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Sequence of Manuscript

I. Title page
II. Abstract (150-250 words)
III. Keywords (3-5)
IV. Introduction
V. Literature Review
VI. Methodology
VII. Results and Discussion
VIII. Conclusion and Recommendations
IX. References (APA 7th Edition)
X. Appendices (if necessary)
XI. Author Biographies (optional)

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Adama Maimunat Isa and **Musa Adeiza Farouk**

ABSTRACT

This study examine the moderating effect of Auditor's Independence on Chief Executive Officers characteristics and Environmental Disclosure Quality of listed oil and gas firms in Nigeria from 2013 to 2023. Adopting a Causal Comparative research design and a census sample of seven listed oil and gas firms in Nigeria. Relying on secondary sources of data collection and utilizing Multiple Regression techniques for the purpose of analysis. The overall result of estimations shows the existence of a significant and positive relationship between Chief Executive Officers' Characteristics and Environmental Disclosure Quality of listed oil and gas firms in Nigeria moderated by Auditor's Independence. Consequently, it is conclude that Auditor's Independence effectively moderates the relationship between CEO characteristics and environmental disclosure quality of listed oil and gas firms in Nigeria and recommended the implementation of institutional reforms aimed at fostering greater auditors independence among oil and gas companies in Nigeria, the need for strong governance structures and institutions to regulate managerial decisions and improved stakeholders demand for more corporate disclosure on the aspect of their activities that affects the environment.

1.0 Introduction

The increasing pressures of global economic development have heightened corporate responsibility for environmental protection, particularly in light of issues like pollution, ozone layer depletion, and deforestation (Bansal & Clelland, 2004). These environmental challenges have prompted firms to address their impact in annual reports, focusing on how they present environmental issues and their effects on stakeholders (Angela & Handoyo, 2021).

Worldwide, environmental disclosure is critical for mitigating climate change through the adoption of sustainable strategies at corporate, national, and international levels (Brooks & Schopohl, 2019; Lu & Herremans, 2019; Haque & Ntim, 2020; Sovacool, Griffiths, Kim & Bazilian, 2021; Gerged ,Mehmood & Saleem, 2021). In Africa, this trend is influenced by various regional factors, including guidelines from the United Nations Economic Commission for Africa (UNECA) and the African Development Bank (AfDB). In Nigeria, corporate governance standards from the Securities and Exchange Commission, sustainability reporting guidelines from the Nigerian Exchange Group (NGX), and regulations from the National Environmental Standards and Regulations Enforcement Agency (NESREA) drive the demand for environmental disclosure.

The oil and gas sector in Nigeria is particularly scrutinized due to issues such as oil spills and gas flaring, which have led to conflicts with local communities (Igbekoyi, 2015). Therefore, stakeholders increasingly calls for corporate reforms to mitigate this environmental impacts and highlighting the importance of integrating sustainability into corporate strategies to enhance waste management, energy efficiency, and carbon emissions reduction (Al-Shaer, Al-Shammari & Ghandour, 2022; Oware & Awunyo, 2021). Given this context, understanding the role and characteristics of CEOs is crucial as firms work towards inclusion in the global sustainable development agenda. CEOs are pivotal in corporate decision-making, operational management, and communication with the board of directors. Their leadership is essential for establishing a regulatory framework that supports effective environmental disclosure in Nigeria's oil and gas industry.

Existing literature reveals significant gaps in environmental disclosure reporting standards in Nigeria, particularly regarding alignment with global best practices. This has sparked research interest in corporate sustainability reporting. One critical gap this study addresses is the influence of CEO characteristics on sustainability reporting design, particularly in reducing information asymmetry related to corporate pollution (Hassan & Guo, 2017; Shahab, Ntim & Ullah 2020; Hassan, Goh & Rahman 2020; Cubilla-Montilla, Muñoz-Colomina, & Ortas, 2020; Romito & Vurro, 2020; Oware & Awunyo, 2021; Christensen, Morsing & Thyssen, 2021; Usman & Yahaya, 2023).While previous studies primarily focus on corporate characteristics such as firm size, performance, age, reputation, and industry membership as determinants of environmental disclosure, overlooking the potential impact of specific CEO characteristics. This study seeks to fill this gap by examining the roles of CEO experience, nationality, turnover, control, and financial expertise, moderated by auditor independence, in influencing environmental disclosure quality within Nigeria's oil and gas sector (Haniffa & Cooke, 2005; Brammer & Pavelin, 2006; Michelon & Parbonetti, 2012).

More so, by focusing exclusively on listed oil and gas firms in Nigeria over the period 2013 to 2023, this study contribute to addressing the lack of a specific reporting index for environmental disclosures in the country's oil and gas sector through the investigation of the moderating effect of auditor's independence on CEO characteristics and environmental disclosure quality. To deliver in this regards, the study raises several questions, including whether CEO experience, nationality, turnover, control, and financial expertise significantly affect environmental disclosure quality, and how auditor independence moderates these relationships among listed oil and gas firms in Nigeria.

To guide this investigation, the following null hypotheses are stated: H01: CEO experience has no significant effect on environmental disclosure quality of listed oil and gas firms in Nigeria. H02: CEO nationality has no significant effect on environmental disclosure quality of listed oil and gas firms in Nigeria. H03: CEO turnover has no significant effect on environmental disclosure quality of listed oil and gas firms in Nigeria. H04: CEO control has no significant effect on environmental disclosure quality of listed oil and gas firms in Nigeria. H05: CEO financial expertise has no significant effect on environmental disclosure quality of listed oil and gas firms in Nigeria. H06: Auditor independence has no significant moderating effect on the relationship between CEO characteristics and environmental disclosure quality of listed oil and gas firms in Nigeria.

Consequently, this study is significant as it responds to growing demands for sustainability reporting, stimulating government efforts to balance economic activities with environmental considerations, enhancing stakeholder confidence, and improving public perceptions of corporate operations. Ultimately, the findings aim to guide CEOs in making informed decisions and adopting improved practices for environmental disclosure and sustainability reporting within the context of an emerging economy like Nigeria.

2.0 Literature Review and Theoretical Framework

2.1 Concept of Environmental Disclosure

Environmental disclosure is a key aspect of corporate responsibility, reflecting firm's accountability for its activities that may negatively impact the environment. It provides crucial information to stakeholders about company's environmental performance and sustainability practices (Okudo & Amahalu, 2023). According to Clarkson, Overell, and Chapple (2011), environmental disclosure encompasses an analysis of a company's environmental conduct and the economic consequences of its actions. Iredele (2020) consider it as the communication of material facts and figures on environmental responsibilities to stakeholders of a company on a regular basis. It is also a means managers use to maximize the relationship between a firm's value and its sustainable growth (Popa et al., 2022; Wahba, 2008). The quality of this disclosure is measured by the accuracy, transparency, relevance, and reliability of the information provided, which should comprehensively cover the impact of corporate activities on the environment (Ane, 2012; Ismail & Rahman, 2016; Wang & Zhang, 2019). Hallgren and Johansson (2016) categorize these quality of environmental disclosure as adequate when it meets minimum standards, fair when it is moderate, and full when it significantly influences users' judgments and decisions.

2.2 Concept of CEO Characteristics

The Chief Executive Officer (CEO) plays a vital role in shaping an organization's strategy and achieving corporate goals (Yukl, 2013; Finkelstein, Hambrick & Cannella, 2009). As a strategic leader, the CEO is pivotal in making major corporate decisions, managing overall operations, and acting as a liaison between the board of directors and corporate activities. Literature suggests that CEO characteristics significantly influence corporate governance, stakeholder relations and organizational performance (Crossland, Zyung, Hiller & Hambrick 2014; Liu, Wei & Xie 2018; You, Wang & Zhang 2020).

Contemporary studies on strategic leadership have explored how CEO attributes affects corporate decisions and outcomes, limited literature have connected this CEOs influence on firm's sustainable development and competitive advantage. Highlighting on some of this characteristics, CEO experience consist of the skills and knowledge acquired through prior executive roles of a CEO. Upper Echelons Theory posits this experience as been able to shape CEO's decision-making abilities and understanding of specific situations (Hambrick, 2007; Hambrick, Finkelstein, & Mooney, 2005). Gomez-Mejia et al., (2007) considers CEO attribute of nationality as affecting organizational dynamics, influencing managerial behaviors, decision-making styles, and risk preferences due to cultural differences. A diversity that enriches leadership approaches and impacts stakeholder perceptions. CEO turnover refers to the rate change in leadership within an organization due to factors like retirement, dismissal, or succession occurs and how it can significantly impact firm's strategic direction and overall governance (Huson, Maltesta & Parrino 2004; Clayton, Hartzell & Rosenberg 2005; Zhang & Rajagopalan, 2010). CEO control pertains to the influence a CEO holds over decision-making processes within a company and how such authority affects board composition, organizational performance, and the extent of environmental disclosure (Bebchuk & Fried, 2003; Muttakin, Monem & Khan 2018; Walls & Berron, 2017). CEO financial expertise on the other hand includes skills in management and financial accounting that facilitate effective leadership, particularly in industries where financial decisions are critical. These expertise enables CEOs to interpret financial data accurately and communicate effectively with stakeholders, ultimately guiding firms toward financial success (Brigham & Houston, 2018; Kaplan & Norton, 2000).

The fundamentals of auditor's independence in ensuring the integrity and objectivity of the audit process and letting auditors assess company's financial health without undue influence from the management underscores the moderating effect of auditor's independence on the over bearing role and influence of CEOs on corporate decisions. Perhaps, because it is essential for maintaining stakeholder trust and enhancing the credibility of financial statements (Francis, 2004; Knechel & Vanstraelen, 2007). In conclusion, understanding the interplay between CEO characteristics and environmental disclosure quality is vital for enhancing corporate responsibility and sustainability reporting in emerging economies like Nigeria. This knowledge could aid organizations in adopting more effective practices for environmental disclosures and overall governance.

2.3 Empirical Literature Review

Research on the impact of CEO characteristics on environmental disclosure quality has revealed inconclusive and mixed results. This overview provide an insights as follows: Sannino, Di Carlo & Lucchese (2020) examined CEO demographics and sustainable business models with a sample of 100 Fintech firms. Using a qualitative and quantitative analysis, they found that CEO tenure positively and statistically influences sustainable development model. Masulis, Wang and Xie (2012) in a study "globalizing the board room: *the e ects of foreign directors on corporate governance and ÿrm performance". Adopting a* multiple regression models t*hey* found that foreign CEOs might face difficulties in understanding local market conditions and cultural differences which can negatively impact firm's performance particularly in industries that are domestically oriented. Meng, Zeng, Tam and Xu (2013) examining the relationship between CEO turnover and environmental disclosure in China. Using a sample of 782 manufacturing listed firms over a period of three years. Using a panel data regression analysis, their findings indicates a negative relationship between CEO turnover (due to dismissal, health issues, resignation, or death) and environmental disclosure practices. However, it identified a positive association between CEO turnover and the improvement of corporate governance mechanisms within the organizations. Zhang et al., (2022). In a study titled "Avoid or approach: How CEO power affects corporate environmental innovation" using listed firms on China's Shanghai and Shenzhen Stock exchanges from 2008−2018 while adopting a generalized estimation model for the purpose of analysis. The results of estimation indicates a positive role of CEO power in promoting environmental innovation and concluded that this is even more stronger when firms have more independent directors and faces greater market competition. Hussain, Zhang and Anwar (2022) examining the impact of CEO ability on corporate environmental sustainability information disclosure. Using samples of Chinese A-share listed companies from 2010 to 2019 and adopting Ordinary Least Square (OLS) as baseline regression model for the purpose of analysis. Their findings showed a positive association between CEO ability and corporate environmental sustainability information disclosure. It also showed a significant negative interaction coefficient between CEO ability and CEO career concerns. Ofoegbu, **Odoemelam and Okafor** (2018) examined the impact of audit committee independence on environmental disclosure quality in both Nigeria and South Africa. Adopting a content analysis and the utilization of ordinary least square for the purpose of data analysis. The result of estimation showed that, audit committee independence has no significant impact on environmental disclosure of listed companies in Nigeria and South Africa. This study appreciates the novel contributions from the above studies, its application for policy and decision making especially in the oil and gas sector of Nigeria is difficult due to factors ranging from cultural, geographical, political and economic differences.

2.4 Theoretical Framework

This study primarily relies on **stakeholder theory**, given its focus in aligning corporate policies with stakeholder interests and its relevance in understanding the dynamics between businesses and their environment. Stakeholders Theory framework suggests that organizations must consider stakeholder interests in their operations and disclosures (Freeman, Wicks & Parmar, 2004). This theory in exploring the dynamics of CEO characteristics and environmental disclosure quality emphasizes on the need for organizations policies and procedures to be made and implemented in a manner that reflects stakeholders' interest in order to gain support of all connected to it operations and existence. Thus, corporate entities are expected to disclose adverse effects of their activities on the environment, state adopted administrative strategies and intermittent environmental performance from time to time. Challenging traditional shareholder dominance model because it focuses solely on maximizing shareholder value, arguing that sustainable success in business can only be achieved when all stakeholders' interests are aligned and addressed (Jones & Wicks, 1999). However, it is criticized for not providing clarity on who should be considered a stakeholder and balancing conflicting Stakeholder Interests, its complexity and costly nature when it comes to the practical implementation of the theory (Freeman et al., 2004).

3.0 METHODOLOGY

This study adopts a causal-comparative design to investigate the moderating effect of auditor independence on the relationship between CEO characteristics and the quality of environmental disclosure (EDQ) among listed oil and gas firms in Nigeria. The study's population includes major oil and gas firms such as Conoil Plc, Eterna Plc, Seplat Petroleum Development Company Plc, MRS Oil Nigeria Plc, Oando Plc, Total Energies Marketing Nigeria Plc, and Japaul Oil and Maritime Services Limited selected using a census sampling technique and secondary source of data spanning through 2013 to 2023.

3.1 Model Specification

To test the hypotheses, the study utilizes a multiple regression model presented as follows in both general and econometric forms: EDQ = f (CEOE, CEON, CEOT, CEOC, CEOFINEX, AI)

EDQtp=βo+β1CEOEtp+β2CEONtp+β3CEOTtp+β4CEOCtp+β5CEOFINEXtp+β6CEOEAItp+β7CEONAItp+β8CEOTAItp+β9CEOCAItp+β10CEOFINEXAItp+β11AItp+µtp. Where, βo is the intercept of the regression. β_1, β_2, β_3, β_4, β_5, are the coefficients of the regression while the regression coefficient β_6 β_7 β_8 β_9 β_{10} measures the interaction effect between independent variable and the moderating variable.

2.5.2 Table1: Variables Definition and Measurement

Variables	Definitions	Measurement	Sources/References
EDQ1	Environmental Disclosure Quality (Unweighted)	Score of 1 for disclosed items, 0 otherwise	Wiseman (1982); Deegan & Gordon (1996); Uwigbe (2011)
EDQ2	Environmental Disclosure Quality (Weighted)	Score based on monetary (3), quantitative (2), etc.	Wiseman (1982); Toms (2002); Al-Tuwaijri et al. (2004)
CEOE	CEO Experience	Number of years in the company	Marshall et al. (2011); Bao & Carol (2012)
CEON	CEO Nationality	Dummy variable (1 for foreign, 0 otherwise)	Ashraf & Qian (2021); Huang (2013)
CEOT	CEO Turnover	Dummy variable (1 for turnover within 1 year, 0 otherwise)	Beneish et al. (2017)
CEOC	CEO Control	Number of shares/stakes held by CEO	Quan & Wu (2010)
CEOFINEX	CEO Financial Expertise	Score of 1 for finance/accounting qualifications	Ason et al. (2021); Jiang et al. (2013)
Auditors' Independence	Degree of independence of auditors	Measured by auditors' remuneration	Francis & Wang (2008); Eshleman & Guo (2014)

The environmental reporting score is calculated using a 60-item disclosure index based on the ISO 14031 benchmark. Each item is scored as follows: 1 for disclosed, 2 for non-monetary but quantitative, 3 for detailed numerical support. The final EDQ value is derived by multiplying the score by the highest ranked disclosure index score, normalizing it to reflect the monetary commitment to environmental disclosure by the firms. The firms are categorized into small and large based on total shares relative to industry averages, facilitating a nuanced analysis of environmental disclosure practices.

4.0 Results and Discussion

Table 2. Descriptive statistic

Variables	Mean	Std. Dev.	Min.	Max.	Swilk(Prob>Z)
EDQ	0.1503	0.0566	0.00556	0.25	0.00871
CEOE	3.9145	3.0654	0.25	13	0.00002
CEON	0.4156	0.4961	0	1	0.96490
CEOT	0.1948	0.3986	0	1	0.00023
CEOC	7.6207	8.3524	0	19.3376	0.00001
CEOFINEX	0.0259	0.1601	0	1	0.00000
AI	17.7470	1.2890	15.6073	20.2612	0.00017

Stata 13 Output,2024

Table 2 highlights key descriptive statistics regarding environmental disclosure quality (EDQ) and selected CEO characteristics within listed oil and gas firms in Nigeria. Environmental disclosure quality showed a minimum of 0.0056 and a maximum of 0.25, indicating that firms reported only 1-25% of disclosure index items. The mean EDQ of 0.1503 reveals that firm's disclosed only 15% of environmental index items, highlighting significant variability and limited reporting in this sector. The Shapiro-Wilk (p = 0.00871) indicates a non-normal distribution for EDQ data.

CEO tenures ranged from 4 months to 13 years, with a mean tenure of approximately 3 years and 9 months (SD = 3.0654), reflects heterogeneous range of experiences among these firms. Data for CEOE was non-normally distributed (p = 0.00002). CEO nationality (CEON) data indicated that 41.56% of CEOs were non-Nigerians, with nationality data been normally distributed (p = 0.96490) Unlike CEO experience. Whereas the average CEO turnover rate was low, with a mean value of 0.1948, suggesting minimal turnover beyond one year. The CEOT data displayed a non-normal distribution (p = 0.00023). CEO control varied significantly with shareholdings ranging from N0 to N250 million and an average of N7.62 million, indicating diverse levels of control among CEOs. The mean financial expertise among CEOs was only 0.0260, suggesting that merely 3% of CEOs possessed relevant financial qualifications. The distribution for this variable was also non-normal. Auditor independence (AI) Measured by auditor's remuneration, with a ranged from N6 million to N630 million and a mean of N17.75 million, indicates a moderate independence across firms. The AI data was non-normally distributed (p = 0.00017). Overall, these findings illustrate considerable variability in both environmental disclosure quality and CEO characteristics, with several metrics deviating from normal distributions. This underscores the unique profiles and disclosure practices prevalent in Nigeria's oil and gas sector.

3.1Correlation Matrix Analysis

Table 3. Correlation Matrix Results

	EDQ	CEOE	CEON	CEOT	CEOC	CEOFINEX	CEOEAI	CEONAI	CEOTAI	CEOCAI	CEOFINEXAI	AI
EDQ	1											
CEOE	0.1914	1										
CEON	0.1259	-0.5668*	1									
CEOT	-0.0613	-0.6875*	0.3837*	1								
CEOC	0.3889*	0.5449*	-0.4503*	-0.3079*	1							
CEOFINEX	0.1196	-0.1491	0.1936	0.1258	-0.1441	1						
CEOEAI	0.2473*	0.9952*	-0.5602*	-0.6860*	0.5649*	-0.1469	1					
CEONAI	0.2166	-0.5124*	0.9542*	0.3067*	-0.4010*	0.1848	-0.4941*	1				
CEOTAI	-0.0317	-0.6792*	0.3910*	0.9923*	-0.3023*	0.1249	-0.6744*	0.3307*	1			
CEOCAI	0.4523*	0.5683*	-0.4709*	-0.3106*	0.9802*	-0.1435	0.5941*	-0.4114*	-0.3044*	1		
CEOFINEXAI	0.1201	-0.1484	0.1936	0.1231	-0.1441	0.9999*	-0.1461	0.1852	0.1222	-0.1435	1	
AI	0.7580*	0.3004*	-0.0326	-0.1837	0.4178*	-0.022	0.3711*	0.1119	-0.1493	0.5096*	-0.0214	1

Stata 13 Output,2024

The Spearman correlation analysis in Table 4.2 reveals that Auditor independence (AI) shows a strong, positive correlation (0.7580*) with EDQ, underscoring its role in enhancing transparency and accountability in environmental reporting. CEO experience (CEOE) correlates positively but insignificantly (0.1914) with EDQ. CEO nationality (CEON) and turnover (CEOT) have an insignificant correlations with EDQ (0.1259 and -0.0613 respectively). A notable positive, significant correlation exists between CEO control (CEOC) and EDQ (0.3889*). CEO financial expertise (CEOFINEX) also correlates positively but insignificantly with EDQ (0.1196). Moderating the analysis with Auditor's Independence (AI), a positive, significant correlation emerges between CEO experience (CEOEAI) and EDQ (0.2473*). Similarly, moderated CEO control (CEOCAI), shows a strong positive correlation with EDQ (0.4523*). In contrast, the correlation of moderated CEO nationality (CEONAI) and EDQ remains positive but insignificant (0.2166), while moderated CEO turnover (CEOTAI) has a negative, insignificant correlation with EDQ (-0.0317). CEO financial expertise (CEOFINEXAI) moderated by AI is positive but insignificantly correlated with EDQ (0.1201).

Further examination of relationship among CEO characteristics indicates that CEO experience significantly but negatively correlates with CEON, CEOT even when moderated by auditor's independence. It also showed a significant relationship with CEO control even when moderated. It is not significantly correlated with CEOFINEX. A positive and significant relationship exist between CEO nationality and CEOT even when moderated, while a significant but inverse correlation exist between CEON and CEOC even when moderated, but it insignificantly relates with CEOFINEX. CEO turnover is significant but inversely correlates with

CEO control, moderated CEO Control and moderated CEO experience but correlates positively and significantly with CEON. It is also poorly related with CEOFINEX even when moderated. Similarly, CEOFINEX insignificantly correlates with other CEO characteristic even when moderated.

More so, moderated CEO experience (CEOEAI) is positively and significantly related with CEOCAI, it is also negatively but significantly correlated with CEONAI and CEOTAI as well as been negatively and inversely related with CEOFINEXAI. The correlation matrix between moderated CEO Nationality (CEONAI) shows that it is correlated significantly and positively with CEOTAI and negatively but significantly correlated with CEOCAI. While a negative relationship exist between the variable and CEOFINEXAI. In the sane vain, moderated CEO Turnover (CEOTAI) is negatively but significantly related with CEOCAI just as a negative correlation existed between it and CEOFINEXAI. The relationship between moderated CEO control (CEOCAI) also shows a significantly and positive correlation with auditor's independence while it is negatively related with CEO financial expertise. Moderated CEO financial expertise indicates that auditor's independence is negatively and inversely correlated with CEO financial expertise. This Pearson's correlation results elucidate on the kind of relationship between the independent and dependent variables as well as the moderating variables of the study.

Diagnostic Analysis

The Shapiro-Wilk W test for normality of data shows that the variables are not normally distributed. The results of Breush-Pagan/ Cook-Weisberg test for heteroscedasticity also shows the absence of heteroscedasticity given a P-value of 0.9813 and Chi^2 0.00. While the test for multicollinearity indicates non-existence of multicollinearity using the tolerance and variance inflation factor values of less than 10 and greater than 0.10 for all the variables (see appendix).

Summary of Regression Results

This section presents discussion on the moderating effect of auditors' independence on the relationship between the proxies of CEO characteristics used for the study and Environmental disclosure quality of listed oil and gas firms in Nigeria.

Table 4. Random Effect General Least Square Regression Results

EDQ	coef.	t	p>/t/	
CEOE	0.0410662	1.55	0.122	
CEON	0.1713809	1.02	0.307	
CEOT	0.0136076	0.05	0.957	
CEOC	0.037384	3.18	0.001	
CEOFINEX	-0.2450213	-0.10	0.921	
CEOEAI	-0.0021803	-1.52	0.129	
CEONAI	-0.0086623	-0.91	0.361	
CEOTAI	0.0000942	-0.01	0.995	
CEOCAI	-0.0021161	-3.08	0.002	
CEOFINEX AI	0.0162406	0.11	0.909	
AI	0.0668514	5.60	0.000	
Constant	-1.038879	-5.06	0.000	
R^2				0.6791
Wald Chi^2				137.54
P-Value				0.0000

Stata 13 Output,2024

The study's findings, based on a Generalized Least Squares (GLS) regression model, reveal an R^2 of 0.6791, indicating that the model explains approximately 68% of the variance in environmental disclosure quality (EDQ) among listed oil and gas firms in Nigeria. This relationship is further validated by the Wald statistic and a 1% significance level, confirming the model's robustness. The key insights are: CEO Experience CEO Nationality, CEO Turnover and CEO Financial Expertise both exhibit positive except for CEO financial expertise but statistically insignificant relationships with EDQ, suggesting that these CEO attributes may not directly influence environmental disclosures due to factors which may overshadow their individual relevance. CEO Control and Auditor's Independence both showed significant and positive impact on EDQ. However, moderated CEO experience, CEO nationality, CEO turnover and CEO financial expertise all showed an insignificant impact on EDQ. While moderated CEO control reveals an inverse relationship with EDQ, suggesting that while CEO control aids strategic alignment, excessive control might hinder transparency. Ultimately, relying on the higher explanatory power of the moderated model, the study rejects the null hypotheses, affirming auditor independence's significance in moderating the effect of CEO characteristics on the quality of environmental disclosure quality of listed oil and gas firms in Nigeria.

In line with already stated hypotheses, findings from this study indicates that auditor independence positively influences corporate environmental disclosure. Consistent with the works of Francis (2004), Kuzey & Uyar (2016), and Mohamed et al. (2023) but conflicting with Carey & Simnett (2006) and Mamman et al. (2021). The analysis also reveals mixed impacts of CEO characteristics on EDQ. Specifically, CEO experience (CEOE), CEO nationality (CEON), CEO turnover and CEO financial expertise all showed a statistically insignificant impact on EDQ. Implying that factors like governance structure or external conditions may play a more decisive role in EDQ than experience, nationality, turnover and financial expertise alone. This is also corroborated by the interaction of the moderated model which also showed an insignificant impact in this context with mixed coefficients. This finding in terms of CEO experience is consistent with Bertrand and Schoar (2003) but contradicts Kor (2006). The findings on CEO nationality is consistent with Li et al. (2018) but contradicts Crossland and Hambrick (2011); Masulis, Wang and Xie (2012). While that on CEO turnover (CEOT) aligns with Khurana (2002); and Rauf et al. (2020) but in contrasts with Huson et al. (2004); and Kim and Lyon (2015). The findings on CEO financial expertise is in align with Malmendier and Tate (2005); Fahlenbrach and Stulz (2011) but deviate from Clarkson et al. (2008); and Hussain et al. (2022). More so, CEO control (CEOC) showed a significant and positive impact on EDQ, suggesting that decisive CEO control can enhance environmental reporting quality. Yet, when moderated an inverse relationship was established, implying that auditor oversight may curb excessive CEO influence and ensure alignment with shareholder interests. This is consistent with Braga et al. (2015); and Hasan et al. (2020) but contradicts Bebchuk (2004); and Ojeka et al. (2019).

Overall, while auditor independence is essential for governance and transparency, its moderating role in the relationship between CEO characteristics and EDQ shows varied and often insignificant effects. These findings suggest that external governance and team structures play crucial roles in influencing EDQ beyond CEO traits.

5 Conclusion and Recommendation

5.1 Conclusion

This study concludes that auditor independence positively and significantly impacts environmental disclosure quality (EDQ) of listed oil and gas firms in Nigeria. Key findings related to CEO characteristics include shows that CEO experience has a positive but statistically insignificant effect on EDQ and that Auditor independence does not significantly moderate this relationship. CEO nationality also shows a positive but statistically insignificantly impact EDQ even when moderated by auditor independence. CEO turnover shows a positive and statistically insignificant effect on EDQ even when moderated by Auditor independence. CEO control has a positive and statistically significant effect on EDQ. However, upon moderation with auditor independence, the relationship turns negative and remains significant. CEO financial expertise exhibits a negative and statistically insignificant effect on EDQ even when moderated by auditor independence.

Overall, the study shows that while auditor independence strengthens the relationship between CEO characteristics and EDQ, its moderating effects vary by characteristic, with CEO control being the most impacted.

5.2 Recommendation

The study offers several recommendations based on its findings with the aim of balancing CEO characteristics and corporate governance mechanisms to enhance environmental disclosure quality and sustainable business practices.

i. Institutional reforms are recommended to strengthen auditor independence in the oil and gas sector in Nigeria, promoting better corporate governance and environmental disclosure.

ii. While experienced CEOs are often better equipped to navigate industry complexities, the study advises caution, as experience alone may not guarantee effective adaptation, especially in rapidly changing sectors.

iii. Robust governance and regulatory frameworks are advised to limit the influence of CEO nationality on decision-making, ensuring that leadership discretion is aligned with firm performance goals.

iv. The study encourages careful consideration of CEO turnover, as leadership changes can bring fresh perspectives but may also lead to disruption if frequent or contentious.

v. Limiting excessive CEO control is advised to prevent potential self-serving decisions, protecting long-term firm value and shareholder interests.

vi. While CEOs with financial expertise bring value in capital and risk management, the study recommends caution due to potential overconfidence that may lead to risky or suboptimal decisions.

vii. Further studies is recommended through collaborations among regulators, shareholders, enterprises, academia, and institutions to deepen understanding and improve sustainability reporting practices in Nigeria.

5.3 Limitation of the Study

The study acknowledges its sector-specific focus on listed oil and gas firms in Nigeria, noting that CEO characteristics may vary across industries. As such, findings and recommendations are primarily applicable to this sector. This limitation, however, does not undermine the study's conclusions. For broader applicability, future research could expand to include different CEO characteristics and sectors, enhancing generalization. Additionally, the study recommends exploring other variables and environmental disclosure index items, potentially categorizing findings by firm size within the Nigerian exchange group for a more granular analysis.

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