



The Effect Gender, Tenure on Environmental Disclosure: Evidence in Indonesian

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Received: 13-12-2024; Accepted: 14-01-2025

Abstract

Environmental sustainability is becoming an important issue for business purposes. This research explores the possible impact of gender and tenure on environmental disclosure in Indonesia. Using 141 observation data for the period 2021-2023. This study found that female representation and the length of work experience of directors can influence environmental disclosure. Different from previous studies that examined financial factors, this study examines non-financial factors, namely board of directors diversity. This study contributes to the managerial implications offer a basis for companies to consider the presence of female representation and length of tenure on the board of directors to maintain stakeholder trust. This paper contributes to the existing literature by exploring the impact of female directors and tenure on the relationship with environmental disclosure, offering an original perspective.

Keywords: Environmental disclosure, gender, tenure, sustainability reporting

Abstrak

Keberlanjutan lingkungan menjadi hal penting sebagai keberlanjutan bisnis. Studi ini meneliti potensi efek dari gender dan masa jabatan terhadap pengungkapan lingkungan di Indonesia. Dengan menggunakan data pengamatan sebanyak 141 periode 2021-2023. Penelitian ini menemukan bahwa keterwakilan wanita dan lama pengalaman kerja direksi mampu berpengaruh terhadap pengungkapan lingkungan. Berbeda dari penelitian sebelumnya yang meneliti dari faktor financial, penelitian ini meneliti dari faktor non-financial yaitu keragaman direksi. Kontribusi penelitian ini dari sisi managerial dengan memberikan dasar bahwa perusahaan perlu mempertimbangkan adanya keterwakilan wanita dan lama masa jabatan pada jajaran direksi untuk mempertahankan kepercayaan pemangku kepentingan. Penelitian ini memperluas literatur yang ada dengan meneliti pengaruh direktur perempuan dan direktur tetap pada hubungan dengan pengungkapan lingkungan sebagai originalitas penelitian.

Kata Kunci: Pengungkapan lingkungan, gender, masa jabatan, laporan berkelanjutan

JEL Classification: G32, M14, Q56

How to cite: Nursulistyo, E. D., Putri, G. A., (2024), The Effect Gender, Tenure on Environmental Disclosure: Evidence in Indonesian, *Jurnal Orientasi Bisnis dan Entrepreneurship (JOBS)*, 6(1), 1-9

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1. Introduction

Environmental sustainability is an effort to realize a sustainable business (Wicaksono, 2024). The impact of environmental damage will have an impact on global economic growth. Various efforts are made to prevent damage. Advocacy of the 2030 sustainable development agenda aims to protect the environment and companies to report environmental disclosures. (Yan, 2024). Environmental disclosure is one strategy that companies can implement to increase stakeholder trust and ensure business sustainability through obtaining resources in operational activities (Zhou & Chen, 2024).

The implementation of environmental policies provides an opportunity to attract more investor attention with ethical and social considerations aimed at considering investor decisions (Liu et al., 2024). The decision authorizes the board of directors to decide on the disclosure of voluntary reports in accordance with the company's authority and regulations (Li et al., 2024). Therefore, gender diversity in leadership becomes a key aspect of governance that can impact environmental performance (Issa, 2021). Directors with gender diversity are expected to demonstrate commitment to their organization. Stakeholder theory suggests that the presence of women in leadership provides opportunities for self-regulation of managerial behavior, encouraging efforts to meet stakeholder expectations (Alsaifi et al., 2020).

Reported by the World Resource Institute (WRI), it states that in 2020 Indonesia was among the top ten largest contributors of emissions, ranking 8th in the world after China. Indonesia contributed 965.3 Mt CO₂e (2.03% of global greenhouse gas emissions). One of the emissions came from production activities amounting to 114.4 Mt CO₂e. The board of directors is a group of individuals selected to set company policies and ensure proper alignment and supervision of activities. Female directors are more likely to mitigate future risks and demonstrate a strong commitment to ethical responsibility. This contributes to the advancement of the SDGs for 2030 (Zhu & Zhao, 2025). Many studies on gender and environmental disclosure have been carried out in developed countries. Environmental disclosure enhances the transparency and credibility of accounting information, serving as a fundamental element in the development of a transparent, high-quality, and comparable accounting system (Buallay & Alhalwachi, 2022). Environmental disclosure it also functions as a way of supporting accountability with stakeholders by including accountability for environmental performance and the disclosure system is able to encourage transparency (Menicucci & Paolucci, 2024).

Previous study Oware et al., (2022) stated that the female directional line does not influence environmental coverage in India. The contradictory results by Menicucci & Paolucci, (2024) The study found that the presence of women, With an average percentage ranging from 21% to 50%, it has a notable positive impact on environmental disclosure. This research was conducted in non-OPEC countries within the banking sector. Ardhaoui et al., (2024) states that the presence of women is able to moderate the relationship between earnings management and environmental disclosure. This is in line with the research (Issa, 2021; Kilincarslan et al., 2020; Paolone et al., 2024). The diversity of research results is an opportunity for further research by generalizing the results of previous studies in developing countries. Therefore, this study examines whether gender influences environmental disclosure.

Hosny & Elgharbawy, (2022) states that the longer the tenure, the greater the concern for environmental issues. Experience and length of service can influence decision-making that has an impact on business performance. Thus, directors with long tenures tend to pay more attention to environmental disclosure aspects (Lahyani, 2022). Using 141 observations from 2021 to 2023, This study adds to the literature by examining the impact of gender and tenure diversity on environmental disclosure in Indonesia. Research on gender diversity and tenure remains limited, particularly in Indonesia. The implications of the study encourage managers

to make decisions and take proactive roles in promoting gender diversity and tenure in environmental activities and disseminating environmental information to the public. This research have several parts: Part 1 introduction, part 2 literature review and hypothesis, part 3 data and methods, part 4 results, part 5 discussion, and part 6 conclusion.

2. Literature Review and Hypothesis

This research is based on stakeholder theory Monica et al., (2021) defines stakeholders as individuals or groups who have claims to the company's interests, ownership, rights, and responsibilities, both in the present, past, and future. Additionally, there are two types of stakeholders: first, primary stakeholders (investors, creditors, customers, employees, suppliers, and the government). The company must establish and maintain strong relationships with stakeholders by fulfilling their expectations, particularly those who hold power over the resources crucial for the company's operations (Konadu et al., 2022). This theory also suggests that companies should focus not only on financial goals but also take responsibility for the environment in their response to stakeholders (Bui et al., 2020). That conducting environmental disclosure as a form of pressure from stakeholders.

Environmental disclosure encourages directors to engage in activities that align with stakeholder expectations (Wicaksono, 2024). This theory also impacts the development of good relations between stakeholders and the achievement of corporate goals. This study applies stakeholder theory to explain the relationship between directors and environmental disclosure. According to the theory, stakeholder involvement in corporate governance drives voluntary disclosure as a form of corporate responsibility for addressing climate change and environmental damage caused by operational activities (Nursulistyo et al., 2023).

Gender Diversity and Environmental Disclosure

Stakeholder theory, women are often seen as more gentle and careful in making of decision (Ji et al., 2021). In corporate governance problems solved by female directors receive a better response from stakeholders (Menicucci & Paolucci, 2023). Previous research has identified factors that can enhance environmental reporting by companies. Disclosure is essential for stakeholders and the public to assess the business and the adverse effects of the company's operational activities. Gender diversity can positively influence environmental disclosure. Female representation on the board of directors tends to align with stakeholder expectations and mitigate future risks.

Buallay & Alhalwachi, (2022) states gender diversity can influence environmental disclosure because women tend to exhibit greater caution. The differences in perspectives and skills, along with the fact that investors often respond more positively to female directors, contribute to this effect (Nuskiya et al., 2021). This is supported research Ardhaoui et al., (2024); Buallay & Alhalwachi, (2022); Menicucci & Paolucci, (2023). Different results were found Oware et al., (2022) Different results were found by studies suggesting that The involvement of women in leadership does not influence environmental disclosure. Given the above explanation, there is a lack of consistency in the results of prior studies, which leads to the hypothesis of this research:

H₁: Board gender diversity have effect on environmental disclosure

Tenure and Environmental Disclosure

Ji et al., (2021) states that in the meeting area, directors who have served longer tend to produce broader CSR decisions. Longer tenure can provide differences in experience, knowledge, expertise, and responses regarding higher carbon coverage. It is hoped that this will result in a better understanding of social change and increase attention related to environmental issues. Khatib et al., (2021) suggests that tenure has an impact on employee satisfaction within the

company. While (Lahyani, 2022) stated that there is no relationship between tenure and voluntary disclosure in companies, indicating inconsistency in the research findings. Based on this, the hypothesis of this study is formed due to the lack of consistency in previous research results:

H₂: Tenure have effect on environmental disclosure

Research Framework

Figure 1 below describe about dependent variables is enviromental disclose (Y), and independent variables is gender (X1) and tenure (X2).

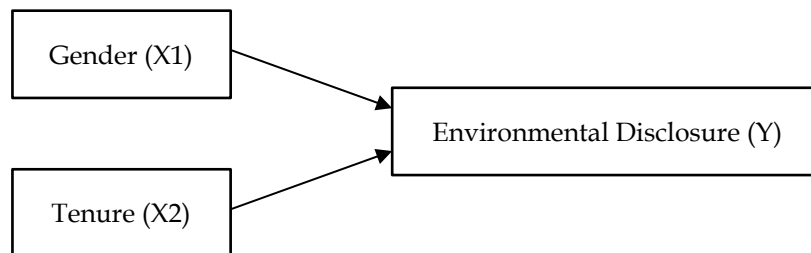


Figure 1. Research Framework

3. Data and Method

This study is a quantitative research. Quantitative research is defined as research based on calculations and data analysis in the form of numbers whose presentation requires statistical tools so that the variables of this research are in the form of numerical data. The independent variables in this study are gender diversity and tenure, while the dependent variable is environmental disclosure. The data for this research is sourced from companies listed on the Indonesia Stock Exchange in 2021-2023 with 141 observation data.

The sample selection criteria are 1) Non-financial firms listed on the Indonesia Stock Exchange (IDX) in 2021-2023; 2) companies that publish annual reports or upcoming reports in 2019-2021 which contain information on environmental coverage; 3) sample companies have complete data on the direction of diversity, supporting data in the form of company profiles, and other completeness required by researchers on the website of company. Sourced from the Indonesia Stock Exchange (IDX), there are 567 non-financial companies listed, 489 of which do not make environmental disclosures in their annual reports/reports entering or reporting but not consistently throughout the sample year (2021-2023), and 31 companies that do not meet the completeness of the data. Thus, only 47 companies were used as research samples.

Similar to previous research, this study measures environmental disclosure based on the Web-based environmental disclosure index (WEDI) which was previously conducted Sayadi & Setiawan, (2024) Each questionnaire item has a maximum score of 36 and a minimum score of 1. Gender diversity is assessed by calculating the average score of female representation on the board of directors, while tenure is measured based on the length of service.

This study tests the hypothesis using multiple linear regression path analysis to examine the cause-and-effect relationships between variables. The regression model for the analysis is panel data regression, with an equation that illustrates the relationship between the dependent variable (Y) and the independent variables (X) (Ghozali, 2015). Based on Ardhaoui et al., (2024) the regression model for this research is as follows:

$$ED_{it} = \alpha + \beta_1 \text{GENDER}_{it} + \beta_2 \text{TENURE}_{it} + e \quad (1)$$

Information:

ED: Enviromental Disclosure; α : Constant; GENDER: Gender; TENURE: Tenure; e: Error.

4. Results

Descriptive Statistics

Descriptive statistics are used to outline the characteristics of each research variable. The measurements applied in this study include minimum, maximum, mean, and standard deviation values. The results of the descriptive analysis are shown in Table 1 Descriptive Statistics as follows:

Table 1. Descriptive Statistics

	ED	GENDER	TENURE
Mean	0.5240	0.4678	0.4594
Median	0.4800	0.4000	0.0535
Maximum	0.9400	1.0000	0.9900
Minimum	0.0800	0.0000	0.0000
Std. Dev.	0.2702	0.1119	0.3685
Observations	141	141	141

Regression Results

Before conducting hypothesis testing, this study conducted an estimation est was conducted to identify the most suitable model. The Chow and Hausman tests were performed, and the results indicated that the random effects model was the most appropriate. Thus, no further classical assumption tests were needed (Muhammad & Aryani, 2021).

Chow Test

The results of the chow test in this study can be seen in the table below Table 3 shows that the value of the Prob. Cross-section Chi-square of 0.0000 is smaller than 0.05, so H0: CEM is rejected and H1: FEM is accepted. It can be concluded that the FEM model is the right model to use. The next step is to conduct the Hausman Test.

Table 3. Chow Test

Effects Test	Statistic	d.f	Prob
Cross-section F	5.549671	(81,137)	0.0000
Cross-section Chi-square	399.306311	91	0.0000

Hausman Test

The Hausman test above shows that the value of the Random Cross-section Prob. of 0.2040 is greater than 0.05. Thus H0: FEM is rejected and H1: REM is accepted. The conclusion of the Hausman Test is that REM is the right model to use, so it is necessary to conduct the next test, namely the Breusch and Pagan Lagrangian Multiplier (LM) Test.

Table 4. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-sectio random	9.637577	7	0.2040

Breusch and Pagan Lagrangian Multiplier (LM) Test

The results of the Breusch and Pagan Lagrangian Multiplier Test show that the Breusch Pagan Cross section value obtained is 0.0000 which is smaller than 0.05. This indicates that the appropriate panel data method to use is the Random Effect Model (REM). Gujarati & Porter (2010) stated that the Random Model Effect (REM) is an estimation model using the Generalized Least Square (GLS). GLS has met the classical assumptions, thus it can be concluded that this study does not require a classical assumption test.

Table 4. Breusch and Pagan Lagrangian Multiplier (LM) Test

	Cross-section	Period	Both
Breusch-Pagan	79.52329 (0.0000)	6.41416 (0.0112)	75.94863 (0.0000)

This study employed three types of hypothesis testing: the coefficient of determination (R^2), the F test, and the partial test. Table 2 presents the results of the coefficient of determination test, which shows a value of 0.41083, indicating that the model explains 41% of the variation in the dependent variable, while the remaining 59% is influenced by factors not included in the study. The F test yielded a significant result of 0.0000 ($0.0000 < 0.05$).

Table 2. Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.270314	0.212479	1.231459	0.2195
GENDER	0.218345	0.068856	3.381001	0.0007
TENURE	0.289661	0.079598	8.858221	0.0000
R-squared			0.434243	
Adjusted R-squared			0.41083	
F-statistic			14.3819	
Prob (F-statistic)			0.00000	

5. Discussion

The results in Table 2 indicate that gender diversity impacts environmental disclosure, with a probability value of 0.0007. Therefore, the research hypothesis suggesting that gender diversity influences environmental disclosure is supported by the data. This finding aligns with Kilincarslan et al., (2020) that gender has a positive effect on environmental disclosure. Women are cautious and tend to avoid future conflicts, which supports the idea that women are more likely to meet stakeholder expectations, as outlined in stakeholder theory. The inclusion of women on the board of directors can help reduce conflicts of interest between stakeholders, allowing directors to balance both financial and non-financial interests. The results of this study align with the findings of previous research (Buallay & Alhalwachi, 2022; Menicucci & Paolucci, 2024; Paolone et al., 2024; Zhou & Chen, 2024). In addition, it is managerially appealing that companies take into account the presence of women in the management ranks to gain another perspective on voluntary disclosures such as environmental disclosures.

The results in Table 2 show that tenure have positive effect on environmental disclose with probability 0.0000 ($0.0000 < 0.05$). Thus, the research hypothesis that tenure diversity has an effect on environmental disclosure is supported by the data. This result line with Hosny & Elgharbawy, (2022) states that the longer the tenure, the greater the concern for environmental issues. Experience and length of service can influence decision-making that has an impact on business performance. Thus, directors with long tenures tend to pay more attention to

environmental disclosure aspects (Lahyani, 2022). Wahid, (2016) found that there is a positive relationship between the board of directors' tenure and voluntary disclose. Long tenure is more likely to carry out voluntary disclose because they have experience and understanding of environmental issues. In addition, strengthening this managerial research is that diversity of tenure on the board of directors is able to provide various different perspectives in one meeting room, so the idea of diversity can be used as a basis for voluntary disclosure.

6. Conclusion

Growing attention and concern for the environment are putting pressure on companies. The consequences of environmental damage will affect global economic growth. Various efforts are made to prevent damage. Advocacy of the 2030 sustainable development agenda aims to protect the environment and companies to report environmental disclosures. Companies seek to adjust operational activities by making environmental disclosures. This action is in line with stakeholder theory. The results indicate that both gender diversity and tenure have an impact on environmental disclosure.

These results suggest that the presence of women on the board of directors influences more comprehensive disclosures, particularly in terms of environmental reporting. Second variable is tenure have positive effect on environmental disclose. Experience and length of service can influence decision-making that has an impact on business performance. This study provides valuable insights for companies regarding the impact of female diversity on the board of directors in relation to environmental disclosure. It also contributes theoretically by offering empirical evidence on the role of gender diversity in environmental reporting. From a managerial perspective, the study provides a foundation for companies to consider the importance of female representation and tenure length on the board of directors to sustain stakeholder trust. Additionally, this paper extends the current literature by exploring the effects of female and tenure directors on environmental disclosure, presenting an original contribution to the field.

Limitations and avenue for future research

The results of this study should be generalized with caution, as it has several limitations. These limitations include: 1) This study only measures environmental disclosure based on sustainability reports and does not include online media as an assessment indicator. This limitation presents an opportunity for future research to explore environmental disclosure through online media. 2) We only used gender and tenure diversity as an independent variable; future research could incorporate the director firm value variable to assess the impact of experience on environmental disclosure.

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