

Determinants Of Environmental Disclosure With Intergrated Corporate Governance As A Moderating Variable

Yuha Nadhirah Qintharah^{1*}, Yvonne Augustine²

¹²Department of Accounting, Trisakti University

Key words:		Abstract
Training, tax officer, knowledge management, tax administration, efficiency		<i>The quest to improve tax efficiency administration and revenue generation is prominent in all nations. The purpose of this study is to understand the link between training, knowledge management (KM) and tax administration efficiency. Qualitative data were collected from 20 tax officers through face-to-face interviews at Federal Inland Revenue Service (FIRS), Nigeria. The qualitative data were supported with documentary study of FIRS annual training schedule. Semi-structured and open-ended interview questions were employed as a guide for the face-to-face interview and recorded with a smart voice recorder. Thematically, the data were analyzed with NVivo 10 qualitative software. Data analysis entails identification and reporting of themes in line with the research objectives and participants' responses. Two main themes namely formal and informal training were identified. Furthermore, sub themes identified include induction and inspector of taxes in connection to formal training while technical sessions and "train the trainer" were linked to informal training. The study found formal and informal training as administration catalysts that can improve KM and tax efficiency. This study recommends training and retraining of tax offers annually in order to improve KM and tax administration efficiency which would increase tax revenue for nation development.</i>
Submission	: 10/12/2024	
received	: 10/12/2024	
Revision	: 05/02/2025	
Accepted	: 07/03/2025	
		*Corresponding author: yuha221022014010@std.trisakti.ac.id

1. INTRODUCTION

(Putra et al., 2021a). Indonesia as a developing country is not free from various environmental problems that are increasingly felt. The industrialization era on the one hand emphasizes the use of technology as efficiently as possible so that sometimes it ignores environmental aspects (Son & Utami, 2018). Some environmental problems that have occurred include the waste case of PT Tirta Frensido Jaya (Mayora Group) which polluted clean water sources in Sukomoro sub-district (Sumatra News, 2018), the plastic waste case by PT Nestle (Greenpeace.org, 2019), the case of pollution of the Surabaya riverbank by PT Garudafood, PT Indofood Sukses Makmur and PT Wings Surya (Idnfinancials, 2020). The many cases of environmental damage and pollution occur because the level of disclosure of environmental responsibility by companies operating in Indonesia is still low.

The still low level of environmental disclosure made by companies in Indonesia means that the regulations made by the government are still ineffective. Companies are required to be more open in disclosing information in terms of social, economic and environmental matters, especially disclosure in terms of the environment. Efforts by the regulatory authorities to preserve and develop harmonious, harmonious and balanced environmental capabilities have been carried out by establishing Law of the Republic of Indonesia Number 40 of 2007 concerning limited liability companies in chapter V article 74 concerning social and environmental responsibility. The regulation states that companies that carry out their business activities in the field of and related to natural resources are required to carry out social and environmental responsibility. Furthermore, the government issued Government Regulation number 47 of 2012 specifically to regulate the disclosure of social and environmental responsibility. Article 6 of the regulation explains that the implementation of social and environmental responsibility is included in the company's annual report and is accounted for to the GMS (general meeting of shareholders). Environmental disclosure is part of the disclosure of corporate social responsibility (CSR). Environmental disclosure is the voluntary disclosure of information, both qualitative and quantitative, made by an organization to inform about its activities, where the quantitative disclosure is in the form of financial and non-financial information (IFADA et al., 2021).

As a consequence, corporate sensitivity and awareness of environmental issues have increased significantly. This affects the reputation and presence of companies in the market (Acar et al., 2021), in addition to increasing sensitivity and awareness, giving positive signals in the market, companies also direct their attention in communicating their environmental actions with stakeholders. Thus, more and more companies start with mandatory disclosures on environmental issues. Previous studies have documented that environmental disclosure is related to many factors, including stakeholder concerns (Ahmadi & Bouri, 2017), strategy and vision, environmental performance (Baalouch et al, 2019; Giannarakis, 2018), size, profitability (Kilic et al, 2019), board independence and the existence of a sustainability committee (Kilic and Kuzey, 2019) as well as macro dynamics such as political system, workforce and culture (Baldini, et al, 2018).

Environmental disclosure requires real costs, for example the costs of creating and developing systems, the costs of measuring, identifying and reporting information, because the profitability

aspect is important to bear the costs (Qintharah, 2024; Rini & Adhariani, 2021). The large environmental costs should make companies integrate them into their business strategies, so that environmental and social activities require significant real costs because they involve systems to measure, identify and report information (Brammer & Pavelin, 2006). In relation to environmental aspects, the amount of measurement such as waste tends to increase company spending significantly (Deswanto & Siregar, 2018). As Ullmaann (1985) asked in (Rini & Adhariani, 2021) which states that financial performance allows companies to undertake expensive programs related to social demands of society. Under some conditions, lower-level management is more likely to have lower compliance and incur environmental costs reactively. Environmental costs were also found to have a significant positive effect in previous studies. (Qintharah & Utami, 2023).

In addition, one of the main factors considered responsible for climate change as an impact of environmental damage is carbon emissions, accounting for 75% of global emissions. Thus, governments have begun to try to influence organizational responses to climate change through policies aimed at internalizing the “externality” of carbon emissions. This push has prompted research investigating the actual management practices used by companies to mitigate carbon emissions problems and the factors that trigger these actions ((Jubb, 2016)

Industry sensitivity is also one of the factors that has a positive influence on environmental disclosure in research conducted by (Arifanata & Wahyudin, 2016)) and the same results were also shown by research conducted by Hadiningtiyas & Mahmud (2017). Research conducted by (Papa et al., 2022) investigated the consolidated non-financial (NF) (CNFS)/sustainability reports of 16 Italian companies from four environmentally sensitive industries (ESI): chemicals, energy (oil and gas), transportation and utilities. We focused on ESI because there are a number of previous studies that have confirmed the relevance of stakeholder influence in these industries on their environmental performance (Branco and Rodrigues, 2008; Fernandez Feijoo et al., 2014; Garcia et al., 2017; Radhouane et al., 2020). This study also explains that industries with higher levels of sensitivity tend to have better environmental performance figures where, this indicator shows that good environmental performance explains that the company has better and more complex environmental disclosures. In addition, the level of industry sensitivity has an effect on environmental disclosure which has been proven by several previous studies.

Research conducted by Rini & Adhariani (2021) found that environmental costs had no effect on environmental disclosure, while research (Qintharah & Utami, 2023) shows that there is a significant positive influence between environmental costs and environmental disclosure. Furthermore, carbon emission disclosure has a significant positive influence on research. (Gerged, 2021) but the opposite result was found by (Alessi et al., 2021). Research conducted by (Qureshi et al., 2020) using industry sensitivity as a moderating variable, which means that many previous studies have shown that industry sensitivity has a positive influence on environmental disclosure. (Papa et al., 2022) However, research (Zeng et al., 2020) show different results.

This study uses CG as a moderating variable because several previous studies have shown that CG always has a positive influence on environmental disclosure. (Ashfaq & Rui, 2019; Raimo et al., 2022;

Trireksani & Djajadikerta, 2016). In addition, the research conducted (Arifianata & Wahyudin, 2016) also uses CG as a moderating variable with industry sensitivity as an independent variable and environmental disclosure as a dependent variable. Also research conducted by (Gerged, 2021) which uses CG as a moderator of environmental disclosure. Based on the phenomenon and also the inconsistent results of several previous studies, this study aims to test the influence of environmental costs, carbon emission disclosure and industry sensitivity to environmental disclosure. However, in this study, the corporate governance variable will be added as a moderating variable which is different from previous studies.

2. LITERATURE REVIEW

2.1 Stakeholder Theory

Stakeholder theory states that all stakeholders have the right to obtain information about company activities that can influence their decision making. Stakeholders can choose not to use the information and cannot even play a direct role in a company (Deegan, 2004). This is because stakeholders are considered to be able to influence but can also be influenced by the company. Thus, the existence of a company is greatly influenced by the support given by stakeholders to the company.

The company considers that the role of stakeholders is very influential for the company so that it can influence and be a consideration in disclosing information in their financial statements. Stakeholders are the main consideration for the company because they hold a strong position in the company. Stakeholders can basically influence the use of various economic resources used in the company's activities. Therefore, stakeholder theory is generally related to the methods used by the company to control the influence of these stakeholders.

2.2 Legitimacy Theory

Legitimacy Theory explains that the social contract of an organization with society, the survival of the company will be threatened if society feels that a company has violated its social contract (Deegan 2002). The legitimacy of a company will be obtained through various actions from the company, including providing company information to stakeholders (Deegan 2002). The disclosure policy of the Company is something that is considered important because it will affect the perception of stakeholders regarding the organization or company. The sustainability of the company depends on the extent to which society considers its organization, which then creates a bond between the company and the community.

There are various previous studies that are relevant to research related to the topics of environmental disclosure, environmental costs, carbon emission disclosure, industry sensitivity and integrated corporate governance which are presented in the form of the following table:

Table 1. Previous Research

No	Title & Author	Research Variables	Research methods	Results & Implications (Limitations) of the Research
1	<i>Does Equity Ownership Matter for Corporate Social Responsibility? A Literature Review of Theories and Recent Empirical Findings</i> (Faller, 2016)	CSR, Family Business, Investor Type, Ownerwhip Structure, Sustainability	Literature Review	Research result: <i>Institutional Investor</i> influences the quality of CSR, Managerial ownership influences the implementation of CSR, Government ownership influences CSR. Research Implications: Requires a contingency approach due to conflicts due to differences in theoretical concepts, to further deepen testing in certain conditions where there is an application of theory.
2	Corporate impact of carbon disclosures: a nonlinear empirical approach (Rodríguez et al., 2020)	<i>Carbon Disclosure Project, Financial Markets</i>	Nonlinear Statistical Methodology	Research result: This study introduces a new method in corporate reporting research as an application of nonlinear techniques that can be more effective in measuring corporate transparency issues. Research Implications: The cutoff concept is supposed to indicate the importance of companies providing more information on certain events. The cutoff is to find whether the impact of reporting differs with respect to the specific reporting behavior adopted by companies.
3	Effects of board characteristics, audit committee and risk management on corporate	<i>Board Characteristic, Audit Committee Characteristics, and Corporate Performance</i>	OLS	Research result: Independence of the Board of Commissioners, Characteristics of the Audit Committee and Risk Management have a

	performance: evidence from Palestinian listed companies (Musallam, 2020)			significant positive effect on company performance. Research Implications: Only examining several variables that influence economic performance, only looking at the time of the PCGG Insurance so that further research is expected to compare the periods before and after the PCGG Insurance.
4	The Influence of Media, Industry Sensitivity and Integrated Corporate Governance Structure on Environmental Disclosure Quality (Study on High Profile Companies on the Indonesia Stock Exchange 2011-2013 Period) (Winarsih & Solikhah, 2015)	Media, Industry Sensitivity, Integrated corporate governance structure and Quality <i>Environmental Disclosure</i>	Multiple Linear Regression	Research result: Media, Industry Sensitivity, Independent Commissioners, Gender Diversity, Audit Committee, Institutional Ownership do not affect Environmental Disclosure, while the board of commissioners does affect Environmental Disclosure.

3. RESEARCH METHOD

This study aims to test the research hypothesis that has been explained in the previous chapter. To test the hypothesis is done with the aim of examining the variance of variables based on the formulation of the research problem, in this study will be used correlational type. Correlational is a study that aims to study the relationship between two or more variables that will show the extent of variation between variables of the relationship of the variables studied, by showing the extent of variation between one variable and another. Index stating how the relationship of one variable with another variable. Called the correlation coefficient index. The correlation coefficient can be used in testing hypotheses about how the relationship between variables or can also be used in stating how big the relationship between the variables being tested.

The types of companies used as the research population are companies from the mining sector, basic and chemical industry sector, consumer goods industry sector, and various industry

sector that have been listed on the Indonesia Stock Exchange with the period used being 2018-2022. Financial reports, annual reports, and sustainability reports of the companies in the 5 sectors will be used to collect the data needed for this study.

3.1 Operational Definition of Variables and Their Measurement

3.1.1 Dependent Variable

The dependent variable of the research is a variable that is bound and also influenced by other variables.(Ariningtika, 2013). The dependent variable used in this study is environmental disclosure.

In this study, the dependent variable used is the environmental disclosure variable. This corporate environmental disclosure is found in the company's annual report and sustainability report. Disclosure of environmental information is a way for companies to show environmental responsibility from their production processes to their contribution to the surrounding environment to the community.

To measure the company's environmental disclosure, an index is used that measures the company's hard disclosure and soft disclosure. Environmental disclosure regarding hard disclosure and soft disclosure is formulated by(Clarkson et al., 2008)which is based on the GRI (Global Reporting Initiative) index. Then, in this study, several modifications of the indicators on the index will be carried out as explained in the previous chapter and will be presented again in this discussion. Comparing the items in the index used with the items disclosed by the company in its annual report and sustainability report is the measurement that will be used in this study. The number of environmental disclosure items that will be disclosed according to the hard disclosure and soft disclosure indexes consists of:

- A. Hard disclosure
 - 1. Government structure and management system (maximum score 6)
 - 2. The credibility of the company (maximum score 10)
 - 3. Environmental performance indicators (EPI) (maximum score 60)
 - 4. Cost to the environment (maximum score 3)
- B. Soft disclosure
 - 1. Claims to the company's vision and strategy (maximum score 6)
 - 2. Profile of the environment (maximum score 4)
 - 3. Environmental initiatives (maximum score 6)

Table 2. Hard and Soft Environmental Disclosure Scores

<i>HARD DISCLOSURE ITEMS</i>
(A1) Government Structure and Management System (Maximum Score is 7)
1. Existence of a department that handles pollution control and/or a position for environmental management (0-1)
2. Existence of a public committee that handles the environment (0-1)
3. Conditions regarding environmental practices that are understandable to suppliers and customers (0-1)
4. Stakeholders in the company are involved in making the company's environmental policies (0-1)

5. Implementation of ISO 14001 in the company (0-1)
6. There is special compensation related to environmental performance (0-1)
7. Disclosure of matters of non-compliance with Environmental Laws and Regulations
(A2) Credibility (Maximum score is 10)
1. Adoption of GRI sustainability reporting guidelines (0-1)
2. Independent verification of environmental information disclosure in environmental performance reports/via the web (0-1)
3. Periodic independent verification/audit of environmental performance (0-1)
4. Environmental program certification by independent agency (0-1)
5. Product certification with responsibility for the impact on the environment (0-1)
6. External environmental performance awards and sustainability index (0-1)
7. Stakeholders involved in the environmental disclosure process (0-1)
8. Participation in environmental sustainability initiatives undertaken by the Department of Energy (0-1)
9. Participation of specific industries to develop environmental practices (0-1)
10. Participation from other environmental associations/organizations to develop environmental practices (0-1)
(A3) Environmental Performance Indicator (EPI) (maximum score is 48)
1. EPI on water use and efficiency (0-1)
2. EPI on other air emissions (0-1)
3. EPI in soil, water and air (0-1)
4. EPI on release of other substances (0-1)
5. EPI on waste management production (0-1)
6. EPI on soil, resource use, biodiversity and conservation (0-1)
7. EPI on environmental impact, if the company produces goods and services (0-1)
8. EPI on performance compliance (0-1)
(A4) Environmental Spending (maximum score is 3)
1. Summary of the amount of money spent by the company to undertake environmental conservation initiatives (0-1)
2. The amount of money the company spends on technology development, R&D, innovation, for environmental performance efficiency (0-1)
3. Number of fines given related to environmental issues (0-1)
<i>SOFT DISCLOSURE ITEMS</i>
(A6) Vision and Strategy Statement (maximum score is 6)
1. CEO's statement on environmental performance in a letter sent to stakeholders in the company (0-1)
2. Statement regarding the company's environmental policies, principles and values (0-1)
3. Statement on formal management system related to environmental performance and risks (0-1)
4. Statement regarding periodic review and evaluation of environmental performance (0-1)
5. Statement of achievable goals for future environmental performance (0-1)
6. Statements about specific environmental innovations and new technologies (0-1)
(A7) Environmental Profile (maximum score is 4)

1. Statement regarding company compliance with specific environmental standards (0-1)
2. A view of the environmental impacts caused by an industry (0-1)
3. A view of how a company's business operations in producing goods and services have an impact on the environment (0-1)
4. A view of the company's environmental performance in relation to competing industries (0-1)
(A8) Environmental Initiatives (maximum score is 7)
1. There is employee training regarding environmental operations and management (0-1)
2. There is a response regarding environmental accidents (0-1)
3. Achievement of a certain predicate in the PROPER assessment (0-1)
4. Internal environmental audit (0-1)
5. Internal certification of environmental programs (0-1)
6. Community involvement or donations related to the environment (0-1)
7. There is a call center for the public to make complaints about environmental impacts caused by companies using an official complaint mechanism.

EPI data scores on a scale of 0-6 are given with the following conditions:

1. Performance data is displayed
2. Performance data is displayed and related to competing industries.
3. Performance data is displayed and relates to the previous period.
4. Performance data is displayed and related to targets.
5. Performance data is displayed in absolute and normalized form.
6. Performance data is displayed at separate levels (divided into forest segments, business units, geographies)

This study uses research on environmental disclosure, and will divide this research to analyze hard disclosure and soft disclosure separately.

3.1.2 Independent Variables

According to Pambudi (2015), independent variables (predictor/antecedent/free variables) are variables that influence or cause changes or the emergence of dependent (bound) variables.

a Environmental Cost

According to Hanson and Mowen (2016), environmental costs are costs incurred by a company due to a poor environmental management system resulting from the company's production process. In practice, environmental costs are still a problematic topic for some companies, because companies consider that the environmental costs incurred are wasteful and can reduce profits. In fact, environmental cost savings can be done when the company has good environmental management.(Putra et al., 2021b). Environmental protection costs include those for avoidance, disposal, planning, control, protective measures and repair of damages that occur to companies, governments or individuals.((VDI 3800)., 2000). Environmental costs are measured following research conducted by(Jasch, 2006)with the following formula:

$$EC = \frac{\text{Environmental Protection Expenditures}}{\text{Material Flow Costs}}$$

Source: (Irfansyah et al., 2018; Jasch, 2006)

b Corporate Carbon Disclosure

Corporate carbon disclosure (CDP) in several previous studies used CDP data as a proxy to show the truth of the company's carbon disclosure and as a proxy for measuring the quality of carbon disclosure. (Liu & Yang, 2016). Several previous studies that examined carbon disclosure used content analysis of annual reports or CSR reports. Similar to the measurements used by (Liu & Yang, 2016) This study uses qualitative content analysis which is considered closer to assessing the quality of carbon disclosure. The index in this study is an index that expands the methodology used by (Haque & Deegan, 2010) Here are the indices of CDP:

Table 3. Corporate Carbon Disclosure

<i>SPECIFIC ISSUES</i>	
1.	Does the CEO articulate the organization's views on climate change issues through publicly available documents such as annual reports, sustainability reports.
2.	Is there any quantitative carbon emissions performance information included in the CEO report?
3.	Whether the carbon emissions issue falls under the oversight of the Board or the executive management team.
4.	Does the organization have general knowledge about carbon emission reduction but no stated targets or outcomes (qualitative policy).
5.	Does the organization implement or plan to implement a specific carbon management scheme or strategy?
6.	Does the organization have future quantitative targets for carbon emission reductions?
7.	Does the organization disclose the methodology or methodologies used to measure or calculate carbon emissions?
8.	Does the organization measure carbon in accordance with any carbon footprint measurement standards, for example, GHG protocol, ISO 14064-1, BS 8901, government environmental reporting guidance, climate change agreements, EU ETS, and country reporting standards.
9.	Does the organization disclose its consolidated approach to carbon emissions and/or any changes during the reporting period.
10.	Does the organization define and review operational boundaries?
11.	Does the organization establish a base year or baseline against which to measure and/or compare its carbon emissions?
12.	Whether the organization adopts absolute quantitative disclosure of its direct carbon emissions.
13.	Does the organization adopt a quantitative comparison of direct carbon emissions (scope 1), either with the current or previous year, or with a baseline year.
14.	Has the organization adopted absolute quantitative disclosure of its indirect carbon emissions from energy purchases (scope 2).

15. Has the organization adopted quantitative measures of its indirect carbon emissions (scope 2), either with current year/previous year, or with a baseline year.
16. Does the organization use intensity ratios to disclose scope 1 and 2 carbon emissions information?
17. Does the organization make quantitative disclosures of other indirect carbon emissions (scope 3).
18. Does the organization make quantitative comparisons of other indirect carbon emissions (scope 3), either with the previous year/years, or with a base year.
19. Does the organization use intensity ratios to disclose the scope of its 3 carbon emissions?
20. Does the organization break down carbon emissions, for example by the organization's activities, products or services, fuel combustion, facility operations, electricity, heat, etc.
21. Does the organization explain its carbon performance and/or significant changes in its carbon performance?
22. Does the organization have disclosure of the financial implications of carbon emissions?
23. Is the carbon emissions data disclosed by the organization independently verified by a third party?
24. Does a third party provide a reasonable, unqualified opinion on the organization's carbon disclosure?
25. Does the organization make disclosures regarding carbon allowance recognition policies (net position method or contributed asset method).
26. Does the organization make disclosure of the basis for its assessment for measuring its carbon items in the financial statements?
27. Does the organisation have a policy for compliance with any guidance for reporting its carbon emissions, e.g. GRI, DEFRA guidance, Climate Change Reporting Framework (CCRF).
28. Does the organization disclose or plan to disclose its carbon information to CDP?
29. Does the organization recognize its regulatory and compliance risks?
30. Does the organization recognize the risks of carbon pricing?
31. Does the organization pursue strategies to minimize exposure to potential compliance regulatory risks?
32. Does the organization recognize other carbon-related risks?
33. Is the organization seeking to achieve energy efficiency and or renewable energy to reduce carbon emissions.
34. Does the organization disclose its investments in energy efficiency and/or renewable energy?
35. Is the organization working to develop low carbon technologies?
36. Does the organization disclose the amount of its investment in low carbon technologies?
37. Is the organization seeking to improve its business processes to reduce carbon emissions?
38. Does the organization train its employees and/or value chain organizations and/or customers on carbon emissions issues or encourage its suppliers to reduce carbon emissions.
39. Does the organization work with other organizations to identify carbon reduction issues?
40. Does the organization monitor any organizations involved in the carbon emissions issue?
41. Does the organization disclose the amount of funding the professional organization receives?
42. Does the organization recognize other carbon-related opportunities?

Source:(Haque & Deegan, 2010)

c Industry Sensitivity

Industry sensitivity is defined as the influence of company activities on the environment. In this study, the industry sensitivity variable is measured by a dummy variable. This measurement is

used in the study(Solikhah & Winarsih, 2016) namely as follows:

1 = Perusahaan merupakan sektor Pertambangan dan Energi

0 = Perusahaan selain sektor pertambangan dan energi

3.1.3 Moderating Variables

a *Integrated corporate governance*

*Integrated corporate governance*In this study, an index called the Integrated Corporate Governance Index (CGI) was used.(Silva & Leal, 2005). CGI presents a broad measure of the quality of integrated corporate governance that is company-specific and reflects different governance attributes. The Integrated Corporate Governance Index in this study was developed from SE OJK Number 32/SEOJK.04/2015 concerning Guidelines for Public Company Governance. In this guideline there are eight principles. This index is measured using the number 0-1 where 0 is given to companies that do not explain anything related to, 1 for companies that do explain. The highest value is 25 for companies that meet the criteria as a whole. Here is a list of CG indices:

Table 4. Integrated corporate governance index

Principle 1. Increasing the Value of Holding General Meetings of Shareholders (GMS)
1. The Company has technical procedures for collecting votes both openly and secretly that prioritize the independence and interests of shareholders.
2. All members of the Board of Directors and members of the Board of Commissioners of the public company are present at the Annual GMS.
3. Summary of minutes of GMS are available on the Public Company's website for at least 1 year.
Principle 2. Improving the Quality of Public Company Communication with Shareholders or Investors
4. Public Companies have a communication policy with shareholders or investors.
5. Public Companies disclose Public Company communication policies with shareholders or investors on their websites.
Functions and Roles of the Board of Commissioners
Principle 3. Strengthening the Membership and Composition of the Board of Commissioners
6. Determination of the number of members of the Board of Commissioners takes into account the conditions of the Public Company.
7. Determining the composition of the members of the Board of Commissioners takes into account the diversity of expertise, knowledge and experience required.
Principle 4. Improving the Quality of Implementation of the Duties and Responsibilities of the Board of Commissioners

8. The Board of Commissioners has its own assessment policy (Self Assessment) to assess the performance of the Board of Commissioners.
9. The self-assessment policy for assessing the performance of the Board of Commissioners is disclosed through the Annual Report of the Public Company.
10. The Board of Commissioners has a policy regarding the resignation of members of the Board of Commissioners if they are involved in financial crimes.
11. The Board of Commissioners or Committee that carries out the Nomination and Remuneration function prepares succession policies in the nomination process for members of the board of directors,
Functions and Roles of the Board of Directors
Principle 5. Strengthening the Membership and Composition of the Board of Directors
12. Determining the number of board of directors takes into account the conditions of the Public Company and the effectiveness of decision making.
13. Determining the composition of the Board of Directors members takes into account the diversity of skills, knowledge and experience required.
14. Board members who oversee the accounting or finance sector have expertise and/or knowledge in the accounting sector.
Principle 6. Improving the Quality of Implementation of the Board of Directors' Duties and Responsibilities
15. The board of directors has its own assessment policy to assess the performance of the board of directors.
16. The self-assessment policy for assessing the performance of the board of directors is disclosed through the annual report of the Public Company.
17. The Board of Directors has a policy regarding the resignation of board members if they are involved in financial crimes.
Stakeholder Participation
Principle 7. Improving Corporate Governance Aspects through Stakeholder Participation.
18. Public Companies have policies to prevent insider trading.
19. Public Companies have anti-corruption and anti-fraud policies.
20. Public Companies have policies regarding the selection and improvement of supplier or vendor capabilities.
21. Public Companies have policies regarding the fulfillment of creditors' rights.
22. Public Companies have a whistleblowing system policy.
23. Public Companies have a policy of providing long-term incentives to directors and employees.
Disclosure of Information

Principle 8. Improving the Implementation of Information Disclosure

24. Public companies utilize information technology more widely in addition to websites as a medium for information disclosure.

25. The Annual Report of a Public Company discloses the ultimate beneficial owners in the ownership of shares of the Public Company of at least 5% (five percent), in addition to disclosure of the ultimate beneficial owners in the ownership of shares of the Public Company through major and controlling shareholders.

Source: SEOJK Number 32/SEOJK.04/2015

From description of each measurement variable explained above, then, the following is a summary of the measurement scale of the variables used in this study:

Table 5. Variable Measurement Scale

Variables	Indicator	Formula	Scale
Environmental Disclosure	<i>Hard Disclosure and Soft Disclosure</i>	$ED = \frac{\text{Jumlah yang diungkapkan}}{\text{Total Item Pengungkapan}}$	Ratio
Environmental Cost		$EC = \frac{\text{Biaya CSR}}{\text{Laba Bersih}}$	Ratio
Carbon Emission Disclosure	<i>Ratio</i>	$CED = \frac{\text{Jumlah yang diungkapkan}}{\text{Total Item Pengungkapan}}$	Ratio
Industry Sensitivity	<i>Dummy Variable</i>	1 = Companies in the energy and mining sector 0 = Companies other than the energy and mining sector	Ratio
Integrated Integrated corporate governance	<i>Index</i>	$ICG = \frac{\text{Jumlah yang diungkapkan}}{\text{Total Item Pengungkapan}}$	Ratio

Source: Processed data, 2023

4. RESULTS

The data results obtained in this study come from 5 sectors, namely the energy sector, the basic materials sector and the consumer silica sector that have been listed on the Indonesia Stock Exchange with the period used being 2019-2022. Financial reports, annual reports, and sustainability

reports. The total sample in this study was 482 data obtained over 4 years. The data processing tool used in this study was SPSS software.

4.1 Descriptive Statistics

The following are the results of descriptive statistical tests that aim to provide an overall picture of the data, both from the minimum, maximum, average and standard deviation values. The picture is shown in the following table:

Table 6. Descriptive Statistical Tests

Variable	Obs	Mean	Std. dev	Min	Max
ENVDISC	482	.1918144	.2270807	.0227273	.8636364
CCD	482	.4184944	.2056547	.047619	.6904762
SI	482	.4273859	.4952131	0	1
ENVCOST	482	2.482652	14.169124	0	151,493
ICG	482	.8714012	.1387301	.3209821	1
SIZE	482	22.55118	4.87144	10.22579	32.01063
ROA	482	.0228648	4.1581824	-1.538286	.6452837
DAR	482	.5462702	.4235035	.0003995	4.098801

Based on the table above, the ED data for 4 years obtained a minimum value of 0.227, which is 482 samples and a maximum value of 0.863, which is the ADRO company 2020. While the average value obtained was 0.191814 with a standard deviation of 0.227. The EC data for 4 years obtained a minimum value of 0.000, which is 24 samples from a total of 482 data and a maximum value of 151,493, which is the INTP company 2019 from a total of 482 data. While the average value obtained was 2.482652 with a standard deviation of 14.169124. CCD data for 4 years obtained a minimum value of 0.047, which is 4 samples from a total of 482 data and a maximum value of 0.690, which is 3 samples from a total of 482 data. While the average value obtained was 0.41849 with a standard deviation of 0.20565. SI data for 4 years obtained a minimum value of 0, which is 312 samples from a total value of 482 data and a maximum value of 1, which is 180 from 482 data. While the average value obtained was 0.4273 with a standard deviation of 0.495. ICG data for 4 years obtained a minimum value of 0.320, which is the MEDC 2018 company and a maximum value of 1, which is 45 samples from a total of 482 samples. While the average value obtained was 0.87140 with a standard deviation of 0.138730. ROA data for 4 years obtained a minimum value of -1.5381, namely the ELSA company 2020 and a maximum value of 45.558, namely the BUMI company 2019. While the average value obtained was 0.85743 with a standard deviation of 14.690538. SIZE data for 4 years obtained a minimum value of 6.770, namely the MBSS company 2019 and a maximum value of 16.020, namely the SMGR company 2020. While the average value obtained was 1.1476 with a standard deviation of 2.681171. DAR data for 4 years obtained a minimum value of 8.6, namely the MDKI company 2020 and a maximum value of 198.885, namely the SULI company 2020. While the average value obtained was 5.135 with a

standard deviation of 28.063.

4.2 Classical Assumption Test

In this study, there are several classical assumption tests conducted. The tests conducted are normality test, heteroscedasticity test, multicollinearity test and autocorrelation test.

Table 7. Normality Test

		Unstandardized Residual
N		482
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.09377378
Most Extreme Differences	Absolute	.084
	Positive	.084
	Negative	-.079
Kolmogorov-Smirnov Z		1.234
Asymp. Sig. (2-tailed)		.095

a. Test distribution is Normal.

b. Calculated from data.

From the results of the table above, it is shown that the results of the Kolmogorov-Smirnov test are 0.095, which means that the value is greater than 0.05. The Asymp. Sig. (2-tailed) value > 0.05, meaning that the data is normally distributed. It can be concluded that the data used in this study are normal and can be processed.

Table 8. Multicollinearity Test

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	E.C.	.953	1,049
	CED	.992	1,008
	SI	.960	1,042

a. Dependent Variable: LN_ED

From the results of the table above, the EC tolerance value is 0.953 and the VIF is 1.049 while, the CED tolerance value is 0.992 and the VIF is 1.008 and the last SI tolerance value is 0.96 with a VIF of 1.042. So, it can be concluded because all tolerance values are greater than 0.10 and the VIF value

is less than 10, then the data used in this study does not have symptoms of multicollinearity.

Table 9. Goodness of Fit

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.183 ^a	.033	.020	1.14948	1.213

a. Predictors: (Constant), SI, LN_CED, LN_EC

Based on the table above, it shows that the Durbin Watson value is 1.213. Based on the determination of the decision in seeing whether or not there is autocorrelation in the data studied is through the theory that states that if the DW value is between -2 and +2, it means there is no autocorrelation.

Table 10. Heteroscedasticity Test

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.980	.105		9,354	.000
	E.C.	.021	.015	.098	1.405	.162
	CED	-.049	.056	-.060	-.870	.386
	SI	.092	.097	.066	.949	.344

a. Dependent Variable: Abs_RES

From heteroscedasticity test table results, EC test value is 0.162, CED test is 0.386 and SI test is 0.344. All of these values are greater than 0.05 which means there are no symptoms of heteroscedasticity in the data used.

Table 11. Moderated Regression Analysis

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.030	.187		-.160	.873
E.C.	.003	.001	.183	2,539	.012
CED	-.136	.140	-.237	-.970	.333
SI	.279	.161	.615	1,734	.034
EC_ICG	.014	.006	.170	2.188	.030
CED_ICG	.043	.153	.069	.284	.777
SI_ICG	-.120	.093	-.445	-1.291	.198
ROA	.002	.001	.118	1,528	.128
SIZE	.020	.006	.236	3.324	.001
DAR	.001	.001	.101	1.355	.177

a. Dependent Variable: ED

Source: Processed data, 2024

$$0.030 = 0.003EC - 0.136CED + 0.279SI + 0.014EC*ICG + 0.043CED*ICG - 0.120SI*ICG + e$$

From the results of the regression equation above, the following is a presentation of the results of each variable test:

1. Environmental Cost

From the results above, it is shown that the coefficient value of EC to ED is positive at 0.003.

These results indicate that if there is an increase of one unit in EC, it will cause an increase in ED of 3 percent.

2. Carbon Emission Disclosure

The table shows that the result of the CED coefficient value is negative at 0.136. Where this explains that if there is an additional one unit in CED, it will cause a decrease in ED by 0.136 or 13.6% percent.

3. Sensitivity Industry

The result of 0.279 is the SI coefficient value whose positive relationship is shown from the t-test table. This value shows that if there is an increase of one unit in SI, it will increase the ED value by 0.279 or 27.9%.

4. ICG moderates EC

From the table results, it shows that the ICG coefficient value moderates EC against ED by 0.014. This value shows a positive relationship, which means that if there is an increase in one unit of strengthening in ICG against EC, there will be an increase of 0.014 or 1.4% in

ED.

5. ICG moderates CED

The table results show that the ICG coefficient value moderates CED against ED by 0.043. This value shows a positive relationship, which means that if there is an increase in one unit of strengthening in ICG against CED, there will be an increase of 0.043 or 4.3% in ED.

6. ICG moderates SI

From the table results, it shows that the ICG coefficient value moderates SI against ED by - 0.120. This value shows a negative relationship, which means that if there is a decrease of one unit in ICG against SI, there will be a decrease of 0.120 or 12% in ED.

4.3 Hypothesis Testing

In This test contains several tests carried out, namely, the coefficient of determination, F test and t test. The following are the results of the tests carried out in this study:

Table 12. Coefficient of Determination

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.610 ^a	.372	.348	.0929400

The Adjusted R Square value = 0.348 from the table above, shows that 34.8% of the ED variance can be explained by the variables EC, CED, SI, EC_ICG, CED_ICD, and SI_ICG, while the rest is influenced or can be explained by other variables that are not included in this research model, which is 66.2%.

Table 13. F Test

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,050	8	.131	15.201	.000 ^a
	Residual	1,771	205	.009		
	Total	2,821	213			

a. Predictors: (Constant), DAR, SIZE, CED_ICG, CostEnv, ROA, SI_ICG, CED, SI, CostEnv_ICG

b. Dependent Variable: ED

Source: Processed data, 2024

Based on the chart above, the F test total is 3.596 (significance $f=0.000$). So, sig $f<0.05$. Shows 19ersa in general 19 Together the independent variables (X) have an effect on the dependent variable (Y).

Table 14. t-test

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.030	.187		-.160	.873
E.C.	.003	.001	.183	2,539	.012
CED	-.136	.140	-.237	-.970	.333
SI	.279	.161	.615	1,734	.034
EC_ICG	.014	.006	.170	2.188	.030
CED_ICG	.043	.153	.069	.284	.777
SI_ICG	-.120	.093	-.445	-1.291	.198
ROA	.002	.001	.118	1,528	.128
SIZE	.020	.006	.236	3.324	.001
DAR	.001	.001	.101	1.355	.177

a. Dependent Variable: ED

Source: Processed data, 2024

From the test results above, the following is a presentation of the results of each variable test:

1) E.C.

The significant level produced for the probability is $0.012 < 0.05$. Confirming that H1 is accepted. This means that the EC variable has a significant influence on ED.

2) CED

The significant level produced for the probability of $0.333 > 0.05$. Confirms that H2 is rejected. This means that the CED variable does not have a significant effect on ED.

3) S1

The significant level produced for the probability is $0.034 > 0.05$. Confirming that H3 is accepted. This means that the SI variable has a significant influence on ED.

4) EC_CG

The significant level produced for the probability is $0.03 < 0.05$. Confirming that H4 is accepted. This means that the CG variable strengthens the relationship between EC and ED.

5) CED_CG

The significant level produced for the probability of $0.777 > 0.05$. Confirms that H5 is rejected. This means that the CG variable is not able to strengthen the relationship between CED and ED.

6) SI_CG

The significant level produced for the probability of $0.198 > 0.05$. Confirms that H6 is rejected. This means that the CG variable is not able to strengthen the relationship between SI and ED.

5 DISCUSSION

5.1 Environmental Costs have a positive effect on Environmental Disclosure

ResultsThe test shows that there is a positive influence between environmental costs and environmental disclosure. This result is supported by stakeholder theory which states that every party has the right to obtain information including information about how much the company spends on the environment. Stakeholder theory states that all stakeholders have the right to obtain information about company activities that can influence their decision making. Stakeholders can choose not to use the information and cannot even play a direct role in a company (Deegan, 2004).

Environmental disclosure presents the extent of the company's concern for the environment. Bethelot in Al Tuwajiri et al. (2013:127) defines "environmental disclosure as a collection of information related to environmental management activities by the company in the past, present and future". Environmental disclosure is the disclosure of information related to the environment in the company's annual report. Generally found in a separate section of the sustainability report or listed in the annual report(Wijaya & Nuryatno, 2019).

5.2 Carbon Emission Disclosure has no impact on Environmental Disclosure

Disclosure of carbon emissions itself is still rarely done by companies in Indonesia. This is due to the absence of mandatory regulations regarding carbon emission disclosure. Thus, the quality of carbon emission disclosure in Indonesia is not very good and has not been widely disclosed. This is in line with the results of this study which show that carbon emission disclosure does not affect environmental disclosure. Where this could be because not many companies have disclosed emissions. In addition, there are no clear rules, this could also be because the company does not have a basic form or the same form in disclosing carbon emissions. Thus, carbon emission disclosure does not affect environmental disclosure.

5.3 Industry Sensitivity has a positive effect on Environmental Disclosure

The test results show that there is a positive influence between industry sensitivity and environmental disclosure. In accordance with the legitimacy theory, the Company must be responsible for its environment. Legitimacy Theory explains that the social contract of an organization with society, the survival of the company will be threatened if society feels that a company has violated its social contract (Deegan 2002). The legitimacy of a company will be obtained through various actions from the company, including providing company information to stakeholders (Deegan 2002). The disclosure policy of the Company is something that is considered important because it will affect the perception of stakeholders regarding the organization or company. The sustainability of the company depends on the extent to which society considers its organization, which then creates a bond between

the company and the community.

Industry Sensitivity is related to the influence of company activities on the company's social and environmental issues. Based on legitimacy theory, companies that have a large impact or influence on society and the environment will provide more disclosures regarding environmental information, with the aim of gaining recognition from stakeholders. Mining and energy companies are companies that fall into the high profile category which receive full attention from the public because their company operations have a very large potential for environmental damage. Meanwhile, chemical, pharmaceutical, cosmetic, food and beverage companies fall into the low profile category, namely companies with a low level of sensitivity and have little influence on environmental damage because their company operations are not directly related to the environment. When associated with legitimacy theory, mining and energy companies tend to disclose their environmental performance better than other companies because they legitimize their operational activities and reduce pressure from social and environmental activists (Sari 2012).

5.4 Governance Strengthens the Relationship between Environmental Costs and Environmental Disclosure

From the previous t-test results, it is known that governance is able to strengthen the relationship between environmental costs and environmental disclosure. This is supported by stakeholder theory which states that owners have the right to obtain information related to the Company's activities. Thus, with good governance, the Company's transparency will be better. Therefore, the more the Company spends on environmental activities, the better the quality of environmental disclosure. This will be strengthened by the existence of good corporate governance activities. The better the governance of a Company, the more it will encourage improvements in all parts of the Company.

LayoutCorporate governance also affects corporate social responsibility. Kartika et al. (2020) said that CSR disclosure will be wider along with the number of independent commissioners because of their large role in management (Sugeng, 2017). Researchers Samudra et al. (2020) and Sembiring (2020), said that the size of the board of directors has a positive effect on CSR because as the number of directors increases, supervision becomes more effective. Gender in the board of directors affects the running of a company. According to Suwandy and Rahayuningsih (2020) and Kadek and Sulestiana (2021), the level of participation of female directors will affect corporate governance and decision-making in the company, especially regarding social responsibility.

5.5 Governance is unable to moderate the Relationship between Carbon Emission Disclosure and Environmental Disclosure

Previous test results showed that governance was unable to moderate the relationship between carbon emission disclosure and environmental disclosure. Thus, it cannot be proven that governance is able to encourage an increase in carbon emission disclosure which will then increase environmental disclosure. Disclosure of carbon emissions itself is still rarely carried out by companies in Indonesia. This is

due to the absence of mandatory regulations regarding carbon emission disclosure. Thus, the quality of carbon emission disclosure in Indonesia is not very good and has not been widely disclosed. These results are consistent with the results of research conducted by (Karjono, 2022) where the results show that governance has no effect on environmental disclosure. Thus, these results strengthen the research results that show that governance is unable to strengthen the relationship between carbon emission disclosure and environmental disclosure.

5.6 Governance Strengthens the Relationship between Industry Sensitivity and Environmental Disclosure

Industry sensitivity is measured based on companies that fall into the 'High Profile' and 'Low Profile' categories. Thus, this determines the type of company that falls into the category that is directly involved with the environment and there are also companies that are not directly involved with the environment. Companies that are directly involved in the company fall into the high profile category while companies that are not directly involved are in the low profile category. Therefore, companies that fall into the high profile category should have good governance in order to have a better level of transparency, accountability and responsibility. This is supported by research results that show that governance can strengthen the relationship between industry sensitivity and environmental disclosure.

6 CONCLUSION

From the results of previous tests, it is known that the results of this study indicate that environmental costs have a positive effect on environmental disclosure, carbon emission disclosure does not affect environmental disclosure, industry sensitivity has a positive effect on environmental disclosure, governance strengthens the relationship between environmental costs and environmental disclosure, governance is unable to moderate the relationship between carbon emission disclosure and environmental disclosure and governance does not moderate the relationship between industry sensitivity and environmental disclosure.

The implications of this study can be input for the government to increase the number or quality of environmental disclosures of companies in Indonesia. Thus, with the increasing number of companies conducting environmental disclosures, there will be more activities or events that focus on environmental protection. In addition, this will also encourage company stakeholders to increase awareness in protecting the environment which then improves the quality of company activities and programs related to the environment.

The limitation in this study is that this study is only limited to using several sectors so that the sectors used in this study are not too varied so that the industry sensitivity variables used in this study have not been seen too much in the diversity of its sectors. This study only uses 3 sectors, namely, the sector energy, basic materials sector and consumer silica sector. In addition, this study only used 4 years of observation.

Thus, the recommendation for further research is to use other variables outside of this

research variable to find out more about what factors can influence environmental disclosure. In addition, further researchers can add or move the observation year that is not used in this study and also use a different Company sector compared to the sector used in this study.

REFERENCES

- Acar, E., Tunca Çaliyurt, K., & Zengin-Karaibrahimoglu, Y. (2021). Does ownership type affect environmental disclosure? *International Journal of Climate Change Strategies and Management*, 13(2), 120–141. <https://doi.org/10.1108/IJCCSM-02-2020-0016>
- Ahmadi, A., & Bouri, A. (2017). The Relationship between financial attributes, environmental performance and environmental disclosure; empirical investigation on French Firms listed on CAC 40. *Management of Environmental Quality*, 28(4). <https://doi.org/10.1108/MEQ-07-2015-0132>
- Alessi, L., Ossola, E., & Panzica, R. (2021). What greenium matters in the stock market? The role of greenhouse gas emissions and environmental disclosures. *Journal of Financial Stability*, 54, 100869.
- Arifianata, AF, & Wahyudin, A. (2016). Company Characteristics Towards Environmental Disclosure With Good Corporate Governance As A Moderation. *AAJ: Accounting Analysis Journal*, 5(2).
- Ariningtika, P. (2013). The influence of good corporate governance practices on corporate environmental disclosure.
- Ashfaq, K., & Rui, Z. (2019). Revisiting the relationship between corporate governance and corporate social and environmental disclosure practices in Pakistan. *Social Responsibility Journal*, 15(1), 90–119.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relationship between environmental performance and environmental disclosure: An empirical analysis. 33, 303–327. <https://doi.org/10.1016/j.aos.2007.05.003>
- Faller, C. M. (2016). Does Equity Ownership Matter for Corporate Social Responsibility? A Literature Review of Theories and Recent Empirical Findings. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-016-3122-x>
- Gerged, A. M. (2021). Factors influencing corporate environmental disclosure in emerging markets: The role of corporate governance structures. *Business Strategy and the Environment*, 30(1), 609–629. <https://doi.org/10.1002/bse.2642>
- Haque, S., & Deegan, C. (2010). An Exploration of Corporate Climate Change-related Governance Practices and Related Disclosures : Evidence from Australia Abstract. Queensland University of Technology.
- IFADA, LM, INDRIASTUTI, M., IBRANI, EY, & SETIAWANTA, Y. (2021). Environmental Performance and Environmental Disclosure: The Role of Financial Performance. *Journal of Asian Finance, Economics and Business*, 8(4), 349–362. <https://doi.org/10.13106/jafeb.2021.vol8.no4.0349>
- Irfansyah, I., Ermaya, HNL, & Septyan, K. (2018). the Influence of Environmental Performance, Environmental Disclosure and Environmental Cost on Economic Performance. *Economics & Accounting Journal*, 1(2), 87. <https://doi.org/10.32493/eaj.v1i2.y2018.p87-94>
- Jasch, C. (2006). How to perform an environmental management cost assessment in one day. 14, 1194–



1213. <https://doi.org/10.1016/j.jclepro.2005.08.005>
- Jubb, J. K. C. (2016). CARBON EMISSION RISKS AND MANAGEMENT ACCOUNTING: AUSTRALIAN EVIDENCE.
- Karjono, A. (2022). The Influence of Environmental Performance, Company Characteristics and Good Corporate Governance on Environmental Disclosure in Mining and Agricultural Companies. *FOCUS*, 3(2), 183–195. <https://doi.org/10.37010/fcs.v3i2.1309>
- Liu, Y.S., & Yang, J.H. (2016). Corporate Carbon Emissions and Financial Performance : Does Carbon Disclosure Mediate the Relationship in the UK?
- Musallam, S.R.M. (2020). Effects of board characteristics, audit committee and risk management on corporate performance: evidence from Palestinian listed companies. 13(4), 691–706. <https://doi.org/10.1108/IMEFM-12-2017-0347>
- Papa, M., Carrassi, M., Muserra, A.L., & Wieczorek-Kosmala, M. (2022). The impact of the EU nonfinancial information directive on environmental disclosure: evidence from Italian environmentally sensitive industries. *Meditari Accountancy Research*, 30(7), 87–120. <https://doi.org/10.1108/MEDAR-03-2021-1247>
- Putra, D., & Utami, IL (2018). The Influence of Environmental Performance on Environmental Disclosure and Economic Performance (Empirical Study on Mining Companies Listed on the IDX). *Maranatha Accounting Journal*, 9(1), 1–11. <https://doi.org/10.28932/jam.v9i1.487>
- Putra, D., Veronica, U., Pebrina, S., & Irawati, A. (2021a). The Influence of Environmental Performance, Company Size and Profitability on Environmental Disclosure. 48–54.
- Putra, D., Veronica, U., Pebrina, S., & Irawati, A. (2021b). The Influence of Environmental Performance, Company Size and Profitability on Environmental Disclosure. 48–54.
- Qintharah, YN (2024). The Urgency of Environmental Disclosure. CV. AZKA PUSTAKA.
- Qintharah, YN, & Utami, FL (2023). Determinants on Environmental Disclosure Moderating by Integrated Corporate Governance (ATT). *Aptisi Transactions on Technopreneurship (ATT)*, 5(1Sp), 26–41. <https://doi.org/10.34306/att.v5i1sp.308>
- Qureshi, M.A., Kirkerud, S., Theresa, K., & Ahsan, T. (2020). The impact of sustainability (environmental, social, and governance) disclosure and board diversity on firm value: The moderating role of industry sensitivity. *Business Strategy and the Environment*, 29(3), 1199–1214.
- Raimo, N., de Nuccio, E., & Vitolla, F. (2022). Corporate governance and environmental disclosure through integrated reporting. *Measuring Business Excellence*, 26(4), 451–470.
- Rini, RK, & Adhariani, D. (2021). Does Financial Performance Drive Environmental Disclosure and Environmental Cost? Evidence from Indonesia. *Jurnal Ilmiah Akuntansi Dan Bisnis*, 16(2), 317. <https://doi.org/10.24843/jiab.2021.v16.i02.p09>
- Rodríguez, M.M., Muñoz, F.F., & Valentinetti, D. (2020). Corporate impact of carbon disclosures: a nonlinear empirical approach. <https://doi.org/10.1108/JFRA-01-2020-0002>
- Silva, A. L. C., & Leal, R. P. C. (2005). Corporate Governance Index, Firm Valuation and Performance in Brazil (pp. 1–18).
- Solikhah, B., & Winarsih, AM (2016). The Effect Of Media Coverage, Industry Sensitivity, And Corporate



- Governance Structure Of A Company On The Quality Of Environmental Disclosure. Indonesian Journal of Accounting and Finance, 13(1).
- Trireksani, T., & Djajadikerta, H.G. (2016). Corporate governance and environmental disclosure in the Indonesian mining industry.
- (VDI 3800)., VDI (2000). Determination of costs for industrial environmental protection measures. 1, 8–9.
- Wijaya, BA, & Nuryatno, M. (2019). The Influence of Environmental Performance and Environmental Disclosure on Economic Performance. Journal of Information, Taxation, Accounting, and Public Finance, 9(2), 141. <https://doi.org/10.25105/jipak.v9i2.4530>
- Winarsih, AM, & Solikhah, B. (2015). The Effect Of Media, Industry Sensitivity And Corporate Governance Structure On Environmental Disclosure Quality (Study Of High Profiled Companies On The Indonesia Stock Exchange In The Period 2011-2013). Accounting Analysis Journal, 4(2), 1–9.
- Zeng, H., Zhang, T., Zhou, Z., Zhao, Y., & Chen, X. (2020). Water disclosure and firm risk: Empirical evidence from highly water-sensitive industries in China. Business Strategy and the Environment, 29(1), 17–38. <https://doi.org/10.1002/bse.2347>