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# FIRMS ATTRIBUTES AND SUSTAINABILITY DISCLOSURES: A STUDY OF SENSITIVE ENVIRONMENTAL SECTOR IN NIGERIA

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**ABSTRACT:** *This study investigates the impact of firm attributes on sustainability disclosure, focusing on a comparative analysis of environmentally sensitive firms. The specific objective is to ascertain the discrepancy in the influence of firm size on sustainability disclosure within the more environmentally sensitive industry. Employing a longitudinal and ex-post facto research design, the study encompasses a population of one hundred and fifty (150) listed firms in Nigeria. A sample of 20 firms from both financial and non-financial sectors was selected using a judgmental sampling technique. Data were gathered from the annual reports and accounts of the chosen firms, as well as the fact book of Nigeria Exchange Group (NGX) spanning from 2012 to 2021. Hypotheses were tested using panel regression and t-test techniques. The key findings indicate a significant disparity in the impact of firm size on sustainability disclosure within the more environmentally sensitive industry (P = 0.0002). In conclusion, the adoption of sustainable development strategies by a company reflects management's consideration of various stakeholders' perceptions. The study recommends that regulators prioritise environmental and social issues to foster sustainable practices, particularly through increased disclosure of environmental, social, and governance factors.*

**KEYWORDS:** Firms, Sustainability Disclosures, Sensitive Environmental Sector, Capital Employed, Net Income Margin.


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## INTRODUCTION

Global warming and climate change represent two of the most urgent global challenges, with business activities standing out as significant contributors to these environmental crises. Operations such as environmental waste and inefficient resource usage have led to increased greenhouse gas emissions, resulting in ozone layer depletion, global warming, and overall environmental degradation. Consequently, the role of businesses becomes pivotal in addressing these environmental issues (Damian, 2006). The growing awareness among various societal groups has prompted corporations to report their environmental activities in periodic reports, alongside a reduction in the adverse impact of industrial activities on the natural environment. This heightened consciousness has fostered an increase in corporate social responsibility, where organisational success is measured not only by financial performance but also by its social and environmental impact (Davies & Okorite, 2007).

The drive for economic growth and industrialisation has exacerbated environmental problems such as pollution, global warming, deforestation, and desertification. Additionally, there is a growing recognition of social responsibilities, compelling environmentally sensitive firms to consider the environment and communities where they operate (Daferighe & Udih, 2015). This has led to the integration of sustainability reporting alongside traditional financial reports, although some firms are yet to fully embrace this practice due to poor firm characteristics.

The current state of environmental accounting disclosures in annual reports and the impact of companies' financial attributes on reporting practices in Nigeria are characterised as perplexing and ambiguous. A preliminary review of annual reports reveals that most companies do not adhere to the Global Environmental Accounting Disclosures Framework introduced by the Global Reporting Initiative (GRI) (2006/2008/2011/2013), with some failing to provide environmental financial reports altogether. Companies are mandated to report their environmental impacts in areas such as environmental financial accounting, management charges, resources and materials, and environmental accounting audits according to GRI guidelines. This is crucial as corporate information disclosure policies and practices are vital for management to manage external perceptions of their organisations. Despite the debate on environmental disclosure since the 1980s and ample empirical research on corporate firm attributes and environmental disclosure practices, there remain divergent opinions on sustainability reporting. The classical school argues that firms' primary objective is profit maximisation and should focus solely on that goal. Conversely, firm theorists argue against burdening service-oriented firms like banks with sustainability reporting requirements, citing potential reductions in shareholder profits. Additionally, leading companies and industries have developed their reporting benchmarks based on their unique operational structures (Adeyemi, Fagboro & Udofia, 2020), highlighting the limitations of imposing a single benchmark on non-environmentally sensitive firms. However, the environmentalist school of thought posits that firms have a responsibility to contribute positively to their operating environment, regardless of their environmental sensitivity (Daferighe & Udih, 2015).

Although extensive theoretical work has been conducted on corporate firm attributes and environmental disclosure practices, there remains a scarcity of research comparing environmental disclosure practices between more and less environmentally sensitive


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industries, particularly in the context of Nigeria. Consequently, the present study aims to address this gap by examining corporate firm attributes and environmental disclosure practices, comparing more environmentally sensitive industries with less environmentally sensitive ones in Nigeria. The main objective of this study is to examine the effect of firm attributes on sustainability disclosure: a study of sensitive environment in Nigeria Sector. The specific objectives are to: determine the difference between the effect of firm size on sustainability disclosure in more environmentally sensitive industries and less environmentally sensitive industries in Nigeria.

## LITERATURE REVIEW

### Conceptual Framework

### Sustainability Disclosure

This environmental accounting concept gained prominence following the June 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. Environmental disclosure entails the description of objectives, explanations, and numerical data, such as emissions and resources utilised, concerning specialised environmental impacts by companies (Adams & Busola, 2017). Nola (2002) contends that companies must disclose environmental accounting information to cultivate a positive environmental image. Beer and Friend (2006) argue that active disclosure of environmental accounting information is essential to address stakeholder investment decisions and potentially gain competitive advantages in the market. From an economic standpoint, environmental information may reflect a company's calculation of prospective costs and benefits associated with environmental data (Cormiera & Gordon, 2007). Therefore, environmental disclosure practices aim to verify, elaborate on, and report all social and environmental aspects involved in a company's day-to-day operations.

### Sustainability Disclosure Measurement

The value of environmental information is often challenging to measure and quantify, which remains a contentious topic in accounting research (Adams & Busola, 2017). Although the quality of disclosures is not universally acknowledged, numerous academic studies have attempted to measure the quality of environmental disclosures based on the objectives of the research. The methods used to measure the disclosure of environmental information include both quantitative and qualitative approaches.

### Environmental Quantitative Measurement Approach

This measurement approach utilises content analysis for environmental disclosure. Neuman (2011) regarded the use of standardised computational and recording processes to explain content in text as a quantitative approach to environmental disclosure. Ong, Tho, Goh, Thai & Teh (2016) highlighted content analysis as a widely employed technique in extension studies, useful for quantifying environmental reporting by counting words, phrases, and pages. Adams and Busola (2017) described content analysis as a research method used to generate replicable interpretations from data, interpreting documents contextually. Previous studies employing the quantitative measurement approach to environmental communication


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include those by Uwuigbe (2011), Ajibolade and Umuigbe (2013), Oba and Fodio (2012), and Jumani (2014).

**More Environmentally Sensitive Industry**

These industries are characterised by companies that significantly impact the environment through the degradation of effluents and emissions (Enahoro, 2009). They are known for their adverse environmental effects resulting from daily operations, making them highly susceptible to pollution (Monteiro & Aibar-Guzman, 2010). Such companies are commonly found in sectors directly associated with environmental impacts, such as chemicals, pharmaceuticals, oil and gas products, motor vehicles, and related industries (Kolk, Walhain & van de Wateringen, 2001). In Nigeria, there are eleven industries listed on the Nigeria Stock Exchange (NSE), including agriculture, construction and property, healthcare, industrial goods, natural resources, and oil and gas. Among these, six are considered more environmentally sensitive industries or sectors.

**Corporate Firm Attributes**

Roberts (1992) emphasised the significance of company attributes in the context of environmental disclosure practices. These attributes encompass the defining characteristics of a company, which serve as pivotal factors shaping its financial decisions and overall operational guidelines. Therefore, the specific features of a company play a crucial role in determining its propensity to disclose non-financial information, including environmental disclosures. Numerous scholars have argued for the importance of stakeholders in assessing the impact of corporate attributes on a company's disclosure policy, aiming to identify influential characteristics. Consequently, this study aims to integrate firm size, firm leverage, and firm profitability as proxies for corporate firm attributes.

**Firm Size**

Several empirical studies have consistently demonstrated a positive correlation between company size and the extent of its environmental disclosure (Brammer & Pavelin, 2006; Zeng, Hu, Yin & Tam, 2012). These studies indicate that larger companies, by their size and visibility, are more inclined to disclose environmental information. Larger firms tend to be more proactive in their sustainability initiatives, often allocating greater resources to voluntarily publish information on environmental issues to enhance their competitive edge and corporate value (Hasan & Hosain, 2015). Moreover, larger companies are motivated to disclose environmental information to appease their extensive stakeholder base and attract external capital; thereby, influencing societal perceptions.

Previous research by Lu & Abeysekera (2014), Zeng, Xu, Dong, & Tam (2010), among others, have revealed a positive relationship between firm size and the level of sustainability disclosure. Additionally, studies by Adhikari & Tondkar (1992) and Galani, Gravas & Stavropoulos (2012) have underscored the significant role of company size as a determinant of environmental ratings. These findings emphasise that firm size and its operational activities play a pivotal role in shaping the quality and extent of environmental disclosure.


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**Return on Investment**

Return on Investment (ROI) serves as a performance metric utilised to evaluate the effectiveness of an investment or to link the efficiency of various investments. It quantifies the return generated by an investment relative to its cost. The calculation of ROI involves dividing the return or gain from an investment by its cost. The result is typically expressed as a percentage or a ratio.

The formula for ROI is as follows:

ROI = (Gain from Investment - Cost of Investment) / Cost of Investment.

Here, "Gain from Investment" refers to the income derived from the sale of the investment in question. ROI enables direct comparison with returns from other investments, facilitating comparison and evaluation across a range of investment options.

**Return on Capital Employed**

Return on Capital Employed (ROCE) is a financial ratio utilised to evaluate a firm's profitability and the efficiency of its capital utilisation. ROCE is calculated as follows:

***ROCE = Earnings Before Interest and Tax (EBIT) / Capital Employed.***

ROCE serves as a valuable metric for comparing profitability among firms by considering the amount of capital they invest. There are two key components used to calculate Return on Capital Employed: earnings before interest and tax (EBIT), and capital employed. Earnings before interest and tax (EBIT), also known as operating income, indicates the profit generated solely from operations, excluding interest and taxes. EBIT is derived by subtracting the cost of goods sold and operating expenses from revenues.

**Net Income Margin**

Net income margin represents the ratio of net revenue or earnings to total income, indicating the proportion of revenue generated by each component. It reflects the percentage of net revenues or net income derived from a firm's operational segments. Typically expressed as the ratio of profit to revenue, the net income margin can also be presented as a fraction. This metric illustrates the conversion of each component of income into profit. The term "net income" is synonymous with "net profit" on the statement of comprehensive income, and they can be used interchangeably. Additionally, investors often refer to net profit margin as the "net margin" or simply "net income" (Corell & Shapiro, 1987). The calculation for the net income margin is as follows:

***Net Income Margin = Net Profit / Total Revenues Or Net Margin = Net Income / Total Revenues***

The above two equations are expressed as a per cent


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**Return on Investment**

Return on Investment (ROI) serves as a performance metric, employed to assess the effectiveness of an investment or compare the efficiency of various investments. It quantifies the return generated by an investment relative to its cost. The ROI formula is as follows:

***ROI = (Gain from Investment - Cost of Investment) / Cost of Investment.***

Here, "Gain from Investment" refers to the proceeds acquired from selling the investment in question. As ROI is expressed as a percentage, it facilitates straightforward comparison with returns from other investments, enabling evaluation across different investment types.

ROI is favoured for its adaptability and simplicity. It offers a basic indication of an investment's profitability, featuring a straightforward calculation and wide-ranging applications. Negative ROI or the availability of higher ROI opportunities can guide investors in decision-making, aiding in the selection or elimination of investment options. ROI can be combined with Rate of Return, which considers a project's timeframe, or with Net Present Value (NPV), which adjusts for the time value of money due to inflation. The application of NPV in rate of return calculations is commonly known as the Real Rate of Return.

**Return on Capital Employed**

Return on capital employed (ROCE) is a financial ratio that measures a company's profitability and the efficiency with which its capital is employed. ROCE is calculated as:

***ROCE = Earnings Before Interest and Tax (EBIT)/Capital Employed***

The components of 'Return on Capital Employed (ROCE)' make it a valuable metric for comparing profitability across companies based on their capital utilisation. To calculate ROCE, two key metrics are necessary: earnings before interest and tax (EBIT), and capital employed. EBIT, also termed operating income, represents a company's earnings solely from its operations, excluding interest and taxes. It's computed by deducting the cost of goods sold and operating expenses from revenues. Capital employed denotes the total capital utilised by a company to generate profits, comprising shareholders' equity and debt liabilities, or alternatively, total assets minus current liabilities. Rather than using capital employed at a specific point, analysts and investors often compute ROCE based on average capital employed, which considers the average of opening and closing capital employed during a period. A high ROCE signifies efficient capital utilisation and value creation for shareholders, whereas a low ROCE suggests ineffective capital employment and failure to generate shareholder value.

**Theoretical Framework**

Numerous theoretical perspectives are employed to elucidate the influence of conflict management strategies on organisational performance. Among these, agency theory, stakeholder theory, and resource dependency theory stand out as particularly noteworthy, as outlined by Maher and Andersson (2019). While all three theories will be examined, this study chooses to adopt the agency theory as its guiding framework.


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## Agency theory

Agency theory, originating from economic theory, was first developed by Alchian and Demsetz (1972) and further refined by Jensen and Meckling (1976). According to Jensen and Meckling (1976), an agency relationship entails a contract in which the principal entrusts another individual to oversee the activities of the firm on its behalf, thereby delegating decision-making authority to the agent. If both parties fully utilise the association, it is reasonable to assume that managers will not always act in the best interests of the owners. Owners can mitigate conflicts of interest by offering appropriate incentives to managers and by investing in monitoring mechanisms designed to curtail the agency's opportunistic behaviour. Managing agency problems in the decision-making process becomes crucial when decision-makers have the power to introduce and enforce significant decisions. Without robust control mechanisms, such decision-makers are more likely to make choices that diverge from the owners' interests (Fama & Jensen, 1983). From the perspective of agency theory, corporate governance improves corporate performance by addressing agency problems through monitoring management actions, curbing managerial self-interest, and overseeing the financial reporting process (Habbash, 2010). Therefore, improved corporate governance mechanisms are expected to lead to better financial performance. Taking agency theory into account, this research identifies key components to investigate the relationships between firm attributes and sustainability disclosure.

## Stakeholders' theory

Stakeholder theory, introduced by R. Edward Freeman in 1984, defines stakeholders as "any group or individual who can affect or is affected by the achievement of the organisation's objectives." This theory advocates that businesses should take into account the interests of all stakeholders, not just shareholders when making decisions. Stakeholders encompass a wide range of groups, including employees, customers, suppliers, communities, and the environment. Over time, stakeholder theory has undergone further development and refinement through contributions from various scholars. It builds upon agency theory, which primarily prioritises the interests of shareholders and expects the board of directors to safeguard those interests. However, stakeholder theory expands upon the narrow focus of agency theory by acknowledging the concerns of diverse groups and individuals, including those representing social, environmental, and ethical interests (Freeman et al., 2004). Stakeholder theory posits that the primary purpose of a corporate entity is to serve and align the interests of its varied stakeholders, which may include shareholders, employees, creditors, customers, suppliers, government entities, and the local community.

## Resource dependency theory

While stakeholder theory emphasises the interrelations between multiple parties for mutual benefit, resource dependency theory shifts focus to the role of board directors in leveraging the company's available resources (Abdullah & Valentine, 2009). According to this theory, the primary responsibility of the board of directors is to ensure the provision of resources to the company. Directors are regarded as crucial reservoirs of organisational resources and are also perceived as suppliers of funds. Various dimensions of director diversity, such as gender, experience, and qualifications, are deemed important. Abdullah and Valentine (2017) suggest that directors offer resources such as information, expertise, and business acumen to the


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company. Additionally, boards of directors serve as potential bridges between the firm and its environment (Ayuso & Argandona, 2007).

In contrast, the agency theory focuses on the monitoring and oversight role of the board of directors, while the resource dependency theory emphasises their advisory and supportive role to management. In recent years, economists and management scholars have increasingly assigned boards the dual roles of monitoring and advising management. However, the effectiveness with which boards fulfil these roles remains a subject of debate (Ferreira, 2010).

**Adoption of Theory**

Among the various theories considered, this study is grounded in agency theory as it offers a pertinent framework for comprehending the link between firm attributes and sustainability disclosure practices. According to agency theory, factors such as firm size, leverage, and profitability play pivotal roles in shaping organisations' disclosure practices. Larger companies may demonstrate higher levels of sustainability disclosure owing to their greater resources and visibility, aiming to mitigate potential information disparities and conflicts of interest between management and shareholders. Conversely, companies with higher leverage may be motivated to enhance sustainability disclosure to reassure creditors and safeguard their reputation, thereby minimising agency costs. By investigating these associations within the framework of agency theory, this research endeavours to elucidate the intricate dynamics between firm attributes and sustainability disclosure practices.

**Empirical Review**

Onyebuenyi and Ofoegbu (2022) investigated the influence of environmental sustainability disclosure on the financial performance of listed oil and gas companies in Nigeria, Namibia, and Kenya using data from 2011 to 2019. They employed the Global Reporting Initiative (GRI) and found that emissions disclosure had a significant negative impact on return on equity, while energy disclosure positively affected gross profit after tax margin. Obiora, Onuora, and Ezeogidi (2022) explored the impact of environmental accounting disclosure on the profitability of quoted firms in Nigeria from 2017 to 2021. Their study, employing descriptive statistics, correlation analysis, and ordinary least square regression, revealed a significant influence of environmental accounting disclosure on the return on assets and return on equity of quoted firms.

Rajesh, Rajeev, and Rajendran (2022) conducted a comparative analysis of Corporate Social Performances (CSP) across firms in developed economies, focusing on the US, UK, Japan, and Australia from 2014 to 2018. Using ANOVA, they found insignificant mean differences in CSR strategy scores but significant differences in ESG scores of Australian firms compared to other economies. Oranefo (2022) examined the effect of firm profitability on the environmental performance of conglomerate firms in Nigeria from 2011 to 2020, revealing a significant impact of profitability on waste management expenses.

Ezekwesili and Ezejiofor (2022) investigated the influence of firm attributes on the environmental performance of Nigerian conglomerates from 2011 to 2020. Their findings, employing Ordinary Least Square regression, showed that firm size and leverage did not significantly affect waste management expenditure. Alade and Odugbemi (2022) analysed the effect of corporate characteristics on the implementation of integrated reporting frameworks


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in Nigerian oil and gas firms from 2011 to 2020, indicating a positive impact of corporate characteristics, particularly profitability, firm size, and board size, on integrated reporting frameworks. Ruiz-Blanco, Romero, and Fernandez-Feijoo (2022) explored the factors influencing greenwashing in the US, revealing that companies in environmentally sensitive industries engage in less greenwashing.

Aparna and Siya (2017) investigated the relationship between sustainability reporting and corporate attributes in India, finding significant sustainability disclosure among companies with large size, older age, multinational operations, and belonging to certain industries. Ahmad (2017) examined the influence of firm attributes on the environmental disclosure of listed brewery companies in Nigeria, revealing a significant negative impact of board size and an insignificant impact of leverage on environmental disclosure. Yousra (2017) assessed the impact of corporate characteristics on environmental information disclosure of listed firms in Egypt, finding insignificant relationships between firm size and leverage, a negative significant relationship with firm age, and a positive significant relationship with firm profitability regarding environmental information disclosure.

## METHODOLOGY

This study employed a longitudinal and ex-post facto research design to investigate environmental disclosure practices in selected industries. The longitudinal approach allowed for the examination of trends in environmental disclosure over time, while the ex-post facto design retrospectively analysed independent variables' influence on the dependent variable. The study population consisted of 150 listed firms in Nigeria, categorised into nine industries: Construction/Real Estate, Consumer Goods, Financial Services, Healthcare, Information Communication and Technology (ICT), Industrial Goods, Natural Resources, Oil and Gas, and Services. Purposive sampling was used to select 20 firms, with a focus on environmental sensitivity, particularly from the oil and gas sector, ensuring balanced representation across industries. Data were collected from secondary sources, including annual reports, accounts, and the Nigeria Exchange Group (NGX) fact book from 2012 to 2021, enhancing data accuracy and validity. Panel data technique and T-test were employed for data analysis. Panel data analysis facilitated the examination of corporate firm attributes' impact on environmental disclosure practices across industries, while the T-test compared environmental disclosure levels between more and less environmentally sensitive industries, providing insights into group differences.


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## ANALYSIS

Table 1: Summary statistics of dependent, independent and control variables

| | EDI | Firm Size | Leverage | ROA | OWS |
|---|---|---|---|---|---|
| Mean | 0.285759 | 67430488 | 0.685198 | 0.014429 | 18.79858 |
| Median | 0.352941 | 8697539. | 0.634927 | 0.020203 | 0.000000 |
| Maximum | 0.970588 | 1.48E+09 | 2.478465 | 1.762669 | 70.43000 |
| Minimum | 0.000000 | 47150.00 | 0.022934 | -0.713574 | 0.000000 |
| Std. Dev. | 0.233033 | 1.91E+08 | 0.356104 | 0.174029 | 28.21788 |
| Skewness | 0.586434 | 5.154917 | 1.701566 | 5.084408 | 0.847150 |
| Kurtosis | 3.772028 | 31.91946 | 7.861063 | 57.43489 | 1.751825 |
| | | | | | |
| Jarque-Bera | 15.60886 | 7462.470 | 278.7556 | 24276.95 | 35.05967 |
| Probability | 0.000408 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| | | | | | |
| Sum | 54.29412 | 1.28E+10 | 130.1876 | 2.741439 | 3571.730 |
| Sum Sq. Dev. | 10.26354 | 6.87E+18 | 23.96705 | 5.724103 | 150491.1 |
| | | | | | |
| Observations | 190 | 190 | 190 | 190 | 190 |

Source: E-Views 10

Key: EDI- GRI Environmental Disclosures; ROA-Return on Assets; OWS-Foreign Institutional Ownership

The mean of the dependent variable, which proxies the Environmental Disclosure Index (EDI) of the sampled companies, was 0.286, with a median value of 0.353. The maximum EDI value observed was 0.971, while the minimum was 0.000. Companies with an EDI equal to or higher than 0.286 were categorised as high EDI firms, while those below 0.286 were considered low EDI firms. Regarding Firm Size, the mean value among the sampled companies was 67,430,488, with a median value of 8,697,539. The highest Firm Size observed was one billion four hundred eighty million, and the lowest was forty-seven thousand one hundred fifty. Companies with a size equal to or greater than sixty-seven million four hundred thirty thousand four hundred eighty-eight were classified as larger firms, while those below were deemed smaller.

The mean Leverage, which proxies X2, was 0.685, with a median value of 0.635. The maximum Leverage observed was 2.478, and the minimum was 0.023, indicating that, on average, companies in the sample were financed approximately 68% by debt and 32% by equity. Regarding Return on Assets (ROA), a proxy for X3, the mean value among the sampled companies was 0.014, with a median of 0.020. The highest ROA observed was 1.763, while the lowest was -0.714. Companies with a ROA equal to or greater than 0.014 were considered more profitable, while those below were deemed less profitable.

For the Ownership Structure (OWS), proxying X4, the mean was 18.799, with a median of 0.000. The highest OWS observed was 70.43, and the lowest was 0.000, indicating that, on average, companies had approximately 18% foreign institutional ownership representation on their boards of directors. The Jarque-Bera test, a joint hypothesis of skewness and excess


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kurtosis being zero, yielded a p-value greater than 0.05 for all variables (EDI, Firm Size, Leverage, ROA, and OWS), indicating the non-normal distribution of the variables.

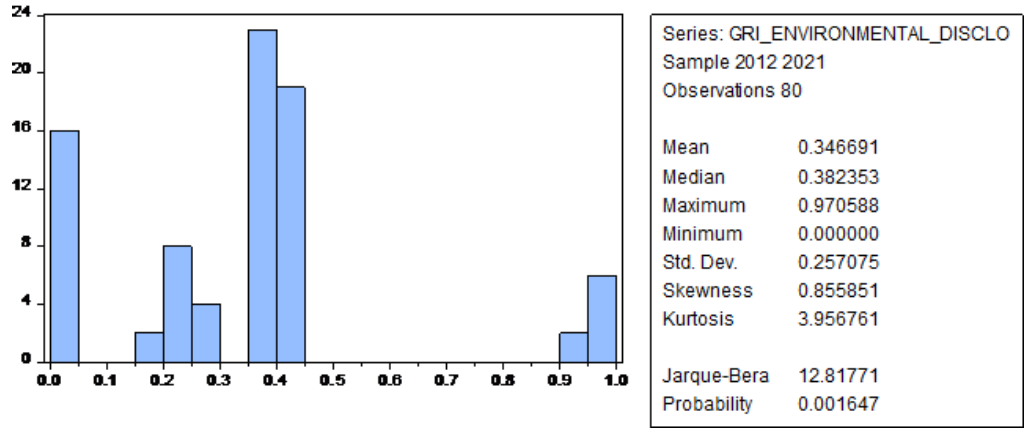


Figure 1: Histogram and descriptive statistics of EDI for environmentally sensitive industry

***Correlation Matrix***

In examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix) and the results are presented in the table below.

Table 2: Correlation analysis of dependent, independent and control variables

| | EDI | Firm Size | Leverage | ROA | OWS |
|---|---|---|---|---|---|
| EDI | 1 | | | | |
| Firm Size | 0.518383 | 1 | | | |
| Leverage | 0.048197 | -0.12288 | 1 | | |
| ROA | 0.033772 | 0.05118 | -0.25658 | 1 | |
| OWS | 0.188219 | 0.407493 | -0.30459 | 0.253412 | 1 |

Source: E-Views 10

Key: EDI- GRI Environmental Disclosures; ROA-Return on Assets; OWS-Foreign Institutional Ownership

Table 2 presents the Pearson correlation coefficient matrix of the variables. The Environmental Disclosure Index (EDI) shows positive correlations with firm size, firm leverage, Return on Assets (ROA), and Ownership Structure (OWS). Firm size exhibits a negative correlation with firm leverage but positive correlations with ROA and OWS. Leverage displays negative associations with ROA and OWS. Additionally, ROA is positively associated with the percentage of foreign shareholders' holdings (OWS). To examine collinearity among the independent variables, the correlation results indicate no strong association between any two independent variables, as all correlation coefficients were less than 0.60. However, since correlation tests do not establish a cause-effect relationship, regression analysis was conducted to test the hypotheses.


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Table 3: Comparison of sensitive and less sensitive EDI disclosure

| | Category | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| EDI | Sensitive | 80 | 0.34669 | 0.25708 | 0.02874 |

Source: SPSS Ver. 25

Key: EDI- GRI Environmental Disclosures; ROA-Return on Assets; OWS-Foreign Institutional Ownership

Table 3 presents the group statistics for both the more environmentally sensitive industry and the less environmentally sensitive industry. The Global Reporting Initiative (GRI) mandates the disclosure of 34 items; the average disclosure value for the less environmentally sensitive industry is 0.24144, while for the more environmentally sensitive industry, it is 0.34669. This indicates approximately 24% for less environmentally sensitive industries and 35% for the more environmentally sensitive industries. The standard deviation for the less environmentally sensitive industry is 0.20385, whereas for the more environmentally sensitive industry, it is 0.25708. A lower standard deviation implies that the data are clustered around the mean. The standard error (Std. Error Mean) reflects the reliability of the mean. A small standard error indicates that the sample mean is a more accurate representation of the actual population means.

Table 4: Independent samples t-test for mean differences

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| EDI | Equal variances assumed | 0.443 | 0.506 | -3.14 | 188 | 0.002 | -0.10525 | 0.033463 | -0.17126 | -0.03924 |
| | Equal variances not assumed | | | -3.03 | 145.693 | 0.003 | -0.10525 | 0.034697 | -0.17382 | -0.03667 |

Source: SPSS Ver. 25

Key: EDI- GRI Environmental Disclosures; ROA-Return on Assets; OWS-Foreign Institutional Ownership

Levene's Test of Equality of Variances in SPSS is employed to evaluate whether the statistical assumption of homogeneity of variance is met in between-subjects designs. The results indicate a statistically significant difference between "Less Sensitive-Group 1" (Mean: 0.241 and SD: 0.204) and "More Sensitive-Group 2" (Mean: 0.347 and SD: 0.257), with $p \leq .01$.



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**Variance Inflation Factor (VIF) Test**

The VIF of an explanatory variable indicates the strength of the linear relationship between the variable and the remaining explanatory variables.

Table 5: VIF test for model explanatory variables

| Variable | VIF | 1/VIF |
|---|---|---|
| OWS | 1.36 | 0.737997 |
| Firm Size | 1.20 | 0.830963 |
| Leverage | 1.15 | 0.872743 |
| ROA | 1.11 | 0.897086 |
| Mean VIF | 1.20 | |

Source: E-Views 10

Key: EDI- GRI Environmental Disclosures; ROA-Return on Assets; OWS-Foreign Institutional Ownership

All variables in the study exhibit correlation coefficients below 0.80, as observed in the correlation matrix presented in Table 2. This suggests that multicollinearity among them is not a concern. The Environmental Disclosure Index (EDI) shows a strong positive correlation with firm size and the percentage of foreign shareholders' holdings (OWS), while displaying weak positive correlations with leverage and return on assets (ROA). Furthermore, the Variance Inflation Factor (VIF) and tolerance values reported in Table 5 affirm that all variables have VIF scores below five and tolerance values above 0.10, indicating a satisfactory correlation. Additionally, Table 5 provides VIF values for firm characteristics such as Firm Size (VIF=1.20), Leverage (VIF=1.15), and ROA (VIF=1.11) in the panel models. The absence of multicollinearity between independent and dependent variables is indicated by the VIF test results in Table 5. Thus, despite the relatively high correlations among certain variables in Table 5, all variables are suitable for simultaneous analysis.

**Fixed and Random Effects Test**

The fixed-effects model (FEM) posits that the individual-specific effect is correlated with the independent variable. In contrast, the random-effects model (REM) permits making population-level inferences under the assumption of a normal distribution. FEM might be preferable when the sample encompasses a significant portion or the entirety of the population under study. Conversely, REM would be more suitable if the sample is derived from a considerably larger population.

Table 6: Correlated Random Effects - Hausman Test

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Cross-section random | 9.019160 | 4 | 0.0606 |

Source: E-Views 10

This factor also appears to lean towards favoring the random-effects model for the study sample. According to Greene (1990), the fixed-effects model is appropriate when differences between units (such as companies) can be interpreted as parametric shifts of the regression function. However, if the differences between companies are not attributed to parametric


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shifts but rather to variations across companies in the regressors, then the random-effects model becomes more appealing (cf. Baltagi, 1995; Hsiao, 1986; Pesaran & Smith, 1995).

***Test of Hypotheses***

In this section, the data are taken together to perform pooled testing, also called group testing. However, a restriction of this approach is that we do not see the differences in the effect of firm characteristics on sustainability-related disclosure in more sensitive and less sensitive industries.

Table 7: Model summary for the pooled sample

| Statistic | Value | Statistic | Value |
|---|---|---|---|
| R-squared | 0.725146 | Mean dependent var | 0.285759 |
| Adjusted R-squared | 0.688938 | S.D. dependent var | 0.233033 |
| S.E. of regression | 0.129969 | Akaike info criterion | -1.129960 |
| Sum squared resid | 2.820972 | Schwarz criterion | -0.736899 |
| Log-likelihood | 130.3462 | Hannan-Quinn criter. | -0.970737 |
| F-statistic | 20.02709 | Durbin-Watson stat | 0.940924 |
| Prob(F-statistic) | 0.000000 | | |

Source:E-Views 10

The empirical findings from the least-squares regression analysis revealed an adjusted R-squared value of approximately 0.689, indicating that the research model explains about 68.9% of the variance in the dependent variable. The F-test yielded a statistically significant result ($p < 0.01$), suggesting that the overall regression model is valid for describing the relationship between firm characteristics and sustainability reporting disclosure. Additionally, the variance inflation factors (VIFs) of each independent variable ranged from 1.11 to 1.36, all below the threshold of 10. This indicates that there were no significant collinearity issues among the independent variables (Greene, 2008; Wang, 2017).

Table 8: Coefficients output for the pooled sample

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -1.136563 | 0.356885 | -3.184675 | 0.0017 |
| FIRM SIZE | 0.077434 | 0.021938 | 3.529760 | 0.0005 |
| LEVERAGE | 0.058825 | 0.041861 | 1.405250 | 0.1618 |
| ROA | 0.034500 | 0.059744 | 0.577468 | 0.5644 |
| OWS | 0.006361 | 0.001930 | 3.295303 | 0.0012 |

Source: E-Views 10

Furthermore, upon analysing the pooled sample (which combines scores from both more and less environmentally sensitive firms for GRI disclosure) as presented in Table 8, environmental disclosure is examined as the dependent variable. The results reveal that, akin to firm size, the influence on environmental disclosure is positively significant at the 1% level. This underscores the role of firm size in fostering environmental disclosure among the sampled firms throughout the study duration. However, the impact of leverage on environmental disclosure is found to be positively insignificant. Moreover, the variable of


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profitability, represented by ROA, exhibits a positive coefficient, although the results are moderately nonsignificant. The control variable in this study, foreign institutional ownership, shows a positive and highly significant association with a p-value < .05. Finally, to validate the hypotheses, the results in Table 4.9 are utilised, presenting the panel estimation output for both less environmentally sensitive firms and more environmentally sensitive firms from 2012 to 2021.

Table 9: Regression output formore environmentally sensitive sub-samples

| **Sensitive** | | | | |
|---|---|---|---|---|
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| FIRM SIZE | 0.012632 | 0.033553 | 0.37648 | 0.7077 |
| LEVERAGE | 0.037273 | 0.0591 | 0.630678 | 0.5304 |
| ROA | 0.022421 | 0.070164 | 0.319548 | 0.7503 |
| OWS | 0.022684 | 0.00416 | 5.453564 | 0 |
| C | -0.414289 | 0.561433 | -0.737914 | 0.4631 |
| | Effects Specification | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.733515 | Mean dependent var | | 0.346691 |
| Adjusted R-squared | 0.690408 | S.D. dependent var | | 0.257075 |
| S.E. of regression | 0.143039 | Akaike info criterion | | -0.913914 |
| Sum squared resid | 1.391295 | Schwarz criterion | | -0.55661 |
| Log-likelihood | 48.55658 | Hannan-Quinn criter. | | -0.770661 |
| F-statistic | 17.01585 | Durbin-Watson stat | | 1.235939 |
| Prob(F-statistic) | 0 | | | |

Source: E-Views 10

The empirical findings from the fixed effects least-squares regression analysis revealed that the adjusted R2 value of the first research model was approximately 0.762, with a statistically significant F-test ($p < 0.01$). Hence, the first research model effectively captures the relationship between firm characteristics and sustainability reporting disclosure. Similarly, the second model focusing on more environmentally sensitive industries displayed an adjusted R2 value of approximately 0.690, with a statistically significant F-test ($p < 0.01$), indicating that this model also aptly describes the relationship between firm characteristics and sustainability reporting disclosure. To ensure the statistical equality of the two regression coefficients, this study follows the procedure established in studies by Clogg, Petkova, and Haritou (1995), as well as Paternoster, Brame, Mazerolle, and Piquero (1998).

$$t = \frac{\beta_1 + \beta_2}{(SE\beta_1)^2 + (SE\beta_2)^2}$$

Where: $\boldsymbol{SE}\beta$ is the standard error of β


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## FINDINGS

There exists a notable distinction in the impact of firm size on sustainability disclosure within more environmentally sensitive industries. This finding aligns with the conditions of imperfect markets observed in developing nations like Nigeria, where firm size begins to exert a substantial influence on profit generation (Yadav, Pahi, & Gangakhedkar, 2022). This outcome resonates with Barako's (2007) investigation into the determinants of sustainability disclosures in the annual reports of Kenyan firms, which utilised pooled OLS findings to highlight the significant impact of firm size as a corporate characteristic on environmental financial information. Similarly, within the Nigerian context, Egbunike and Tarilaye (2017) found, in a study focusing on manufacturing firms, that sustainability disclosure experiences a positive influence from firm size.

Kabiru (2020) explored the influence of firm-specific factors on sustainability disclosure among listed cement companies in Nigeria from 2013 to 2017. The study's results indicated that firm size exerts a notable impact on sustainability disclosure practices.

In a study examining factors affecting the level of environmental accounting information among construction enterprises in Vietnam, Nguyen, Tran, Nguyen, and Le (2017) found a direct correlation between corporate size and sustainability reporting based on data from 74 construction businesses registered on the Vietnam Stock Exchange over four years (2013-2016).

However, in contrast, Wang (2017) investigated firms listed on the Taiwanese 50-index list from the year-end of 2010 to 2013. Utilising data from various sources including the Market Observation Post System, the Taiwan Economic Journal (TEJ) database, the websites of The Business Council for Sustainable Development of Taiwan (BCSD-Taiwan), and firm websites, the least squares regression results revealed a negative but non-significant influence of firm size on sustainability reporting and disclosure.

## CONCLUSION

This study examined the impact of firm-specific attributes on sustainability disclosure practices, distinguishing between environmentally sensitive and non-environmentally sensitive firms. Analysing a sample comprising eight firms from the more environmentally sensitive oil and gas sector, the study identifies a significant disparity in the influence of firm size on sustainability disclosure within the environmentally sensitive industry. However, no significant difference is observed in the effect of leverage on sustainability disclosure in this sector. Additionally, there is no notable distinction in the impact of profitability on sustainability disclosure within the environmentally sensitive industry.

## RECOMMENDATIONS

Based on the empirical analysis presented earlier, the study offers the following recommendations for stakeholders:

1. Regulators and financial analysts should pay close attention to the relationship between business size and corporate sustainability performance. While there is a significant


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positive association for the less environmentally sensitive industry, this link is non-significant for the environmentally sensitive industry, particularly in the oil and gas sector. This suggests that large firms in this sector may not be disclosing sufficient information and could be subject to further scrutiny. Therefore, regulators at both the national and firm levels should prioritise environmental and social issues, promoting sustainable practices through enhanced disclosure.

2. Oil and gas companies should focus on understanding the role of ethical environmental disclosures in reducing debt costs and improving financial performance. While leverage was positively associated with the Environmental Disclosure Index (EDI) in the less environmentally sensitive industries, this association was not significant for environmentally sensitive industries. Green investors and capital market regulators may need to offer additional incentives to oil and gas firms to disclose environmental, social, and governance issues effectively.

3. Managers should recognize the positive relationship between profitability and sustainability-related disclosures. This connection can foster a mutually beneficial strategic relationship between financial analysts and managers. Enhanced disclosure of sustainability-related information can attract more investors by improving the quality and quantity of financial information disclosed by firms. This, in turn, can encourage investors to incorporate environmental, social, and governance factors into their organisational strategies and decision-making processes, promoting long-term sustainability.

## REFERENCES

Adams, A.A. & Busola, A.A. (2017). Environmental Disclosure Practices in Annual Reports of Listed manufacturing Firms in Nigeria. *Social Science Research Network*, (SSRN) 1-19

Adeyemi, S. B., Fagboro, G. D. & Udofia, I. E. (2020). The Integrated Reporting (IR) Framework Implementation in Nigerian Listed Companies. Global Journal of Accounting, 6(1), 1-11. Retrieved (21/10/2022) http://ujhr.unilag.edu.ng/index.php/gja/article/download/859/705

Adhikari, A., & Tondkar, R. H. (1992). Environmental Factors Influencing Accounting Disclosure Requirements of Global Stock Exchanges. *Journal of International Financial Management & Accounting*, *4*(2), 75–105

Ahmad, A.A. (2017), Influence of Firms Attributes on Environmental Disclosure in Listed Brewery Companies in Nigeria. Research Journal of Finance and Accounting 8(21). 31-35. Retrieved (6/4/2022) from www.iiste.org

Ajibolade, S. O. & Uwuigbe, U. (2013). Effects of Corporate Governance on Corporate Social and Environmental Disclosure among Listed Firms in Nigeria. *European Journal of Business and Social Sciences*, 2(5), 76-92. Retrieved (21/10/2022) https://core.ac.uk/download/pdf/17045094.pdf

Alade, M. E. & Odugbemi, O. M. (2022). Corporate Characteristics and Implementation of Integrated Reporting Framework of Listed Oil and Gas Firms in Nigeria. *International Review of Business and Economics*, *6*(1), Retrieved (21/10/2022) from https://digitalcommons.du.edu/irbe/vol6/iss1/23


Article DOI: 10.52589/AJAFR-NUWBRI1F
DOI URL: https://doi.org/10.52589/AJAFR-NUWBRI1F

Aparna B. & Siya T. (2017), Corporate attributes affecting sustainability reporting: an Indian perspective. International Journal of Law and Management 59(3) 10.1108/IJLMA-11-2015- 0057 June, retrieved (5/04/2022)from: https://www.researchgate.net/

Barako, D. (2007). Determinants of voluntary disclosures in Kenyan companies annual reports. *African Journal of Business Management, (*5),113-128.

Brammer, S., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance & Accounting, 33*(7/8), 1168-1188

Cormier, D., & Gordon, I. M. (2001). An examination of social and environmental reporting strategies. Accounting, Auditing & Accountability Journal, 14(5), 587–616.

Deegan C. & Rankin, M. (1996). "Do Australian Companies Repot Environmental News objectively? An Analysis of Environmental Disclosure by Firms Prosecuted Successfully by the Environmental Protection Authority. "*Accounting Auditing and Accountability Journal 4*(1)23-42.

Egbunike, A.P., & Nwankwe, T. (2017). Firm's specific attributes and voluntary environmental disclosure in Nigeria: evidence from listed manufacturing companies. *Academy of Accounting and Financial Studies Journal, 21*(3).1-9.

Ezekwesili, T. P. & Ezejiofor, R. A. (2022a). Firm characteristics and environmental performance: a study of listed conglomerates in Nigeria. Innovations, 1(68), 69-83. Retrieved (14/10/2022) from www.journal-innovations.com

Galani, D., Gravas, E., & Stavropoulos, A. (2012). Company characteristics and environmental policy. Business Strategy and the Environment, 21(4), 236–247

Greene, W. H. (2008). *Econometric Analysis* (6th Ed.). Upper Saddle River, NJ, USA: Prentice Hill Publishing.

Juhmani, O. (2014). Determinants of Corporate Social and Environmental Disclosure on Websites: The Case of Bahrain. *Universal Journal of Accounting and Finance, 2*(4), 77-87.

Kabiru Shuaibu (2020).Firm Characteristics and Environmental Disclosure Quality of Listed Cement Companies in Nigeria. African Scholar Journal of Mgt. Science and Entrepreneurship, 18(7),2276-0732

Kolk A, Walhain S, Van de Wateringen S2001). Environmental Reporting by the Fortune Global 250: Exploring the Influence of Nationality and Sector. *Business Strategy and the Environment, 12*, 15-28.

Lu, Y. & Abeysekera, I. (2014). Stakeholders' power, corporate characteristics, and social and environmental disclosure. *Journal of Cleaner Production, 64* (1): 426–436.

Monteiro, S. M., & Aibar-Guzman, B. (2010). Determinants of environmental disclosure in the annual reports of large companies operating in Portugal. *Corporate Social Responsibility and Environmental Management, 17*(4), 185–204.

Neuman, W.L. (2011). Social Research Method: Qualitative and Quantitative Approaches: (7the,d) Pearson: Boston.

Nguyen, L.,Tran,M.D.,Nguyen,T.,X., & Le,Q.H,.(2017). Factors Affecting Disclosure Levels of Environmental Accounting Information: The Case of Vietnam, *Accounting and Finance Research, 6*(4), 255-264.

Oba, V. & Fodio, M. (2012b). Characteristics and the quality of environmental reporting in Nigeria. Journal of Accounting and Management (JAM) 2 (2): 33 – 48.

Obiora, F. Onuora, J.K.J & Ezeogidi, C.S (2022), An Assessment Of The Impact Of Environmental Accounting Disclosure On Profitability Of Firm In Nigeria International


Article DOI: 10.52589/AJAFR-NUWBRI1F
DOI URL: https://doi.org/10.52589/AJAFR-NUWBRI1F

Journal of Innovative Finance and Economics Research 10(1):92-103, seahipaj.org/journals-ci/

Ong, T.T., Tho, H.S., Goh, H.H., Thai, S.B. &Teh B.H. (2016). The Relationship between Environmental Disclosure and Financial Performance of Public Listed Companies in Malaysia: Empirical Review. *International Journal of Business Management, 10*(4), 461-467.

Onyebuenyi & Ofoegbu (2022) Environmental Sustainability Disclosure And Firm Performance Of Quoted Oil And Gas Companies In Sub-Saharan Africa Countries. Retrieved (6/4/2022) from https://www.medwelljournals.com

Rajesh, R., Rajeev, A. & Rajendran, C. (2022). Corporate social performances of firms in select developed economies: A comparative study. Socio-Economic Planning Sciences, 81, 101194. Retrieved (14/10/2022) from https://doi.org/10.1016/j.seps.2021.101194

Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organisations and Society, 17*(August), 595–612.

Ruiz-Blanco, S., Romero, S., & Fernandez-Feijoo, B. (2022). Green, blue or black, but washing–What company characteristics determine greenwashing? *Environment, Development and Sustainability*, *24*(3), 4024-4045. Retrieved (21/10/2022) from https://doi.org/10.1007/s10668-021-01602-x

Uwuigbe, U. (2011) An empirical investigation of the association between firms' characteristics an Corporate social disclosures in the nigerian financial sector. Journal of Sustainable Development in Africa 13(1): 60-74 retrieved (6/4/2022). From https://core.ac.uk/

Wang, M. (2017). The Relationship between Firm Characteristics and the Disclosure of Sustainability Reporting. Journal of Sustainability, 9(1), 1-14. Retrieved (14/10/2022) from www.mdpi.com/journal/sustainability

Wang, M. C. (2017). The relationship between firm characteristics and the disclosure of sustainability reporting. *Sustainability*, *9*(4), 624.

Yadav, I. S., Pahi, D., & Gangakhedkar, R. (2022). The nexus between firm size, growth and profitability: new panel data evidence from Asia–Pacific markets. *European Journal of Management and Business Economics*, *31*(1), 115-140

Yousra, N.E. (2017), The impact of corporate characteristics on environmental information disclosure: an empirical study on the listed firms in Egypt. *The Business and Management Review*. 8(5): 181-191. Retrieved (6/4/2022) from https://www.researchgate.net/

Zeng, S. X., Xu, X. D., Dong, Z. Y., & Tam, V. W. Y. (2010). Towards corporate environmental information disclosure: An empirical study in China. *Journal of Cleaner Production, 18*(12), 1142–1148. doi:10.1016/j. jclepro.2010.04.005.

Zeng, S. X., Xu, X. D., Yin, H. T., & Tam, C. M. (2012). Factors that drive Chinese listed companies in voluntary disclosure of environmental information. *Journal of Business Ethics, 109*(3), 309–321


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DOI URL: https://doi.org/10.52589/AJAFR-NUWBRI1F