Corporate Governance, Green Investment, and Carbon Emission Disclosure Moderated by Environmental Reputation

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ABSTRACT

This study explores the voluntary disclosure of carbon emissions in sustainability reports. It examines the influence of good corporate governance and green investment on this disclosure, with environmental reputation serving as a moderating factor. The analysis was conducted on 131 energy companies listed on the Indonesia Stock Exchange from 2018 to 2022 using moderated regression analysis with the subgroup method. Interpretations of the research findings through the lens of stakeholder theory and the contingency approach reveal that while good corporate governance and its interaction with environmental reputation do not significantly affect carbon emission disclosure, green investment and its interaction with environmental reputation significantly impact the disclosure levels.

Keywords: Carbon Emission Disclosure; Good Corporate Governance; Green Investment; Environmental Reputation

Good Corporate Governance, Investasi Hijau, Pengungkapan Emisi Karbon: Pengaruh Moderasi dari Reputasi Lingkungan

ABSTRAK

Studi ini mengeksplorasi pengungkapan emisi karbon yang masih secara sukarela dalam laporan keberlanjutan. Penelitian ini menguji bagaimana good corporate governance dan investasi hijau berpengaruh pada pengungkapan ini, yang dimoderasi oleh reputasi lingkungan. Analisis yang dilakukan terhadap 131 perusahaan energi di Bursa Efek Indonesia pada tahun 2018-2022 menggunakan moderated regression analysis metode sub-group. Temuan penelitian yang diinterpretasikan melalui teori pemangku kepentingan dan pendekatan kontinjensi, mengungkapkan bahwa meskipun good corporate governance dan interaksinya dengan reputasi lingkungan tidak berpengaruh signifikan terhadap pengungkapan emisi karbon, namun investasi hijau dan interaksinya dengan reputasi lingkungan memiliki pengaruh yang signifikan.

Kata Kunci: *Pengungkapan Emisi Karbon; Good Corporate Governance; Investasi Hijau; Reputasi Lingkungan*

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INTRODUCTION

Carbon emission disclosure has emerged as a critical issue in developing countries, including Indonesia. The Institute for Essential Services Reform (2011) and the United Nations Environment Programme (2023) have indicated that while many individuals are unaware of the impact of their daily activities on emissions, there is a general understanding that human-generated emissions affect climate change. This underscores the necessity for individual and societal sensitivity. However, many companies overlook long-term impacts. Dewi *et al.* (2019) noted that in Indonesia, the extent of carbon emissions disclosure in sustainability reports is contingent upon a company's voluntary compliance, despite the presence of supportive legal frameworks such as the Law of the Republic of Indonesia Number 40 of 2007 concerning Limited Liability Companies, Article 66 Paragraph (2c); the Circular Letter of the Financial Services Authority (OJK) Number 30/SEOJK.04/2016; and the Global Reporting Initiative (GRI) Standards (Global Reporting Initiative, 2016), which recommend comprehensive disclosure for environmentally sensitive sectors (Kuswanto, 2019). Nonetheless, firms are often hesitant to disclose carbon emissions due to the high environmental costs that might impact profitability, as demonstrated by Indika Energy Tbk in 2019 (Khairunisa & Pohan, 2022).

The theoretical framework for this research is anchored in stakeholder theory, which highlights the critical role of stakeholder support in company operations (Pramuditya & Budiasih, 2020), and utilizes a contingency approach to emphasize a company's capacity to adapt to social and environmental pressures through leadership decisions and corporate policies (Surya *et al.*, 2023). Given the significance of carbon emissions across various business sectors, this study draws on previous research such as Dewi *et al.* (2019), who examined manufacturing companies from 2012 to 2016; Astiti & Wirama (2020), who investigated all entities listed on the IDX in 2018; and Amaliyah & Solikhah (2019), who studied non-financial companies that published sustainability reports from 2013 to 2017. This research focuses on the energy sector of the IDX from 2018 to 2022, aiming to understand factors that enhance carbon emission disclosure and to test the consistency of the theory.

According to the Greenhouse Gas Emission Inventory Report for the Energy Sector by the Ministry of Energy and Mineral Resources (2020), carbon emissions from the energy sector in 2019 amounted to 279,863 Gg CO2e, with an average annual increase of 7.13%. Annual reports from 2018 to 2022 indicate fluctuations in emissions among companies within this sector. The Low Carbon Development Initiative (LCDI) of the Indonesian Ministry of National Development Planning reported that this sector contributed 50.6% of Indonesia's total carbon emissions in 2022. Variables influencing carbon emission disclosure are consistent with those identified in studies by Puspita & Tanjaya (2022) and Sari & Susanto (2021), which focus on good corporate governance, as well as Dani & Harto (2022) and Syabilla *et al.* (2021), which explore the impacts of green investments.

The Asian Corporate Governance Association (ACGA) reported in 2021 that Indonesia ranked the lowest (12th place) in a survey assessing corporate governance practices in the Asia-Pacific region in 2020, attributing this position to poor financial and sustainability reporting practices (ACGA, 2021). Indonesia's lag

in the ranking underscores a significant gap in sustainability reporting, particularly in carbon emissions disclosure, attributed to suboptimal corporate management practices. Well-managed companies tend to prioritize environmental investments as preventive measures against the negative impacts of their activities. Nevertheless, the prevailing belief that environmental costs can diminish corporate profits persists (Dani & Harto, 2022). In this study, environmental reputation is considered as a moderating variable due to the inconsistent results of previous studies on good corporate governance and green investment. Environmental reputation is defined as the collective perception of stakeholders regarding a company's sustainability performance, especially concerning environmental impacts (Astuti & Ayuningtyas, 2019).

Stakeholder theory posits that good corporate governance is intrinsically linked to carbon emission disclosure as part of corporate social responsibility and efforts to enhance performance. According to (Rooschella & Sulfitri, 2023), companies manage carbon emissions both as a form of sustainability practice and to maintain relationships with stakeholders. Pramuditya & Budiasih (2020) found that the presence of an audit committee positively influences carbon emission disclosure. Similarly, research by Budiharta & Kacaribu (2020) and Elsayih et al. (2018) demonstrated that managerial ownership is positively correlated with carbon emission disclosure; managers who are shareholders tend to be more proactive in disclosing carbon-related information. Döring et al. (2023) also reported a positive impact of institutional ownership on carbon emission disclosure, enhancing both the quality and scope of the information disclosed. Furthermore, independent commissioners positively affect carbon emission disclosure by encouraging management to increase transparency, as highlighted in studies by Tila & Augustine (2019) and Trufvisa & Ardiyanto (2019). The engagement of stakeholders builds investor confidence in corporate management and sustainability reporting, particularly in sectors sensitive to environmental impacts.

H_1: Good corporate governance positively affects carbon emission disclosure.

Stakeholder theory underscores the importance of cooperation between companies and stakeholders through environmental disclosure, which serves as a strategic information tool (Grediani et al., 2020). Studies by Afni et al. (2018) and Syabilla et al. (2021) have shown that green investments significantly influence sustainability disclosure, especially in terms of carbon emissions. Lyeonov et al. (2019) identified a positive relationship between green investments and carbon emissions, noting that such investments facilitate the adoption of renewable energy and contribute to the reduction of carbon emissions. Green investments are typically implemented via green finance mechanisms, which, according to Zhang et al. (2022), positively correlate with carbon emission efficiency. Further highlight that environmental quality, as reflected in carbon emission disclosure, benefits significantly from green investments, which contribute to reducing emissions (Hordofa et al., 2023). Moreover, funding environmental initiatives through such investments is viewed as a long-term commitment that enhances a company's positive image and value, thus aligning the interests of the company with those of its stakeholders.

H_2: Green investment has a positive effect on carbon emission disclosure.

Stakeholder theory posits that companies endeavor to fulfill stakeholder needs by contributing economically important resources essential for their survival. A contingency approach is utilized to assess the interconnection between good corporate governance and carbon emission disclosure. According to Astuti & Ayuningtyas (2019), the optimal implementation of corporate governance plays a pivotal role in maintaining reputation and fostering strong relationships with stakeholders. Ganescu & Dindire (2014) suggest that environmental reputation impacts corporate social obligations and influences emission disclosure as a measure of environmental sustainability (Sandy & Ardiana, 2023). Effective corporate governance enhances a company's reputation through diligent social information disclosure (Bravo et al., 2015). Furthermore, (Lu *et al.*, 2015) argue that the quality of corporate social responsibility reporting, when managed with good governance, can significantly boost environmental reputation. Thus, environmental reputation reinforces the relationship between good corporate governance and carbon emission disclosure by emphasizing the importance of optimal corporate management and stakeholder support for management decisions in emission disclosure.

H_3: Environmental reputation strengthens the effect of good corporate governance on carbon emission disclosure.

Stakeholder theory highlights the imperative for companies to address the interests of all stakeholders by investing in environmental initiatives, evaluating environmental performance, and enhancing transparency (Putri & Arsjah, 2023). It underscores the importance of employing a contingency approach to evaluate corporate social performance, particularly in addressing emergent social issues. Astuti & Ayuningtyas (2019) emphasize that a company's reputation plays a critical role in addressing future environmental challenges. Green investments, particularly in carbon emissions, are of significant value as they demonstrate a company's commitment to environmental stewardship (Azhari & Hasibuan, 2023). According to (Dang, 2020), environmental financing subsidies are instrumental in increasing green investments, thereby promoting better corporate environmental governance. Furthermore, Martin & Moser (2016) and Petkeviciene (2015) indicate that prospective investors are likely to respond favorably to the voluntary disclosure of green investments, which in turn strengthens the company's reputation. Environmentally friendly financing practices positively influence carbon emission disclosure and fulfill stakeholder expectations.

H_4: Environmental reputation strengthens the effect of green investment on carbon emission disclosure.

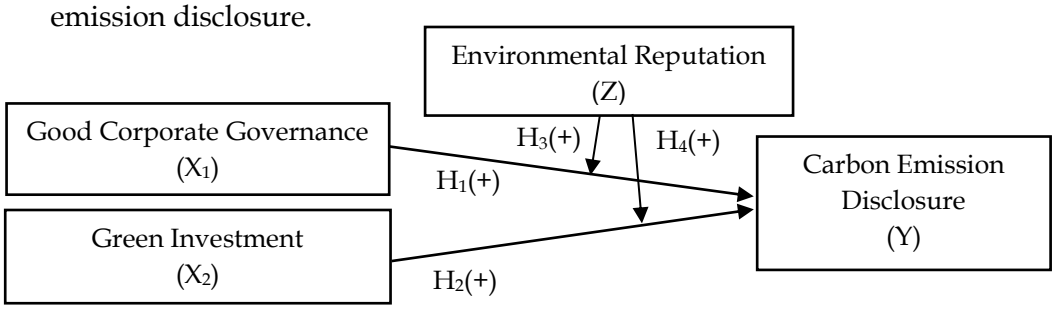

Figure 1. Conceptual Framework

Source: Research Data, 2024

RESEARCH METHODS

The methodology of this study included a comprehensive literature review of annual and sustainability reports to formulate hypotheses based on the identified trends and gaps. A total of 131 observations were gathered through purposive sampling and subsequently analyzed using moderated regression analysis employing the sub-group method. This approach was selected to assess the impact of independent variables on dependent variables with the inclusion of moderating variables, which were measured as dummy variables. The population of this study consisted of energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022, totaling 338 companies.

The measurement of carbon emission disclosure was conducted using content analysis based on the GRI 305: Emissions 2016 standards (Global Reporting Initiative, 2016). Companies were assigned a score of 1 if they disclosed items in accordance with the GRI Standards, and a score of 0 if they did not disclose the items. The total score was then divided by the maximum number of items that could be disclosed and multiplied by 100% to calculate the disclosure percentage. This scoring method has been previously utilized in the study by Wahyuningrum et al. (2022), as follows:

$$CARBONDISCi = \frac{\sum di}{M} \; x \; 100\% \quad \text{..... (1)}$$

Good corporate governance and green investment are the independent variables in this study. The measurement of good corporate governance utilizes internal elements such as institusional ownership, managerial ownership, independent commissioners, and audit committees, consistent with previous research by Wasista & Putra (2019). The measurement of institusional ownership in this study follows the formula below:

$$INS = \frac{The\ number\ of\ shares\ held\ by\ institutions}{Total\ outstanding\ shares} \quad \text{..... (2)}$$

The measurement of managerial ownership in this study follows the formula below:

$$MNJ = \frac{The\ number\ of\ shares\ held\ by\ management}{Total\ outstanding\ shares} \quad \text{..... (3)}$$

The measurement of independent commissioners in this study follows the formula below:

$$KI = \frac{Number\ of\ independent\ board\ commissioners}{Total\ number\ of\ board\ commissioners} \quad \text{..... (4)}$$

The measurement of audit committees in this study follows the formula below:

$$KA = \frac{Number\ of\ audit\ committees}{Total\ number\ of\ board\ commissioners} \quad \text{..... (5)}$$

The measurement of the green investment variable is based on the PROPER ranking issued by the Ministry of Environment, adopting the method used by Syabilla et al. (2021), which employs a scale of 1 to 5 corresponding to gold, green, blue, red, or black color categories.

The moderating variable, environmental reputation, is quantified using a dummy variable based on a company's inclusion in the SRI-Kehati index, following the approach of Sandy & Ardiana (2023). Companies not featured in the SRI-Kehati index are assigned a value of 0, while those included are assigned a value of 1.

The study population comprises energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022, with a total of 131 observations determined through purposive sampling. Data collection methods include the analysis of annual reports, sustainability reports, as well as information on PROPER ratings and SRI-Kehati index inclusion. The data analysis technique utilized is moderated regression analysis (MRA) with the sub-group method, where independent variables are tested individually in three regression equation models that divide the sample into two sub-groups. The specific regression equation model for examining the interaction between good corporate governance and environmental reputation on carbon emission disclosure is structured to identify the nuanced effects of these variables on disclosure practices, as follows:

Regression Equation Model 1:

$Y = \alpha 1 + \alpha 2GCG + \varepsilon 1$ ……...(6)

Regression Equation Model 2:

$Y = \beta 1 + \beta 2GCG + \varepsilon 2$ ……...……(7)

Regression Equation Model 3:

$Y = \lambda 1 + \lambda 2GCG + \varepsilon 3$ ……(8)

The regression equation model for the interaction of green investment with environmental reputation on carbon emission disclosure is as follows:

Regression Equation Model 1:

$Y = \alpha 1 + \alpha 2GI + \varepsilon 1$ ……...…(9)

Regression Equation Model 2:

$Y = \beta 1 + \beta 2GI + \varepsilon 2$ ……...…(10)

Regression Equation Model 3:

$Y = \lambda 1 + \lambda 2GI + \varepsilon 3$ ……..(11)

Explanation:

Regression Equation Model 1: Intended for the total sample of energy companies included and not included in the SRI-Kehati index

Regression Equation Model 2: Intended for the total sample of energy companies not included in the SRI-Kehati index

Regression Equation Model 3: Intended for the total sample of energy companies included in the SRI-Kehati index

The regression procedure was conducted using SPSS to obtain the Residual Sum of Squares results. The calculated F Value was computed using the following formula:

$$\text{F value} = \frac{(RSSr - RSSur)/k}{(RSSur)/(n1+n2-2k)} \text{……...……...……(12)}$$

Explanation:

RSSr = *Restricted Residual Sum of Squares* (residual in the first regression test)

RSSur = *Unrestricted Residual Sum of Squares* (combination of RSS1 and RSS2)

n1 = Number of samples in the first category

n2 = Number of samples in the second category

k = Number of sub-groups

If the calculated F value is less than the F table value, it indicates the absence of a moderation effect. Conversely, if the calculated F value exceeds the F table value, a significant moderation effect is present. To ascertain whether the moderation effect strengthens or weakens the relationship, one should examine

the Beta values in the Coefficients Table for Regression Models 2 and 3. A higher Beta value suggests that the moderating variable strengthens the influence of the independent variable on the dependent variable, particularly if this effect is statistically significant.

RESULTS AND DISCUSSION

The data for this study were collected by accessing several official websites, rather than visiting each energy company directly. A total of 338 energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022 were identified as the research population. A purposive sampling method was employed based on specific sample qualifications, resulting in 131 observations for the period.

Factor analysis was conducted to assess aspects of good corporate governance. The measurement of institutional ownership was excluded from the factor analysis because its anti-image correlation value was less than 0.50, indicating that the data did not meet the criteria necessary for inclusion based on the amount of institutional ownership. For a measurement to adequately explain the factors formed, an extraction value greater than 0.50 is required. However, the results of the factor analysis revealed that the extraction value for the measurement of managerial ownership was only 0.429, falling below the desired threshold of 0.50. Consequently, the factors that could be better explained involved measurements of the number of independent commissioners and audit committees, collectively referred to as oversight factors. This underscores the significant role of independent commissioners, managerial ownership, and audit committees in reinforcing good corporate governance.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
Good Corporate Governance	131	-2.424	3.153	-0.000	0.999
Green Investment	131	0	5	1.92	1.936
Environmental Reputation	131	0	1	0.05	0.210
Carbon Emission Disclosure	131	0.00	1.00	0.502	0.267

Source: Research Data, 2024

Descriptive statistics, including minimum, maximum, mean, and standard deviation values, are presented in Table 1. Prior to conducting the Moderated Regression Analysis (MRA), classical assumption tests were performed, encompassing tests for normality, multicollinearity, and heteroscedasticity. Normality was assessed using the One-Sample Kolmogorov-Smirnov method, yielding an Asymp Sig. (2-tailed) value of 0.058, which, being greater than 0.05, supports the assumption that the residuals in the regression model are normally distributed. Multicollinearity testing indicated VIF values of 1.134 for good corporate governance, 1.171 for green investment, and 1.042 for environmental reputation. As all VIF values were below 10, there was no indication of multicollinearity within the model. Heteroscedasticity was evaluated using the Glejser method, showing significance values of 0.061 for good corporate

governance, 0.812 for green investment, and 0.208 for environmental reputation, all exceeding 0.05, thus indicating no presence of heteroscedasticity.

Model feasibility testing confirmed the suitability of the regression model for use, evidenced by an F value of 0.000 (less than 0.05) and an Adjusted R^2 value of 0.242, indicating that 24.2% of the variation in carbon emission disclosure is explained by the independent variables. Hypothesis testing via a t-test, as detailed in Table 2, assessed the impact of good corporate governance on carbon emission disclosure. With a significance level of 0.398 (greater than 0.05), the first hypothesis was rejected. The influence of green investment on carbon emission disclosure, showing a significance level of 0.000 (less than 0.05), supported the acceptance of the second hypothesis. Further, MRA sub-group method hypothesis testing revealed that the interaction between environmental reputation and good corporate governance yielded an F value of 8.062, surpassing the F table value of 3.07, indicating that environmental reputation can moderate the relationship. However, the negative Beta values in regression models 2 and 3 suggest that environmental reputation diminishes the influence of good corporate governance on carbon emission disclosure, leading to the rejection of the third hypothesis. Lastly, the interaction between environmental reputation and green investment recorded an F value of 5.87, which is higher than the F table value of 3.07, and exhibited the largest Beta value in the third regression model when companies were listed on the SRI-Kehati index. Hence, the fourth hypothesis was accepted.

Table 2. Results of the Effect of Good Corporate Governance and Green Investment on Carbon Emission Disclosure

Independent Variable	T Value	Coefficient	*Sig.*	Decision
Good Corporate Governance	-0.847	-0.020	0.398	H_1 rejected
Green investment	6.516	0.069	0.000	H_2 accepted

Source: Research Data, 2024

Statistical tests reveal that good corporate governance does not significantly influence carbon emission disclosure. This finding aligns with previous studies by Amaliyah & Solikhah (2019) and Puspita & Tanjaya (2022), which also observed no correlation between supervisory factors and carbon emission disclosure. The underlying reasons include managers prioritizing financial performance to optimize returns on investment, the need for higher-quality independent board members, audit committees focusing on more pressing issues, and a lack of competence and independence among audit committee members. This study diverges from prior research such as Budiharta & Kacaribu (2020); Elsayih et al. (2018); Pramuditya & Budiasih (2020); Tila & Augustine (2019); Trufvisa & Ardiyanto (2019) due to variations in research location, number of observations, measurement methodologies for carbon emission disclosure, and analytical approaches. Stakeholder theory underscores the importance of considering the social impact of business activities, suggesting that reliance on supervisory factors alone may not suffice for effective carbon emission disclosure.

Furthermore, green investment, as measured by the PROPER rating from the Ministry of Environment and Forestry, exhibits a positive and significant impact on carbon emission disclosure. The PROPER rating, reflecting a company's commitment to social and environmental responsibilities, supports findings from

Afni et al. (2018); Lyeonov et al. (2019); and Syabilla et al. (2021), which indicate that green investments can mitigate carbon emissions without compromising production or consumption. Such transparency in non-financial reporting, including carbon emission disclosure, also influences investor decisions. Syabilla et al. (2021) found that green investment affects carbon emission disclosure as firms allocate funds to reduce environmental impacts, prompting extensive reporting on the carbon emissions they generate. Stakeholder theory elucidates that the interaction between companies and stakeholders promotes social and environmental disclosures, such as carbon emissions, providing valuable information to investors and company owners. Companies engaged in pro-environment investments are more inclined to comprehensively disclose carbon emissions, with stakeholder oversight enhancing the benefits for all parties involved.

Table 3. Results of Sub-group Method Moderation test for Environmental Reputation on the Influence of Good Corporate Governance on Carbon Emission Disclosure

Regression Results	Residual Sum of Squares	Standardized Coefficients (Beta)
Regression Model 1 (Sum of Squares Residual Total)	9.235	-0.074
Regression Model 2 (Sum of Squares Residual 0) Energy companies not included in the SRI-Kehati index	8.053	-0.089
Regression Model 3 (Sum of Squares Residual 1) Energy companies included in the SRI-Kehati index	0.150	-0.022

Source: Research Data, 2024

Based on the information above, the calculation of the F value was performed using the Chow test formula, resulting in the following:

$$\text{F value} = \frac{(RSSr - RSSur)/k}{(RSSur)/(n1+n2-2k)} \quad \ldots\ldots(13)$$

$$\text{F value} = \frac{(9.235 - 8.203)/2}{(8.203)/(125+6-2.2)}$$

$$\text{F value} = \frac{0.516}{0.064}$$

$$\text{F value} = 8.062$$

Based on the calculation using the Chow test formula, the F value obtained is 8.062, and the F table (df1 = 2, df2 = 127) is 3.07. The calculated F value (8.062) > the F table (3.07), indicating that environmental reputation moderates the influence of good corporate governance on carbon emission disclosure. However, to determine which category strengthens or weakens the moderation effect on the independent variable's influence on the dependent variable, one can refer to the Beta values from regression models 2 and 3 in Table 3. Regression model 2 has a Beta value of -0.089, while regression model 3 has a Beta value of -0.022. The negative values in the results of both regression models indicate that environmental reputation weakens the influence of good corporate governance on carbon emission disclosure, leading to the rejection of hypothesis three.

The results of the MRA sub-group method analysis show that environmental reputation weakens the influence of good corporate governance on carbon emission disclosure. Entities with high environmental reputations and optimal governance tend to prioritize less carbon emission disclosure as it is seen as an environmental cost burden. Kurnia et al. (2020) also state that companies are reluctant to disclose carbon emissions due to the high costs of implementing carbon emission processes. This finding contradicts some previous studies by Sandy & Ardiana (2023) which found a positive relationship between environmental reputation and carbon emission disclosure, and Mahmood et al. (2018) which highlighted the importance of corporate governance for sustainability. This study introduces a new perspective on considering environmental reputation in the context of corporate management and carbon emission disclosure. It challenges stakeholder theory and contingency approaches. Even though corporate governance is effective and good environmental reputation is considered advantageous for the company, in the context of energy companies, decisions regarding carbon emission disclosure can be influenced by the company's attention to environmental reputation.

Table 4. Results of the Sub-Group Moderation Test of Environmental Reputation on the Influence of Green Investment on Carbon Emission Disclosure

Regression Results	Residual Sum of Squares	Standardized Coefficients (Beta)
Regression Model 1 (Sum of Squares Residual Total)	6.986	0.498
Regression Model 2 (Sum of Squares Residual 0) Energy companies not included in the SRI-Kehati index	6.303	0.473
Regression Model 3 (Sum of Squares Residual 1) Energy companies included in the SRI-Kehati index	0.096	0.600

Source: Research Data, 2024

Based on the information above, the calculation of the F value was performed using the Chow test formula, resulting in the following:

$$\text{F value} = \frac{(RSSr - RSSur)/k}{(RSSur)/(n1+n2-2k)} \quad \text{.....(14)}$$

$$\text{F value} = \frac{(6.986 - 6.399)/2}{(6.399)/(125+6-2.2)}$$

$$\text{F value} = \frac{0.2935}{0.050}$$

$$\text{F value} = 5.87$$

Based on the calculation using the Chow test formula, the calculated F value is 5.87, and the F table (df1 = 2, df2 = 127) is 3.07. The calculated F value (5.87) > the F table (3.07), thus concluding that environmental reputation moderates the influence of green investment on carbon emission disclosure. However, to determine which category strengthens or weakens the moderation effect on the independent variable's influence on the dependent variable, one can observe the Beta values from regression models 2 and 3 in Table 4. Regression model 2 has a

Beta value of 0.473, while regression model 3 has a Beta value of 0.600. The positive values in the results of both regression models, with the largest Beta value being 0.600, indicate that environmental reputation, specifically in energy companies included in the SRI-Kehati index, strengthens the influence of green investment on carbon emission disclosure. Based on these findings, hypothesis four is accepted.

The results of the Moderated Regression Analysis (MRA) employing the sub-group method demonstrate that environmental reputation enhances the influence of green investment on carbon emission disclosure. Companies recognize that the reputation built through environmentally friendly investments impacts both carbon emission disclosure and stakeholder trust. These findings align with prior research by Pérez (2015) and Petkeviciene (2015), which indicated that corporate social responsibility bolsters reputation and enhances sustainability disclosure. Additionally, the study by Martin & Moser (2016) emphasized the positive response of potential investors to the voluntary disclosure of green investments, suggesting that energy companies engaging in environmentally friendly initiatives positively affect both carbon emission disclosure and market response. Both stakeholder theory and contingency approaches suggest that management, particularly in the energy sector, considers environmental reputation when making green investment decisions, which in turn influences the extent of carbon emission disclosure as an expression of commitment to environmental stewardship and stakeholder satisfaction.

CONCLUSION

This study elucidates four principal findings concerning carbon emission disclosure. Firstly, good corporate governance does not significantly impact carbon emission disclosure, as such policies are more directly influenced by company management. Secondly, green investment exerts a positive influence on carbon emission disclosure, indicating stakeholder satisfaction and benefits derived from implementing environmentally friendly investments. Thirdly, environmental reputation, as reflected in the SRI-Kehati index, diminishes the influence of good corporate governance on carbon emission disclosure. This reduction is attributed to perceptions within companies that the costs of disclosure outweigh the benefits, while the existing levels of good corporate governance and environmental reputation are deemed sufficient to satisfy stakeholder expectations. Fourthly, environmental reputation enhances the impact of green investment on carbon emission disclosure, signifying those environmentally friendly investments, supported by a robust environmental reputation, positively influence disclosure practices.

This study recommends further investigation in different sectors, such as transportation, to expand the understanding of the dynamics between good corporate governance, green investment, environmental reputation, and carbon emission disclosure. Given the limited Adjusted R^2 value, future research should incorporate additional variables, such as carbon performance, to achieve a more comprehensive understanding of these relationships.

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