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Environmental, social and governance (ESG) performance and earnings management: the role of gender diversity

Vincentia Anindha Primacintya
Faculty of Business, Universitas Kristen Duta Wacana, Yogyakarta, Indonesia and Master of Science in Accounting Program, Universitas Gadjah Mada, Yogyakarta, Indonesia, and
Indra Wijaya Kusuma
Faculty of Economic and Business, Universitas Gadjah Mada, Yogyakarta, Indonesia

Abstract

Purpose – This study investigates the impact of ESG performance on earnings management practices in Indonesia and also examines whether gender diversity on the board of commissioners moderates this relationship.
Design/methodology/approach – The sample of this study consisted of nonfinancial companies listed on the Indonesia Stock Exchange from 2014 to 2022. ESG performance is proxied by the ESG score; earnings management is calculated by the Jones modified model. Gender diversity is represented by the proportion of female board commissioners. This research employs a balanced panel; after conducting model tests, the common effect model is used to test the first hypothesis, and the fixed effect model is applied to test the second hypothesis.
Findings – This study provides empirical evidence that higher ESG performance in a company is associated with lower earnings management. Companies with a diverse gender composition on their board of commissioners demonstrate a stronger negative relationship between ESG performance and earnings management.
Research limitations/implications – Empirical evidence on company ESG performance is important because Indonesia, as a G20 member, is striving to maximize the implementation of the SDGs. This study provides empirical evidence on the significance of Goal 5 of the SDGs, which pertains to gender equality in Indonesia.
Originality/value – This study complements previous research on ESG in Indonesia by providing empirical evidence on the impact of strong ESG performance among companies. Referring to Indonesia's two-tier board system and Goal 5 of the SDGs, which focuses on gender equality, this study examines the value of gender diversity on the board of commissioners.

Keywords Earnings management, SDG 5, ESG, Gender diversity, Female board of commissioners
Paper type Research paper

1. Introduction

The quality and credibility of a company's financial and non-financial reports are essential for its sustainability. This importance stems from the information in these reports, which serves as

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a basis for stakeholder decision-making (Ghaleb *et al.*, 2021). From an informativeness perspective, earnings signal key considerations for decisions (Schipper, 1989). However, earnings quality can be influenced by earnings management practices. Earnings management occurs when managers use personal judgment in preparing financial statements, potentially misleading stakeholders about the company's economic performance (Palacios-Manzano *et al.*, 2021). Numerous corporate scandals have raised concerns about the reliability of corporate financial information, driving increased scholarly research on earnings management. Managers may engage in earnings management by exploiting the characteristics of the accrual accounting system. As concerns about corporate reporting quality rise, stakeholders are also placing greater emphasis on the non-financial aspects of companies (Gavana *et al.*, 2022).

Rodriguez-Fernandez *et al.* (2014) found that earnings management activities can damage corporate reputation. Companies with a strong motivation to maintain a positive reputation tend to avoid behaviors that harm stakeholders. Currently, Stakeholders are increasingly demanding more comprehensive business reporting, not only in financial terms but also in terms of non-financial information (Li *et al.*, 2018). This non-financial information is often presented in sustainability reports, which provide an overview of a company's economic, social, and environmental impacts.

A survey conducted by the International Federation of Accountants (IFAC), the American Institute of Certified Public Accountants (AICPA), and the Chartered Institute of Management Accountants (CIMA) between 2019 and 2021, revealed that 100% of companies reported ESG-related information in 2020 and 202. In previous years, only 90% of companies reported such information. Additionally, 70% of companies include ESG activities in their annual reports, while 30% reports them through dedicated sustainability reports.

Previous studies on sustainable business have found mixed results, particularly regarding ESG performance, firm performance, stock returns, financial distress, and firm value. Research on the relationship between ESG performance and earnings management also shows inconsistent findings. Research on the relationship between ESG performance and earnings management still shows inconsistent findings. According to Tohang *et al.* (2024), companies with high ESG performance have a positive relationship with earnings management. This suggests that better ESG scores in this industry are associated with higher discretionary accruals due to possible opportunistic reasons that may drive agency conflicts between managers and shareholders in changing accounting numbers, which may lead to less quality financial reporting practices.

Conversely, a study by Pathak and Gupta (2022) found a negative relationship between ESG performance and earnings management in a sample of 33 countries from 2010 to 2020. Moreover, Chouaibi and Zouari (2022) conducted a study in European companies and found that those engaged in corporate social responsibility (CSR) were less likely to engage in earnings management. Companies committed to sustainability strive to maintain their reputation and stakeholder trust. Research related to the relationship between ESG performance and earnings management in Indonesia needs to be studied further to prove that companies in Indonesia committed to ESG performance can maintain their reputation and minimize deviant activities such as earnings management.

This study is motivated by the growing demand for enhanced ESG performance and the disclosure of sustainability reports in Indonesia. Sustainability reporting is regulated by the Indonesia's Financial Services Authority Regulation 51/POJK.03/2017 regulates sustainability reporting by ensuring the implementation of sustainable finance for financial services institutions, issuers, and public companies.

As part of the sustainability report, ESG practices have taken center stage in Indonesia. Government Regulation No. 47 of 2012 emphasizes that "Every company, as a legal entity, has social and environmental responsibilities." The Indonesian government is committed to achieving the 17 United Nations Sustainable Development Goals by 2030. In 2020, the

Indonesia Stock Exchange introduced IDX ESG Leaders, an index that measures the price performance of stocks with strong ESG assessments and financial performance.

Additionally, Indonesia's Financial Services Authority is implementing a Sustainable Finance Roadmap program, which consists of two phases: Phase I (2015–2019) and Phase II (2021–2025). This program will progressively require the adoption of sustainable finance principles and the issuance of sustainability reports. These initiatives demonstrate that ESG practices in Indonesia are receiving significant attention from various stakeholders. As companies engage in improving their ESG practices, they must also prioritize the integrity of their management to ensure overall corporate integrity.

Indonesia's two-tier board system assigns full responsibility for corporate governance to the board of directors, while the board of commissioners serves as a supervisory body. The roles and duties of both boards are governed by POJK Number 33/POJK.04/2014. The presence of a board of commissioners is a unique and interesting aspect to study, as it offers a supervisory function that provides a different perspective compared to countries with only a single board of directors.

The two-tier system encourages a more diverse range of personalities on the board, including gender diversity, which broadens the board's knowledge and skills base. Achieving gender equality is Goal 5 in the Sustainable Development Goals (SDG) agenda. The Ministry of National Development Planning of the Republic of Indonesia has organized various programs to achieve this goal. Indonesia supports women's active participation in the prevention, resolution, and restoration of sustainable peace.

The International Finance Corporation (IFC) of the World Bank Group (2019) explains that women are often engaged in ESG activities that enhance corporate reputation. An IFC analysis conducted in 2017 indicates that ASEAN is one of the world's most dynamic regions, with continued growth in women's economic participation. Notably, Indonesia ranks third in gender diversity, with women occupying 14.9% of board seats in publicly listed companies.

Female board members in Indonesia have achieved significant recognition, such as the women board of PT XL Axiata Tbk, which was awarded Indonesia's Most Powerful Women 2021 and Top Leader on CSR Commitment 2021. PT XL Axiata Tbk also ranks among the TOP 10 ASEAN Asset Class, an assessment of corporate governance excellence. Companies with female commissioners, such as PT Semen Indonesia Tbk and PT Bumi Serpong Damai Tbk, are among the top ESG-rated companies. This index highlights firms with strong ESG and financial performance. Thus, female board members in Indonesia positively influence environmental, social, and corporate governance aspects, contributing to enhanced financial performance. A gender-diverse board improves a company's capability to implement ESG practices effectively.

Previous research has indicated that greater gender diversity on boards correlates with improved ESG performance, with studies showing that more diverse boards often lead to better ESG outcomes (Issa and Hanaysha, 2023; Mallidis *et al.*, 2024; Velte, 2016; Yadav and Prashar, 2023). This suggests that female board members tend to be more involved in ESG activities.

However, existing research has not fully explored the connection between ESG performance and gender diversity on the board of commissioners. This study aims to investigate the relationship between ESG performance and gender diversity on the board of commissioners, highlighting the unique context of Indonesia's two-tier board system. Furthermore, it offers a new perspective on how gender diversity within the board of commissioners can influence ESG performance by providing valuable input to the board of directors.

This study provides novel insights by examining the relationship between ESG performance and gender diversity on the board of commissioners, particularly in the context of corporate earnings management. While numerous previous studies have explored the connection between board gender diversity and earnings management with mixed results, the majority indicate a negative relationship (Anh and Khuong, 2022; Zalata *et al.*, 2022b).

Specifically, findings suggest that increased gender diversity correlates with a reduction in earnings management activities.

However, most research on board gender diversity and earnings management has focused on countries with a single board structure. This study uniquely concentrates on gender diversity within the board of commissioners, which plays a supervisory role in promoting good governance and minimizing deviant earnings management practices.

Limited research has examined the moderating role of board gender diversity between ESG performance and earnings management, and such studies have largely focused on the board of director rather than the board of commissioners. For instance, research from Githaiga (2024) found that board gender diversity moderates the relationship between sustainability reporting and earnings management in publicly listed companies within the East African Community, indicating that greater diversity reduces earnings management. Similarly, Ghaleb *et al*. (2021) analyzed a moderating effect of gender diversity on the board of directors regarding CSR and earnings management.

Given these mixed results, this study hypothesizes that ESG performance negatively affects earnings management. Companies committed to ESG practices strive to maintain their reputation, including ethical financial performance. Additionally, the study tests whether gender diversity on the board of commissioners strengthens the relationship between ESG performance and earnings management. Female commissioners may enhance company's reputation by increasing supervisory activities and providing diverse perspectives, leading to more effective management oversight.

The study analyzes a sample of non-financial companies listed on the Indonesia Stock Exchange (IDX) from 2014 to 2022, utilizing data sourced from the Thomson Reuters database, Osiris, and annual reports. The dependent variable, earnings management, is measured using discretionary accruals according to the modified Jones model developed by Dechow *et al*. (1995). ESG performance, the independent variable, is proxied by ESG scores from the Thomson Reuters Assets 4 database. Gender diversity on the board of commissioners is measured by the percentage of female commissioners relative to the total number of commissioners. Control variables include company size, profitability, leverage, managerial ownership, company age, and losses, based on prior research.

The results revealed two key findings. First, the study identified a negative relationship between ESG performance and earnings management, providing empirical evidence that higher commitment to ESG performance corresponds to lower levels of earnings management. Second, the study found that gender diversity on the board of commissioners moderates this relationship, showing that gender diversity can strengthen the link between ESG performance and earnings management. The findings suggest that female board members tend to actively engage in ESG activities that enhance corporate reputation. This indicates that firms with both male and female board members who are committed to ESG performance exhibit lower levels of earnings management.

The contributions of this study are significant. It explores the impact of ESG performance on earnings management in Indonesia, where ESG practices are gaining prominence. Theoretically, it contributes empirical evidence that strong ESG performance is associated with reduced actions that undermine stakeholder trust. Additionally, this research supports the 5th Sustainable Development Goal (SDG) on gender equality, indicating that collaboration between men and women in ESG activities can decrease earnings management.

Practically, the findings serve as a guideline for stakeholders, emphasizing the importance of linking financial and non-financial performance in economic decision-making. For management, the study highlights the necessity of maintaining corporate reputation through ESG commitments. Moreover, it provides insights for policymakers in developing regulations that enhance corporate sustainability performance and gender equality.

The remainder of this study is organized into five sections. Section 2 presents the theoretical framework and hypothesis development; Section 3 outlines the methodology; Section 4 analyzes the data; and Section 5 concludes the study.

2. Theoretical framework and hypothesis development

2.1 Theoretical framework

In recent years, stakeholders have increasingly demanded not only financial information but also non-financial data related to environmental, social, and governance (ESG) aspects. This trend has prompted market participants, particularly public companies, to enhance their disclosure of environmental and social activities to uphold moral principles and protect their reputations (ElHawary and Elbolok, 2024; Rezaee *et al.*, 2020). The concept of ESG was first defined by the United Nations Environment Programme in 2004. According to PwC Indonesia (2021), the Indonesian government has integrated all 17 Sustainable Development Goals (SDGs) for 2030, along with 105 targets and indicators, into the National Medium-Term Development Plan for 2020–2024. Additionally, regulations such as POJK No. 51/POJK.03/2017 and the implementation of a carbon tax further encourage companies to adopt sustainable business practices and develop ESG-aligned products and services.

The environmental aspect focuses on the resources a company uses, its energy consumption, and waste management, while also addressing the impact of business activities on the environment. The social dimension pertains to a company's relationships with both internal and external stakeholders. Governance emphasizes the internal regulatory mechanisms, including the quality of information in financial statements and adherence to business ethics. Effective governance can promote ESG activities by encouraging practices such as renewable energy adoption and transparent financial reporting (Cheng *et al.*, 2023).

ESG performance yields both internal and external benefits. Internally, it enhances a company's resources, knowledge, and corporate culture, while externally, it bolsters the company's reputation (Branco and Rodrigues, 2006; Rahmaniati and Ekawati, 2024). Companies that demonstrate strong ESG practices often receive positive recognition and can mitigate the risk of criticism, as they are perceived as morally responsible, particularly in their treatment of employees (Hillman and Keim, 2001; Salehi *et al.*, 2018). This positive reputation fosters greater stakeholder trust. Consequently, ESG performance scores can lead to increased monitoring and higher stakeholder expectations, prompting companies to be more proactive in avoiding manipulative practices (Cahan *et al.*, 2015; Shan and Zhu, 2024).

Corporate reputation can be assessed from various perspectives, including leadership, product quality, service, employee behavior, and environmental responsibility. Therefore, strong ESG performance offers tangible benefits beyond mere financial metrics (Zakerean, 2021; Zimon *et al.*, 2022). High ESG performance enhances transparency through sustainability reports, which help mitigate information manipulation. By disclosing non-financial performance information, ESG reporting allows stakeholders to reduce information asymmetry and verify the reliability of financial data (Shan and Zhu, 2024; Siew *et al.*, 2016). Stakeholders play a crucial role in driving companies toward sustainable practices through ESG performance (Putri *et al.*, 2024). Stakeholder theory has emerged as a significant framework for examining ESG issues (ElHawary and Elbolok, 2024), with numerous studies investigating the impact of ESG performance within organizations (Borralho *et al.*, 2022; Kumala and Siregar, 2021; Nadeem *et al.*, 2020b; Palacios-Manzano *et al.*, 2021). According to stakeholder theory, socially responsible behavior balances the interests of various stakeholders, including investors, managers, employees, customers, suppliers, regulators, and society (Fatemi *et al.*, 2018).

Managers pursuing sustainable success must prioritize the welfare of stakeholders, as these groups control essential resources critical for the company's survival. From this perspective, companies that are committed to ESG performance are more likely to cultivate long-term relationships with stakeholders, rather than merely focusing on short-term profit maximization (Cheng *et al.*, 2023; Choi *et al.*, 2013). Ultimately, when a company excels in ESG aspects, it can build a strong reputation and foster a stable sustainability environment, thereby enhancing its overall value (Cheng *et al.*, 2023). Companies operate under social contracts with their stakeholders, which obligates them to conduct business activities based on trust and ethics, while fulfilling their social responsibilities to gain legitimacy from society. This perspective suggests that companies should avoid opportunistic earnings management (Kumala and Siregar, 2021). Agency problems arise from the separation of ownership and information asymmetry, which can motivate managers to manipulate earnings (Azad *et al.*, 2023). Sustainability-oriented companies seek to align stakeholder interests by integrating ESG considerations into their strategic decision-making processes. This alignment creates value by merging financial performance with environmental impact (Khlifi *et al.*, 2024).

Research by Kim *et al.* (2012) indicates that companies committed to social and environmental responsibility are less likely to engage in earnings manipulation through discretionary accruals compared to those lacking such commitment. ESG disclosure reflects executives' ability to implement socially responsible practices aimed at profit generation, ultimately reducing company risk (Sumunar and Djakman, 2020). Numerous studies have explored stakeholder theory within the context of ESG and corporate financial performance, yielding mixed results. While some studies suggest a positive relationship—where companies with high ESG performance engage in significant earnings management activities (Ahmadi *et al.*, 2023; Tohang *et al.*, 2024)—other research aligns with stakeholder theory, indicating a negative relationship between ESG performance and earnings management (Borralho *et al.*, 2022; Chouaibi and Zouari, 2022; Pathak and Gupta, 2022; Velte, 2019).

Stakeholder theory also highlights that stakeholder needs can vary, prompting companies to enhance disclosure regarding gender diversity, which is often linked to ESG activities, in order to meet stakeholder demands (Wan Mohammad *et al.*, 2023). ESG performance has increasingly become a crucial factor in achieving social and environmental objectives. Companies with female board members tend to exhibit higher ESG performance, as these members are generally more attuned to social and environmental issues (Wang and Hou, 2024). Issa and Hanaysha (2023) identify two key reasons why diverse gender representation on boards can facilitate better ESG-related decision-making. First, female board members bring different perspectives on managing environmental risks and issues, particularly those that serve stakeholder interests, thereby helping to minimize the company's environmental impact. Second, gender diversity enhances oversight of both ESG and financial performance, leading to reduced agency costs. This improved oversight fosters better decision-making and increases trust among stakeholders. The establishment of an effective board can align the interests of managers and stakeholders, ultimately enhancing operational performance and corporate sustainability (Masulis and Mobbs, 2014; Shafeeq Nimr Al-Maliki *et al.*, 2023).

2.2 Relationship between ESG performance and earnings management

Stakeholder theory posits that companies will reduce their manipulation activities by actively engaging in sustainability initiatives, such as ESG activities, which in turn lowers agency costs for stakeholders. Furthermore, companies are likely to consider stakeholder preferences when making capital structure decisions (Adeneye and Kammoun, 2022). Previous literature suggests that ESG performance aligns closely with corporate CSR activities. Theoretically, there are two perspectives linking earnings management and corporate CSR (Palacios-Manzano *et al.*, 2021). The first perspective indicates that corporate managers may exploit CSR practices for opportunistic behavior. For instance, López-González *et al.* (2019) found a positive relationship between CSR engagement and earnings management, suggesting that companies may use CSR to obscure their true financial performance. Conversely, the second perspective views earnings management as inconsistent with the principles of CSR practices. Companies that are strongly committed to social and environmental responsibility are more likely to act ethically when reporting their financial statements (Choi *et al.*, 2013).

In line with stakeholder theory, this study posits that companies with robust ESG performance will exhibit low levels of earnings management, supporting the second perspective. Companies focused on ESG are less inclined to manipulate earnings, as they are more committed to their role in creating value for stakeholders and guided by transparency in corporate disclosures (Palacios-Manzano *et al.*, 2021). The relationship between non-financial and financial performance is particularly relevant in Indonesia, which, as a G20 member, aims to maximize its achievement of the Sustainable Development Goals (SDGs). Compared to other G20 countries, Indonesia's implementation of Integrated Reporting has not been fully realized, making the evidence linking ESG to earnings management vital for improving integrated reporting practices.

ESG performance reflects a company's adherence to environmental and social responsibility principles, as well as its governance and political responsiveness, leading to observable outcomes in its relationship with society (Velte, 2019). A focus on ESG and sustainable corporate performance suggests that management seeks to promote the interests and welfare of stakeholders, whereas earnings management practices reflect contrary behavior in corporate activities (Gavana *et al.*, 2022). Research by Sun *et al.* (2024) investigates whether ESG can mitigate earnings management and finds that firms with higher ESG performance are less likely to engage in such practices, as stakeholders increasingly prioritize long-term growth. Companies that actively embrace ESG principles can enhance their corporate reputation.

As previously discussed, ESG performance in Indonesia is regulated under POJK 51/ POJK.03/2017. Research by Rahmaniati and Ekawati (2024) indicates that ESG-related financial performance positively influences non-financial performance in Indonesia. They conclude that following the implementation of POJK 51, the motivation to engage in ESG activities (doing good) is driven by the financial benefits of such implementation (doing well). Therefore, this study argues that companies in Indonesia engage in ESG activities to enhance their reputation and realize financial benefits, thus steering clear of activities that would have the opposite effect, such as opportunistic earnings management.

Based on this, the first hypothesis of this study can be formulated as follows:

H1. ESG performance has a negative effect on earnings management.

2.3 The effect of board of commissioners gender diversity on the relationship between ESG performance and earnings management

Stakeholder theory posits that board gender diversity positively impacts ESG disclosure. As board members become more diverse, the range of ESG-related practices can also expand, enabling companies to better meet the needs of various stakeholders Mensah and Onumah (2023). Research indicates that female board members actively participate in corporate environmental initiatives Alazzani *et al.* (2017). Studies have shown that female boards are particularly interested in promoting pollution prevention strategies, which can lead to sustainable competitive advantages in both short- and long-term financial performance. This suggests that male and female board members can collaborate effectively to enhance the firm's environmental performance Xie *et al.* (2020).

For example, Ben-Amar *et al.* (2017) found that companies with a higher percentage of gender diversity are more engaged in voluntarily disclosing climate change information. Women are often perceived as having a communal nature, fostering social connections that can help them collaborate with male board members in managing stakeholder interests (Nadeem *et al.*, 2020a). Additionally, female board members can bring valuable experience and knowledge related to non-business strategic decisions, often positioning themselves as influencers within their communities Byron and Post (2016). These perspectives collectively suggest a strong link between gender diversity and corporate ESG performance.

The interplay between corporate ESG performance and gender diversity indicates that collaboration between male and female boards can enhance the company's commitment to ethics and reputation while minimizing opportunistic actions, such as earnings management. Female board members tend to exhibit a risk-averse nature, which is associated with lower earnings management activities (Du *et al*., 2016). Furthermore, gender diversity on the board enhances oversight due to varied backgrounds, experiences, and perspectives, leading to improved vigilance among board members. This heightened oversight can significantly reduce instances of fraud and financial misconduct within the company (Issa and Hanaysha, 2023). Research by Tee and Kasipillai (2022) supports this notion, demonstrating that diverse board supervision is linked to higher earnings quality, indicating effective collaboration between male and female board members.

The Indonesian government is committed to achieving the 17 goals of the UN SDGs, ranking third in ASEAN for board gender diversity. Various initiatives have been implemented to promote the 5th goal of the SDGs, which focuses on gender equality. Indonesia's two-tier board system, consisting of a board of commissioners that supervises the board of directors, offers a unique advantage. Female board members, particularly in the board of commissioners, play crucial roles in prioritizing ESG aspects and enhancing the company's reputation. Their interest in ESG can lead to more rigorous oversight of company performance, thereby reducing earnings management activities.

Based on this, the second hypothesis of this study can be formulated as follows:

H2. Gender diversity on the board of commissioners strengthens the negative relationship between ESG performance and earnings management.

3. Methodology

3.1 Data and sample selection

This study employs secondary data collected from various sources, including company annual reports from 2014 to 2022, the BvD Osiris database, and Thomson Reuters. The selection of 2014 as the starting year is based on the implementation of POJK Number 33/POJK.04/2014, which outlines regulations regarding the roles of Directors and the Board of Commissioners in issuers or public companies. Additionally, 2013 is included as year t−1 for the calculation of the dependent variable related to earnings management.

Through a sample elimination process, the study identifies 23 companies that meet the specified criteria, resulting in a total of 207 observations. The details of the sample elimination process are summarized in Table 1.

3.2 Operational definition of variables

In this study, earnings management is quantified using the absolute value of Discretionary Accruals, following the modified Jones model established by Dechow *et al*. (1995). The measurement of ESG performance is based on the ESG score obtained from Thomson

Table 1. Sample Selection process

Criteria	
Companies listed on the IDX in 2014–2022	545
(−) Companies do not have ESG scores in the Thomson Reuters database	(500)
(−) Financial sector companies	(10)
(−) Companies do not publish financial statements in Rupiah currency	(5)
(−) The company does not consistently have an ESG score for 2014–2022	(7)
(−) Companies do not provide information on the gender of the board of commissioners	(0)
Companies that meet the criteria	23
Total sample 2014–2022 (23 x 9)	*207*

Source(s): Authors' own work

Reuters' ASSET4 database, which ranges from 0 to 100. This score incorporates a weighting of various ESG pillars, with higher scores reflecting more comprehensive corporate ESG-related disclosures.

Gender diversity on the board of commissioners is assessed by calculating the proportion of female members relative to the total number of board members, consistent with methods from Lim and Rokhim (2020), Marinova *et al*. (2016).

Additionally, several control variables are included in the analysis:

(1) Company Size: Measured by the natural logarithm of total company sales (Lim and Rokhim, 2020)

(2) Managerial Ownership: Calculated as the ratio of shares owned by management to the total outstanding shares.

(3) Leverage: Determined by dividing total debt by total assets.

(4) Profitability: Measured by Return on Assets (ROA), calculated as net income divided by total assets.

(5) Loss: A binary variable where a value of 1 is assigned if the company reports a loss (negative net income) and 0 otherwise (Peni and Vähämaa, 2010).

(6) Company Age: Calculated as the difference between the study year and the year of establishment of the company.

These variables collectively allow for a robust analysis of the relationships among ESG performance, gender diversity, and earnings management. Table 2 presents all the variables in this study and their measurements.

3.3 Model specification

The study employs two regression models for hypothesis testing. The first model tests the effect of ESG performance on corporate earnings management practices. Control variables, including SIZE, leverage, ROA, OWN, AGE, and LOSS, are included in the first model to test their effects on earnings management practices. The moderating variable, representing gender diversity on the board of commissioners, is included in the second model to test its effect on the relationship between ESG performance and earnings management practices, along with the control variables. The regression models are as follows:

Table 2. Definitions of variables

Variable	Description	Measure
EM	Accrual-based earnings management	Discretionary accruals based on modified Jones Model (1995)
ESG	ESG performance	Company's ESG score sourced from Thomson Reuters' ASSET 4
GD	Gender diversity	Ratio of the presence of a female board of commissioners of company
SIZE	The size of company	the natural log of total company sales
OWN	Managerial ownership	Ratio of the number of shares owned by the management of company
DAR	Leverage	Ratio of total debt divided by total assets
ROA	Profitability	Ratio of net income divided by total assets
LOSS	Companies that have losses	A binary variable taking the value 1 if the company has a loss or negative net income, otherwise 0
AGE	Age of the company	the difference between the year of research and the year of establishment of the company

Source(s): Authors' own work

Research Model 1:

$$EM_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 OWN_{i,t} + \beta_4 DAR_{i,t} + \beta_5 ROA_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 AGE_{i,t} + \varepsilon_{i,t}$$

Research Model 2:

$$EM_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 GD_{i,t} + \beta_3 ESG*GD_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 OWN_{i,t} + \beta_6 DAR_{i,t} + \beta_7 ROA_{i,t} + \beta_8 LOSS_{i,t} + \beta_9 AGE_{i,t} + \varepsilon_{i,t}$$

This research uses balanced panel data. Prior to testing the research hypotheses, model tests such as the Chow Test, Hausman Test, and Lagrange Multiplier Test are performed.

4. Analysis and results

4.1 Descriptive statistics

Table 3 presents the results of the descriptive statistical analysis of the study. Regarding ESG performance, the average ESG score for the companies is 43.8440, with a minimum score of 7.72686 and a maximum score of 88.2761. Earnings management is measured by the absolute value of discretionary accruals, resulting in an overall positive value. The average value of earnings management is 0.05409, with a minimum of 0.00038 and a maximum of 0.2984; a higher EM value indicates a greater level of earnings management by the company. Furthermore, gender diversity on the board of commissioners (GD) averages 7.680%, with the highest level of diversity at 42.85%, while some companies do not have any female board members.

Company size (SIZE) as a control variable has a minimum value of 15.0115 and a maximum value of 19.5238, with an average value of 17.0011. The second control variable is managerial ownership (OWN), which ranges from a minimum of 0.0000 to a maximum of 0.0381. This indicates that some companies have no shares owned by board members, while the highest ownership percentage is 3.81%. The average share ownership by the company's board is 0.14%.

The third control variable, leverage (DAR), has a minimum value of 0.1120 and a maximum value of 0.9533, indicating that the lowest proportion of debt to assets is 11.20%, while the highest is 95.33%. The average leverage shows that the average proportion of company debt is 46.39% compared to total assets.

Table 3. Descriptive statistics

Variables	Min	Max	Mean	Standard deviation
ESG	7.72686	88.2761	43.8440	19.574
EM	0.00038	0.2894	0.05409	0.0398
GD	0.0000	0.4285	0.07680	0.1113
SIZE	15.0115	19.5238	17.0011	0.9760
OWN	0.0000	0.0381	0.0014	0.0038
DAR	0.1120	0.9533	0.4639	0.2019
ROA	−0.1858	0.4578	0.0991	0.1017
LOSS	0.0000	1.0000	0.0531	0.2248
AGE	5.0000	89.0000	42.086	17.1818

Note(s): Number of samples (n) = 164
Source(s): Authors' own work

Furthermore, profitability (ROA) has a minimum value of −0.1858 and a maximum value of 0.4578, meaning that the company's ability to manage its assets to generate profits ranges from −18.58% to 45.78%. The average value indicates the company's ability to generate profits through asset management is 9.91%.

The fifth control variable, company age (AGE), shows a minimum age of 5 years for the youngest company and a maximum age of 89 years for the oldest company. The average age of the companies in the sample is 42.086 years.

In testing for multicollinearity, Table 4 presents the correlation matrix among the variables in the study. According to Gujarati (2004), multicollinearity problems arise when the correlation between variables exceeds 0.8. Table 4 shows that the correlations among the research variables are low, with the highest value being 0.327, indicating that there is no multicollinearity problem in the study.

4.2 Empirical results

After model testing, the Common Effect Model was found to be the best model for predicting the first hypothesis. The results of this hypothesis test are presented in Table 5. The first hypothesis posits that ESG performance has a negative effect on earnings management. The *p*-value of 0.022, along with a coefficient of −0.034 shown in Table 6, supports this hypothesis. These findings provide empirical evidence that ESG performance negatively affects earnings management, indicating that higher ESG performance is associated with lower earnings management activities.

Companies committed to ESG practices—such as effective waste management, product responsibility, and robust corporate governance—aim to maintain their reputation among stakeholders, thereby reducing the temptation for opportunistic actions like earnings management. Managers of firms with higher ESG performance are perceived as honest, trustworthy, and ethical, which fosters more transparent communication with stakeholders. As a result, these companies are likely to minimize earnings manipulation that could undermine stakeholder trust (Kim *et al.*, 2012; Kolsi *et al.*, 2023). Moreover, strong ESG

Table 4. Pearson's correlation matrix

	EM	ESG	SIZE	OWN	DAR	ROA	LOSS	AGE
EM	1.000							
ESG	−0.096	1.000						
SIZE	−0.208**	0.195**	1.000					
OWN	−0.007	−0.356**	−0.313**	1.000				
DAR	0.042	0.084	−0.071	0.246**	1.000			
ROA	0.059	0.079	−0.002	−0.142**	−0.060	1.000		
LOSS	−0.094	0.110	−0.132	−0.061	0.149**	−0.313**	1.000	
AGE	0.049	0.311**	0.327**	−0.174**	0.064	0.271**	0.029	1.000

Source(s): Authors' own work

Table 5. First hypothesis model test of research

Test	Selection criteria	Prob.	Model choice
Chow	CEM or FEM	0.0542	CEM
Hausman	FEM or REM	0.0173	FEM
Lagrange Multiplier	REM or CEM	0.1155	CEM

Source(s): Authors' own work

Table 6. Common-Effects panel regression of ESG performance on earnings management

Variables	Model 1 Coef.	*t*-value	Sig.
ESG	−0.0134	−2.31	0.022**
SIZE	−0.0132	−4.22	0.000**
OWN	−5.2956	−2.62	0.009**
DAR	0.0127	0.94	0.349
ROA	−0.0285	−0.94	0.347
LOSS	−0.0301	−2.29	0.023**
AGE	0.0176	2.74	0.007**
Constant	0.2678	5.00	0.000
R-squared	0.115	*F*-stat	3.69
Adj. *R*-squared	0.083	Sig. *F*	0.0009
Observations	207		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt and assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company; the dependent variable in this study is earnings management (EM)
Source(s): Authors' own work

performance can reduce monitoring costs by enhancing internal management control mechanisms (Yoon *et al.*, 2018).

In line with stakeholder theory, this study concludes that companies actively engaged in social and environmental activities are more likely to foster long-term relationships with stakeholders rather than focusing solely on short-term profit maximization (Choi *et al.*, 2013). The primary role of corporate accounting and reporting is oriented toward sustainable growth in the medium to long term (Kolsi *et al.*, 2023; Tettamanzi *et al.*, 2022). This study aligns with previous research by Velte (2019), which found that companies with strong ESG performance tend to exhibit low levels of accrual earnings management. When management engages in earnings management, the risk of eroding stakeholder trust increases. This study supports the second perspective on earnings management, which posits that such practices are inconsistent with the principles of CSR Palacios-Manzano *et al.* (2021). Companies committed to CSR invest significant resources in activities that meet stakeholder expectations, making them appear more ethical and less likely to engage in earnings manipulation (Kumala and Siregar, 2021). The findings support government efforts to achieve the 17 goals of the UN SDGs and emphasize sustainability initiatives across various sectors. Additionally, the Indonesian government has implemented regulations, such as POJK, that govern corporate sustainability reporting, serving as guidelines for stakeholder assessments of companies. In line with stakeholder theory, companies are expected to implement ESG practices that preserve stakeholder trust and avoid opportunistic earnings management.

After model testing, the Fixed Effect Model emerged as the best fit for predicting the second hypothesis. The test results for the second hypothesis are presented in Table 7.

Table 7. Second hypothesis model test of research

Test	Selection criteraia	Prob.	Model choice
Chow	CEM or FEM	0.0076	FEM
Hausman	FEM or REM	0.0031	FEM
Lagrange Multiplier	REM or CEM	0.0323	REM

Source(s): Authors' own work

This hypothesis posits that gender diversity on the board of commissioners strengthens the relationship between ESG performance and earnings management. The *p*-value of 0.005 and a coefficient of −0.2099 in Table 8 indicate that the statistical results support this hypothesis. Thus, there is empirical evidence that gender diversity on the board of commissioners enhances the relationship between ESG performance and earnings management.

The results of this study align with previous research indicating that gender diversity is linked to improved non-financial reporting and the mitigation of earnings management (Ghaleb *et al.*, 2021; Velte, 2016; Zalata *et al.*, 2022a). A board comprised of both female and male members engages in social, environmental, and corporate governance efforts aimed at enhancing the company's reputation, thereby reducing unethical earnings management practices. The presence of women on the board fosters greater dynamics among members and enhances decision-making quality.

According to stakeholder theory, stakeholder needs vary, prompting companies to provide more disclosures related to gender diversity, which is often connected to ESG activities, in order to meet stakeholder demands (Wan Mohammad *et al.*, 2023). This study further supports previous findings that greater gender diversity can improve the effectiveness of board oversight on financial statement quality, thereby curbing manipulative behavior (Ghaleb *et al.*, 2021). Female board members are generally more risk-averse and cautious in their actions, aiming to minimize errors or irregularities within the organization (Zalata *et al.*, 2022a).

Board members share a strategic goal of delivering value to diverse stakeholders. With the diversity present among board members, they are better equipped to monitor managerial behavior effectively, reducing opportunistic actions. Characteristics related to diversity, particularly gender diversity, enhance monitoring capabilities concerning earnings management activities. The role of the board of commissioners in overseeing corporate performance warrants empirical investigation, especially given the focus on gender diversity in governance (Mensah and Onumah, 2023). This study provides empirical evidence that female board commissioners collaborate with male members in corporate ESG activities, which enhance the company's reputation and mitigate deviant behaviors such as earnings management.

Table 8. Fixed-effects panel regression of the moderating effect of board of commissioner gender diversity

Variables	Model 2 Coef.	*t*-value	Sig.
ESG	0.0091	0.53	0.600
GD	0.6837	2.48	0.014**
ESG*GD	−0.2099	−2.81	0.005**
SIZE	−0.0143	−1.08	0.281
OWN	−1.2533	−0.19	0.851
DAR	0.0334	0.75	0.457
ROA	−0.055	−0.779	0.437
LOSS	−0.0321	−2.38	0.018**
AGE	−0.0386	−1.02	0.310
Constant	0.3936	2.10	0.038
R-squared Overall	0.0194	*F*-stat	2.81
R-squared Within	0.1263	Prob > *F*	0.0042
R-squared Between	0.0002		
Observations	207		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; GD is the gender diversity of the board of commissioners; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt to assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company
Source(s): Authors' own work

The findings also support initiatives related to gender diversity in Indonesia, where the government is working to achieve the fifth goal of the SDGs related to gender equality. Indonesia employs a two-tier board system, with the board of commissioners playing a supervisory role. Notably, Indonesia ranks third in ASEAN for gender diversity on boards, according to a survey by IFC (2019). The various ESG-related initiatives undertaken by companies in Indonesia, coupled with gender-diverse boards, demonstrate that such diversity can reduce opportunistic behaviors like earnings management, enabling firms to pursue sustainable corporate objectives.

The results of the control variable tests are presented in Table 8. The variable LOSS has a significance value of 0.018 with a coefficient of −0.0321. Companies that report poor performance or experience losses tend to engage in lower levels of earnings management. This correlation suggests that companies committed to CSR practices may exhibit reduced opportunistic behaviors, as they strive to maintain stakeholder trust even in challenging circumstances (Sila *et al*., 2016).

4.3 Additional analysis

Various global crises, such as the COVID-19 pandemic, have presented new challenges for companies. The universal consensus on the importance of ESG has been widely discussed in relation to corporate sustainability performance (Cheng *et al*., 2023). A survey conducted by Ernst and Young (2021) among 300 senior decision-makers in global buyer institutions revealed that 90% of respondents indicated they have paid greater attention to a company's ESG performance in their investment decisions and strategies since the onset of the pandemic.

Additional tests were conducted to examine the effects of ESG performance and earnings management, as well as the moderating role of gender diversity on the board of commissioners, both before (2014–2019) and after (2020–2022) the COVID-19 pandemic. The tests utilized Common Effects panel regression. ESG performance has proven to be a protective factor against declines in stock returns during the pandemic (Hartono and Hashim, 2023). However, previous studies have shown mixed results regarding the effects of COVID-19 on CSR and ESG performance. For instance, research by Aqabna *et al*. (2023) found a significant effect of ESG performance on ROA both before and after the pandemic. Conversely, Agustina and Barokah (2024) did not find a moderating effect of COVID-19 on the relationship between female board presence and ESG performance. Given these inconsistencies, this study adds further analysis of the relationship between ESG performance and earnings management, exploring the influence of gender diversity on the board of commissioners as a moderator, before and after the pandemic. Research by Savio *et al*. (2023) suggests that gender diversity on the board has helped mitigate the pandemic's effects and has improved environmental performance in companies with lower gender diversity.

The results of hypothesis testing for the pre-pandemic period (2014–2019) are presented in Table 9, showing the relationship between ESG performance and earnings management, while Table 10 presents the results of the moderating effect of gender diversity. Table 9 indicates that ESG performance has a coefficient of −0.0164 with a significance of 0.030, demonstrating that ESG performance negatively influences earnings management in the pre-pandemic period. Additionally, Table 10 shows that gender diversity on the board of commissioners moderates the relationship between ESG performance and earnings management, with a coefficient of −0.1333 and a significance level of 0.033.

These findings suggest that before the COVID-19 pandemic, companies focusing on ESG performance aimed to minimize earnings management activities to uphold the primary objective of ESG—enhancing reputation. Furthermore, gender diversity on the board of commissioners plays a crucial role in overseeing and reducing earnings management activities.

Meanwhile, Tables 11 and 12 indicate that there is no significant relationship between ESG performance and earnings management, and that gender diversity on the board of

Table 9. Common-effects panel regression of ESG performance on earnings management before the COVID-19 pandemic (2014–2019)

Variables	Model 1 Coef.	*t*-value	Sig.
ESG	−0.0164	−2.20	0.030**
SIZE	−0.0151	−3.69	0.000**
OWN	−7.7772	−2.64	0.009**
DAR	0.0278	1.54	0.127
ROA	−0.0399	−1.10	0.275
LOSS	−0.0358	−2.14	0.034**
AGE	0.0179	2.25	0.026**
Constant	0.3066	4.39	0.000
R-squared	0.1393	*F*-stat	3.01
Adj. *R*-squared	0.0930	Prob > *F*	0.0059
Observations	138		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt and assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company; the dependent variable in this study is earnings management (EM)
Source(s): Authors' own work

Table 10. Common-effects panel regression of the moderating effect of board of commissioner gender diversity before the COVID-19 pandemic (2014–2019)

Variables	Model 2 Coef.	*t*-value	Sig.
ESG	−0.0116	−1.46	0.147
GD	0.5258	2.21	0.029**
ESG*GD	−0.1333	−2.16	0.033**
SIZE	−0.0166	−4.04	0.000**
OWN	−12.979	−3.31	0.001**
DAR	0.0441	2.19	0.031**
ROA	−0.0448	−1.24	0.217
LOSS	−0.0398	−2.39	0.018**
AGE	0.0123	1.47	0.144
Constant	0.3295	4.63	0.000
R-squared	0.1712	*F*-stat	2.94
Adj. *R*-squared	0.1129	Prob > *F*	0.0034
Observations	138		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; GD is the gender diversity of the board of commissioners; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt to assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company
Source(s): Authors' own work

commissioners does not moderate this relationship in the post-COVID-19 period. After the pandemic, companies shifted their focus more towards ESG performance to maintain stock prices Hartono and Hashim (2023), leading to a decoupling of earnings management from ESG activities. These findings align with previous research by Agustina and Barokah (2024), Savio *et al.* (2023), which found that the COVID-19 pandemic did not significantly affect the impact of the gender diversity index on sustainability performance. This suggests that gender diversity has become an inherent aspect of ESG performance, resulting in no observable

Table 11. Common-effects panel regression of ESG performance on earnings management after the COVID-19 pandemic (2020–2022)

Variables	Model 1 Coef.	*t*-value	Sig.
ESG	−0.0021	−0.19	0.848
SIZE	−0.0063	−1.52	0.133
OWN	−0.9704	−0.39	0.695
DAR	−0.0117	−0.67	0.507
ROA	−0.0185	−0.36	0.721
LOSS	−0.0099	−0.53	0.598
AGE	0.0172	1.82	0.073
Constant	0.1080	1.37	0.175
R-squared	0.0750	*F*-stat	0.71
Adj. *R*-squared	−0.0312	Prob > *F*	0.6665
Observations	69		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt and assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company; the dependent variable in this study is earnings management (EM)
Source(s): Authors' own work

Table 12. Common-effects panel regression of the moderating effect of board of commissioner gender diversity after the COVID-19 pandemic (2020–2022)

Variables	Model 2 Coef.	*t*-value	Sig.
ESG	−0.0094	−0.64	0.522
GD	−0.481	2.48	0.230
ESG*GD	0.1140	1.16	0.251
SIZE	−0.0092	−1.79	0.079
OWN	1.2067	0.31	0.754
DAR	−0.0188	−0.87	0.389
ROA	−0.0295	−0.44	0.661
LOSS	−0.0143	−0.63	0.529
AGE	0.0289	2.25	0.028
Constant	0.1483	1.61	0.112
R-squared	0.1195	*F*-stat	0.63
Adj. *R*-squared	−0.0148	Prob > *F*	0.11195
Observations	69		

Note(s): ** significance at 5% level
ESG is the ESG performance of the company; GD is the gender diversity of the board of commissioners; SIZE is the size of the company; OWN is share ownership by managers; DAR is the ratio of debt to assets; ROA is the ratio of profit after tax to assets; LOSS is a loss dummy variable; AGE is the age of the company
Source(s): Authors' own work

influence from the gender diversity of the board of commissioners in the post-pandemic period.

5. Conclusion

This study successfully demonstrates that companies committed to ESG practices engage in less earnings management in Indonesia. It provides stakeholders with insights that non-financial performance is just as crucial as financial performance. ESG performance reflects a sustainable approach that yields long-term benefits and aims to maintain a company's reputation. Consequently, management is motivated to minimize actions that could undermine stakeholder confidence and the quality of financial statements, such as opportunistic earnings management.

The study also offers empirical evidence that gender diversity on the board of commissioners moderates the relationship between ESG performance and earnings management. In Indonesia, corporate gender diversity is increasingly reported in sustainability reports, and the involvement of female board members in ESG activities has been recognized through various awards. This research highlights the significance of Goal 5 of the SDGs, which pertains to gender equality in Indonesia. This study enriches the literature on CSR by linking ESG with corporate earnings management from the perspective of stakeholder theory. Practically, the results are intended to inform stakeholders about the relationship between non-financial and financial performance in company valuation. Furthermore, the findings should serve as a reference for management to uphold their reputation and trust among stakeholders regarding both financial and non-financial aspects. This research also aims to guide the government in enhancing regulations related to corporate non-financial performance and gender equality in Indonesia.

Several recommendations for future research arise from this study. First, the sample could be extended both temporally and geographically. Incorporating a longer time frame could yield more robust results, while expanding the research to include cross-border perspectives, such as those from ASEAN or the Asia-Pacific region, could enhance the understanding of the issue on an international scale. Second, exploring additional governance aspects could uncover further moderating effects. As sustainability performance remains a vital topic, further investigation into companies' ESG performance will continue to be a valuable area for research.

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About the authors

Vincentia Anindha Primacintya is a lecturer in the management program at Duta Wacana Christian University Yogyakarta, Indonesia. She completed her master of science in accounting at Gadjah Mada University Yogyakarta, Indonesia. Her research interests are in finance and sustainability. Vincentia Anindha Primacintya is the corresponding author and can be contacted at: vincentiaanin@staff.ukdw.ac.id

Indra Wijaya Kusuma is a professor of accounting at Gadjah Mada University in Yogyakarta, Indonesia. He completed his doctoral education at Kent State University, Ohio, USA. His research interests are in Financial Accounting, International Accounting, and Sustainability.