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Review Article

Corporate Responsibility for Water Disclosure in Improving Environmental Transparency: A Case Study of ASEAN Countries

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Abstract
This study analyzes water disclosures by leading ASEAN manufacturing firms regarding corporate social responsibility (CSR). The ASEAN region faces considerable environmental challenges, especially in managing water resources, which are increasingly critical owing to the rapid growth of manufacturing sector companies. Purposive sampling was used to analyze 176 secondary data units from sustainability and annual reports of companies listed on the stock exchanges of Indonesia, Malaysia, Singapore, Thailand, and the Philippines between 2020 and 2023. The variables studied include gender diversity, board meeting frequency, government ownership, profitability, and company size. The results show that only gender diversity significantly affects the exposure to water. Moderation regression analysis indicates that the CSR Committee strengthens the influence of company size but weakens the influence of other variables. This study makes a theoretical contribution by offering actual data on the intricate function of the CSR Committee in reducing the impact of corporate governance traits on water disclosure. The practical implication is that companies can improve the effectiveness of CSR committees, and the government can formulate policies that encourage sustainable water management through good corporate governance.

Keywords: Corporate governance; CSR committee; profitability; company size; water disclosure

1. Introduction

The availability of clean water is increasingly threatened by irresponsible water resource management by companies. The Association of Southeast Asian Nations (ASEAN) region faces significant environmental challenges, particularly regarding water resources. These challenges include clean water scarcity, flooding, pollution, and climate change impacts (Coen et al., 2022). Irresponsible water management can lead to environmental pollution and disruption of marine ecosystems, affecting human health and biodiversity. ASEAN was chosen as the research focus because of the urgency of addressing these water-related environmental challenges, which are exacerbated by rapid industrial growth, especially in the manufacturing sector (ASEAN Secretariat, 2021). Countries like Indonesia, Malaysia, and the Philippines face persistent pollution and inefficient water management issues despite their significant economic progress. Therefore, there is a critical need to examine how corporate governance and environmental reporting mechanisms can effectively mitigate the adverse impacts of industrial activities on water resources while promoting sustainability practices, such as those outlined by the Global Reporting Initiative (GRI) (Wicaksono et al., 2024).

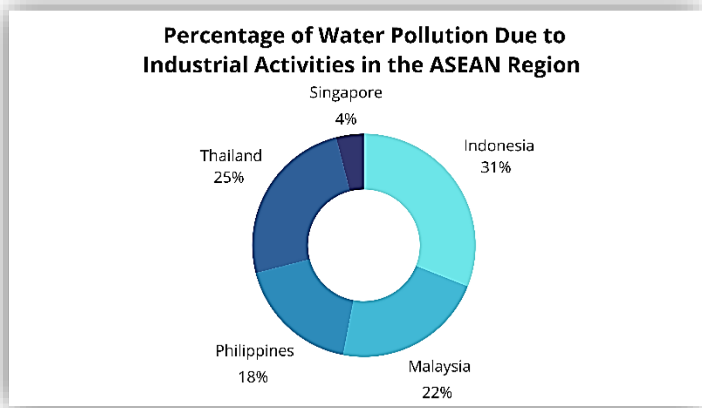

Figure 1. Water pollution due to industrial activities in the ASEAN Region in 2023

Water pollution data in ASEAN countries are evaluated annually, revealing trends and the impact of industrial activities on water quality. This evaluation underscores the importance of corporate water disclosure as an integral part of comprehensive environmental reporting. Water disclosure involves thoroughly assessing companies' water resource management practices, including their sustainability initiatives, wastewater discharge protocols, and the broader business impacts related to water. By disclosing water usage and management practices in sustainability reports, companies demonstrate their accountability to stakeholders and signal their commitment to addressing pressing water resource issues.

Water disclosure among leading manufacturing companies in ASEAN has increased annually. High-profile manufacturing companies in ASEAN were selected because of their high environmental sensitivity and high-risk large-scale operations. They face greater public and stakeholder scrutiny and are thus compelled to disclose social responsibilities, including water management, to maintain their reputation and legitimacy (Pilomonu, 2023). The sector also contributes significantly to the ASEAN economy and is a major source of industrial waste, making it an important focus for environmental sustainability research (Putri et al., 2024).

This study examines water disclosure in various manufacturing sectors, including cement, concrete, tires, automotive, cigarettes, pharmaceuticals, consumer goods, food, beverages, electronics, plastics, and rubber. These sectors were selected based on their different water requirements and potential impacts. The cement and concrete sectors require large amounts of water for raw material mixing and cooling processes. Simultaneously, the pharmaceutical and food/beverage industries use water as a key raw material and for sterilization. In contrast, the automotive and tobacco sectors mainly use water for employees' domestic needs and support activities, and the electronics sector uses minimal water mainly for incredible production machinery (Hasibuan and Ismail, 2024). The focus on these sectors is significant as high water-consuming sectors have greater environmental impacts; thus, water disclosure is essential for corporate transparency and meeting stakeholder demand for ecological sustainability (Wicaksono et al., 2020; Wahyuningrum et al., 2023).

Corporate governance is integral to water disclosure, as an effective corporate governance structure encourages transparency and accountability in water resource management. Companies with robust governance mechanisms typically have better board oversight of water risks, compliance, and proactive responses to stakeholder demands for environmental transparency. This is reflected in comprehensive disclosures on water use, ecosystem impacts, conservation strategies, and water-related risk management. Sound corporate governance enhances a company's sustainability. It safeguards long-term value for shareholders and society by facilitating excellent water disclosure and incorporating water-related issues into business strategy and decision-making processes.

Given ASEAN's serious water resource environmental problems, this study highlights the importance of regional industrial enterprises' water disclosure. It fills a literature gap by examining corporate governance's influence on water disclosure and provides empirical data on CSR committee roles in regulating this relationship. The research contributes to understanding how CSR committees can effectively oversee environmental prioritization in corporate decision-making. Companies can use these findings to enhance CSR committee effectiveness and promote water resource management accountability. Additionally, the study provides governmental policy input for sustainable water management through improved corporate governance while raising stakeholder awareness about the importance of water disclosure. This research has significant implications for improving responsible water management practices and contributing to sustainable development goals.

2. Literature Review

Corporate governance has a significant relationship with gender diversity, which improves oversight, transparency, and the quality of corporate decisions. Based on agency theory, women tend to be more sensitive to environmental issues and can encourage more responsible resource management practices (Peng et al., 2023; Haryanto et al., 2024; He et al., 2023). Although some studies show that gender diversity can increase transparency and accountability, cultural factors and organizational structure also weaken the role of women in decision-making (Hasibuan and Ismail, 2024).

H1: Gender diversity affects water disclosure

According to agency theory, more frequent board meetings allow for more active management oversight. This can encourage managers to be more transparent in environmental disclosure, especially water resource management (Peng et al., 2023). Frequent meetings strengthen the company's supervisory function and minimize agency conflicts, thereby expanding environmental disclosure (Wicaksono et al., 2020; Haryanto et al., 2024; Effendi, 2018).

H2: The frequency of commissioner meetings has an impact on water disclosure.

Agency theory states that government ownership in companies is essential as a watchdog that encourages transparency and accountability in water disclosure. As a shareholder, the government ensures that companies are environmentally responsible and more focused on disclosing the use of water resources (Wahyuningrum et al., 2023). Government ownership can strengthen regulation with direct involvement in management and decisions related to water disclosure, as shown by several studies that found a positive relationship between government ownership and water disclosure (Wicaksono and Setiawan, 2022; Zhou et al., 2018).

H3: The government ownership has an impact on water disclosure

Based on agency theory, corporate profitability should focus not only on operational performance but also on transparent disclosure of information related to water management. This disclosure aims to increase stakeholder trust, reduce reputational risk, and improve long-term profitability (Ayyas et al., 2023; Peng et al., 2023). However, some studies show that profitability is not associated with water disclosure due to the lack of awareness of stakeholders, especially investors, who are more focused on financial information and are concerned that these disclosures may increase costs and reduce investment returns (Wahyuningrum et al., 2022).

H4: profitability has a positive effect on water disclosure

Agency theory explains that large companies with complex organizational structures and many stakeholders may face difficulties making environmental disclosures more transparent, especially regarding water disclosures. However, large companies tend to make more detailed and sustainable disclosures because they face more significant pressure from stakeholders for transparency in sustainability practices (Hasibuan and Ismail, 2024; Wahyuningrum et al., 2023).

H5: company size has a positive effect on water disclosure

Agency theory suggests that CSR committees can moderate the effect of gender diversity on water disclosure. CSR committees serve as an oversight mechanism to ensure the prioritization of environmental issues in business decision-making (Haryanto et al., 2024). Gender diversity on the board of directors enriches decision-making perspectives, and when combined with CSR committees, they mutually reinforce the positive influence on accountable and transparent environmental disclosure.

H6: The existence of a CSR committee can moderate the influence of gender diversity on water disclosure

Based on agency theory, a CSR committee serves as a monitoring mechanism that can reduce conflicts between owners and management by ensuring environmental issues, including water resource management, receive special attention in board meetings. The quality of the CSR committee can improve the quality of meetings by encouraging board members to pay more attention to sustainability and transparency related to water disclosure (Isabel-Maria et al., 2019; Haryanto et al., 2024).

H7: the existence of the CSR committee moderates the frequency of board of commissioner meetings for water disclosures.

The existence of CSR committees is essential to improve corporate transparency and accountability. These committees ensure companies fulfill their social responsibilities, build public and stakeholder trust, and reduce managerial opportunism. Based on agency theory, CSR committees serve as a control mechanism that links the interests of owners and managers, encouraging transparency of disclosure and minimizing conflicts of interest (Zaid and Abuhijleh, 2020; Sibuea and Arieftiara, 2022).

H8: the existence of a CSR committee to moderate the government's ownership of *water disclosur*e

Based on agency theory, companies with high profitability tend to have more resources to invest in good disclosure practices, including water disclosure. However, a CSR committee is crucial because, without efficient oversight, management might not be inspired to be open. Research by (Azzaki, 2019; Iwan and Yumniati, 2019) shows that the existence of a CSR committee can improve the quality of environmental disclosure, especially in companies with high profitability.

H9: the existence of a CSR committee to moderate the profitability of *water disclosur*e

Agency theory explains that large firms have operational complexity and stakeholder expectations for greater transparency. Without CSR committees, firms may be less motivated to make transparent environmental disclosures, as these committees serve as watchdogs that encourage management to respond to stakeholder demands (Tawaqal et al., 2022). CSR committees enhance a firm's legitimacy in the eyes of stakeholders and assist large firms in improving the quality of water disclosures. Research shows that larger firm size is positively associated with environmental disclosure, including water disclosure, with CSR committees playing an essential role in moderating this relationship (Rohma Fitria, 2021; Hasibuan and Ismail, 2024; Wahyuningrum et al., 2023).

H10: the existence of a CSR committee moderates the size of the company to water disclosure

3. Methods

The source population of this study is high-profile manufacturing sector companies listed on the stock exchanges of each country, such as the Indonesia Stock Exchange (IDX), Bursa Malaysia (KLSE), Singapore Exchange (SGX), Stock Exchange of Thailand (SET), and the Philippine Stock Exchange (PSE) in 2020-2023. The total population is 110 companies, but only 44 meet the sampling criteria. The researcher determined 176 units of analysis using the purposive sampling method. Water disclosure variables were measured from previous research, namely by using the Global Reporting Initiative (GRI) and waste with 37 indicators (Wahyuningrum et al., 2023). Table 1 shows the sampling criteria.

Table 1. Sampling criteria in research

No.	Criteria	Total
1.	High-profile companies in the manufacturing sector listed on the Indonesia, Malaysia, Singapore, Thailand and Philippines Stock Exchanges in 2020 - 2023	110
2.	Manufacturers who don't provide their sustainability reports	(24)
3.	Manufacturing firms that don't release yearly reports from 2020 to 2023	(42)
4.	Manufacturing companies that do not disclose water information (water disclosure) in their 2020-2023 sustainability report	0
	Total Companies in Sample	44
	Research period 2020-2023	4
	Total units of analysis	176

Source : (Wahyuningrum et al., 2023)

In addition, this study has independent variables consisting of gender diversity, frequency of board of commissioner meetings, government ownership, profitability, and company size. Another moderating element included in this study is a CSR committee, which is supposed to encourage water disclosure.

Table 2. Measurement of research variables

No.	Variable	Symbol	Variable Definition	Measurement
1	Water Disclosure	WD	Standardised disclosure of information on the management, use and impact of water resources on company operations	Of the 37 water disclosure indicator items. The assessment of each measurement indicator uses dummy variables: 0: no disclosure regarding water disclosure 1: There is water disclosure (Wahyuningrum, et al., 2023)
2	Gender Diversity	GD	A process to analyze the gender representation of an organization/company.	$\frac{Total\ of\ female\ board\ directors}{total\ board\ of\ directors}$ (Wahyuningrum et al., 2022)
3	Board of Commissioners Meeting	BOC	The commissioners' board meeting is a meeting that is held regularly to allow management to discuss environmental issues in depth, evaluate existing policies, and determine sustainability targets in depth.	The annual number of meetings of the Board of Commissioners (Suryarahman and Trihatmoko, 2021)
4	Governance Ownership	GO	The percentage of business shares that are directly or indirectly owned by the government is referred to as government ownership.	Make use of the variable Dummy. 1: The government's holding of shares was discovered.

No.	Variable	Symbol	Variable Definition	Measurement
				0: There is no evidence of government ownership of shares. (Wahyuningrum et al., 2023)
5	Profitability	PROFIT	The capacity of a business to turn a profit within a specific time frame	$\frac{Net\ Profit}{Total\ Asset}$ (Wahyuningrum et al., 2022)
6	Company Size	SIZE	The size of the business itself gives insight into the corporation's size.	Total company assets (in USD) (Wahyuningrum et al., 2022)
7	CSR Committee	CSR	A special committee in corporate governance that is responsible for planning, implementing, and supervising corporate social responsibility policies and practices.	Using dummy variables: 0 : no active CSR committee 1: There is an active CSR committee (Hanan and Setiawan, 2023)

The annual report and sustainability report, which are available on the company's official website as well as the stock exchanges in each country, provide the documentation process used for data collection. Using IBM SPSS version 25 software, the data was examined using multiple linear regression analysis, traditional assumption testing, descriptive statistical analysis, and hypothesis testing. Equations (1) and (2) provide numerous regression equation models.

$$WD1 = a + ß1GD + ß2BOC + ß3GO + ß4PROFIT + ß5SIZE + e \quad (1)$$

$$WD2 = a + ß1GD + ß2BOC + ß3GO + ß4P + ß5SIZE + ß6(GD*CSR) + ß7(BOC*CSR) + ß8(GO*CSR) + ß9(PROFIT*CSR) + ß10(SIZE*CSR) + e \quad (2)$$

4. Result and Discussion

This analysis uses well-known manufacturing firms listed between 2020-2023 on each nation's stock exchange. The total population is 110 high-profile manufacturing companies in the ASEAN Region. After conducting sample selection, 44 companies that successfully met the sample criteria were obtained, and 176 observation data were used for analysis, as seen in Table 1. The software used for the relevant statistical test in this study is SPSS 25. Based on the results of a descriptive statistical analysis of every variable, Table 3 shows how the data used is normally distributed.

Table 3. Results of descriptive statistical analysis

	N	Minimum	Maximum	Mean	Std. Deviation
WD	176	3	37	21.66	8.158
GD	176	.000	.600	.17391	.143357
FRDK	176	4	16	7.64	3.080
KP	176	0	1	.20	.405
PROFIT	176	-.114	.940	.08141	.115612
UP	176	23.940	252842.570	15621.24125	40122.323817
KOM_CSR	176	0	1	.34	.475
Valid N (listwise)	176				

Additionally, the Kolmogorov-Smirnov test yields a significant result of 0.200 (>0.05), indicating that the data is regularly distributed. The sample used in this study was free from multicollinearity symptoms because the tolerance value was>10 and VIF <10.00. All variables used have passed the autocorrelation test, indicating that the regression can be tested to the maximum. The white test is used to assess heteroscedasticity, and the results show that the calculated c^2 of 50.864 is smaller than the c table of 206.86798. This indicates that there aren't any heteroscedasticity symptoms.

Adjusted R-squared findings from multiple regression analysis were 0.021, or 2.1 percent. Therefore, it can be said that the independent variables of gender diversity, frequency of board meetings, government ownership, profitability, and company size account for 2.1 percent of the dependent variable of water disclosure, while the remaining variables are explained by variables not included in this study in table 4.

Table 4. Results of the regression hypothesis test for equation I

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	18.815	2.157		8.721	.000
	GD	10.351	4.605	.182	2.248	.026
	FRDK	.140	.224	.053	.625	.533
	KP	1.187	1.684	.059	.704	.482
	PROFIT	-1.243	5.595	-.018	-.222	.824
	UP	-1.075E-5	.000	-.053	-.668	.505

a. Dependent Variable: WD

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.222[a]	.049	.021	8.071

a. Predictors: (Constant), UP, KP, PROFIT, GD, FRDK

Based on the R square test results, there is a significant increase from 2.1% before moderation to 11.9% after the moderation variable is included. This growth suggests that the CSR committee variable significantly improves the correlation between the independent and dependent variables. A comparatively poor direct effect of the independent variable was shown by the model's ability to explain just 2.1% of the variation in the dependent variable before moderation. However, after adding the CSR committee variable, the model's ability increased almost sixfold to 11.9%, indicating a significant contribution from the interaction effect between independent variables such as gender diversity, frequency of board meetings, government ownership, profitability, and firm size with the moderator variable of CSR committee. In the context of corporate governance and water disclosure, these results suggest that CSR committees play an essential role in strengthening the relationship between corporate governance practices and the level of disclosure of water-related information.

Table 5. Regression hypothesis test results II

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	18.770	2.216		8.469	.000
	GD	11.195	5.777	.197	1.938	.054
	FRDK	.025	.232	.009	.107	.915

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
KP	.589	2.065	.029	.285	.776
PROFIT	-11.965	8.145	-.170	-1.469	.144
UP	-9.622E-6	.000	-.047	-.622	.535
X1Z	-1.262	8.491	-.019	-.149	.882
X2Z	.170	.244	.088	.696	.487
X3Z	.595	3.360	.018	.177	.860
X4Z	20.916	10.702	.254	1.954	.052
X5Z	.000	.000	.201	2.207	.029

a. Dependent Variable: WD

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412[a]	.169	.119	7.657

a. Predictors: (Constant), X5Z, X4Z, UP, KP, GD, FRDK, X3Z, X2Z, PROFIT, X1Z

4.1. Gender Disclosure on Water Disclosure

Gender diversity in water disclosure about corporate governance shows that the presence of women can increase company transparency and accountability regarding water resource management. Water disclosure is positively impacted by the gender diversity variable, according to the study's findings. Table 4 indicates a sig. value of 0.026 (<0.05). This proves that the role of gender diversity directors can contribute to the management of high-profile companies in the ASEAN manufacturing sector regarding sustainability reporting, especially in water disclosure.

Agency theory backs up the study's findings as having more women on the board of directors can improve openness in water disclosure and lessen information asymmetry. The presence of women are more ecologically conscious than men, and the findings of this study are consistent with research (Tawaqal et al., 2022) that indicates that the level of environmental disclosure is higher when women are part of the management team. This is further supported by (Liu et al., 2021; Peng et al., 2023), who assert that the moral qualities of female directors can improve the board's capacity to identify issues with stakeholders' water management obligations.

However, this study contradicts research (Hasibuan and Ismail, 2024) emonstrating that gender diversity does not impact water disclosure. This is due to social and cultural factors, including the belief that men, as family heads, should make all decisions and the low proportion of women in the study. The number of women on the board of directors is being decreased by top management. Thus, gender diversity improves the quality of water disclosure and creates a better environment, transparency, and accountability in managing water resources in companies in the ASEAN area. Companies should take gender diversity into account more when it comes to corporate governance, especially when it comes to sustainability and social responsibility, since this research offers significant advantages.

4.2. The Frequency of Board of Commissioners Meetings on Water Disclosure

Although the Board of Commissioners meetings on water disclosure are known to produce the best results in decision-making, the frequency of these meetings shows that, in reality, this variable does not affect water disclosure. Based on the study's findings, the variable frequency of Board of Commissioners meetings receives a sig value. Based on table 4, the result is 0.533 (> 0.05), indicating that the frequency of Board of Commissioners meetings and water disclosure are not significantly correlated.

The significant value for the frequency of Board of Commissioners meetings falls short of the anticipated threshold, indicating that more meetings will not necessarily result in more firms disclosing information about their water usage and management in quantity and quality.

According to agency theory, better communication between boards will improve oversight and encourage more open disclosure of data on water resource use. The findings of this study contradict this idea. Nevertheless, the more often the Board meets regularly, the less likely water resource management methods are discussed. This suggests that the frequency of board meetings cannot influence water disclosure. As a result, increasing the frequency of board meetings alone will not increase disclosure in sustainability reporting; this illustrates a contradiction in practicing agency theory. This is because most board members' views are focused on interests other than environmental issues. This research is strengthened by (Purwandari, 2023) who found that a board of commissioners that is too focused on regulatory decisions without paying attention to sustainability aspects can result in inadequate disclosure. However, this research also contradicts what has been done by (Effendi, 2018; Suryarahman and Trihatmoko, 2021) According to the results of their study, the management supervisory function will be more effective, and environmental information will be exposed to a broader audience if the Board of Commissioners meets more regularly to provide reports to the Board of commissioners.

4.3. Government Ownership of Water Disclosure

Government ownership of companies is often considered to increase transparency and accountability in water resources, including water disclosure. However, the findings of this investigation show that the government ownership variable obtains a sig value. This amounts to 0.482 (>0.05) (table 4), meaning that the government ownership variable does not affect water disclosure. One of the deeper reasons behind this finding is that although the government has a stake in companies, this does not always lead to increased initiatives to release water-related information use and management. In many cases, government-owned companies may focus more on compliance with existing regulations than proactively disclosing relevant information. Additionally, government ownership can create dependence on political policies and decisions, reducing incentives for companies to adopt better transparency practices.

The study's findings counter agency theory, which holds that government engagement with shareholders may push businesses to disclose environmental information more openly and act responsibly as the government demands. This shows that this insignificance is influenced by the government's commitment in each country to dealing with water resource problems, which can be categorized as weak, so in overcoming water problems, it is not intensively organized. This research is in line with (Wahyuningsih and Meiranto, 2021) that governments often face a conflict of objectives between fulfilling social environmental responsibilities and achieving financial goals. In some cases in high-profile manufacturing companies in ASEAN, the pressure to achieve economic performance can reduce the focus on disclosing ecological information, such as water disclosure. This is supported by research showing that companies prefer to maintain high leverage, so they minimize water disclosure to avoid additional costs. However, the findings of this investigation directly contradict previous studies, including (Wicaksono and Setiawan, 2022; Wahyuningrum et al., 2023;Zhou et al., 2018). Saying that government-owned companies will go deeper into water disclosure than private companies.

4.4. Profitability on Water Disclosure

The relationship between corporate governance and profitability and water disclosure implies that more prosperous businesses should have more significant resources to make more open disclosures. However, the results of this study show that the profitability variable obtained a sig. value of 0.824 (> 0.05) (table 4), meaning that the profitability variable has no effect on water disclosure. One reason for this finding is that companies focusing on short-term profits may pay less attention to social and environmental responsibilities, including water resources management. Highly profitable companies may feel no need to voluntarily disclose information related to water use, as they may assume that it cannot affect their financial performance.

The findings of this study go counter to agency theory, which holds that profitable businesses are better equipped to disclose information openly to repay stakeholders' confidence and lower reputational risk. This shows that high-profile companies in the ASEAN manufacturing sector have a primary focus on achieving substantial short-term profits, which can defeat managers' attention from sustainability issues, such as water disclosure, so that it can reduce the quality of environmental disclosure. This research aligns with (Hasibuan and Ismail, 2024; Peng et al., 2023; Wahyuningrum et al., 2023). Investors are more concerned with how transparent financial data is when managers make choices, and they also think that too much information about water might lower investment returns and raise expenses.

4.5. Company Size on Water Disclosure

The company size variable obtained a sig value based on table 4 of 0.505 (> 0.05), the company size variable has no effect on water disclosure. This is because large companies often face challenges in managing operational complexity and compliance with diverse regulations, which can divert their attention from proactive disclosure initiatives. In addition, high-profile companies in the manufacturing sector may feel that they have sufficiently fulfilled their obligations law and do not feel the need to disclose additional information about water use and management voluntarily.

This study contradicts agency theory, which expects large companies to be more responsible in water management and more transparent in their sustainability reports. One reason behind this contradiction is that large companies are often caught up in operational and regulatory complexities that make them focus more on legal compliance than voluntary initiatives to disclose information related to water use. In addition, despite better company size, many large companies may not feel the need to actively report such information, as they are already fulfilling their legal obligations. This research is in line with (Yu et al., 2020; Wahyuningrum et al., 2023; Hasibuan and Ismail, 2024), showing that companies with small sizes still report water disclosure to stakeholders.

4.6. The Effect of the Existence of a CSR Committee on Moderating Gender Diversity on Water Disclosure

The CSR committee cannot enhance the impact of gender diversity on water disclosure, as shown by the sig. Value of 0.882>0.05 in Table 5 of the MRA test findings. The CSR committee is unable to strengthen decisions related to the disclosure of corporate water resources because the CSR committee focuses more on other aspects of corporate social responsibility. In this case, women on the board of directors, who should be able to bring a more sensitive perspective to environmental issues, may feel limited by the policies set by the CSR committee. Therefore, the association between water disclosure and gender diversity cannot be moderated by the existence or lack of a CSR committee. Without the presence of a CSR committee, companies still sustainably report water disclosure (Wahyuningrum et al., 2023). This study contradicts research conducted by (Peng et al., 2023; Pareek et al., 2023; Isabel-Maria et al., 2019) with the existence of gender diversity combined with CSR committees can align the interests of the company with stakeholders in making higher quality decisions.

4.7. The Effect of the Existence of a CSR Committee on Moderating the Frequency of Board of Commissioners Meetings on Water Disclosure

The CSR committee cannot increase the impact of the frequency of board meetings on water disclosure, according to the results of Table 5, obtaining a sig. Value of 0.487>0.05. Although the CSR committee is supposed to improve oversight and openness, this does not always translate into optimal disclosure procedures, as seen by its incapacity to control the frequency of Board of Commissioners meetings on water disclosure. This is because the board of commissioners is not always firmly committed to sustainability issues, even though they often hold meetings. Still, if the topic of discussion does not discuss sustainability issues, it will not be able to contribute to improving water disclosure. Furthermore, while boards may meet frequently to discuss issues, including environmental responsibility, the presence of a CSR committee may create a formal structure that limits individual initiatives within the board to make more proactive disclosures regarding water use. In this case, while the frequency of meetings may improve communication and oversight, the CSR committee may reduce the motivation of board members to engage in water disclosure actively. The findings of this investigation run counter to earlier findings (Effendi, 2018), saying that the frequency of board meetings can contribute to improving the performance of previous years by adding the presence of a CSR committee will result in maximum disclosure quality.

4.8. The Effect of the Existence of a CSR Committee on Moderating Government Ownership of Water Disclosure

CSR committees are not able to increase the impact of government ownership on water disclosure, according to the test results in table 5, with a sig. value of 0.860 > 0.05. This shows that CSR committees often do not have enough power to influence policies set by the government, especially in the context of water resource management regulations. Although these committees are tasked with improving corporate transparency and accountability, the influence of government ownership can create conflicts of interest that hinder such efforts. In addition, the existence of CSR committees is not able to encourage the government to be more vigorous in conducting direct checks on environmental disclosure to each company. This is due to the lack of integration between government policies and CSR committee initiatives that have been formed by the board with the approval of the government, so that CSR committees do not have sufficient power to fulfill decisions related to water disclosure. In many cases, government-owned companies tend to be more bound by policies and procedures set by the government, hindering the flexibility of CSR committees to encourage better disclosure practices (Vanessa and Meiden, 2020). This study contradicts earlier research by (Irfan and Sarumpaet, 2023) which found that the government-CSR committee interaction is highly beneficial in generating transparency disclosure.

4.9. The Effect of the Existence of a CSR Committee on Moderating Profitability on Water Disclosure

Based on agency theory, a CSR committee can benefit companies by disclosing environmental information, including water resource management, more transparently. However, the results after the test showed that the CSR committee could not moderate the relationship between profitability and water disclosure because it obtained a sig value of 0.052 (> 0.05) (table 5). Several factors cause this insignificance. Namely, company management is more focused on achieving short-term profits and ignoring the role of CSR committees in considering environmental sustainability; most companies do not attach importance to the role of CSR committees because, according to them, if there is an additional CSR committee, it will increase expenses and will result in lower profits (Sriwahyuni, 2023).

This study contradicts agency theory, as company managers may be more incentivized to prioritize financial interests over more transparent environmental disclosures. This creates a gap between CSR committees and profitability objectives, where managers are more concerned with neglecting social responsibility in favor of better financial outcomes. In addition, water disclosure is often considered an additional cost for companies, so they hesitate to do it even though they have high profitability. This study is consistent with studies by (Yu et al., 2020; Sriwahyuni, 2023).

4.10. The Effect of the Existence of a CSR Committee on Moderating Company Size on Water Disclosure

According to agency theory, a CSR committee can mediate to lessen the information asymmetry between stakeholders and management while regulating business size and environmental disclosure. The larger a company is, the more resources it has to make better disclosures, but without encouragement from CSR committees, they are less motivated to report environmental information comprehensively.

Thus, CSR committees can ensure that companies fulfill legal obligations and commit to sustainable water management practices.

The test findings show that CSR committees can enhance the impact of firm size on water disclosure, based on Table 5 obtaining a sig. Value of 0.029 (<0.05). This study found a strong positive correlation between companies' water disclosures and the presence of CSR committees. This implies that the CSR Committee is critical in increasing corporate accountability and openness in water resource management. This study's findings are consistent with those of (Rohma Fitria, 2021), who discovered that the existence of a CSR Committee not only supports the link between water disclosure and company size but also shows that larger companies are more likely to report environmentally friendly water use when supported by an efficient governance structure such as a CSR Committee. This outcome aligns with the principles of agency theory, which maintains that a CSR Committee's participation may enhance environmental disclosure compliance and reduce conflicts of interest. This study found that although a company's size does not necessarily have a significant influence on water disclosure, the presence of a CSR Committee can increase this effect by encouraging companies to disclose more proactively on the management and use of their water resources (Hasibuan and Ismail, 2024).

5. Conclusions

According to the study's findings, having a diverse mix of genders on the boards of prominent ASEAN manufacturing businesses may significantly boost water disclosure, demonstrating the beneficial impact of women's viewpoints on the openness of water resource management. Adding the variable of CSR committee presence as a moderating variable can mitigate the association between business size and water disclosure, indicating that CSR committees have a multifaceted function in corporate governance, even while other corporate governance factors do not directly influence.

This research benefits corporate governance, especially in the context of water resource management and environmental disclosure transparency. It is devoted to how to become good corporate governance and encourage companies to increase water disclosure, namely by disclosing information related to the use and management of water resources in a sustainable manner.

Another advantage of this research is the ASEAN region's growing understanding of corporate social responsibility (CSR). In the face of increasingly pressing environmental challenges, companies are expected to be more active in disclosing the impact of their activities on water resources. In addition, by applying the Global Reporting Initiative (GRI) standards, companies can improve the quality and completeness of their accounting information and increase investor and other stakeholder confidence.

Overall, this study offers insightful information about how corporate governance may encourage firms to accept accountability for the environmental effects of their operations and act as a catalyst for improved disclosure standards. This is not only beneficial for the companies themselves but also for society and the environment as a whole.

Future research can address the shortcomings of this study. First, this study is restricted in its ability to measure the scope of water disclosure in the ASEAN area since it primarily looks at water disclosure in well-known manufacturing enterprises in a few ASEAN countries, including Indonesia, Malaysia, Thailand, the Philippines, and Singapore. As a result, future studies might involve experts from every ASEAN nation to investigate water disclosure further. It is advised t hat future research employ other factors or proxies that might assist water disclosure in the ASEAN area, as this study is limited to demonstrating two assumptions. Finally, this study may be used as a reference to compare water disclosure in developing economies with Southeast Asia in the future if we choose to assess it generally.

Future research is expected to consider contextual factors such as the quality of environmental regulation in each ASEAN country, the intensity of government supervision, or firm-specific characteristics (e.g., the degree of dependence on water in the production process). Furthermore, future research is expected to explore mediating mechanisms, such as the influence of CSR committees on inclusive decision-making, focus on specific manufacturing sectors that significantly impact water resources, and examine the influence of stakeholder pressure, such as the public and investors, on water disclosure. In addition, researchers can add water disclosure trends that are influenced by external shocks, such as the COVID-19 pandemic (2020-2022) and the emergence of ESG (2022-2023).

References

ASEAN Secretariat, 2021. ASEAN state of climate change report.

Ayyas, Y., Ihsan, B. and Prastya, H., 2023. Pengaruh leverage, profitabilitas, likuiditas, dewan komisaris, dan ukuran perusahaan terhadap environmental disclosure (Studi empiris pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia tahun 2020-2022). Journal of Economics and Halal Tourism, 2, pp.39–46.

Azzaki, M.R., 2019. Corporate social responsibility dalam memoderasi pengaruh karakteristik perusahaan dan corporate governance terhadap sustainability report (Study empiris pada perusahaan manufaktur yang terdaftar di BEI). Jurnal Riset Akuntansi dan Manajemen, 9, pp.114–124.

Coen, D., Herman, K. and Pegram, T., 2022. Are corporate climate efforts genuine? An empirical analysis of the climate 'talk–walk' hypothesis. Business Strategy and the Environment, 31, pp.3040–3059.

Effendi, B., 2018. Ukuran perusahaan, dewan komisaris dan environmental disclosure. Jurnal Riset Akuntansi Tirtayasa, 3, pp.1–19.

Hanan, S.Z. and Setiawan, M.A., 2023. Pengaruh slack resources, dewan direksi, dan komite CSR terhadap sustainability report. Jurnal Ekonomi, 5, pp.833–846.

Haryanto, H., Ong, T. and Diversity, G., 2024. Apakah gender diversity memoderasi hubungan antara corporate social responsibility dengan sustainable development goal: Perusahaan. Jurnal Manajemen, 13, pp.1405–1420.

Hasibuan, N. and Ismail, M., 2024. Pengaruh firm size, political connection, gender diversity, profitability, dan leverage terhadap water disclosure pada perusahaan sektor pertambangan yang terdaftar di Bursa Efek Indonesia periode 2021-2022. Ekonomi: Jurnal Ekonomi Bisnis, 8, p.685.

He, C., Shen, J., Xu, J., Sun, F. and Wang, B., 2023. Quality evaluation of water disclosure of Chinese papermaking enterprises based on accelerated genetic algorithm. Scientific Reports, 13, pp.1–15.

Irfan, S. and Sarumpaet, S., 2023. Pengaruh good corporate governance dan diversitas gender terhadap pengungkapan sustainability report (Studi empiris pada perusahaan pertambangan yang terdaftar di Bursa Efek Indonesia tahun 2019-2021). Inisiatif: Jurnal Ekonomi Akuntansi dan Manajemen, 2, pp.334–355.

Isabel-Maria, G.-S., Hussain, N., Martinez-Ferrero, J. and Ruiz-Badbadillo, E., 2019. Impact of disclosure and assurance quality of corporate sustainability reports on access to finance. Sustainability, 11(24).

Iwan, S. and Yumniati, A., 2019. Pengungkapan lingkungan, profitabilitas dan nilai perusahaan. Jurnal Ekonomi dan Bisnis, XVII, pp.198–207.

Liu, C., Su, K. and Zhang, M., 2021. Technological forecasting & social change water disclosure and financial reporting quality for social changes: Empirical evidence from China. Technological Forecasting & Social Change, 166, p.120571.

Pareek, R., Sahu, T.N. and Gupta, A., 2023. Gender diversity and corporate sustainability performance: Empirical evidence from India. Sustainability, 20, pp.140–153.

Peng, X., Li, J., Su, Y. and Bai, Y., 2023. Board independence and corporate water disclosure: The role of board diversity. Journal of Business Ethics, 32, pp.5319–5332.

Pilomonu, M.R.S., 2023. Jambura accounting review analisis tingkat pengungkapan emisi gas rumah kaca pada. Jambura Accounting Review, 4, pp.174–186.

Purwandari, L., 2023. Laporan kinerja Direktorat Pengendalian Pencemaran Udara Direktorat Jenderal Pengendalian Pencemaran dan Kerusakan Lingkungan tahun 2022. Direktorat Pengendalian Pencemaran Udara, pp.53, 229.

Putri, S.W., Nur, H. and Ermaya, L., 2024. Equity komite audit memoderasi corporate social responsibility dan board structure terhadap manajemen. Jurnal Manajemen, 27, pp.18–42.

Rohma Fitria, V.L., 2021. Pengaruh ukuran perusahaan dan konsentrasi kepemilikan terhadap pengungkapan air perusahaan (Studi pada perusahaan pertambangan di Indonesia, Malaysia, Singapura, Thailand The influence of firm size and ownership concentration on corporate water disclosure). Jurnal Akuntansi dan Keuangan, 10.

Sibuea, R.M.F. and Arieftiara, D., 2022. Pengaruh kepemilikan manajerial, kepemilikan institusional, dan budaya organisasi terhadap pengungkapan corporate social responsibility dengan komite audit sebagai variabel moderasi. Veteran Economics, Management, and Accounting Review, 1, pp.133–148.

Sriwahyuni, A., 2023. Pengaruh dewan komisaris, komite audit, profitabilitas, likuiditas, dan ukuran perusahaan terhadap corporate social responsibility disclosure pada perusahaan manufaktur 2016-2020. Sanskara Akuntansi dan Keuangan, 1, pp.59–69.

Suryarahman, E. and Trihatmoko, H., 2021. Effect of environmental performance and board of commissioners on environmental disclosures. Assets: Jurnal Akuntansi dan Pendidikan, 10, p.1.

Tawaqal, P., Baeha, Z. and Safrida, E., 2022. Pengaruh ukuran perusahaan, dewan komisaris independen dan komite audit terhadap pengungkapan corporate social responsibility (CSR). Konferensi Nasional Sosial dan Engineering Politeknik Negeri Medan, pp.607–625.

Vanessa, F. and Meiden, C., 2020. Beberapa faktor yang mempengaruhi CSR disclosure pada sektor pertambangan yang terdaftar di BEI periode 2015-2018. Jurnal Ilmu Komputer dan Bisnis, 11, pp.2415–2430.

Wahyuningrum, I.F., Sri, Oktavilia, S., 2022. The effect of company characteristics and gender diversity on disclosures related to sustainable development goals. Journal of Accounting Research, 1–13.

Wahyuningrum, I.F.S., Chegenizadeh, A., Hajawiyah, A., Sriningsih, S., Utami, S., Budihardjo, M.A. and Nikraz, H., 2023. Determinants of corporate water disclosure in Indonesia. Sustainability, 15, pp.1–17.

Wahyuningrum, I.F.S., Safitri, L., Oktavillia, S. and Setyadharma, A., 2022. The determinant of environmental disclosure in ASEAN. International Journal of Environmental Research, 19, pp.24–33.

Wahyuningsih, I.F.S. and Meiranto, W., 2021. Pengaruh good corporate governance dan regulasi pemerintah terhadap pengungkapan informasi akuntansi lingkungan (Studi empiris pada perusahaan manufaktur yang terdaftar di BEI tahun 2016-2019). Jurnal Akuntansi, 10, pp.1–12.

Wicaksono, A.P., Setiawan, D., 2022. Water disclosure in the agriculture industry: Does stakeholder influence matter? Journal of Cleaner Production, 337, p.130605.

Wicaksono, A.P., Setiawan, D., Anni Aryani, Y. and Hartoko, S., 2024. The effect of ownership structure on water disclosure in Indonesian companies. Journal of Open Innovation: Technology, Market, and Complexity, 10, p.100185.

Wicaksono, B., Djuminah, D. and Honggowati, S., 2020. Pengungkapan air dalam perspektif agenda-setting theory. Jurnal Akuntansi Multiparadigma, 11, pp.600–612.

Yu, H.C., Kuo, L. and Ma, B., 2020. The drivers of corporate water disclosure in enhancing information transparency. Sustainability, 12, pp.1–14.

Zaid, M.A.A. and Abuhijleh, S.T.F., 2020. Ownership structure, stakeholder engagement, and corporate social responsibility policies: The moderating effect of board independence. Journal of Corporate Finance, 18(3).

Zhou, Q., Wang, Y., Zeng, M., Jin, Y. and Zeng, H., 2018. Does China's river chief policy improve corporate water disclosure? A quasi-natural experimental. Journal of Cleaner Production, 311, p.127707.