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Corporate sustainability reporting and financial performance of likelihood distress companies in Nigeria

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Abstract

This study explored the interplay between corporate sustainability reporting and the financial performance of likelihood distressed listed companies in Nigeria. This study employed an ex-post facto research design spanning a longitudinal period of five years (2018–2022). The sample size comprises one hundred and nineteen firms listed on the Nigerian Exchange Group (NGX), formally known as the Nigeria Stock Exchange (NSE). The study data were analysed using the random effect panel regression technique based on the outcome of the Hausman selection test. The study's result indicated that both corporate social responsibility and economic performance exhibited a significant and positive relationship with the performance of the likelihood distressed companies implying an increase in corporate financial performance based on data extracted from the audited annual reports of the sampled firm. Surprisingly, environmental performance reporting demonstrated a negative and non-significant relationship with financial performance. Corporate governance practice displayed a positive but non-significant relationship with financial performance. Therefore, this study recommends that the management of the sampled companies should improve social responsibility and economic disclosures as they positively affect corporate financial performance. It is also recommended that companies disclose only material information especially concerning environmental sustainability performance to improve corporate financial performance.

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1. Introduction

Corporate sustainability is one of the essential mainstays upon which companies are built to ensure survival and stability. It seeks to enhance firm financial performance by supporting actions that meet present needs without compromising the ability of future generations to meet their own needs (Pobbi, Anaman, & Quarm, 2020). This growing importance of corporate sustainability reporting stems from the heightened demands by shareholders, investors, suppliers, consumers, government entities and the general public for non-financial information on companies' performance (Aggarwal, 2013; Aifuwa, 2020). Corporate sustainability reports provide a snapshot of non-financial facts regarding the social, economic and environmental performance of a company rather than simply producing information based on data that is applicable only to shareholders (Al-Shaer & Hussainey, 2022; Ismail, Islam, & Haque, 2021). On the other hand, financial performance primarily focuses on past events and includes measures of a firm's profitability such as return on investment (ROI), economic value added (EVA), return on assets (ROA), return on equity (ROE) and Tobin's-Q, earnings per share (EPS) among others.

Corporate sustainability reporting supports the view that companies improve on their transparency and accountability to society by continuously addressing and revealing the risks connected with their operations over time. Yet, the quality and quantity of environmental resources are steadily depleting on account of rising material use, an increasing population and growing sophistication in manufacturing processes and technologies (Ezeabasili, 2009; Viek & Steg, 2019). Remarkably, the idea of sustainable development was conceived about 4 decades ago when the Brundtland Report was released in 1987. The release of the report closely followed the formation of the World Commission on Environment and Development in 1983 by the United Nations. The Commission has the mandate of reviewing and reporting on the global deterioration of the environment by human activities and natural resources. According to the Brundtland Report, sustainable development is vital for the future wealth of individual nations (White, 2009) and corporations.

Poor management practices within corporations can significantly impact various sustainability factors, including weak corporate governance, neglect of corporate social responsibility, poor environmental performance and failure to achieve economic performance in the interest of stakeholders. The collapse and demise of renowned corporate entities like Enron, WorldCom, Cadbury and several Nigerian banks serve as stark examples of fraudulent activities undermining sustainability and performance. Instances such as the Giwa-Osagie financial crime highlight the repercussions of inadequate sustainability practices on organizational performance. Recent cases like Wire Card Financial (Germany) in June 2020, First Republic Bank (USA) in 2023 and Signature Bank (USA) in 2023 further illustrate how compromised sustainability leads to distressed performance situations. These failures are primarily attributed to management deficiencies and shortcomings which ultimately jeopardize sustainability, business operations and potentially lead to financial distress. Companies that experience financial hardship are those that have large fixed expenses, illiquid assets or revenues that are susceptible to economic downturns. As a result, they are unable to get outside funding or pay their creditors on time.

Most studies on the relationship between corporate sustainability reporting and financial performance have generated results that are either inconclusive or contradictory, reporting positive outcomes at one time or negative outcomes at another time. For instance, studies such as Akinlo and Iredele (2014), Olayinka and Oluwamayowa (2014), Nnamani, Onyekwelu, and Ugwu (2017) and Nze, Ogwude, Nnadi, and Ibe (2016), all found corporate sustainability reporting to have a positive and significant influence on corporate financial performance. On the other hand, Asuquo, Dada, and Onyeogaziri (2018) and Erhirhie and Ekwueme (2019) as well as Oyewo and Badejo (2014) documented a negative relationship between corporate sustainable development practices and corporate performance. Moreover, other studies found no clear relationship between sustainability reporting and firm performance.

Our study is not only driven by the mixed findings from these past studies but also by the limited Nigerian studies that have investigated the relationship between corporate sustainability reporting and financial performance using metrics from the annual accounts of financially distressed likelihood companies. These studies have often produced inconsistent and erratic results. Research on the relationship between business sustainability reporting and financial performance will continue as long as previous studies provide inconsistent findings (Lyndon & Sunday, 2018). Therefore, this study was carried out to address this gap. To do so, corporate sustainability reporting was examined across its four dimensions of social responsibility, corporate governance, environmental and economic performance about the financial performance of likelihood distress companies using Nigeria as a reference point. Arising from the above, the following research questions were raised: (i) To what extent does social responsibility influence the financial performance of likelihood distress companies in Nigeria? (ii) How does corporate governance affect the financial performance of likelihood distress companies in Nigeria? (iii) To what extent does environmental performance influence the financial performance of likelihood distress companies in Nigeria? and does economic performance affect the financial performance of likelihood distress companies in Nigeria?

The remaining part of this paper is structured as follows: conceptual and empirical reviews, methodology, results and discussions, conclusion and recommendations.

2. Conceptual Review

2.1. Firm Financial Performance

Firm performance refers to the ability of a company to use its resources to generate profit or revenue and satisfy the needs of numerous stakeholders of the company. Santos and Brito (2012) stated that performance can be measured using growth, profitability or market value whereas profitability and growth indicate the ability of a company to make a profit and increase its size respectively, market value evaluates the prospects of the future performance of the company (Santos & Brito, 2012). Lassala, Apetrei, and Sapena (2017) identified accounting-based measures and market-based measures as two commonly documented groups of performance measures in literature.

Accounting-based measures reveal information on present activities in a company and their metrics are taken from the corporate annual reports (Aggarwal, 2013; López, Garcia, & Rodriguez, 2007). Examples of accounting-based measures include return on shares, measures return on capital employed, return on asset, return on earnings and return on sales (Galant & Cadez, 2017). Conversely, market-based measures assess future expectations about the profitability of a firm and they are influenced by market perceptions and conditions (Griffin & Mahon, 1997). Metrics for market-based measures are extracted from daily price listings and corporate annual reports. Examples of market-based measures are dividend per share, Tobin's Q, earnings per share, and stock returns (Galant & Cadez, 2017). We evaluated financial performance using Tobin-Q, while the likelihood of financial distress firms was estimated using the Altman Z-score model. We proxy the likelihood of financial distress among Nigerian firms using the Altman Z-score model because it is a widely acceptable measure of financial distress and corporate default prediction.

2.2. Corporate Sustainability Reporting

According to the World Business Council for Sustainable Development (2002) corporate sustainability reporting represents a method of communicating how a business addresses environmental concerns, supports sustainable economic development, employees, families, the local community and society to improve the quality of life. A sustainability report is defined as a document published by an organization that shows details of the environmental, economic and social impacts caused by the regular activities of the organization (Global Reporting Initiative, 2017). The principles and governance framework of an organization are presented in a sustainability report showing the relationship between its strategic plans and its commitment to environmental conservation (Osemene, Kolawole, & Oyelakun, 2016).

Sustainability reporting is not new to companies in Nigeria. The general sustainability reporting requirements in the country as reflected in the Nigeria Stock Exchange (NSE) (now Nigerian Exchange Group) expect listed companies to produce sustainability reports that should not only contain information that will be meaningful and relevant to stakeholders but also should be consistent with themes and guidance contained in internationally accepted standards like the Global Reporting Initiative (GRI) Standards.

The notion of sustainability reporting is connected to other ideas like triple bottom line reporting and corporate social responsibility (CSR) reporting. Elkington (1997) perceived triple bottom line reporting as the practice of disclosing information on the economic, environmental and social performance of organization and it is fundamental for the continued existence of companies. Corporate organisations that seek to provide their stakeholders with meaningful information about the impacts of their operations on the environment and society will willingly produce sustainability reports (Garg, 2015). Dembo (2017) identified lower costs of capital, increased customer base and market share, greater resource yield and stock exchange premiums as some of the advantages that are associated with voluntary sustainability reporting. The manner in which these reports are presented often reflects the financial capacity of the company to fulfil its sustainability obligations. However, corporate sustainability reporting typically incorporates four dimensions of reporting: environmental, corporate social responsibility, economic sustainability and corporate governance.

2.2.1. Environmental Performance Reporting

Environmental performance refers to the vigorous pursuit of activities that can have an impact on the environment. Environmental performance reporting consists of timely information communicated to relevant stakeholders at regular intervals regarding the environmental activities of a company (Hindley & Buys, 2012). The purpose is to inform and update stakeholders about the activities and performance of a company and its interactions with the environment (Bhattacharyya, 2014). There are diverse frameworks for reporting environmental issues. Nevertheless, the global reporting initiative sustainability reporting guideline seems to be the most definitive and commonly applied reporting framework worldwide (Hindley & Buys, 2012). The necessity to legitimize the activities of organisations justifies the need for reports on environmental performance. The initiative to disclose environmental information is subject to several factors that vary from one company to the next.

2.2.2. Corporate Social Responsibility Reporting

Corporate social responsibility (CSR) manifests across various dimensions of a company's interaction with stakeholders including investors, management, government, suppliers, customers, creditors, employees, society and the local community (Ohiokha, Odion, & Akhalumeh, 2016). According to Ohiokha et al. (2016), CSR reporting elucidates the obligations of organizations to the community encompassing issues such as poverty alleviation, healthcare accessibility, education and the overall welfare of the community. Becker, Harrison., and Wicks (2005) declared that in sustainability reporting, social responsibility pertains more to the company's impacts on social aspects including labor practices, human rights, fair wages, retirement benefits, healthcare, safety standards, reasonable working hours and fostering positive relationships with communities among others.

2.2.3. Economic Sustainability Reporting

The concept of economic sustainability performance reporting revolves around maximizing the utilization of available resources through various means to achieve a responsible and profitable balance in the long -term (Asuquo et al., 2018). Economic sustainability reporting assists companies display their dedication to ethical business practices and enduring financial well-being (Global Reporting Initiative, 2018). It can also serve as a means of attracting investors who are fascinated by the social, governance and environmental performance of a company. It comprises both the company's financial performance reporting and influence on the economic conditions of relevant stakeholders and where it operates.

2.2.4. Corporate Governance Reporting

Corporate governance performance reporting pertains to the practices adopted by firms to implement effective mechanisms, rules, regulations, guidelines and principles aimed at safeguarding and enhancing the management-owner relationship and the interests of various stakeholders, thereby improving overall performance (Michelon & Parbonetti, 2012; Naciti, 2019). Corporate governance issues such as board size, board independence, frequency of board meetings, external auditor reports, chairman statements, and the presence of audit committees in firms' annual reports and accounts play a significant role in enhancing financial performance (Gholami, Sands, & Rahman, 2022; Husnaini & Basuki, 2020; Mardnly, Mouselli, & Abdulraouf, 2018; Price & Sun, 2017; Zabri, Ahmad, & Wah, 2016). Ismail et al. (2021) argued that the growing corporate reporting landscape necessitates organizations to prioritize sustainability objectives alongside wealth creation and corporate governance goals.

3. Empirical Review

Some prior studies include Ellili and Nobanee (2023) who investigated the impact of economic, environmental and corporate social responsibility reporting on the financial performance of UAE banks. The results of the study revealed a positive and significant relationship between sustainability information disclosure and bank performance. Jia and Li (2022) investigated the relationship between corporate environmental performance and financial distress in Australia. The results of their study revealed a negative relationship between environmental performance and the observed probability of financial distress in the market. The outcome of the negative relationship was found to be particularly obvious for companies having a higher level of financial risk. He and Zheng (2022) studied the effect of environmental regulations on firm financial distress in China over a twenty-year period. The findings of the study revealed an inverse relationship between environmental regulations and firm performance as well as a direct relationship between environmental regulations and the likelihood of financial distress. Additionally, the results indicated that environmental regulations were negatively associated with the duration of distress. On the contrary, Omaliko, Nweze, and Nwadialor (2020) and Ofoegbu and Asogwa (2020) found a strong and positive relationship between environmental disclosures and firm performance. This study provided insights into the overall influence of Chinese environmental regulations on firms in financial distress zones.

Tarighi, Appolloni, Shirzad, and Azad (2022) explored the relationship between corporate social responsibility (CSR) disclosure and financial distress risk with a particular focus on the moderating effect of institutional ownership based on data extracted from 200 firms listed on the Tehran Stock Exchange (TSE). The logistic regression results indicated that higher levels of CSR information disclosure hardly enhance a firm's access to financing which in turn raises the risk of financial insolvency. On the other hand, Gholami et al. (2022) reported a positive relationship between higher corporate environmental, social, governance-performance and company's profitability in the financial sector but a negative relationship in the non-financial sector when they investigated the relationship within both sectors in Australia from 2007 to 2017. Jahmane and Gaies (2020) and Akparhuere (2019) obtained similar positive results. However, some other studies did not find any significant relationship between corporate sustainability reporting and the company's performance (Baalouch, Ayadi, & Hussainey, 2019; Yahaya, 2019).

Citterio and King (2023) sought to ascertain the role of environmental, social and governance performance in forecasting the financial distress of three hundred and sixty-two commercial banks within the United States and the European Union's twenty-eight member states from 2012 to 2019. The outcome of the study revealed that the predictive power of the regression model improved when ESG indicators were introduced allowing more accurate identification of financial distress. Remarkably, this study revealed that the likelihood of misclassifying distressed banks as financially healthy firms was significantly reduced by the ESG indicators. Similarly, Ismail et al. (2021) conducted empirical research to evaluate the relationship between sustainability reporting and financial performance of industrial goods listed firms in Nigeria from 2011-2020. The multiple regression analysis revealed that sustainability reporting measured using economic, environmental and social indices has a significant and positive influence on return on assets, return on equity and earnings per share.

Furthermore, Jahmane and Gaies (2020) performed a study on the influence of corporate social responsibility on the financial performance using a study sample of CAC 40 companies. This study used data from 2002 to 2017. The results of the Generalized Method of Moments (GMM) estimation technique showed a direct positive non-linear relationship between corporate social responsibility and corporate financial performance signifying that higher levels of corporate social responsibility activities positively influence financial performance. The results of the estimation technique equally showed that corporate social responsibility performed the role of a mitigating factor during banking crises, thereby reducing the negative effect on corporate financial performance and causing a positive spillover effect. Nguyen, Sheridan, Su, and Xuan (2020) conducted a study to investigate the relationship between corporate social responsibility disclosures and the risk of bankruptcy among companies listed on the stock exchanges of Vietnam. The results of the regression models revealed that Vietnamese firms with higher levels of corporate social responsibility disclosures experienced a significant decrease in their risk of bankruptcy based on secondary data extracted from the audited financial statements of the sampled firms. Moreover, the results indicated a discrepancy in the risk of bankruptcy between companies that included corporate social responsibility disclosures in their annual reports and those that did not.

Aifuwa (2020) examined the impact of sustainability reporting on firm performance in developing countries using content analysis of the annual reports of firms. The study found that most existing research indicates a positive relationship between sustainability reporting and firm performance especially as regards return on assets and return on equity. The study also found that sustainability reporting was prevalent in developing countries compared to developed ones. Akparhuere (2019) explored environment reporting in annual reports focusing on a comparative analysis of reporting practices for oil and gas firms and consumer goods firms listed in Nigeria. This study found that social responsibility reporting practices such as donations and gifts significantly influence firm performance in Nigeria.

4. Review of Theories

4.1. Stakeholders Theory

The stakeholder theory credited to Freeman (1984) posits that an organisation or company is accountable to a group of individuals referred to as stakeholders (Learmount, 2002). Logsdon and Wood (2000) argued that a primary aim of the stakeholder theory was to assist corporate managers in comprehending their stakeholders and managing relationships more effectively within the framework of their companies. Freeman (1984) defined stakeholders as any group or individual capable of influencing or being influenced by the firm's objectives while Shafiq, Johnson, Klassen, and Awaysheh (2017) defined stakeholders as individuals or groups with legitimate interests in procedural and substantive aspects of corporate activities.

According to stakeholder theory, a company is obligated to fulfil the diverse expectations of different stakeholder groups rather than solely prioritizing the interests of shareholders as conventional shareholder theories emphasize. According to the stakeholder theory, managers of firms are responsible for effectively operating the business in the interest of its stakeholders and ensuring compliance with practices that promote the firm's sustainability, thereby enhancing the financial performance of the stakeholders.

4.2. Legitimacy Theory

The legitimacy theory is widely regarded as one of the most frequently cited theories in studies relating to environmental and social reporting. The theory is traced to the concept of organizational legitimacy initially proposed by Dowling and Pfeffer (1975). Fundamental to this theory is the notion that meeting societal norms and expectations is relevant for the survival of a company in the long-term (Guthrie, Cuganesan, & Ward, 2007). Legitimacy can be perceived as a reciprocal interaction between the company and the community where the community provides support to the company in exchange for benefits from the company (Ghozali & Chariri, 2007). According to this theory, corporate sustainability reporting plays a significant role in shaping perceptions as the community's approval of a company's activities establishes its legitimacy and has implications for its long-term sustainability. Companies can enhance their legitimacy and maintain positive relationships with stakeholders, ultimately contributing to their continued success by demonstrating alignment with societal values and expectations through sustainability reporting.

Although, two theories have been reviewed, the present study was anchored on the stakeholders' theory given that the theory is cantered on finding solutions to conflicts among several stakeholders. Moreover, corporate sustainability reporting in relation to firm financial performance is relevant to different stakeholders whose interests may be directly or indirectly affected by the activities of the firm.

5. Methodology

This study adopted an ex-post facto research design with a population of one hundred and seventy-one (companies listed on the Nigerian Exchange Group (NGX) over the period between 2018 and 2022. However, a final sample of one hundred and nineteen companies was chosen. The selection was based on the criteria that only firms with distress likelihood status as revealed by the Altman Z-score model and with complete 2018-2022 published annual reports were included in the study sample. A firm was considered as lying within the financial distress zone when its z-score value fell below 1.81 in line with the assertion of Udin, Khan, and Javid (2017). Since slightly more companies had complete published financial statements than our computed sample size over the period investigated, 598 firm-year observations were used for data analysis. The formula for computing the Z-score of the model is given below:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5 \quad (1)$$

"Z" is the overall index of the variables.

X_1 to X_4 are computed as absolute percentage values.

X_5 is computed in number of times.

The following accounting ratios are used as variables and combined into a single index which is efficient in predicting the likelihood of financial distress for firms.

X_1: The ratio of working capital to total assets (WC/TA * 100) which measures the net liquid assets of a company relative to its total capitalization.

X_2: The ratio of net operating profit to net sales (NOP/S*100).

X_3: The ratio of earnings before interest and taxes to total assets (EBIT/TA * 100).

X_4: The ratio of the market value of equity to the book value of debt (MVE/BVD *100).

X_5: The ratio of sales to total assets (S/TA).

The model specification for this study is below:

$$TOBIN - Q = \beta_0 + \beta_1 ENPRit + \beta_2 CSRPRit + \beta_3 CGPRit + \beta_4 CEPRit + eit \quad (2)$$

Where

β_0= Constant.

B_1 to β_4 = Coefficients.

it= Firm (i) and at time (t).

e= Error term.

Table 1. Operationalization and measurement of variables.

S/N	Variables	Notation	Measurements
1	Financial performance	TOBIN-Q	$\frac{\text{Market value + Total liabilities}}{\text{Total assets}}$
2	Environmental performance reporting	ENPR	Environmental practices reporting information disclosure index is calculated as the average value of the dummy variables obtained from the financial statement.
3	Corporate social responsibility performance reporting	CSRPR	Corporate social sustainability practices reporting index data is measured as the average value obtained from the financial statement.
4	Corporate governance performance reporting	CGPR	Computed as the average value of all the corporate governance information reported in the financial statement
5	Corporate economic performance reporting	CEPR	Computed as the average of economic activities obtained from the financial statement.

Table 1 presents the operationalisation and measurement of variables chosen for the study.

6. Interpretation of Results and Discussion of Findings

6.1. Interpretation of Results

Table 2 presents the descriptive statistics of corporate sustainability variables and financial performance across 598 observations of firms at risk of financial distress.

Table 2. Descriptive statistics: Likelihood financial distress.

Variables	TOBIN-Q	ENPR	CSRPR	CGPRR	CEPR
Mean	0.650	0.075	0.306	0.390	0.342
Maximum	1.840	1.000	1.000	0.830	8.05E+08
Minimum	-9.600	0.000	0.000	0.000	-31726763
Std. dev.	1.119	0.178	0.150	0.195	86281998
Skewness	-3.276	2.697	0.439	-0.175	4.337
Kurtosis	23.176	10.154	3.751	2.245	26.318
Jacque-Bera	11.213	2000.421	33.244	17.267	15421.78
Probability	0.000	0.000	0.000	0.000	0.000
Observations	598	598	598	598	598

The TOBIN-Q used to gauge financial performance ranged from a maximum of 1.8 to a minimum of -9.6 with a mean value of 0.650 and a standard deviation of 1.112. These figures suggest that the likelihood of financial distress companies generally exhibit low financial performance. The distribution of TOBIN-Q is negatively skewed (-3.276) indicating a leftward skewness while the high kurtosis (23.176) implies a peaked distribution deviating significantly from a normal distribution. Moreover, the Jacque-Bera test yielded a statistically significant result (p-value < 0.05) indicating non-normal distribution.

The maximum value was 1.000 (presence of environmental performance) while the minimum was 0.000 (absence of environmental performance) regarding environmental performance reporting (ENPR). The mean value of 0.075 and a standard deviation of 1.12 suggest that environmental performance among these firms is generally low. The positive skewness (2.697) implies a rightward skewness and the positive kurtosis (10.153) indicates a peaked distribution deviating from normality. Similarly, the Jacque-Bera test showed a statistically significant result (p-value < 0.01) indicating a non-normal distribution.

The maximum value was 1.000 (presence of social responsibility performance) while the minimum was 0.000 (absence of social responsibility performance) for corporate social responsibility performance reporting (CSRPR). The mean value of 0.306 and a high standard deviation suggest that social responsibility performance among these firms is relatively high. The positive skewness (0.439) and positive kurtosis (3.175) indicate a distribution approaching normality. The Jacque-Bera test yielded a non-statistically significant result (p-value > 0.05) suggesting normal distribution.

Corporate governance performance reporting (CGPR) ranged from a maximum of 0.83 to a minimum of 0.0219. The mean value of 0.3903 and standard deviation suggest that corporate governance performance among these firms is generally high. The negative skewness (-0.175) indicates a leftward skewness while the positive kurtosis (2.245) suggests a distribution approaching normality. The Jacque-Bera test yielded a non-statistically significant result (p-value > 0.05) suggesting a normal distribution.

Finally, corporate economic performance reporting (CEPR) ranged from a maximum of 0.819 to a minimum of -0.317. The mean value of 0.342 and standard deviation suggest that economic performance among these firms is very low. The positive skewness (4.337) and positive kurtosis (26.318) indicate a distribution significantly deviating from normality. The Jacque-Bera test yielded a statistically significant result (p-value < 0.01) indicating a non-normal distribution.

Table 3. Pearson correlations.

Variables	TOBIN-Q	ENPR	CSRPR	CGPR	CEPR
TOBIN-Q	1.000				
ENPR	0.154	1.000			
CSRPR	0.267	0.470	1.000		
CGPR	0.168	0.296	0.634	1.000	
CEPR	0.178	0.377	0.354	0.324	1.000

Table 3 shows the relationships among variables. The study deduced that the financial performance (measured by TOBIN-Q) of distressed firms stands at a unit value of 1.000. It is positively correlated with environmental sustainability reporting (ENVSR) at a coefficient of 0.154 units, corporate social sustainability reporting (CSSR) at a coefficient of 0.267 units, governance sustainability reporting (GOVSR) at a coefficient of 0.168 units and economic sustainability reporting (ECOSR) at a coefficient of 0.178 units. The highest correlation coefficient is between corporate social sustainability reporting (CSSR) and governance sustainability reporting (GOVSR) at a value of 0.634 (63%) units indicating a strong effect on the financial performance of distressed firms. The low associations between the variables suggest the absence of multicollinearity issues as none of the correlation coefficients identified exceed 0.80 as suggested by Kennedy (2008). This indicates that the variables are relatively independent of each other and do not pose a problem of redundancy or excessive overlap in the regression analysis.

Table 4 shows the outcome of the panel least square regression. The fixed effect panel regression of the likelihood of financial distress firms indicated a coefficient of determination (R^2) value of 0.662 with financial performance (TOBIN-Q) which implied that 66% of the systematic variations were explained by the independent variables of corporate sustainability reporting (environmental, social, governance and economic) while 34% was captured by the error term. On adjusting the degree of freedom, the coefficient of determination (bar R-square) ($\hat{R}^2$) stood at 0.637 with the financial performance (TOBIN-Q) of likelihood distress firms indicating that the independent proxied variables accounted for about 64% while the remaining 36% was accounted for by the stochastic i2 disturbance. The overall F-statistic of 7.467 at a probability value of 0.00 (1%) and a minimal standard error of regression of 0.857 implied that the general result is statistically significant suggesting a linear relationship between financial distress and the Durbin-Watson which stood at a value of 1.556 suggested that there is an absence of serial correlation in the results and there is no problem with the entire regression results.

The random effect (RE) revealed a coefficient of determination (R^2) value of 0.586 with a financial performance (TOBIN-Q) of likelihood for financial distress firms implying that 59% of the changes in financial performance were accounted for by corporate sustainability reporting while 41% were unaccounted for, hence captured by the error term. The adjusted coefficient of determination (bar R-square) ($\hat{R}^2$) which showed 0.5719 with financial performance (TOBIN-Q) of likelihood financial distress firms implied that the independent variables accounted for about 56% of variations in financial performance while 43% was accounted for by the stochastic disturbance. The general F-statistic stood at a value of 13.092 at a probability value of 0.000 (1%) compared with the minimal standard error of regression value of 0.854 suggesting that the overall result is statistically significant as there is a linear relationship. The result of Durbin-Watson with a value of 1.634 indicated that there is an absence of autocorrelation in the results.

Table 4. Panel least square regression (dependent variable: TOBIN-Q).

Variables	Financial performance (Likelihood financial distress)	
	Fixed effect Model	Random effect Model
CONS.	-26.042 -1.006 0.315	-25.274 -0.993 0.322
ENPR	-0.217 -0.784 0.433	-0.165 -0.622 0.534
CSRPR	1.008 2.438 0.015***	1.042 2.623 0.009**
CGPR	0.117 0.365 0.715	0.207 0.689 0.491
CEPR	0.252 4.734 0.000*	0.277 5.677 0.000*
R-squared (R2)	0.662	0.5867
Adjusted R-squared	0.637	0.5719
SE of regression	0.857	0.4154
F-stat. (P- value)	7.467(0.000)	13.092(0.000)
Hausman-test (PV)		2.557(0.768)
Durbin-Watson	1.556	1.634

Note ***, **, * implies statistical significance at 10%, 5% and 1% respectively.

6.2. Discussion of Findings

The Hausman test result as shown in Table 4 is statistically insignificant indicating that the random effect (RE) model is appropriate for discussion of findings. Otherwise, the fixed effect (FE) model would be more suitable. The study revealed some key findings which are discussed as follows: First, the study revealed that corporate environmental sustainability performance reporting has no significant effect on the financial performance (measured by TOBIN-Q) of distressed firms (β = -0.165, p-value = 0.534 > 0.05). This suggests that corporate environmental sustainability performance is not an enhancer of the financial performance of the likelihood distress companies in Nigeria. The negative coefficient value of -0.165 implies that an increase in environmental performance activities will lead to a decrease in the financial performance (TOBIN-Q) of the firms. This finding aligns with existing research such as Jia and Li (2022) who found a negative relationship between environmental performance and the perceived probability of financial distress in the market. Similarly, He and Zheng (2022) found environmental regulations to have a negative relationship with firm performance and the duration of firm distress. On the other hand, both Omaliko et al. (2020) and Ofoegbu and Asogwa (2020) found a strong and positive relationship between environmental disclosures and firm performance signifying an improvement in the likelihood of financial distress for the sampled firms. Overall, the results of these studies provided valuable insights into the broader influence of environmental regulations on firms, particularly regarding financial distress.

Second, the result of the study revealed that corporate social responsibility (CSR) exerts a positive and significant effect on the financial performance of distressed firms in Nigeria (β = 1.042, p-value = 0.009 < 0.05) suggesting that an increase in CSR activities can improve the financial performance of likelihood distress companies in Nigeria. This finding underlines the significance of CSR initiatives in driving financial performance particularly in challenging economic circumstances. This finding of the study is consistent with the results of Nguyen et al. (2020) who documented that enhanced corporate social performance is related to a significant reduction in the risk of bankruptcy and financial distress. Other researchers including Jahmane and Gaies (2020) and Akparhuere (2019) reported similar positive results. However, Tarighi et al. (2022) found evidence that suggests that CSR disclosure hardly improves a firm's access to external financing.

Furthermore, the result of this study revealed a positive but non-significant relationship between corporate governance practice reporting and firm performance (β = 0.207, p = 0.491 > 0.05), thus signifying that effective corporate governance practices can cause an insignificant improvement in financial performance of the likelihood financial distress firms in Nigeria. Gholami et al. (2022) reported a positive relationship between greater corporate governance practices and company profitability. These findings reinforce the significance of an effective corporate governance structure in enhancing financial outcomes and ensuring sustainable business operations.

Finally, the study found that economic sustainability exerts a significant and positive effect on financial performance of the likelihood of financial distress in Nigerian firms ($\beta = 0.277$, p-value = $0.000 < 0.05$). This suggests that an increase in economic performance activity reporting can lead to improved financial performance for the firms studied. This result supports the findings of Ismail et al. (2021) who also found a significant and positive relationship between three dimensions of sustainability reporting (environmental, economic and social performance) and key financial measures like earnings per share, return on equity, and return on assets, Overall, these findings highlight the important influence of economic sustainability reporting on financial performance.

7. Conclusion and Recommendations

This study employed four dimensions of corporate sustainability reporting (environmental, social responsibility, governance and economic performance) and one measure of firm financial performance to develop a model to explain the relationship between corporate sustainability reporting and the financial performance of likelihood distress companies in Nigeria. This study found that both corporate social responsibility and economic performance demonstrated a significant and positive relationship with the financial performance of the sampled Nigerian listed companies based on 598 firm-year observations over a 5-year period (2018 - 2022). However, contrary to expectations, environmental performance exhibited a negative relationship with financial performance while corporate governance performance demonstrated a positive but insignificant relationship.

Therefore, the results of the study signified that both corporate social responsibility and economic performance play critical roles in enhancing the financial performance of the likelihood distress companies in Nigeria. This emphasizes the importance of prioritizing social responsibility and economic performance as key factors in improving the financial performance of distressed firms while also recognizing the nuanced impact of environmental performance and corporate governance on financial outcomes in the Nigerian context. A notable finding from the research is the substantial quantity of Nigerian listed firms that have the potential to experience financial difficulties. This provides information about the country's increasing economic problems. The Nigerian government seems not to be doing much currently to fix the impending crisis.

Based on the findings of the study, we recommend the following:

First, companies should be mindful of activities that negatively affect the environment in the form of pollution, waste, spillages, degradation and ensure quick implementation of policies directed at cleaning up the affected areas in the interest of the host communities and the public in general. Government policymakers should ensure proper monitoring and control of companies involved in hazardous or harmful emissions on the environment to reduce reputational risk for the companies. Second, companies in Nigeria should implement a materiality approach to sustainability because disclosure of immaterial environmental sustainability information may not improve their financial performance. Third, companies should make it a point of duty to give back to society by way of corporate social responsibility and to the various stakeholders that have impacted their operation and financial performance. Furthermore, companies should maintain good corporate governance practice capable of promoting harmony between management and different stakeholders, including shareholders, employees, host communities, creditors and relevant government agencies. Finally, the Nigerian government must immediately implement the right strategies to address the current impending crisis to keep Nigeria from deteriorating into a failed state.

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