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EFFECT OF ENVIRONMENTAL DISCLOSURE ON COST OF EQUITY OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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ABSTRACT*: As concerns about climate change, pollution and resource scarcity intensifies, stakeholders are placing greater emphasis on the environmental practices of organisations. Based on this, the study examined the effect of environmental disclosure on the cost of equity of listed consumer goods firms in Nigeria. Ex-post facto research design was adopted, and panel data covering ten (10) years (2013-2022) were collected across eighteen (18) listed consumer goods firms in Nigeria which formed the sample size of the study. The data collected were analysed using panel multiple regression analysis via E-views 10.0 statistical package. The study findings revealed environmental risk disclosure (Coeff. = -0.0269{0.0107}) and waste management disclosure (Coeff. = -0.0178{0.0009}) have significant negative relationships on cost of equity (COE) of listed consumer goods firms in Nigeria while greenhouse gas emission disclosure (GGED) has an insignificant negative effect (Coeff. = -0.0075{0.3966}) on cost of equity (COE) of listed consumer goods firms in Nigeria. It was thus concluded that environmental accounting disclosure plays a crucial and significant role in shaping the cost of equity of listed consumer goods firms in Nigeria. The study recommended, amongst others, that regulatory bodies and industry associations should advocate for the integration of robust waste management disclosure strategies within corporate reporting frameworks to mitigate environmental impact and promote sustainable business practices.*

KEYWORDS: Environmental disclosure, Cost of capital, Environmental risk, Waste management practices, Greenhouse gas emission.

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INTRODUCTION

Globalisation and technology have expanded the scope of business activities and financial reporting which led to cutting edge competition among firms around the world. Thus, every firm looks for a way of being cost efficient which is a measure of management effectiveness and efficiency in the utilisation of the resources of the firm. Cost of capital is among the costs to be reduced which could be achieved through the adoption of many strategies, one of which is environmental disclosure. Environmental disclosure refers to the process of providing information publicly about a company's environmental practices, impacts, initiatives and risks (Ahmed & Bala, 2019). By increasing the amount of information that companies release to the public, companies can lower their capital costs, gain investor confidence, and improve shares' marketability (Meek *et al*., 2015).

Environmental risk disclosure involves the identification, assessment, and disclosure of potential environmental risks and their impact on business operations. It aids in understanding the potential consequences of environmental risks and facilitates informed decision-making by stakeholders (Emeh & Eze, 2022). Several drivers motivate companies to engage in environmental risk disclosure, including stakeholder demands, regulatory requirements, reputational concerns, and the need to manage and mitigate environmental risks effectively. Waste management disclosure refers to the transparent reporting of an organisation's waste management practices and policies. Consumer goods firms often generate significant amounts of waste during manufacturing processes, packaging and distribution. By disclosing their waste management strategies, companies can demonstrate their efforts to minimise waste generation, promote recycling, and reduce their environmental impact (Nwachukwu *et al.*, 2020). Greenhouse gas emission disclosure provides investors with critical data to evaluate the companies' risk appetite, enabling them to make informed investment decisions (Komolafe *et al.,* 2021). According to Samuel et al. (2022), when firms provide information about the greenhouse emissions and strategies adopted to manage them, providers of funds will be aware of the risks and opportunities they are exposed to by investing in such firms and can adjust their cost of investment upward or downward depending on the risk exposure level.

Cost of equity is a financial concept that represents the rate of return required by investors to compensate for the risk they undertake when investing in a particular company's stock. According to Nindya (2020), every business is looking for high return and the cost of equity is important to determine the return on investment as it is an essential component in determining a company's overall cost of capital and plays. The cost of capital should be minimal for a business that successfully manages its finances and many factors are responsible for a reduced or minimised cost of capital, and one of these is environmental disclosure practices of the firm. Firms that voluntarily disclose their environmental responsibility are expected to have lower cost of capital because such disclosure would send signals to investors that they are involved in sustainable activities that would not engender any form of hostility from the various stakeholder groups.

The relationship between environmental disclosures and cost of capital is supported by two major theories which are signalling theory and agency theory. Signalling theory states that the cost of capital of the company can be decreased if the firm voluntarily reports (signals) private information about itself through corporate social responsibility activities that are credible hence reducing outsider uncertainty (Elsayed & Hoque, 2022; Connelly *et al.,* 2011). From the agency theory perspective, voluntary disclosures are used by managers to reduce information

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asymmetry between them and providers of funds. By these disclosures the providers of capital are also made aware of the otherwise private information of management and this can make them adjust the cost of capital whether favourably or unfavourably depending on the level of risk perception. Environmental disclosures contribute to improving the firms' information environment and thus permit a more precise estimation of future earnings and cash flows leading to a decreased risk estimation (Hann *et al.,* 2019). Environmental disclosure also allows investors as well as other stakeholders to monitor managerial actions more accurately and with lower costs (Selah *et al.,* 2022).

The association between environmental disclosure and cost of equity is of paramount importance for listed consumer goods companies in Nigeria at a time when environmental concerns are growing and consumer demands for sustainability are increasing. However, the lack of comprehensive research in this specific context creates uncertainty and leaves room for missed opportunities. Failure to disclose environmental efforts and performance can have a negative impact on both the consumer goods industry and the Nigerian economy as a whole. Without transparent information, investors may perceive that companies are not committed to environmental responsibility, leading to increased cost of equity and potential loss of investment opportunities (Onoh *et al.,* 2023). There is no consensus in the existing literature on the effect of environmental disclosure on cost of capital because of mixed results. It was also noted the consumer goods sector was not really the focus of previous study as most of the studies focused on other sectors of the economy like the banks, oil and gas companies and ICT firms (Yan *et al.,* 2023; Khandelwal *et al.,* 2023, Nindya *et al.,* 2019). Another notable gap found in the literature was that most of the studies on environmental disclosure concentrated on its effects on financial performance, firm value, and even the study that considered cost of capital used weighted average cost of capital but this study focused on the cost of equity since it seemed to be ignored. It was as a result of this gap that this study was undertaken to ascertain the effect of environmental disclosure on the cost of equity of consumer goods companies in Nigeria.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Environmental Disclosure

Environmental disclosure refers to the process of providing information publicly about a company's environmental practices, impacts, initiatives and risks. This reporting practice includes information about the environmental policies, strategies, goals, risks and performance metrics related to environmental sustainability. It encompasses various aspects, including environmental risk disclosure, gas emission disclosure, and greenhouse disclosure. According to Hann et al. (2019), environmental accounting reports on the effect of the company's activities on the environment and also the impact of the environment on the business in financial and physical terms. In the view of Kumar et al. (2017), environmental accounting measures record and disclose the effect of corporate environmental actions on its financial standing using a set of accounting systems. Environmental accounting aims to enable companies to achieve sustainable development and pursue efficient and effective environmental conservation activities while maintaining a good relationship with the company's community. Akpan and Nkanta (2023) noted that this reporting practice process aids organisations in identifying the cost of engaging in environmental conservation activities, the benefits gained from

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conservation activities provided in quantifiable means of measurement and support the communication of the evaluation results carried out to the stakeholders. Disclosing environmental practices demonstrate to investors effective management practices and thus reduces investors' uncertainty while potentially lowering perceived risk and consequently reducing the cost of capital

Cost of Equity

Cost of capital is the cost that a company incurs in order to raise funds for its operations or investments. It is the return that investors expect to receive in exchange for providing capital to the company. Samuel *et al.* (2022) noted that the level of information disclosure has a potential to reduce the cost of capital through mitigating adverse selection and moral hazard problems. Companies get capital to finance their operations in two ways, namely through debt and company equity (Keown *et al.,* 2005). The choice of debt and equity is fueled by their cost which are closely connected to corporate performance (Alhares *et al.,* 2019). While the cost of debt is often quoted by the issuer, the cost of equity involves complex relationships among factors such as governance system, political stability and economic condition (Raimo *et al.,* 2020). Debt is obtained from creditors who provide loans to companies and get returns in the form of interest. Whereas equity is obtained from investors who invest their capital in the form of shares and get returns in the form of dividends or capital gains. The cost of equity capital can be defined as the return that the equity holders require on the capital that they have put into the company. This return is an assessment of how risky the investors believe that the investment is, which can be exemplified by a model like the CAPM where the cost of equity capital is the sum of the risk-free rate of return and the return that relate to the covariance of the firm in relation to the market (Mulyati, 2017). Various factors affect the movement of companies' cost of capital including the firms' disclosure practices.

Environmental Risk Disclosure and Cost of Equity

Environmental risk disclosure involves the identification, assessment, and disclosure of potential environmental risks and their impact on business operations. It aids in understanding the potential consequences of environmental risks and facilitates informed decision-making by stakeholders (Emeh & Eze, 2022). According to them, several drivers motivate companies to engage in environmental risk disclosure, including stakeholder demands, regulatory requirements, reputational concerns, and the need to manage and mitigate environmental risks effectively. Investors request higher premiums for their investments when company risk is high (Eriandani *et al*., 2019). They stated that environmental risk disclosure affects cost of capital in two ways. Firstly, information asymmetry in the capital market can be reduced if the company is willing to provide more information. Second, it shows that more disclosures reduce the cost of equity by reducing non-diversifiable estimates. If the risk of estimation cannot be diversified, the investor asks for compensation because of the increase in the risk element. The previous studies had varying outcomes on the effect of environmental risk disclosure on cost of capital. Positive relationship was found in the studies of Eriandani *et al.* (2019) and Eneh *et al.* (2019); on the contrary, negative relationship was observed by Nindya *et al.* (2019), and Dada and Danjuma (2021), while Nduka and Ndubisi (2018) found no effect. It was as a result of these mixed findings that this study hypothesised that:

Ho1: Environmental risk disclosure has no significant effect on the cost of equity of consumer goods companies in Nigeria.

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Waste Management Disclosure and Cost of Capital

Waste management disclosure refers to the transparent reporting of an organisation's waste management practices and policies. Consumer goods firms often generate significant amounts of waste during manufacturing processes, packaging and distribution. According to Akpan and Nkanta (2023), waste management is a serious issue due to human health and environmental sustainability implications. It is a globally challenging issue especially in developing countries because of inadequate infrastructure for waste management and limited resources to invest in modern waste management technologies. It is really a pressing issue the world is facing today since a high percentage of waste is currently disposed of by open dumping (Harts & Ahuja, 2016). By disclosing their waste management strategies, companies can demonstrate their efforts to minimise waste generation, promote recycling, and reduce their environmental impact (Nwachukwu et al., 2020). Waste management disclosure allows firms to demonstrate their commitment to responsible waste management, circular economy principles, and environmental sustainability. According to some studies, businesses that disclose waste management practices more effectively might see a decrease in their cost of equity. Moreover, businesses with strong waste disclosure policies may draw in more investors who value sustainable and ethical investments (Brad, 2018). Eriandani *et al.,* (2019) found a positive relationship between waste management disclosure and cost of capital while David & Jose (2014) reported no statistical relationship between these items. Thus it was therefore hypothesised that;

Ho_2: Waste management disclosure has no significant effect on the cost of equity of consumer goods companies in Nigeria.

Greenhouse gas emission disclosure and cost of capital

Greenhouse gas emissions disclosure refers to the companies' practices of reporting their greenhouse gas emission, typically as part of their commitment to environmental sustainability. Greenhouse gases are gases that trap heat in the earth's atmosphere leading to greenhouse effect and contributing to global warming and climate change. Greenhouse gas emission disclosure provides investors with critical data to evaluate the companies' risk appetite, enabling them to make informed investment decisions (Komolafe et al, 2021). According to Samuel et al., (2022) when firms provide information about the greenhouse emissions and strategies adopted to manage them, providers of funds will be aware of the risks and opportunities they are exposed to by investing in such firms and can adjust their cost of investment upward or downward depending on the risk exposure level. The disclosure of greenhouse gas emissions to investors can signal a firm's commitment to environmental responsibility and sustainability which may positively influence investors' perceptions and lead to a reduction in the firms' cost of capital. Previous studies found mixed results concerning the effect of GHG emission on cost of capital. Adenugba et al., (2018) found a positive relationship between greenhouse gas emission disclosure and cost of capital while Ajayi and Anjorin (2020) and Ahmed and Bala (2019) found a negative relationship. It was thus based on these mixed findings that the third hypothesis was raised;

Ho_3: Greenhouse gas emission has no significant effect on the cost of equity of consumer goods companies in Nigeria?

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Theoretical framework

This study is backed up by two major theories which are signalling theory by Spence (1973) and Agency theory by Jensen and Meckling (1976). Signal theory revolves around the idea that companies use their disclosure practices to send signals to the market about their underlying values, performances and future prospects. Positive disclosures such as firm's sustainable practices, strong financial performance, innovative strategies, robust risk management practices generate positive market reactions and boost confidence in the company's value. Effective signalling through corporate disclosure can potentially lower a company's cost of capital by mitigating uncertainty and boosting investors' trust.

According to agency theory, there is a natural conflict of interest between the principal (shareholders) and the agent (management) as the shareholders delegate decision making authority to management who may act in their own self-interest rather than the best interest of the shareholders (Jensen & Meckling, 1976). This can potentially lead to information asymmetry where management possesses more information about the companies' performance and prospects than the shareholders. To address this imbalance, management on more voluntary disclosures to provide accountability and transparency allowing stakeholders to monitor and evaluate their actions. In this regard, Akhtaruddin and Hossian (2008) affirm that information disclosure is motivated by the wish of the managers to efficiently treat the potential conflicts between companies" managers and stakeholders. By these disclosures the providers of capital are also made aware of the otherwise private information of management and this can make them adjust the cost of capital whether favourably or unfavourably depending on the level of risk perception.

Empirical framework

Akpan and James (2024) examined the relationship between corporate social responsibility and weighted average cost of capital of listed consumer goods companies in Nigeria. The findings of this study revealed that philanthropic responsibility disclosure has a significant negative effect on weighted average cost of capital; Community responsibility disclosures has no significant effect on weighted average cost of capital and environmental responsibility disclosure has a non-statistically significant effect on the weighted average cost of capital of listed consumer goods firms in Nigeria. Pietro et al., (2023) examined the relation between environmental disclosure and the cost of capital by exploiting the Fukushima nuclear disaster as a source of variation in the relevance of environmental information for investors. The finding revealed that the association between disclosure and the cost of capital is driven by the increase in investor uncertainty.

Yan et al., (2023) examined the relationship between environmental disclosure and the cost of capital. The research revealed that environmental disclosure, on its own, does not significantly account for the variation in cost of capital. Udomah and Emenyi (2023) examined the effects of sustainability reporting on the financial performance of ten cement manufacturers in Nigeria. The main conclusions showed a weak and unfavourable relationship between environmental reporting and the success of Nigerian cement companies. Gerged et al., (2023) examined whether internal corporate governance (CG) mechanisms moderate the relationship between a firm's engagement in corporate environmental disclosure (CED) and earnings management (EM) practices in an emerging economy. However, the links between CG arrangements and

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EM were found to be heterogeneous, indicating that they might either reduce or increase earnings manipulations in Jordan.

Meiryani et al., (2023) scrutinised the influence of Corporate Social Responsibility (CSR) on the financial performance of manufacturing firms listed in the LQ45 Index. The findings indicated that CSR had a significant impact on ROA but did not significantly affect ROE and NPM in LQ45 manufacturing companies. Akpan and Nkanta (2023) investigated the effect of green accounting practices on shareholders' value in Nigeria by drawing samples from listed consumer goods firms on the floor of the Nigerian Exchange Group from 2012 to 2021. The result showed that biodiversity disclosure and compliance to environmental laws disclosures, water & effluents and waste disclosures have a positive significant effect on shareholders' value added of listed consumer goods firms in Nigeria during the period under study. Carnini et al., (2022) reviewed the influence of environmental, social, and governance (ESG) disclosure on firm performance given the growing attention from stakeholders to a firm's ESG practices and found a positive relationship. Nangih et al., (2022) examined the effect of environmental disclosures on earnings quality of listed consumer goods companies in Nigeria. The findings revealed that environmental sustainability disclosures had a positive and significant influence on the earnings quality of consumer goods firms in Nigeria. Johnson et al., (2022) examined the effect of environmental disclosure on the cost of equity for Nigerian consumer goods firms. The findings demonstrate a non-linear relationship between environmental disclosure and the cost of equity, with an inverted U-shaped curve.

METHODOLOGY

The research design adopted for this study was *ex-post facto* research and the design was suitable for this study because the data used were secondary derived from the Nigeria Exchange Group factbook. The population of this study was made up of all listed consumer goods firms in Nigeria from 2013-2022. As at December 31st, 2022, the total number of consumer goods companies in Nigeria was twenty-one (21). The sample size of 18 companies was purposively selected in order to have a homogeneous data. The study adopted a self-compiled checklist which included specific environmental disclosure items in deriving data for the environmental disclosure components. The disclosure index was however expressed as the sum of the scores for each disclosed item divided by the total possible score, multiplied by 100 to express it as a percentage. The study adopted panel multiple regressions to analyse data via E-Views 10.0.

Model specification

The model for this study is specified as given below;

$$COE_{it} = \beta_0 + \beta_1 ERD_{it} + \beta_2 WMD_{it} + \beta_3 GGED_{it} + \mu_{it}$$

Where;

COE_{it} = Cost of equity of firm *i* in period *t*
ERD_{it} = Environmental risk disclosure of firm *i* in period *t*
WMD_{it} = Waste management disclosure of firm *i* in period *t*
$GGED_{it}$ = Greenhouse gas emission disclosure of firm *i* in period *t*
β_0 = Intercept or regression constant
$\beta_1, \beta_2\ \beta_3$ = Regression coefficients to be estimated for firm *i* in period *t*

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μ = Stochastic error term.

DATA ANALYSIS AND DISCUSSION OF RESULTS

Data analysis

Various statistical techniques were utilised in the analysis of data of this study. These include descriptive statistics, regression assumption tests and panel multiple regression analysis.

Model evaluation

Residual and coefficient diagnostics were however conducted to assess the suitability of the model as stated in the previous section. These include normality test, multicollinearity test, heteroscedasticity test and autocorrelation assessment.

Normality test

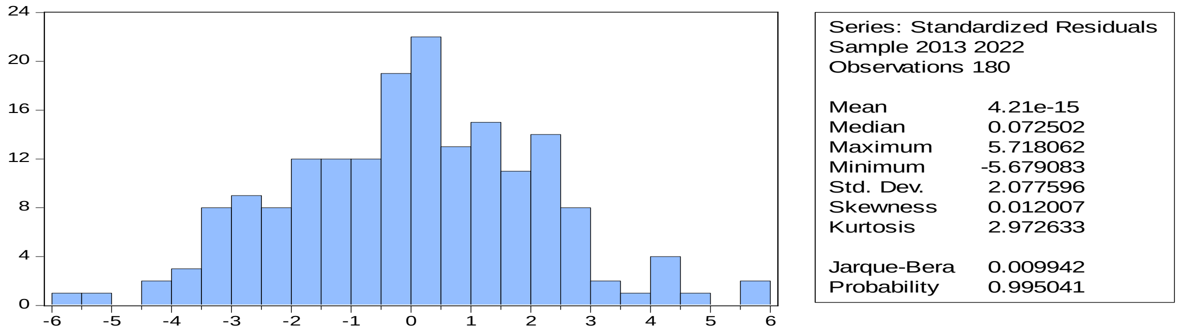

Fig. 4.1 Jarque-Bera Normality test results

Source: Eviews 10.0 Output in Appendix II

The essence of a normality test is to determine if a dataset or sample follows a normal distribution. This is important because many statistical models assume normality, and deviations from normality can affect the validity of statistical inference. The Jarque-Bera test was employed in this case. As applied, if the p-value associated with the Jarque-Bera test is below a predetermined significance level ($p<0.05$), then we reject the null hypothesis and conclude that the data do not follow a normal distribution. With a p-value of 0.995041, there is sufficient evidence to conclude that the data were normally distributed.

Multicollinearity test

Table 4.1 Variance inflation factors

Variable	Coefficient Variance	Uncentered VIF	Centred VIF
C	0.545303	22.35876	NA

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ERD	0.000109	7.055723	1.004763
WMD	0.000116	8.627498	1.024060
GGED	7.81E-05	9.911207	1.019929

Source: Eviews 10.0 Output

Multicollinearity tests evaluate the degree of correlation between predictors, as high multicollinearity can lead to unreliable coefficient estimates and difficulties in results interpretation. VIF value of less than 10.0 signifies that no severe multicollinearity exists in the model. With a centred variance inflation factor (VIF) values of 1.004763, 1.024060 and 1.019929, there is sufficient evidence to conclude that the explanatory variables in the regression model are not highly correlated with each other.

Heteroscedasticity test

Table 4.2 Heteroscedasticity test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	262.3880	153	0.0610
Pesaran scaled LM	15.24302		0.0451
Pesaran CD	-1.094252		0.2738

Source: Eviews 10.0 Output

Heteroscedasticity refers to the unequal spread of residuals (or errors) across the range of predictor variables in a regression model. Heteroscedasticity tests aim to detect this violation of the assumption of constant variance. The statistics and probability value associated with the Breusch-Pagan LM test help determine whether there is evidence of heteroscedasticity in the regression model. A low p-value ($p<0.05$) suggests evidence against the null hypothesis in favour of the alternate hypothesis which indicates the presence of heteroscedasticity in the regression model. With a p-value of 0.0610, there is sufficient evidence to accept the null hypothesis, thus, conclude that the predictor variables in the regression model were homoscedastic.

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Autocorrelation

The Durbin-Watson statistic value of 1.557131 in table 4.4 suggests a mild positive autocorrelation present in the residuals of the regression model.

Panel regression analysis

Table 4.4 Panel multiple regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.29892	0.738446	23.42611	0.0000
ERD	-0.026945	0.010451	-2.578346	0.0107
WMD	-0.017797	0.010791	-3.649302	0.0009
GGED	-0.007512	0.008839	-0.849849	0.3966

R-squared	0.553339	Mean dependent var	15.20246
Adjusted R-squared	0.537203	S.D. dependent var	2.135325
S.E. of regression	2.095228	Akaike info criterion	4.339174
Sum squared resid	772.6368	Schwarz criterion	4.410128
Log likelihood	-386.5256	Hannan-Quinn criter.	4.367943
F-statistic	3.305567	Durbin-Watson stat	1.557131
Prob(F-statistic)	0.021545		

Source: Eviews 10.0 Output in Appendix II

The multiple regression line is as written below:

COE = 17.29892-0.026945ERD-0.017797WMD-0.007512GGED + μ

Considering the regression results above, when the independent variables- environmental risk disclosure (ERD), waste management disclosure (WMD) and greenhouse gas emission disclosure (GGED) are held constant (equal Zero), the dependent variable– cost of equity (COE) increased at a constant average of approximately 17.29%. However, a one percent rise in environmental risk disclosure (ERD), waste management disclosure (WMD) and greenhouse gas emission disclosure (GGED) decrease cost of equity (COE) of listed consumer goods firms by approximately 0.026%, 0.017% and 0.008% respectively. In addition, Adjusted R-squared of 0.537 indicates that the model explains approximately 53.7% of the variations while other variables not included in the model accounts for approximately 46.3% of the variations respectively.

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RESULT AND DISCUSSION

Environmental risk disclosure and cost of equity

In order to test whether the variations in cost of equity (COE) of listed consumer goods firms in Nigeria caused by environmental risk disclosure (ERD) is significant, the T-test was carried out at .05 significance level with Ttab of 2.109 given at $T_{0.05,18}$. From the result above, the Tcal of 2.5783 is greater than the Ttab given at $T_{0.05,18}$. Hence, the null hypothesis which states that environmental risk disclosure has no significant relationship with cost of equity of listed consumer goods firms in Nigeria was rejected. The results obtained from panel regression analysis in table 4.4 revealed that environmental risk disclosure (ERD) has a significant negative relationship (Coeff. = -0.0269{0.0107}) with cost of equity (COE) of listed consumer goods firms in Nigeria. This implies that for every 1% increase in environmental risk disclosure, there is an expected decrease of 0.0269% in the cost of equity for these firms. This result underscores the importance of transparently disclosing environmental risks and impacts. It suggests that investors perceive a lower level of risk associated with firms that provide comprehensive and transparent information about their environmental risks, which subsequently leads to a reduction in the required rate of return on equity investments.

The implication of this finding is profound, as it highlights the potential financial benefits for companies that prioritise and openly disclose their environmental risk management strategies. This may lead to improved investor confidence, potentially lowering the cost of capital and enhancing access to investment opportunities. This position aligns with extant literature as documented by Pietro et al., (2023) and Nangi et al., (2022).

Waste management disclosure and cost of equity

In addition, the T-test was also carried out at .05 significance level with Ttab of 2.109 given at $T_{0.05,18}$ in order to test whether the variations in cost of equity (COE) of listed consumer goods firms in Nigeria caused by waste management disclosure (ERD) is significant. From the results obtained, the Tcal of 3.6493 is greater than the Ttab given at $T_{0.05,18}$. Hence, the null hypothesis which states that waste management disclosure has no significant effect on cost of equity of listed consumer goods firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The study findings also revealed that waste management disclosure (WMD) has a significant negative relationship (Coeff. = -0.0178{0.0009}) with cost of equity (COE) of listed consumer goods firms in Nigeria. This implies that a 1% increase in waste management disclosure is associated with a 0.0178% decrease in the cost of equity for listed consumer goods firms in Nigeria. This outcome emphasises the value of proactive waste management practices and transparent reporting in reducing the perceived investment risk. Companies that effectively manage and disclose their waste-related activities are likely to gain favour with investors, leading to a reduced cost of equity.

The implications of this finding are multifaceted, suggesting that firms could potentially benefit from lower capital costs by investing in sustainable waste management practices and communicating these efforts clearly to investors and stakeholders. Additionally, this underscores the growing recognition of environmental and social governance (ESG) factors in investment decision-making, where strong waste management practices can positively influence the cost of equity and strengthen a company's financial standing. This is in agreement with the findings of Yan et al., (2023) and Akpan and James (2024) who noted that corporate

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disclosures give investors confidence in the safety of their investment and thus reduce perception risk.

Greenhouse gas emission disclosure and cost of equity

The result obtained from table 4.4 revealed that the Tcal of 0.8498 is less than Ttab given at $T_{0.05,18}$. Hence, the null hypothesis which states that greenhouse gas emission disclosure has no significant relationship with cost of equity of listed consumer goods firms in Nigeria was accepted. The null hypothesis was further accepted given that at $T_{0.05,18}$, its probability value (p-value = 0.3966) is greater than 0.05. In addition, the study documented that greenhouse gas emission disclosure (GGED) has an insignificant negative relationship (Coeff. = -0.0075{0.3966}) with cost of equity (COE) of listed consumer goods firms in Nigeria. Despite the lack of statistical significance, the analysis reveals that a 1% increase in greenhouse gas emission disclosure is associated with a 0.0075% reduction in the cost of equity. While this relationship did not reach statistical significance, the nominal decrease in the cost of equity suggests a potential trend worthy of further exploration.

The implications of this finding prompt reflection on the complexities associated with greenhouse gas emissions and their disclosure within the context of the consumer goods industry in Nigeria. It raises questions about the level of investor sensitivity to greenhouse gas emissions and the impact of related disclosure on the perceived investment risk. Although the numerical impact appears modest, the non-significant relationship begs the question of whether there are other influential factors at play or if the sample size or dynamics within the industry may be influencing the outcome. Nonetheless, this result underscores the growing importance of environmental considerations in investment decision-making, even if the immediate impact on cost of equity is not statistically significant. This position aligns with the findings of Dada and Danjuma (2021) and Samuel et al., (2022).

CONCLUSION

It was thus concluded that environmental disclosure plays a crucial and significant role in shaping the cost of capital of listed consumer goods firms in Nigeria. This emphasises the need for companies to strengthen their environmental reporting framework to achieve cost efficiency which is one of the measures of management effectiveness. It also underscores the importance of continued efforts to integrate environmental considerations into corporate reporting and strategic decision-making to address evolving investor expectations and societal demands for sustainable and transparent business practices. The study recommended that regulatory bodies and industry associations should advocate for the integration of robust waste management disclosure strategies within corporate reporting frameworks to mitigate environmental impact and promote sustainable business practices.

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REFERENCES

Adenugba, A., Uwuigbe, U. & Ibegi, T. (2018). Corporate social responsibility and financial performance of listed manufacturing firms in Nigeria. *Corporate Governance and Sustainability Review, 2*(3), 32-40.

Ahmed, A., & Bala, A. (2019). The Impact of Environmental Disclosure on the Cost of Equity Capital: *A Study on Nigerian Consumer Goods Companies. Global Business Review, 20(4), 877-896.*

Ajayi, T., & Anjorin, I. (2020). Corporate Environmental Disclosure and Cost of Equity: Evidence from Nigerian Consumer Goods Firms. *African Journal of Economic and Management Studies, 11(2), 210-229.*

Akpan, D. C. & James, J. A. (2024). Empirical analysis of the nexus between corporate social responsibility disclosure and weighted average cost of capital of consumer goods firms in Nigeria. International Journal of Innovative Finance and Economics Research, 12(1), 53-65.

Akpan, D. C. & Nkanta, U. O. (2023). Green accounting practices and shareholders' value of listed consumer goods companies in Nigeria. European Journal of Accounting, Auditing and Finance Research, 11(6), 1-23.

Akhtaruddin, M., & Hossian, M. (2018). Investment opportunity set, ownership control and voluntary disclosures in Malaysia. *JOAAG,* 3(2), 25-39.

AlHares, A., & Al-Hares, O. M. (2020). The impact of corporate governance, mechanisms on risk disclosure [Special issue]. *Corporate Ownership & Control, 17*(4), 292-307.

Brad, J. D. & Maurer, C. P. (2018). Environmental risk identification for risk management professionals. *https://www.linkedin.com/pulse/environmental-risk-identification-management-brad-maurer-jd-*

Carnini, P. S, Ciaburri M., Magnanelli, B. S. & Nasta. L. (2022). Does ESG disclosure influence firm performance? *Sustainability*, *14*(13), 7595

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signalling theory: A review and assessment. *Journal of Management*, 37, 39–67.

Dada, O., & Danjuma, I. (2021). The Relationship between Environmental Disclosure and the Cost of Equity*: Evidence from Consumer Goods Firms in Nigeria. International Journal of Financial Research, 12(3), 134-150.*

Emeh, C., & Eze, S. (2022). Corporate Environmental Disclosure and the Cost of Equity: Evidence from Nigerian Consumer Goods Firms. *International Journal of Finance and Accounting, 7(1), 78-96.*

Eneh, O., & Eniola, A. (2019). The Relationship between Environmental Disclosure and the Cost of Equity: A Case Study of Nigerian Consumer Goods Firms. *International Journal of Accounting and Financial Management Research, 9(2), 45-62.*

Elsayed, M. O., & Hoque, Z. (2021). Perceived international environmental factors and corporate voluntary disclosure practices: An empirical study. *The British Accounting Review*, *42*(1), 17-35.

Eriandani R., Narsa I.M., Irwanto, A. (2019). Environmental risk disclosure and cost of equity doi: *10.17512/pjms.2019.19.2.10. Polish journal of management studies eriandani, 19(2), 123- 144.*

Gerged, A. M., Albitar, K., & Al-Haddad, L. (2023). Corporate environmental disclosure and earnings management—The moderating role of corporate governance structures. *International Journal of Finance & Economics*, *28*(3), 2789-2810.

Article DOI: 10.52589/AJAFR-DQGE5931
DOI URL: https://doi.org/10.52589/AJAFR-DQGE5931

Hann,R.,M.Ogneva&O.Ozbas (2019).Corporate diversification and the cost of capital. *The Journal of Finance*, 68(5), 61-99.

Hart, S. L., & Ahuja, G. (2016). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, *5*(1), 30-37.

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency and ownership structure. *Journal of Financial Economics*, *4,* 305–360.

Johnson, O., & Jumoke, O. (2022). Environmental Disclosure and Cost of Equity: *A Study of Consumer Goods Firms in Nigeria. Journal of Environmental Investment and Finance, 10(3), 210-226.*

Keown, A. J. Scott, D. F., Martin, J. D., & Petty, J. W. (2005). Dasar-dasar Manajemen Keuangan. Edisi Jakarta: Salemba Empat. 443-480.

Khandelwal V., Sharma P. & Chotia, V. (2023). ESG disclosure and firm performance: An asset-pricing approach. *Risks*, *11*(6).

Komolafe, B., Elumilade, D. & Babajide, A. (2021). Corporate governance and carbon emissions reduction in Nigeria: Stakeholder perspectives. *Journal of Sustainable Development, 14*(1), 48-64.

Kumar, N. A., Pranitha, T. S., & Kumar, N. K. (2017). A study on green accounting and its practices in India. In the IOSR *Journal of Business and Management. International Conference on "Paradigm Shift in Taxation, Accounting, Finance, and Insurance"* 1, 30-34).

Meek, G. K., Roberts, C. B. & Gray, S.J. (2015), "Factors influencing voluntary annual report disclosures by US, UK and continental European multinational corporations", *Journal of International Business Studies*, 26(3), 555-572.

Meiryani, H. S. M., Soepriyanto, G., Jessica, F. M., & Grabowska, S. (2023). The effect of voluntary disclosure on financial performance: Empirical study on the manufacturing industry in Indonesia. *PLoS ONE, 18*(6), 34-45

Mulyati, Y. (2017). The influence of voluntary disclosure, stock beta, and firms size on cost of equity capital. *Jurnal Keuangan Dan Perbankan*, *21*(3), 387-396.

Nangih, E., Emeka-Nwokeji, N. & Peters, G. (2022). Environmental disclosures and earnings quality of listed consumer goods firms in Nigeria. *Journal of Accounting Information and Innovation, 8*(4), 1-17.

Nwachukwu, C., Nnabuchi, M., Mbah, S. & Anyanwu, E. (2020). Corporate social responsibility and environmental sustainability in emerging economies: Evidence from Nigeria. *An International Journal, 31*(6), 1448-1468

Nindya Farah & Dwi Puspitasari, (2019). Cost of Equity: Disclosure, Size, and Political Connection: *Advances in Economics, Business and Management Research,* 2(2), 143-156

Nduka, C., & Ndubisi, A. (2018). Environmental Disclosure and the Cost of Equity: A Comparative Analysis of Nigerian Consumer Goods Firms. *Journal of Accounting and Taxation, 10(4), 98-116.*

Onoh, U., Kayadi, B. & Ndubuisi, O. (2023). Sustainability reporting and firm value of listed oil and gas companies in Nigeria. *Journal of Development Economics and Finance, 4*(1), 177-223.

Pietro Bonetti, Charles H. Cho & Giovanna Michelon (2023): Environmental Disclosure and the Cost of Capital: Evidence from the Fukushima Nuclear Disaster. *European Accounting Review,* DOI: 10.1080/09638180.2023.2203410

Raimo, N., de Nuccio, E., Giakoumelou, A., Petruzzella, F.& Vitolla, F. (2020). Non-financial information and cost of equity capital: an empirical analysis in the food and beverage industry", *British Food Journal*, *123*(1), 49-65.

Saleh, A., Aboud, A., & Eliwa, Y. (2022). IFRS 8 and cost of debt in Europe. *International Journal of Finance and Economics, 4(2), 15-24.*

Samuel, H. O., & Akpan, D. C. (2022). Segment reporting and cost of capital of banks with international authorization in Nigeria. *European Journal of Business and Innovation Research,* 10(8), 12-23.

Udomah, M. O., & Emenyi, D. E. O. (2023). Sustainability reporting and financial performance of selected cement firms in Nigeria. *GPH-International Journal of Business Management*, *6*(08), 40-65.

Yan, S., Na, W., Yu, X., & Zhang, X. (2023). Regulation intensity, environmental disclosure, and cost of capital: Evidence from listed firms in China. *Environmental Science and Pollution Research*, *30*(5), 12283-12306.

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