Board Characteristics and Environmental Disclosure of Quoted Oil and Gas Firms in Nigeria: The Moderating Role of Firm Size

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ABSTRACT
This study investigated the relationship between board characteristics and environmental disclosure of quoted oil and gas firms in Nigeria: The moderating role of firm size with its specific objectives such as to determine the relationship between board independence and environmental disclosure. The research design adopted was ex-post facto design while, the population and the sample size for the study is the 12 quoted oil and gas companies in the Nigerian Stock Exchange (NSE). Secondary data were used in this study and data were analyzed using both descriptive, inferential statistics and Pearson Correlation Coefficient Statistical tool complementarily with the aid of Statistical Package for Social Sciences version 23.0 to test the null hypotheses. The findings of the study reveal that board independence has a negative relationship with environmental disclosure. The findings of the study further indicate that firm size significantly moderates the relationship between board characteristics and environmental disclosure. Based on the findings, the study recommends that independence should be assessed by weighing all the relevant factors that may compromise independence while the classification of directors as independent or otherwise in the integrated report should be done on the basis of assessment. Finally, increase in total asset is required as firm size was identified as a moderator variable between board characteristics and environmental disclosure.

Keywords: Board Characteristics, Board Independence, Environmental Disclosure, Firm Size

INTRODUCTION
The concept of corporate social responsibility is a straightforward topic of conversation among firms and stakeholders that has drew the attention of corporate governance. This occurred as a result of community members' demands for enterprises to incorporate community environmental and social concerns into their activity strategy, as the company's interests extend beyond profit to both stakeholders and shareholders. According to Umar and Alifiah (2020), the concept of corporate social responsibility is a simple topic of debate among firms and stakeholders that has continued to attract the attention of corporate governance. This occurred as a result of community members' demands that corporations address the neighborhoods environmental and social concerns as part of their business plan, because the company's interests extend beyond producing a profit for shareholders to both stakeholders and shareholders. Companies are required to be more productive in their thinking, particularly in terms of ways and processes to alleviate and solve the requirements of various stakeholder groups. Employees, government, community members, consumers, and business owners who have a stake in a company are all stakeholders. Because of the evidence of financial scandals that led to corporate failure in the last decade (s), such as Cadbury Nigeria Plc, Oceanic Bank International, Intercontinental Bank, and Afri Bank, among others, the issue of board characteristics as a subset of corporate governance has been given special attention by all sectors of the economy in Nigeria. As a result, companies with effective board
characteristics such as board size, board independence, managerial ownership, and female board participation are presumed to be better corporate citizens and more socially and environmentally responsible than companies with ineffective board characteristics. This suggests that board qualities and company Corporate Social Responsibility Disclosure (CSRD) should have a substantial positive relationship (Ali & Attan 2013).

Furthermore, in order to establish image and reputation in a competitive business climate, organizations must meet the interests of various stakeholder groups. Furthermore, businesses are expected to be transparent and accountable to their stakeholders. As a result, owners evaluate companies based on their financial success, and governments evaluate companies based on their compliance with relevant regulations (Thi & Pham, 2018), while communities evaluate the company's commitment to social and environmental activities (Phiri, Mantzari, & Gleadle, 2018). In general, CSR is a requirement for businesses to participate in programs that promote societal growth, the fulfillment of stakeholder interests, and the improvement of societal conditions (Chelliah, Jaganathan, & Chelliah, 2017; Radka, 2019). The greatest way for a corporation to report social and environmental initiatives for community members in bookkeeping is through disclosure in an annual account statement (Alnabsha et al., 2018; Umoren, Isiavwe, & Morenike, 2016). As a result, organizations' management is questioned about including information on CSRD actions in their annual reports. The goal is to meet the information needs of the host communities of the companies (Khasharmeh & Desoky, 2013). Furthermore, including environmental and social activities information in annual reports of corporations has improved the validity and trustworthiness of the financial reporting system while also increasing the company's image and reputation.

Several studies identified in the literature sought to address the many paradoxes and disputes surrounding CSR concerns, however there is a great deal of disagreement, controversy, and conflict of interest among business theorists, corporate executives, academics, and the general public. Many prior research have identified firm profitability, firm size, firm liquidity, independent directors, and female directors as major firm features and board characteristics that influence firm corporate social responsibility investment, disclosure, and practice. The research, on the other hand, yielded varied outcomes. Ponnu and Okoth (2009), Enny and Yulita (2010), Jurica and Lady (2012), and more. Amole, Adebiyi, and Awolaja (2012) found evidence to suggest a favorable association between firm traits, board characteristics, and CSR, but Abu Sufian (2012) found no evidence of a meaningful relationship at all. Investigating board characteristics and corporate social responsibility disclosure in Nigerian oil and gas businesses may be of immediate benefit, given the volume of arguments, conflicts, debates, and diverse expectations in the literature. This is because the vast majority of studies on the impact of board characteristics on CSR were conducted in the United States. The majority of Nigerian research on CSR, on the other hand, either linked it to performance or failed to analyze the importance of governance systems in determining the role played by board members in management choices to engage in CSR activities. Few studies, such as Farouk and Shehu (2013) and Akano, Jamui, Olaniran, and Timothy (2013), have looked at the factors that influence CSR, but they have the flaw of ignoring the impact of numerous essential board characteristics such as board independence, diversity, composition, and size. This was a considerable yawning gap the present research work was able to discover in the literature alongside the period gap of the previous studies. However, to the best of the researcher’s knowledge, no study with similar combination of variables have been conducted in the Nigerian oil and gas sector. Owing to their indispensable contributions to the economy, it is paramount to fill in this gap.

Research Hypotheses
The following null hypotheses are formulated for the study:

Ho1 There is no significant relationship between board independence and environmental disclosure.

Ho2 Firm size does not moderate the relationship between board characteristics and corporate social responsibility disclosure in the quoted oil and gas companies in Nigeria

Theoretical Framework
The theories covered in this study include legitimacy theory propounded by Edward Freeman (1984) and group diversity theory. The study therefore, is anchored on legitimacy theory because it underpin the objective of the study.

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Stakeholders’ Theory
The Stakeholders' Theory is an extension of legitimacy theory that advances the concept that every corporate action should consider the society. The proponent of this thesis claimed that corporations should consider many stakeholders' groups in their decisions and activities, not just the community. These stakeholders are divided into many groups and require different types of information, which enterprises must prudently respond to in a number of ways. Stakeholders' Theory has risen to prominence as one of the most prominent and widely quoted theories in CSR. According to this theory, managers can establish socially responsible conduct by paying attention to the interests of all stakeholders in a business, and a socially responsible organization is one in which managers' commitments to stakeholders are prominent in their decision-making (Clarkson 1995). This research, on the other hand, supports the use of Legitimacy Theory and Stakeholder Theory. As a result, the research concluded that Legitimacy Theory and Stakeholders Theory better explain the study's variables, and thus adopted them as the theories with the best nexus underpinning the study's variables. Legitimacy theory on the one hand suggested the need for firms to respect community values and ensure overall corporate community concerns.

Agency Theory
Fama (1980) and Fama and Jensen (1983) introduced agency theory, which is based on the principal-agent connection. The operative agency idea is based on the separation of ownership between the company's management. Typically, agents are used to monitor and regulate typical business activities. Separation of ownership and control, on the other hand, creates conflicts of interest between the agent and the principal. As a result, agency theory was developed to address agency issues by reviewing financial reporting methods, monitoring management activities, and minimizing or controlling management's selfish behaviors (Muhammad, Xiaoming, Riaz, & Rehman, 2017). Agency theory acts as a monitoring mechanism in this context (Miras-Rodríguez, Martínez-Martínez, & Escobar-Pérez, 2018). It is believed that a better level of responsibility will reduce agency conflict between proprietors and management. Appah, 2017; Frynas & Yamahaki, 2016; Henritte & Anna-Retha, 2015 define advanced disclosure as corporations engaging in extra corporate social responsibility (CSR) and disclosing it.

Conceptual Review
Board Characteristics
From an organizational standpoint, the board can be seen as a group of people who have come together to work toward a common purpose (Langton & Robbins, 2007). The board of directors, which is positioned above the chief executive and other managers in the company's hierarchy, plays a strategic role in the firm's decision-making. The composition of the board and the skillsets it holds are critical organizational assets (Ljungquist 2007). Firms can get a competitive advantage by utilizing such resources, which can help them achieve higher performance (Prahalad & Hamel, 1990; Barney 1991; Hamel & Prahalad, 1994; Hunt, 2000). As a result, team composition and qualities are crucial for effective group decision-making and company performance. Scholars have examined the impact of board qualities on business success from a variety of theoretical approaches. Different hypotheses, on the other hand, have all sought to establish a link between certain board qualities and business performance (Kiel & Nicholson, 2003).

Monks and Minnow (1995) emphasize the importance of boards in corporate governance research, defining corporate governance as the connection between shareholders, the board of directors, and senior management, as well as how strategic choices important to a company's performance are made. Different corporate governance guidelines released as a guide to practitioners have also focused on boards. The importance of an independent and competent board, according to Carlsson (2001), is at the heart of all corporate governance regulations. “In essence, corporate governance is the structure that is designed to ensure that the correct questions are addressed and that checks and balances are in place to ensure that the answers represent what is optimal for the production of long-term, sustainable value,” write Monks and Minnow (2004). The board membership, constitution, and function, all of which have a considerable impact on firm performance, are critical components of this organization. Early scholars (Mace, 1971; Norburn & Grinyer, 1974; Rosenstein, 1987; Vance, 1983; Monks & Minnow, 1991) suggested that boards play a little role in strategy development and that the chief executive is the primary strategist.
Board Independence

The degree to which board members are dependent on the present CEO or organization is referred to as board independence. Outside directors, as opposed to insiders, who are managers or employees of the firm, or dependent non-executive directors, who have personal and/or professional relationships with the firm other than board membership, are considered a major factor influencing financial performance. The proportion of independent non-executive directors on the board is viewed as a major factor influencing financial performance. The focus on board independence is anchored in agency theory and supported by the stakeholder viewpoint, in which independent non-executive directors are seen as a tool for monitoring management actions, resulting in more information disclosure, as representatives of the stakeholders.

As a result, several studies have identified independent directors as key players on the board, influencing decisions such as firing and hiring CEOs and compensating top management (Weisbach, 1988; Borokhovich et al., 1996), negotiating takeover premiums (Byrd & Hickman, 1992; Cotter et al., 1997), and implementing antitakeover devices (Weisbach, 1988; Borokhovich et al., 1996). (Brickley et al., 1994). As a result, it is expected that having more independent directors on the board will improve transparency, corporate social performance, and the CSRD of Jordanian banks, because the outside directors will encourage top management to incorporate social considerations into their strategy and improve disclosure. Many studies have showed that board independence has a positive impact on CSR and CSR (e.g., Johnson & Greening, 1999; Webb, 2004; Zhang et al., 2013; Sharif & Rashid, 2013).

The need of having independent directors on a board to protect the interests of investors is bolstered by the stakeholder theory (Arayssi, Dah, & Jizi, 2016; Gul & Leung, 2004; Jizi, Salama, Dixon, & Stratling, 2013). Using both univariate and regression models, Liao et al. (2015) found evidence of a positive relationship between major independent directors and board disclosure of GHG information in a UK sample of 329 biggest corporations. To understand the relationship between corporate governance structure and voluntary disclosure, Garca-Meca and Sánchez-Ballesta (2010) used a meta-analysis technique to a sample of 27 empirical research. The study shows that there is only a positive relationship between BIND and voluntary disclosure in nations with strong investor protection laws. According to Jiziet al., (2013), there is a link between higher levels of corporate social responsibility (CSR) disclosure and more independent boards of directors. A sample of big US commercial banks was included in the research. More independent executive administrators on the board, according to Eberhardt-Toth (2017).

Post, Rahman, and McQuillen (2014) used sustainability-themed partnerships as a moderating variable and the entire public oil and gas businesses as a sample to empirically analyze the relationship between board structure and company environmental performance. They discovered that sustainability-themed coalitions moderate dependent and independent variables, among other things.

An increased ratio of non-executive independent directors on the board is projected to have a substantial impact on detailed environmental impact disclosure.

Environmental Disclosure

Environmental disclosure means that a firm is obligated by law to include environmental information in annual reports, either voluntarily or statutorily. Environmental disclosure also communicates relevant information to stakeholders and society as a whole as a result of the company's actions as they influence the environment. According to Panigrati (2015), environmental disclosure is information that is presented to analyze a company's environmental conduct and the economic consequences of that activity. It includes both financial and non-financial information. Environmental disclosure is defined by Ejoh, Orakand, and Sakey (2014) as a set of information about a company's past, current, and future environmental operations. Environmental disclosure, according to Ong, Tho, Hoh Thai, and The (2016), is a declaration that demonstrates a company's environmental efforts, such as the company's aims, environmental policies, and environmental consequences, which are documented and publicized annually to the general public. Environmental disclosure, according to Dibia and Onwuchekwu (2015), aids corporations in capturing public opinion of their operations. Because of the importance of the environment and the devastating impact of companies' activities on the environment, environmental disclosure serves as a medium of communication between the company and stakeholders. Disclosure is required because of the importance of the environment and
the devastating impact of companies’ activities on the environment (Abubakar, Moses & Inuwa, 2017).

According to the above writers, environmental disclosure refers to information regarding environmental actions that occurred in the past, present, or future, and should be revealed to the public on an annual basis. This data might be in the form of financial and non-financial data, and it can be quantitative or qualitative. Environmental disclosure refers to all information on the environment that is reported or made available in the annual report of the company. Environmental disclosure has been quantified both quantitatively and subjectively using content analysis and the environmental disclosure index. According to a study of the literature, several studies measured environmental accounting disclosure using both quantitative and qualitative methods. Both methodologies were utilized by researchers such as Abubakar, Moses, and Inuwa (2017), Adams and Busola (2017), Ong et al., (2016), and Buniami (2010) to measure environmental accounting disclosure of companies.

The use of objective and systematic counting and recording processes to provide a description of the content in text, according to Neuman (2011), is a quantitative approach to environmental disclosure. According to Ong et al., (2016), the quantity of environmental accounting disclosure can be quantified using content analysis, which is regarded as the most widely used technique in prior studies. It can be quantified in terms of the number of words, sentences, and pages. Annual reports of companies contain both financial and non-financial data; financial data may be easily analyzed using financial ratios, while non-financial data can be interpreted using a research tool called content analysis (Adams & Busola 2017).

Empirical Review
Hosam, Eko, Rockhudin and Wuryan (2019) studied the impact of board characteristics on earnings management in the International oil and gas corporations. This study examined whether the board characteristics have any impact on earnings management among the International Oil and Gas Corporation in the world. The findings of this study indicated that the board independence has a significant impact on the reduction of earnings management. In contrast, the board size does not have any impact on the reduction of earnings management, due the larger the board size less efficient on monitoring of the board. While gender diversity has a significant impact on the reduction of earnings management, Finally, The CEO Duality has a significant impact on the increase of earnings management.

Emmanuel, Elvis and Abiola (2019) studied environmental accounting disclosure and performance of listed Companies in Nigeria from 2007 –2016. Data were analyzed through the use of multiple regression. The result of the study shows that non-financial indicators of environmental disclosure have a positive significant effect on performance, while performance indicator of environmental accounting disclosure has no effect on performance of firms.

Bansal, Lopez – Perez and Rodriguez – Ariza (2018) studied Board Independence and Corporate Social Responsibility Disclosure: The mediating role of the presence of family Ownership. This paper examines the impact of board independence on corporate social responsibility (CSR) disclosure and analyses the moderating effect of the presence of family ownership. The study finds that independent directors encourage CSR disclosure in family firms more in civil law countries where investor protection is low compared to common law countries where investor protection is high.

Yahaya (2018) examined the environmental disclosure and financial performance of Listed Environmentally –Sensitive Firms in Nigeria. Data were analyzed using descriptive statistics, correlation analysis and multiple regression. The result indicated that environmental disclosure and financial performance have positive and significant relationship.

Oti and Ogar (2018) examined the impact of environmental and social disclosure on financial performance of selected oil and gas companies on the Nigerian Stock Exchange over a period of five years from 2012–2016. Data were extracted from the annual reports and accounts of five sampled oil and gas companies. Ordinary least square regression was used to analyze the data. The study revealed that environmental and social disclosure positively affects financial performance.

Ahmad, Rashid and Gow (2017) studied Board Independence and Corporate Social Responsibility (CSR) Reporting in Malaysia. This study aims to examine the influence of board independence on corporate social responsibility (CSR) reporting by publicly listed companies in Malaysia. The results
indicate that the association between board independence and company CSR reporting is industry specific. Overall, the empirical evidence partially supports agency theory.

Ezeagba, Rachael, and Chiamaka (2017) conducted a study that investigated the relationship between environmental disclosure and financial performance companies in Nigeria for a period of ten years from 2006-2015. Data were analyzed using multiple regression. The study found a significant relationship between environmental disclosure and financial performance of companies.

Ortas, Álvarez and Zubeltzu (2017). Firms’ Board Independence and Corporate Social Performance: A Meta-Analysis. This paper investigates the influence of organizations’ board independence on corporate social performance (CSP) using a meta-analytic approach. The results show that the independence of a company’s board positively influences CSP. This is because companies with more independent directors in their boards are more likely to commit to stakeholder engagement, environmental preservation and community well-being.

MATERIALS AND METHODS

This study investigates the relationship between board characteristics and environmental disclosure of quoted oil and gas firms in Nigeria. The study adopt ex – post facto and research design because it relies on historical or past data and a cross section of oil and gas firms in Nigeria. The population of the study comprises of 12 quoted oil and gas firms on Nigerian Stock Exchange as at 31st December, 2019. The selection of Oil and gas sector was necessitated because they operate in environmentally sensitive sectors. There has been increasing hostility against oil and gas firms in Nigeria as a consequence of the negative social and environmental results of their operations in host communities. Secondary data were used to carry out this study. Secondary data was collected from the company Annual Reports. Pearson Product Moment Correlation Coefficient analytical technique was used and facilitated by Statistical Package for Social Sciences (SPSS) version 23.0.

RESULTS AND ANALYSIS

The data collected were presented and discussed in this section. The descriptive statistics and correlation matrix are all presented in this section. The hypothesis formulated for the study was also tested to ascertain the relationship between board characteristics and environmental disclosure.

<table>
<thead>
<tr>
<th>Table 1 Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Independence</td>
<td>120</td>
<td>288.00</td>
<td>11012687.00</td>
<td>6.0500</td>
<td>2.16096</td>
<td>2.838</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output, 2021

Table 2 showed that board independence had the mean of 6.0500 and the standard deviation of 2.16096. The minimum and maximum values of 288.00 and 11012687.00 respectively. The skewness is at 2.838 which shows the normality of the variables and is within the threshold of +/- 1.96. It signifies the absence of outliers in the data set. This is also shown in the histogram below:
Table 2 showed that environmental activities disclosure had the mean of 110622951.8250 and the standard deviation of 399106134.80713. The minimum and maximum values of 78729.00 and 3177609842.0 respectively. The skewness is at 6.963 which shows the normality of the variable and is within the threshold of +/- 1.96. It signifies the absence of outliers in the data set. This is also shown in the histogram below:

Figure 1: Histogram of Board Independence

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Activities Disclosure</td>
<td>120</td>
<td>78729.00</td>
<td>3177609842.0</td>
<td>110622951.8</td>
<td>399106134.80</td>
<td>6.963</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output, 2021
Figure 2: Histogram of Environmental Activities Disclosure

Test of Hypotheses

**H₀₁:** There is no significant relationship between board independence and environmental activities disclosure in oil and gas companies in Nigeria.

**Test of Hypothesis 1**

Table 3: Correlation Analysis on the Extent and Direction of the Relationship between Board Independence and Environmental Activities Disclosure

<table>
<thead>
<tr>
<th></th>
<th>Board Independence</th>
<th>Environmental Activities Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Independence</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.774</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>120</td>
</tr>
<tr>
<td>Environmental Activities Disclosure</td>
<td>Pearson Correlation</td>
<td>-0.027**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.774</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>120</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

Table 3 shows the correlation analysis on the extent and direction of the relationship between board independence and environmental activities disclosure. It showed the correlation coefficient of \( r = -0.027** \) with the significant/probability value = 0.774 greater than 0.05 level of significant. The value is negative indicating a negative relationship between board independence and environmental activities disclosure. Based on the above result, the study did not reject the null hypothesis of no
significant relationship between board independence and environmental activities disclosure but rejected the alternate hypothesis of a significant relationship between board independence and environmental activities disclosure.

**Table 4: Partial Correlation Analysis showing the Impact of Firm Size on the Relationship between Board Characteristics and Environmental Disclosure**

<table>
<thead>
<tr>
<th>Control Variables</th>
<th>Board Characteristics</th>
<th>Environmental Disclosure</th>
<th>Firm Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>-none-&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Correlation 1.000</td>
<td>Correlation 0.640</td>
<td>Correlation 0.625</td>
</tr>
<tr>
<td></td>
<td>Significance (2-tailed) .</td>
<td>.027</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Df 0</td>
<td>118</td>
<td>118</td>
</tr>
<tr>
<td>Environmental</td>
<td>Correlation 0.640</td>
<td>Correlation 1.000</td>
<td>Correlation 0.679</td>
</tr>
<tr>
<td>Disclosure</td>
<td>Significance (2-tailed) .027</td>
<td>.</td>
<td>.023</td>
</tr>
<tr>
<td></td>
<td>Df 118</td>
<td>0</td>
<td>118</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Correlation 0.625</td>
<td>Correlation 0.679</td>
<td>Correlation 1.000</td>
</tr>
<tr>
<td></td>
<td>Significance (2-tailed) .000</td>
<td>.023</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Df 118</td>
<td>118</td>
<td>0</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Correlation 1.000</td>
<td>Correlation 0.753</td>
<td>Correlation 0.015</td>
</tr>
<tr>
<td>Board Characteristics</td>
<td>Significance (2-tailed) .</td>
<td>.015</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Df 0</td>
<td>117</td>
<td>0</td>
</tr>
<tr>
<td>Environmental</td>
<td>Correlation 0.753</td>
<td>Correlation 1.000</td>
<td>Correlation 1.000</td>
</tr>
<tr>
<td>Disclosure</td>
<td>Significance (2-tailed) .015</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Df 117</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup> Cells contain zero-order (Pearson) correlations.

Table 4 showed the partial correlation on the impact of firm size on the relationship between board characteristics and environmental disclosure. With the introduction of the moderator variable, Table 4 showed a correlation coefficient of 0.640 significant at 0.027 < 0.05 on the relationship between board characteristics and environmental disclosure; a correlation coefficient of 0.625 significant at 0.000 < 0.05 on the relationship between board characteristics and firm size; and a correlation coefficient of 0.679 significant 0.023< 0.05 on the relationship between environmental disclosure and firm size. Table 4 showed a correlation coefficient of 0.679 significant at 0.015< 0.05 upon the introduction of firm size on the relationship between board characteristics and environmental disclosure.

**Decision Rule for Partial Correlation**

**H<sub>0</sub><sub>2</sub>** Firm size does not moderate the relationship between board characteristics and environmental disclosure in quoted indigenous oil and gas companies in Nigeria. The difference between the Zero Order Partial Correlation (ZPC) and the Controlled Partial Correlation (CPC) > 0.01, conclude a significant moderating influence.

Zero Order Partial Correlation (ZPC) = 0.640, Controlled Partial Correlation (CPC) = 0.753. The difference between the Zero Order Partial Correlation (ZPC) and the Controlled Partial Correlation (CPC) (0.679 - 0.640) = 0.039 > 0.01. Accordingly, the researcher conclude that firm size significantly impact on the relationship between board characteristics and environmental disclosure in oil and gas companies in Nigeria.

**DISCUSSION OF FINDINGS**

The test of hypotheses one (H<sub>0</sub><sub>1</sub>), found that there is a negative and insignificant relationship between board independence and environmental disclosure as shown in table 3 with the correlation coefficient value of r = -0.027** significant at pv = 0.774>0.05. Hence, the conclusion that there is no significant relationship between board independence and environmental disclosure. The study agrees with the study of Polycarp (2019) who conducted a research on environmental accounting and financial performance of oil and gas companies in Nigeria from 2016-2017. The study found out that environmental disclosure has no relationship with financial performance.

Test on the second hypothesis (H<sub>0</sub><sub>2</sub>), show that firm size has a significant moderating influence on the relationship between board characteristics and environmental disclosure as shown in table 3. The table shows that a significant positive relationship exist between board characteristics and environmental disclosure (r = 0.640, PV = 0.000 < 0.05). The table also showed that firm size had a significant and
direct positive relationship with board characteristics (r = 0.625, PV = 0.000 < 0.05) and with environmental disclosure (r = 0.679, PV = 0.000 < 0.05). The positive r values indicate that environmental disclosure improves as board characteristics increases; also, board characteristics increases with an increase in firm size. The study is in line with the study of Al-Gamrh and Al-Dhamari (2016) studied firm characteristics and corporate social responsibility disclosure. This study evaluates the Corporate Social Responsibility (CSR) information disclosed by the Saudi listed firms and investigates the influence of six firm characteristics (firm size, industry type, government ownership, firm age, capital raised and audit firm size) on the CSR disclosure. The study found that large, government-owned and old firms disclose more CSR information.

CONCLUSION AND RECOMMENDATIONS
The study empirically examined board characteristics and environmental disclosure in quoted oil and gas companies in Nigeria using cross-sectional data of 12 quoted oil and gas companies for a period of 10 years starting from 2010 to 2019. The dependent variable was measured by environmental disclosure, while the independent variable was proxied by board independence. The theoretical framework of the study were stakeholders’ theory and agency theory, the study was anchored on stakeholders’ theory because it underpin the objective of the study. Two hypothesis were postulated in this study. Moreover, based on the test of the hypotheses, the following conclusions are drawn: That there is no relationship between board independence and environmental disclosure in the quoted oil and gas companies in Nigeria. In the light of the above, the study recommends that independence should be assessed by weighing all the relevant factors that may compromise independence while the classification of directors as independent or otherwise in the integrated report should be done on the basis of assessment. Finally, increase in total asset is required as firm size was identified as a moderator variable between board characteristics and environmental disclosure.

REFERENCES


