composition, Firm size.* Control variables*: LEV ROA FER GDPG indicates Leverage, Return on Asset, Foreign Exchange rate (naira to dollar) and GDP growth rate.*

Source: Author's computation using EViews 12 (2023)

Starting with firm age, as the oil and gas firm ages in Nigeria, discretionary cash flow decreases. An additional year of age for an oil firm resulted in a 0.9% reduction in discretionary cash flow.

Audit dichotomous also showed a negative insignificant effect (coefficient of -0.304 and Prob. of 0.08). A unit increase in the activity of the big4 leads to a 0.3% decrease in discretionary cash flow. Although the effect is relatively small, the fact that audit dichotomous reduced discretionary cash flow suggests that the involvement of big4 auditors limits the inclination to practise earnings management through cash flow discretion.

Firm size reduced discretionary cash flow by 3.5% for a 1% increase. This significant magnitude indicates that discretionary cash flow is highly responsive to changes in the assets of oil and gas firms in Nigeria. An increase in assets of a company with large assets leads to a decrease in discretionary cash flow, while a reduction in assets of a company with small assets results in more discretionary cash flow.

Board composition influences discretionary cash flow by approximately 0.72% for a 1 percentage change. A 10% increase in the board composition of the Nigerian oil and gas sector results in an approximate 7.2% increase in discretionary cash flow. A one-unit increase in the non-executive/independent directors in the board size leads to approximately a 0.72% increase in discretionary cash flow. Board composition of Nigerian oil and gas firms does not act to reduce discretionary cash flow but rather facilitates it.

Leverage also has a notable positive and significant impact on discretionary cash flow. A 1% increase in leverage causes discretionary cash flow to rise by 2.66%. Therefore, discretionary cash flow is highly responsive to changes in the leverage of oil and gas firms

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in Nigeria. The effect of returns on assets on discretionary cash flow is insignificant, but negative. Hence, returns on assets are also unable to reduce discretionary cash flow.

Fluctuation in the exchange rate has a mild and negative effect on discretionary cash flow. If the naira experiences a 1% depreciation against the dollar, discretionary cash flow is expected to decrease by 0.08%. Although the magnitude is small, the fact that it can reduce discretionary cash flow suggests that certain external factors could impact discretionary cash flow. The growth rate of GDP also exhibits a negative effect, although it is insignificant. Therefore, the improvement in economic performance, as measured by the growth rate of GDP, has not yet controlled discretionary cash flow in the oil and gas sector.

To relate these results to the hypothesis of this study, the null hypothesis is that firm age, board composition, firm size, and audit firm size do not have a significant effect on earnings management. Results from the discretionary cash flow, a proxy for earning management, reject the null hypothesis for all firm characteristics. However, only board composition has a positive and significant effect, while others have a negative but significant effect.

The statistical properties of the model are presented in the Table below. The variation in discretionary cash flow explained by the explanatory variables (firm characteristics variables and other catch all variables considered in the model) is 88%.

OBSERVATION	180
R-SQUARED	0.91
ADJUSTED R-SQUARED	0.88
DURBIN-WATSON STAT	2.38

This indicates that only 12% of the total variation in discretionary cash flow is not captured by the regressors. Therefore, the model exhibits a good fit and the question about possible spurious regression does not arise. The value of the Durbin-Watson

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statistic (2.38) falls within the appropriate range, ensuring the absence of serial correlation.

The cross-section dependence of residuals, as captured by Breusch-Pagan LM, Pesaran Scaled LM, and Pesaran CD, all indicate that the model does not show any evidence of the interdependence of residuals across oil and gas firms.

Cross Section Dependence of residuals

Breusch-Pagan LM	1.62	0.19
Pesaran scaled LM	1.29	0.92
Pesaran CD	0.10	0.83

This is supported by the probability values associated with the F-distribution of each of the statistics, which are greater than 10%, indicating that the null hypothesis of no cross-section dependence is not rejected.

Similarly, cross-section heteroscedasticity returns statistical values in favour of no variance dependence across oil and gas firms in Nigeria.

Cross Section Hetero

Breusch-Pagan LM	1.62	0.12
Pesaran scaled LM	1.29	0.72
Pesaran CD	1.10	0.82
Period Hetero		
Breusch-Pagan LM	0.62	0.91
Pesaran scaled LM	1.29	0.94
Pesaran CD	0.10	1.44

Based on this report of the diagnostic tests, the estimation technique employed for the model is valid and, by implication, precision, inference, and prediction can be inferred from the results. The findings are also reliable for drawing important policy implications regarding earnings management in the Nigerian oil and gas sector.

Discussion of Findings

In relation to the objective, which was to determine the relationship between firm characteristics and discretionary cash flow in listed oil and gas firms in Nigeria, the second objective second hypothesis states that, there is no significant relationship between firm characteristics and discretionary cash flow in listed oil and gas firms in Nigeria, Firm age was found to have a negative significant relationship to discretionary cash flow, this implies that as a firm ages, there is a decrease in abnormal cash available for withdrawal by investors. This could be attributed to the accumulation of more experience and management decisions to reduce discretionary cash flow as the firm matures.

Audit firm size dichotomous also showed a negative insignificant effect. This indicates that in the Nigerian oil and gas sector, firms that engage one of the big 4 auditors are more likely to have lower levels of earnings management. Furthermore, it can be inferred that there is a less pronounced presence of agency problems in this context.

Board composition was found to have a positive significant relationship with discretionary cash flow. This indicates that in the Nigerian oil and gas sector, an increase in the relative number of non-executive/independent directors enhances earnings management using discretionary cash flow. This is contrary to the finding of Fodio, Ibikunle and Oba (2013) which revealed that board independence leads to a lower level of accrual management thereby suggesting the importance of board independence in increasing board vigilance. This study expects that firms with more independent board members are likely to monitor managers over earnings manipulation and so there will be a negative relationship between discretionary cash flow and board independence.

Firm size has a negative significant relationship with discretionary cash flow. This implies that discretionary cash flow is highly responsive to changes in the assets of oil and gas firms in Nigeria. An increase in assets of a company with large assets leads to a decrease in discretionary cash flow, while a reduction in assets of a company with small assets results in more discretionary cash flow. This suggests that firms with large asset bases are less likely to practise earnings management compared with firms with small asset bases, an increase in assets may likely elevate capital gains and compensations for the Directors, making management less likely to engage in discretionary cash flow. However, a decrease in assets may lead to a fall in capital gains and compensation, potentially triggering agency problems that favour discretionary cash flow to compensate for any loss in investor transaction obligations. This is consistent with the findings of Fodio, Ibikunle and Oba (2013) that firm size has a significant negative association with discretionary cash flow, meaning that larger firms are less engaged in earnings management. Smaller firms might engage in earnings management to reflect appealing bottom lines to attract more patronage.

The positive and significant coefficient of leverage supports that firms with high leverage are likely to engage in more activities of earnings management, making use of their capital structure and debt, this is supported by debt covenant violation theory described by Healy and Wahlen (1999). Indeed, the findings until this point indicate that Accrual Earnings Management (AEM) decreases with increases in leverage and Real Earnings Management (REM) increases with the increase in leverage. This result is in line with the findings of Awuye and Aubert (2022), and contrary to the finding of Shittu, Onifade, Aminu, and Ajibola (2023), which revealed that leverage has a negative and significant influence on discretionary cash flow.

Return on asset (ROA) has a negative insignificant relationship with discretionary cash flow, this implies that as total assets are increasing, earnings management is reducing. This outcome is contrary to the findings of Elessa, AL Shanti, Humeedat and Weshah (2023) who found that discretionary cash flows were in a positive relationship with profitability measured by ROA. On the other hand, our results did agree with those of Awuye and Aubert (2022) which showed an inverse relationship between discretionary cash flows and the profitability of corporations.

The foreign exchange rate was found to have a negative significant relationship with discretionary accruals, this outcome is contrary to the finding of Hsiao and Han (2022) who found a positive correlation between discretionary cash flow and currency exchange rate volatility. This implies that one factor that investors consider when making investment decisions is foreign exchange gain or loss, which may spur management to control earnings.

The negative insignificant relationship between GDP growth and discretionary cash flow found in this research is at variance with the findings of China, Chen, Cheng, Hao, and Liu, (2020) who discovered that companies in target provinces or those with GDP growth incentives are more prone than those in other provinces to manipulate results. They discovered, specifically, that these companies have a higher propensity to overproduce, inflate their revenues, and postpone their asset impairment losses.

Conclusion and Recommendation

The study examined the relationship between firm characteristics and discretionary cash flow in listed oil and gas firms in Nigeria. The findings revealed that discretionary cash flow and the firm characteristics of oil and gas firms have a negative significant relationship. Only the makeup of the board, however, has a considerable and beneficial impact; the others have a significant but unfavourable impact. An abundance of operating cash flow lessens the propensity to participate in earnings management. The outcome can be trusted when formulating significant rules for managing earnings in the Nigerian oil industry. Therefore, the study recommended that companies listed on the Nigerian Exchange Group (NGX) should abide by the governance reforms already in place in the nation, such as sufficient assessment, investigation, and scrutiny of the company's financial statement and sufficient protocols for the early identification of earnings management practices. The Company and Allied Matters Act, the International Financial Reporting Standards, and other financial reporting Acts should all be strictly enforced and monitored by the Financial Reporting Council of Nigeria (FRCN) for all companies listed on the Nigerian Stock Exchange.

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