Global Journal of Applied, Management and Social Sciences (GOJAMSS); Vol.29, June 2024; P.54 – 65 (ISSN: 2276 – 9013)

IMPACT OF FIRM CHARACTERISTICS AND DISCRETIONARY EXPENSES AND DISCRETIONARY PRODUCTION COST FLOW IN NIGERIAN LISTED OIL AND GAS FIRMS

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Abstract
The study evaluated the effect of firm characteristics on discretionary expenses and discretionary production costs in listed oil and gas firms in Nigeria. The study adopted a longitudinal research approach. The populations of this study encompassed the 12 oil and gas companies listed as of the last quarter of 2021 on the Nigerian Exchange Group (NGX). The study made use of secondary data from the 2002–2021 annual reports of oil and gas companies listed on the Nigerian Exchange Group. The study adopted Pooled Ordinary Least Square (OLS) regression analysis as the method of data analysis. According to the findings, the firm characteristics proxies used had a significant impact on discretionary expense and also firm characteristic variable had a positive effect on discretionary cost. Based on the above findings, this study concludes that firm characteristics play a major role in the management of earnings in Nigeria's oil and gas industry. The study therefore recommended that Managers of publicly traded companies in the oil and gas sector that have discretion in both operating choices and financial reporting may utilise this discretion to increase profit predictability and give stakeholders positive information.
Keywords: Discretionary expenses, Discretionary production cost, Firm characteristics, Oil and gas firms

Introduction

Due to the economic interdependence among all countries, almost every nation has encountered earnings management and its consequences (Ibrahim & Abubakar, 2019). Even if a nation had never witnessed earnings management, it could not claim to be immune to the effects of earnings manipulation in other nations. The not-too-recent economic crisis that began in the United States of America and spread to other nations demonstrated the interconnection of the world's economies. In September 2008, a US bank called Lehman Brothers collapsed, setting off a global disaster that extended to all corners of the globe. Huge repercussions for managing earnings have been felt by many nations across the world, including loss of investments, complete collapse of the impacted companies, employment losses, and lost government revenue, among other things (Zayol, Adzembe, & Akaa, 2017).

To address this incidence of manipulation of financial reports, the Nigerian Security and Exchange Commission (SEC) initiated some reforms in 2011. According to Oteh (2012), the reform includes the mandatory adoption of International Financial Reporting Standards (IFRSs) for all listed firms and focuses on improved disclosure of information in financial reports. In Nigeria, adherence to the requirements is expected of all corporate organisations of the pertinent laws, guidelines, and IFRSs in their financial

transactions and reporting, so if there are hints of earnings manipulation that they are not adhering to, it could cause companies' corporate failure. Therefore, it's critical to assess the effect of firm characteristics such as firm age, firm size, composition of the board, and size of the audit firm on listed oil and gas companies' earnings management. Therefore, this study evaluates the effect of firm characteristics on discretionary expenses and discretionary production costs in listed oil and gas firms in Nigeria.

Literature Review

Firm Characteristics

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 specialization, 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. Firm characteristics can involve various aspects, including nationality, size, age, ethnicity, education, financial leverage, ownership, and gender.

Discretionary Real Expenditures

In the context of management deciding on additional discretionary real expenditures (DRE) in research and development (R&D), selling, general, and administrative expenses (SG&A), and advertising in period t, the decision is influenced by the marginal return on such expenditures (R(DRE)), tax status (T) in period t, cash flow constraints (CF), and financial reporting costs (FRC) related to potential earnings targets. It is assumed that financial reporting costs increase with DRE, or f(DREt). These costs are also affected by discretionary accruals made initially, as the firm first makes necessary discretionary accruals (which are not taxed) (Ahmed & Sulong, 2023).

Earnings Management Practices

Earning management can be divided into two categories: opportunistic and informational. When managers use opportunistic creative accounting techniques, they are trying to deceive investors by looking out for their interests. The majority of the research on this kind of creative accounting stems from Healy (1985), who discovered that managers strategically influence bonus income through accruals. According to empirical data, management controls earnings to prevent reporting lower-than-expected earnings (Roychowdury, 2006). Earnings can be managed by management for informative or opportunistic reasons. Bonuses are typically maximised by management that handles earnings opportunistically (Scott 2009; Watts & Zimmerman, 1990; & Healy, 1985).

Ibrahim and Dauda (2019) suggested that management acquires specialized information about future performance, such as new firm strategies, changes in firm characteristics, or market conditions, based on their expertise. This information is not directly communicated to the investor due to its cost, resulting in blocked communication. Such blocked communication can diminish the effectiveness of agency contracts (Scott, 2009). Earnings management is a way to reduce obstacles. If a manager simply made the announcement, it would be costly to verify, and no one would respond. To address this issue, a manager will use discretionary accruals to manage earnings and display their insider knowledge (Scott, 2009). Research by Stocken and Verrecchia (2004) shows that a manager may not choose the most accurate financial systems if they have confidential information not recorded by the company's financial reporting system. This manipulation could come at a cost to the management. Earnings management is informational, as investors would be disappointed if future earnings were to decline, so a manager wouldn't be so foolish as to report larger earnings, earnings than could be achieved. The labour market and capital markets will retaliate against them.

Theoretical Review

The agency theory was used as the theoretical background for this study to develop an empirical framework for assessing the impact of firm characteristics on earnings management in listed oil and gas firms in Nigeria. The agency theory is based on the relationship between the principal (owners) and the agent (managers). The separation of ownership from management in modern corporations provides the context for the function of agency theory. Modern organizations have widely dispersed ownership, in the form of shareholders, who are not normally involved in the management of their companies. In these instances, an agent is appointed to manage the daily operations of the company. This distinction between ownership and control creates the potential for conflicts of interest between agents and principals, resulting in costs associated with resolving these conflicts (Okafor & Ezeagba, 2018).

The agency theory suggests that managers are often motivated by their gains and work to exploit their interests rather than considering shareholders' interests and maximizing shareholder value. As a result, management has an incentive to manipulate the company's financial report process to meet or exceed earning targets and receive bonuses tied to the company's earnings (performance-related pay). This creates an information asymmetry where managers can exercise discretion over accruals, reducing the relevance and reliability of reported earnings and financial statements. Therefore, the main challenge highlighted by agency theory is to ensure that managers pursue the interests of shareholders and their own.

Empirical Review

Araoye and Ganiyu (2022) identified a relationship between ownership structure and real earnings management. 2195 firm-year observations that are listed on the Dhaka Stock Exchange between 2000 and 2017 are used in the study. The results of the panel least square regression showed that institutional ownership had a positive relationship with real earnings management, whereas inside and foreign ownership had an unfavourable relationship. To control profitability, companies typically cut discretionary spending when there is little internal ownership. Firms with a higher proportion of institutional ownership, on the other hand, are more likely to manage real earnings through further price reductions, a more accommodative lending arrangement, and a reduction in discretionary spending. This outcome is in line with earlier research. However, in the event that foreign ownership is absent, companies would rather control profits by operating at levels of overproduction and reducing discretionary spending. They also discovered that company governance helps to restrict the manipulation of real earnings.

Awuye and Aubert (2022) investigated the impact of leverage on the earnings management strategy of firms. This was done by: testing the impact of leverage on accrual earnings management (AEM); testing the impact of leverage on real earnings management (REM); testing the impact of leverage on the total earnings management activity; investigating how leverage moderates the usage of REM and AEM. This study contributed to the current stream of literature by providing deeper insights into how leverage affects the quality of financial reporting. Analysing the impact of leverage on total earnings management and studying how leverage moderates the trade-off between REM and AEM is a study that had not been conducted and this research makes this contribution to the literature. Two major theories support the results obtained in this stream of research. One is the control hypothesis by Jensen (1986) and the other is the debt covenant violation hypothesis also covered by Healy and Wahlen (1999) and many researchers thereafter. The results of this study provided insights into both theories. First, the tests on AEM indicate that the control hypothesis is in force. The results show that firms with high leverage are less likely to manage their earnings using AEM procedures. However, further tests on REM indicate that the fear of debt covenant violation urges firms to manage their earnings through REM. The second insight is that the role leverage plays in shaping firms" choices between AEM and REM has been established. AEM has been noted to be more easily traceable as compared to REM. Leverage can control the level of earnings management, but this ability is only limited to AEM. Instead of firms succumbing to the monitoring mechanism of leverage, managers rather find other ways to manage earnings.

Kalantonis, Schoina, and Kallandranis (2021) studied the question of whether the composition of a board of directors is related to earnings management proxied by discretionary expenses. 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. Saona, Muro, and Alvarado (2020) conducted a study on how ownership structure and board of directors' features impact managerial opportunistic behaviour in the management of accounting earnings in Spain. The study analyzed the relationship between firm-level and country-level corporate governance systems on earnings management in the Spanish corporate sector. The study found that the efficiency of the corporate governance systems is reflected in the way accounting discretion is performed through discretionary spending.

Grimaldi (2019) examined the correlation between the financial crisis and earnings management. Despite extensive research on earnings management, there is still much to be learned about the impact of macroeconomic factors on accounting discretionary decisions; recent financial crises may be one such factor. This study aimed to investigate whether, in the Italian context, the precarious macroeconomic conditions and the resulting difficulties faced by listed companies have incentivized the implementation of earnings management. The research was based on a sample of 89 non-financial listed Italian companies and covered the period from 2005-2016, divided into three subperiods: a pre-crisis period (2005-2008), a crisis period (2009-2012) and a post-crisis period (2013-2016). The research utilized the Beneish Model, known for its ability to identify, based on likelihood, companies that potentially engage in earnings management. The study's results indicated an overall low presence of companies at risk of manipulation throughout the period under investigation; however, the highest number of such companies was observed during the pre-crisis period.

Yuan (2015) examined that accrued earnings management (AEM) is positively and significantly related to the firm’s future profitability and market value, In contrast, most real earnings management proxies (abnormal cash flow, abnormal Production cost) have negative and significant related to the firms future profitability and market value. This evidence indicated that different types of earnings management have different effects on the firm’s future profitability and market value, accrual earnings management is effective, and real earnings management is aggressive in China.

Methodology

The study took a longitudinal research approach and used secondary data from the 2002-2021 annual reports of oil and gas companies listed on the Nigerian Exchange Group. The study's population consists of 12 oil and gas businesses listed on the Nigerian Exchange Group (NGX) as of the fourth quarter of 2021. These companies are involved in the downstream sector of the oil and gas industry. A simple random selection technique was employed in selecting nine of the twelve firms for the investigation. The secondary data used was obtained from the Nigeria Exchange Group's annual reports filed by listed oil and gas businesses. The study runs from 2002 to 2021, and the data for the variables were gathered through content analysis. The data analysis strategy used in this study was Pooled Ordinary Least Squares (OLS) regression.

Results and Presentation of Data

Presentation of Data

Hypotheses Testing

Hypothesis One

Ho_1 Firm characteristics have no significant influence on discretionary expenses in listed oil and gas firms in Nigeria.

Hypothesis Two

Ho_2 Firm characteristics have no significant impact on discretionary production costs in listed oil and gas firms in Nigeria.

Effects of firm characteristics on earnings management (Discretionary Expenses)

The results of the effects of firm characteristics on discretionary expenses are presented in Table 1. Discretionary expenses are the expenses that can be incurred without having possible consequences on the operation of the company in the short run. demonstrates how firm characteristics contribute to this type of earnings management.

Table 1: Panel OLS results showing the effects of firm characteristics on Discretionary Expenses.

Discretionary Expense

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FAGE	0.003**	0.00	2.41	0.02
AUFSIZE	-0.051**	0.02	-2.23	0.02
BODCOMP	0.550***	0.12	4.71	0.00
FSIZE	-0.049***	0.01	-6.14	0.00
LEV	0.000	0.03	0.01	0.99
ROA	0.099	0.08	1.26	0.21
FER	0.000***	0.00	2.08	0.04
GDPG	-0.024**	0.01	-2.37	0.02

*Note: *,**, and *** indicate significance 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 a dollar) and GDP growth rate.*

Source: Author's computation using EViews 12 (2024)

Variables that positively affect discretionary expenses include firm age, board composition, leverage, returns on assets, and exchange rate. The exchange rate does not have a noticeable effect on discretionary expenses in the Nigerian oil and gas industry.

The dichotomous audit showed a negative effect on discretionary expenses. In this regard, if the activity of the big4 auditors increases by 1%, discretionary expenses are expected to fall by 0.05%. Thus, the choice of audit firm type significantly reduces earnings management practices via discretionary expenses in Nigeria's oil and gas sector.

Board composition has a positive significant relationship with discretionary expenses. A unit increase in board composition (having one more non-Executive/Independent member or having one less Executive member on the Board of Directors) will engender discretionary expenses by 0.049%. This suggests that comparatively, discretionary expenses are sensitive to changes in audit firm size dichotomous more than board composition. In the case of a firm's size, the negative impact implies that the larger the size of the firm (or that of a firm with large assets) the less the discretionary expenses. Specifically, a 1% increase in firm size proxy by the firm's asset will lead to a reduction in discretionary expenses by 0.049%.

The discretionary expenses may be dwarfed due to high expenses. The firm's expense policy may not be the best, leading to negative effects. The exchange rate has no impact on discretionary expenses. Leverage hurts discretionary expenses, with a 1% increase resulting in a 0.02% decrease. Returns on assets have a positive but insignificant effect, with a 1% increase leading to a 0.09% increase in discretionary expenses. The growth rate of GDP has a significant and modest negative effect, with a 1% increase leading to a 0.02% decrease.

Firm characteristics, including firm age, audit dichotomous, board composition, and firm size, significantly affect discretionary expenses. The null hypothesis is rejected for each firm characteristic. The model explains 98% of the variation in discretionary expenses. The Durbin-Watson statistic indicates no presence of serial correlation in the model. Other diagnostic tests also support the validity of the model.
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 catchall variables considered in the model) is 85%.

OBSERVATION	180
R-SQUARED	0.98
ADJUSTED R-SQUARED	0.85
DURBIN-WATSON STAT	1.77

This indicates that only 15% of the total variation in discretionary expenses 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 statistic (1.77) 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	0.15	0.83
Pesaran scaled LM	0.97	0.91
Pesaran CD	0.11	0.12

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	0.15	0.83
Pesaran scaled LM	0.97	0.91
Pesaran CD	0.11	0.12
Period Hetero		
Breusch-Pagan LM	0.15	0.83
Pesaran scaled LM	0.97	0.91
Pesaran CD	0.11	0.12

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.

Effects of firm characteristics on earnings management (Discretionary Production Costs)
Discretionary cost of production can be avoided without inhibiting the production of the firm. Board composition and firm age have a positive effect, while audit dichotomous and firm size have a negative effect

on earnings management. Return on asset and GDP growth rate show positive and significant effects, while leverage and exchange rate indicate negative effects on discretionary cost of production.

The null hypothesis is rejected for each firm characteristic, indicating that all variables significantly affect discretionary expenses. The model explains 98% of the variation in discretionary expenses, demonstrating a good fit. The Durbin-Watson statistic suggests no presence of serial correlation in the model. Other diagnostic tests also support the validity of the model. The Jarque-Bera statistic indicates that the residuals are normally distributed, and there is no cross-section dependence of residuals. This is supported by alternative tests with probability values of 0.83, 0.91, and 0.12 respectively.

Since all probability values exceed 10%, the null hypothesis of no cross-section dependence cannot be rejected. In addition to testing for cross-section dependence of residuals, cross-section heteroscedasticity was also examined to ensure that firm-based variance is homoscedastic, meaning it is not dependent on each other. This implies that the variance associated with one oil firm does not impact the variance associated with any other oil and gas firm. If there were variance dependence, the estimation technique used would be questionable. The null hypothesis is that there is no cross-section variance dependence in the model. The three tests conducted - Breusch-Pagan cross-section heteroscedasticity, Pesaran Scaled LM, and Pesaran CD - do not reject the null hypothesis, indicating no evidence of variance dependence across firms. Based on the diagnostic test results, the estimation technique used for this model is valid, and policy implications can be drawn from the results.

Table 2: Panel OLS results showing the effects of firm characteristics on Discretionary Production.
Discretionary Production

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FAGE	0.005	0.01	0.77	0.44
AUFSIZE	-0.170**	0.07	-2.52	0.04
BODCOMP	0.237***	0.04	5.75	0.67
FSIZE	-0.103*	0.06	-1.85	0.00
LEV	-0.096	0.22	-0.43	0.06
ROA	1.032**	0.51	2.04	0.04
FER	-0.005**	0.00	-2.27	0.04
GDPG	0.007***	2.96	3.37	0.00

*Note: *,**,*** indicate 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 a dollar) and GDP growth rate.*
Source: Author's computation using EViews 12 (2024)

Audit dichotomous effectively constrained discretionary production costs in the Nigerian oil and gas sector. Specifically, a 1% increase in engagement with Big 4 auditors led to a 0.1% reduction in earnings management practices through discretionary production costs in the Nigerian oil and gas sector. The Big 4 auditors provide valuable insights on how production-related expenses can be minimized or eliminated. Consequently, the null hypothesis that audit dichotomous or audit quality has no significant impact on real discretion, in this case, discretionary cost of production is rejected.

Firm size has a negative impact on discretionary production costs. A larger oil firm, with substantial total assets, can reduce discretionary costs. For every 1% increase in firm size, discretionary production costs decrease by 0.1%. This is unsurprising as larger firms are more likely to be cost-conscious and may need to cut avoidable costs such as advertising expenses.

Leverage leads to a reduction in discretionary production costs. A 1% increase in leverage results in a 0.15% decrease in discretionary production costs. While this reduction is modest, the overall impact of reducing discretionary production costs is significant. The foreign exchange rate also decreases discretionary production costs by 0.01% for every 1% in depreciation of the naira. On the other hand, GDP growth rate

showed a significant positive effect on discretionary production costs. A 1% increase in GDP growth rate leads to a 0.007% increase in discretionary production costs. The model's results indicate that the null hypothesis for firm age and board independence is not rejected, while for other firm characteristics, it is rejected. It's worth noting that audit firm size is dichotomous and significantly and negatively affects discretionary production costs.

The results also show that 89% of the total variation in the discretionary cost of production of oil and gas firms in Nigeria can be explained by firm characteristics variables and other catchall variables such as leverage, returns on assets, exchange rate, and GDP growth rate (Table 2). The model demonstrates good fit.

OBSERVATION	180
R-SQUARED	0.93
ADJUSTED R-SQUARED	0.89
DURBIN-WATSON STAT	1.70

The Jarque-Bera value suggests that the residuals associated with the model are normally distributed, indicating that the use of Panel Pooled Least Square (PPLS) is appropriate.

Diagnostic tests		
Tests	Statistic	Probability values
Jarque-Bera	1.87	1.12

The result of the cross-section dependence of residuals also supports the choice of the estimation technique, as questions related to firm-specific interference do not arise. Not only is cross-section residual dependence absent in the model, but cross-section variance dependence is also absent.

Cross Section Dependence of residuals		
Breusch-Pagan LM	1.85	0.94
Pesaran scaled LM	0.81	1.84
Pesaran CD	1.34	0.18
Cross Section Hetero		
Breusch-Pagan LM	1.85	0.94
Pesaran scaled LM	0.81	1.84
Pesaran CD	1.34	0.18
Period Hetero		
Breusch-Pagan LM	1.85	0.94
Pesaran scaled LM	0.81	1.84
Pesaran CD	1.34	0.18

The presence of period heteroscedasticity (non-constant variance) indicates that no time-varying variance exists in the model. These diagnostic tests confirm that the estimation technique used for this model is valid and that precision and prediction can be carried out for policy purposes.

Discussion of Findings

The third objective of the study was to evaluate the effect of firm characteristics on discretionary expenses in listed oil and gas firms in Nigeria. The first hypothesis is that firm characteristics have no significant influence on discretionary expenses in listed oil and gas firms in Nigeria; The result of the study showed that

firm age has a positive and significant relationship with earnings management proxied by discretionary expenses. This implies that older firms are more likely to engage in the management of earnings compared with younger firms. The older the firm, the more the chances for earnings management. This result is inconsistent with the findings of Saheed and Babatunde (2022) who found a negative and insignificant relationship between firm age and real earnings management.

The audit firm type showed a negative and significant effect on discretionary expenses. Thus, the choice of audit firm type significantly reduces earnings management practices via discretionary expenses in Nigeria's oil and gas sector. The implication of this is that Big4 auditors can limit the levels of real earnings management, in this case, discretionary expenses, that their clients in the oil and gas sector in Nigeria engage in. Hence, within the context of Nigeria, clients of Big4 audit firms are less likely to have higher levels of discretionary expenses. This result is consistent with those obtained in other countries such as the United States (Piot and Janin, 2007).

The board composition showed a positive and significant relationship with discretionary expenses, which implies that board independence leads to a higher level of earnings management thereby suggesting the importance of board independence. These findings are consistent with the findings of Fodio, Ibikunle and Oba (2013). This study expects that independent board members are likely to monitor managers over earnings manipulation and so there will be a negative relationship between earnings management and board independence.

Firm size (FS) proxy by the firm's asset is negative and significantly related to discretionary expenses. In principle, an increase in firm size, or a firm with large assets is expected to free up some funds for expenses that can be carried out by the capital owner without having any serious impact on the operation of the firm. However, the negative effect is not out of place, particularly if the culture and the type of people who make up the board members care about avoiding (ab)normal expenses. Another reason for this negative effect could be borne out of the fact that as the firm builds up assets, its liabilities may also build. This result is in agreement with the findings of Saheed and Babatunde (2022) that FS has a significant and negative effect on earnings management.

Where leverage is positively but insignificantly related to earnings management. When the company has high leverage, then management will increase the company's profits so that creditors continue to provide debt and the company seems able to repay its debts. The Debt covenant hypothesis states that if all other things remain the same, the closer a company is to the possibility of violating an accounting-based debt agreement, it will increase the likelihood for managers to move reported earnings from future periods to the current period (Watts and Zimmerman, 1986). This will lead to earnings management practices by raising the level of the company's profit to be higher. The findings of this study are inconsistent with the findings of Bassiouny (2016) that there is a significant positive relationship between firms' financial leverage and earnings management while other variables of the firm characteristics which are firm size, firm age and firm' audit quality have an insignificant relationship with earnings management.

Results from the study showed that return on asset was positive and significantly related to earnings management proxied by discretionary expenses, It is a general expectation that as total assets of a firm increase, earnings management would also increase. It is consistent with the findings of Shehu and Musa (2014).

The foreign exchange rate was found to have a positive significant relationship with discretionary expenses, but the magnitude of the effect was 0.00, this implies that discretionary expenses are almost unresponsive (inelastic) to changes in the exchange rate. This outcome is unexpected but not impossible. It is unexpected because as companies operating in the major exporting sector with sales in foreign exchange, it is expected that the exchange rate will play a significant role in discretionary expenses. It is not impossible because if there is a depreciation in the naira, firms may anticipate future appreciation or any government policy that may affect foreign exchange, and as a result, do not engage in any non-essential spending or expenses. The outcome of this study is consistent with the findings of Kassim, Awoniyi, Ogunode, Amusa, Iwala, Omosebi, and Akintoye (2022), their findings affirmed that despite the upward swings in the Nigerian exchange rates

against US Dollars in the past decade, exchange rate volatility favourably and significantly influences earnings management.

It is evident that all four firm characteristics proxies significantly affect discretionary expenses. Among the four control variables considered, three - namely leverage, exchange rate, and GDP growth rate - significantly affect discretionary expenses.

The second hypothesis says that firm characteristics have no significant impact on the discretionary production cost of listed oil and gas firms in Nigeria. The impact of firm characteristics on earnings management, as measured by discretionary cost of production, is detailed in Table 2. Discretionary cost of production refers to costs that can be avoided without hindering the firm's production, often related to fixed costs. Examples include advertising, public relations, training, and research and development.

A positive effect of a firm characteristic variable on discretionary cost implies an increase in earnings management practices through production costs, while a negative effect suggests a reduction. The results showed that board composition and firm age have a positive and insignificant effect on discretionary production cost, this implies that if board composition and firm age increase, there will be an increase in the earning management practices of selected oil and gas firms. In quantitative terms, a 1% increase in firm age leads to a 0.01% increase in discretionary cost. However, given the insignificant coefficient, the impact is almost negligible. This indicates that firm age has little influence on discretionary production costs. As firms age, they accumulate experience, expand production, and may benefit from economies of scale. Consequently, increased advertising, research, and development may not significantly impact the oil and gas sector. This may explain the insignificant and minimal impact of firm age on discretionary production costs.

However, Board composition showed positive and insignificant effects. One more non-executive/Independent Director in the composition of the Board of Directors or one less Executive Board member enhances the discretionary cost of production to the tune of 0.2%. This is unexpected but not unreasonable. Not all Directors are cost-conscious. Further, this outcome could be the aftermath of an Agency problem or superiority complex of some non-executive/Independent but relatively very powerful/highly influential Board members. These set of people may consider more spending on production with the belief that doing so will enhance production and sales, whereas even if such costs are cut, the production process will not be affected. Their influence (mostly political) could incapacitate the decision of the Executive Director counterparts to prevail on the nature and pattern of some aspects of costs that are associated with production but can be eliminated or reduced. Further, if some of these non-Executive/Independent Directors will benefit from the avoidable production cost (for example if they have an advertising firm or agents) they might ensure that their decision to up advertising costs prevails. This could be a possible reason why Board composition in the Nigerian oil and gas sector enhances discretionary production costs. Another way to interpret this result is that oil and gas firms with a high percentage of non-executive/Independent Directors may likely witness a high level of discretionary production cost. This outcome is consistent with the findings of Saheed and Babatunde (2022) and inconsistent with other studies such as Dechow, Sloan & Sweary (1996) that an independent board will reduce the likelihood of a firm’s engagement in earnings management.

The audit firm size showed a negative significant effect on discretionary production cost, this is in line with the expectation that the quality of the auditor should reduce earnings management practices because the Big 4 are renowned for their integrity and are motivated to uphold it. Their professionalism and diligence play a role in limiting management's inclination towards discretionary production costs. This result provides evidence that the Big 4 auditors restrict the levels of discretionary production costs in Nigeria's oil and gas firms. In the context of Nigeria's oil and gas sector, clients of the Big 4 auditors are more likely to have lower levels of discretionary production costs. This result contrasts with the findings of Awuye (2022).

The control variable Leverage is negatively correlated with discretionary production cost but statistically significant, this suggests that the more geared a company is, the more external pressure the lenders can mount on the firm, and consequently the lower the incidence of earnings management. The outcome is not consistent with the findings of Shittu, Onifade, Aminu, and Ajibola (2020) that leverage has a positive influence on firm value proxy for earnings management.

Return on asset (ROA) was found to have a positive significant relationship with discretionary production cost, which implies that an increase in total assets will lead to an increase in abnormal discretionary cost. This result is consistent with the predictions of several researchers who affirm that earnings management is operated when extreme performance is achieved. In other words, profitable firms arrange several methods to manipulate earnings (Dechow et al., 1995).

Conclusion and Recommendations

The study evaluated the effect of firm characteristics on discretionary expenses and discretionary production costs in listed oil and gas firms in Nigeria. The outcome of discretionary expense, which is defined as an expense that can be incurred without potentially negatively impacting the company's operations in the near term, showed that all four of the firm characteristics proxies used had a significant impact on discretionary expense. This suggests that, using discretionary expenses, firm characteristics have a major impact on oil and gas companies' earnings management strategies. This is because every variable has a big impact on discretionary expenses. On the other hand, the significant effect is favourable for firm age and board composition and unfavourable for audit dichotomy and business size. Based on the statistical characteristics of the model, the explanatory variables account for up to 98% of the variation in discretionary expenses. This suggests that the model has a strong fit, which allows precision to be determined based on the outcomes. The findings also show that firm characteristics variables and other control variables including leverage, returns on assets, currency rate, and GDP growth rate account for 89% of the total variation in the discretionary cost of production of oil businesses in Nigeria. The model's outcome showed that, while the null hypothesis for audit firm size and firm size is rejected, it is not rejected for firm age and board independence. Therefore, it can be concluded that firm characteristics play a major role in the management of earnings in Nigeria's oil and gas industry.

Based on the findings, the study therefore recommended that:

1. Managers of publicly traded companies in the oil and gas sector that have discretion in both operating choices and financial reporting may utilise this discretion to increase profit predictability and give stakeholders positive information. In addition to financial statements, they might also employ various platforms that allow for effective communication of earnings-related information.
2. Additionally, regulatory bodies such as the Nigerian Exchange Group, Security and Exchange Commission, and Corporate Affairs Commission should be paying closer attention to the financial reports of large companies, as this study found that they are more likely to be able to influence audit procedures and, as a result, conceal certain financial activities to manipulate earnings opportunistically. This will guarantee the large companies' financial reports' quality.

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