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ESG Controversies and Firm Performance in ASEAN: Do Board Gender Diversity and Sustainability Committee Matter?

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ABSTRACT

This study investigates the impact of ESG controversies on the performance of publicly listed firms in the ASEAN-5 countries with the moderating effect of board gender diversity and sustainability committees. By employing random-effects regression, this study examines 1414 observations covering 2017 to 2023. Besides, a two-step GMM and 2SLS regression were used to address the endogeneity problem. The results found a significant negative relationship between ESG controversies and firm performance, implying that firms with fewer ESG controversies have higher performance. Besides, board gender and sustainable committees contribute to reducing the intensity of ESG controversies, which subsequently improves corporate reputation and hence their performances. This outcome presents policymakers with recommendations on how to develop regulations concerning ESG controversies, board gender diversity, and sustainability committees. This study is among the first that highlights the role of board gender diversity and sustainability committees in the context of ESG controversies and firm performance in the region of ASEAN.

1 | Introduction

Environmental, social, and governance (ESG) are new strategic factors that define the sustainability of business organizations (Chen et al. 2023; Sharma et al. 2020). Firms that implement ESG create better sustainability for their organizations and provide value to multiple stakeholders (Khamisu et al. 2024). However, stakeholders are aware of both positive and negative ESG actions. The negative elements, known as ESG controversies, involve corporate scandals or suspicious, harmful, or unlawful behaviors that highlight serious issues within organizations (Treepongkaruna et al. 2024).

ESG controversies, encompassing negative news related to the environmental, social, and governance aspects of firms, significantly shape public perceptions and investor reactions (Barkemeyer et al. 2023; Menicacci and Simoni 2024). As public awareness and regulatory pressures around ESG issues increase, companies face greater risks to their reputation and financial performance when controversies arise (Xue et al. 2023; Elamer and Boulhaga 2024). ESG-related controversies bring the media and the eyes of investors that have a negative impact on the company's reputation and the entire business by putting questions about the future of the company (Melinda and Wardhani 2020). In a time when investors are

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demanding of the ESG performance as a prime investment criterion, such issues represent a severe obstacle to a business's survival (Burke 2021).

From the previous literature, it is clear that investigations on the connection between firm performance and ESG factors have received growing interest (Alhasnawi et al. 2024). Previous research again supported the significant impact of ESG factors on firms' performance (Aziz et al. 2024; Albitar et al. 2020; Amosh et al. 2022; Aouadi and Marsat 2016; Aydoğmuş et al. 2022; Yoon et al. 2018; Shaikh 2022). The discussion includes ESG controversies noted as one of the factors that may impact firm value. Such controversies present threats that may compromise the financial stability of a firm and its fitness in the market. Thus, it is also important to comprehend the ESG controversy effect on overall firm performance.

In the context of ASEAN, some of the largest firms in these countries have been negatively affected by ESG controversies. Examples of cases are labor rights abuse, human trafficking, and deforestation issues leading to million-dollar losses, regulatory penalties, and loss of contracts (Mohan and Morel 2014). Due to these ESG controversy issues, many ASEAN countries have instituted rules and policies in addition to advisory measures aiming at improving board diversity and have also taken initial steps toward requiring companies to set up sustainability committees. For instance, Malaysia and Singapore have put measures in place to incorporate these governance practices into the code of corporate governance. The Malaysian Code on Corporate Governance (MCCG) issued in 2017 underlines the importance of board diversity and recommends that large companies report on the company's gender diversity policy (MCCG 2017). In the same way, the 2018 update of Singapore's Code of Corporate Governance emphasizes board diversity and supports the formation of boards with committees that focus on sustainability (Money Authority of Singapore 2018).

ESG factors have been studied extensively in literature, but the impact of ESG controversies is underexplored (Elamer and Boulhaga 2024). Besides, most studies and research are focused on developed markets, leaving a huge gap in understanding how ESG variables, particularly controversies, affect developing markets (Anita et al. 2023). Indonesia, Malaysia, the Philippines, Singapore, and Thailand, known as ASEAN-5, are the countries that are growing fast and becoming more globally integrated. Moreover, ASEAN-5 may have different governance issues, including different regulatory maturity, sociopolitical influence, and stakeholder involvement as compared to developed markets. These make it challenging to handle ESG issues; thus, there is a need to look into the impact of ESG controversies in these settings. As mentioned above, ESG controversies are still in their infancy globally, and a focused study in ASEAN-5 can provide valuable insights that can be applied to other emerging markets.

Governance structures, especially board gender diversity and sustainability committees, have a big impact on ESG policies and practices. While these mechanisms have been studied extensively on overall ESG outcomes, their specific role in ESG controversies needs more attention (Aziz et al. 2024). Although these variables have been used globally, studying them in the ASEAN-5 context may provide a unique perspective. In the ASEAN-5, the integration of gender diversity and sustainability committees in governance frameworks is at different stages of maturity influenced by different institutional pressures, cultural norms, and corporate governance practices. This presents an opportunity to examine how these governance factors interact with ESG controversies to impact firm performance. By focusing on this region, this study addresses the gap in research on this topic in emerging markets and contributes to a more refined understanding of the relationship between governance structures and ESG controversies. These insights are particularly useful for tailoring governance practices and regulations in ASEAN-5 countries and other emerging markets facing similar challenges.

Therefore, this study examines the moderating effect of board gender diversity and sustainability committees on the relationship between ESG controversies and firm performance. Based on the data of 1414 firm-year observations, the primary results suggest that there is a strong negative relationship between ESG controversies and firm performance. Furthermore, this research suggests that board gender diversity and sustainability committees are relevant to minimizing the effects of ESG controversies on firm performance.

This study makes several noteworthy contributions to the expanding field of ESG research. Firstly, it offers new empirical evidence on the influence of ESG controversies on firm performance in developing countries, which differs from the majority of prior studies that have primarily focused on developed countries. Thus, this study addresses research gaps through cross-country studies within the relatively underexplored ASEAN context. Secondly, the research enhances the literature by including two moderating variables: board gender diversity and a sustainability committee. Thirdly, the study extends the application of stakeholder theory by linking ESG controversies and firm performance with agency theory to clarify the interaction of the moderating variables. Lastly, from a practical standpoint, the findings are expected to be highly relevant to investors, regulators, policymakers, and firms. For firms, it highlights the importance of avoiding ESG controversies and emphasizes the need to prioritize gender diversity and the presence of a sustainability committee. These insights can guide investors in decision-making processes and regulators in implementing suitable regulations for firms to enhance their sustainable business practices.

The rest of this paper is structured as follows: Section 2 presents the literature review and hypotheses development. The research method used in this study is described in Section 3. Section 4 describes the findings of the regression model in relation to the variables under analysis in this study. Lastly, Section 5 provides the conclusion of the paper and recommendations for possible studies in the future.

2 | Theoretical Framework, Literature Review and Hypotheses Development

Stakeholder theory provides a framework to understand the relationship between ESG controversies and firm performance. Freeman (1984) developed this theory, which states

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that corporations are accountable not only to shareholders but also to a wider range of stakeholders such as employees, customers, suppliers, communities, and the environment. Stakeholder theory highlights the interrelation of business and its stakeholders, and how corporate actions directly impact stakeholder trust, satisfaction, and engagement (Freeman et al. 2010). In the context of this study, stakeholder theory is useful to assess the impact of ESG debates. Good ESG practices allow companies to match their operations with stakeholder expectations, build trust, strengthen relationships, and improve reputation (Karwowski and Raulinajtys-Grzybek 2021; Alsayegh et al. 2020). Companies that address stakeholder issues proactively, such as reducing environmental footprint, supporting social fairness, and adhering to ethical governance, are better positioned to reduce risk and create long-term value. This alignment not only increases stakeholder loyalty but also operational efficiency and financial performance, as stakeholder engagement directly contributes to a company's success (Handoyo and Anas 2024).

On the other hand, ESG controversies erode stakeholder trust and damage the company's brand. Whether environmental, social, or governance related, these debates can lead to stakeholder dissatisfaction, boycott, regulatory penalties, and decreased investor confidence (Treepongkaruna et al. 2024; Xue et al. 2023). For example, a company's involvement in environmental degradation or unethical labor practices can cause public outcry and reduce customer loyalty, resulting in lost sales and increased operational risk. These outcomes show how important stakeholder management is in addressing ESG issues. Stakeholder theory supports the agency approach by highlighting the broader implications of governance for various stakeholder groups. While agency theory focuses on the alignment of interests between managers and shareholders, stakeholder theory widens the scope to include all parties affected by a company's decisions. This dual perspective shows the role of governance frameworks such as gender-diverse boards and sustainability committees in managing stakeholder interaction and ESG debates (Saci et al. 2024; Baraibar-Diez and Odriozola 2019).

Agency theory assists in extending the research question toward finding out how board gender diversity and the presence of a sustainability committee moderate the relationship between ESG controversies and the performance of the firm. This theory relates to the interaction between managers and the shareholders (Jensen and Meckling 2019). Boards that vary in their composition, especially in terms of gender, offer fresh perspectives and more vigilant monitoring (Goyal et al. 2019). Hence, they can reduce agency costs by increasing accountability and enhancing the agency decision-making process (Manita et al. 2018; Shubita and Alrawashedh 2023). These boards are usually more efficient at supervising the managerial actions, thereby providing adequate management of the ESG concerns. When ESG controversies arise, a gender-diverse board can respond to them effectively and in a manner that minimizes adverse effects on a firm's performance. On the other hand, an established sustainability committee that is responsible for monitoring the firm's ESG initiatives provides a sustainable management goal that is compatible with the interests of managers and shareholders (Baraibar-Diez and Odriozola 2019). This committee makes managers responsible for the firm's ESG performance and controversies; improve the firm's capacity to respond to ESG-related matters positively (Abdullah et al. 2023). This helps to minimize the risks of these controversies escalating to a greater level of harm. The presence of the sustainability committee guarantees that managers focus on sustainability issues and reduces the impact of ESG controversies on firm performance (Burke et al. 2019).

2.1 | ESG Controversies and Firm Performance

Due to the scarcity of literature on ESG controversies and firm performance, coupled with conflicting findings and the absence of evidence related to the ASEAN region, we believe there is room for more research. Overall, the literature mainly presents a negative association between ESG controversies and firm performance, which implies that controversies are generally detrimental to efficiency, profits, and general firm performance (Elamer and Boulhaga 2024; De Abreu Passos and De Campos-Rasera 2024; Treepongkaruna et al. 2024; Xue et al. 2023; Shakil 2021). Stakeholder theory posits that management should be responsive to the needs of the firm's diverse stakeholders; this finding indicates that the negative association between ESG controversies and firm performance is consistent with this position. When firms are involved in activities that result in ESG issues, they suffer from reactions from different stakeholders. For example, controversies may weaken customer trust, resulting in low sales or dissatisfaction among the employees, which reduces organizational productivity (Lee and Isa 2024; Nirino et al. 2021; Saci et al. 2024).

However, there are some literatures that support the opposite view. Surprisingly, Aouadi and Marsat (2016) report a positive relationship between ESG controversies and firm performance. Also, Melinda and Wardhani (2020) and Komath et al. (2023) state that controversies can also be used to make signals about the corporations' commitment toward transparency and accountability, which improves firm operation. Such a positive correlation indicates that in specific circumstances, the controversies can help emphasize a firm's approach to dealing with ESG matters that increase general public confidence and, consequently, enhance the firm's performance. When the firms and/or companies respond to the ESG controversies and perform necessary corrective actions, then it shows that the companies have embraced high standards of ethical behavior and are sensitive to the needs of stakeholders. Such an approach can be useful in reestablishing the confidence of the stakeholders and might help turn a negative circumstance into a positive one. It could also help such firms to have a good reputation and therefore increase customer loyalty thus making their businesses sustainable. As stated in the above literature review and with reference to the stakeholder theory which postulates that instead of focusing on the shareholder's wealth maximization, firms have the responsibility to all the stakeholders, this research proposes that firms undergoing ESG controversy will most probably observe a negative impact on their performance.

H1. *ESG Controversies significantly and negatively affect firm performance.*

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2.2 | Board Gender as a Moderating Variable

The impact of gender on ESG controversies has been the subject of limited research. Previous research has shown that the presence of females on boards can result in improved monitoring management and reduce conflicts of interest (Kahloul et al. 2022; Mansour et al. 2024), which may have an influence on ESG controversies and firm performance. Agency theory posits that a diverse board can reduce agency costs and improve supervision by aligning the interests of management with those of shareholders (Amin et al. 2022). Besides, ESG practices have been demonstrated to be positively impacted by the presence of women on boards. Research suggests that gender-diverse boards are more credible in their CSR reporting and demonstrate a strong commitment to stakeholders (Cucari et al. 2018; Wu et al. 2021; Temiz and Acar 2023). Similarly, the adverse consequences of ESG controversies can be effectively mitigated by diverse boards (Elamer and Boulhaga 2024). Supported by Issa and Hanaysha (2023), when there are three or more female directors, there is a correlation between a higher proportion of women on boards and a decrease in the number of ESG controversies. This corroborates the notion that diverse boards are more effective in monitoring and regulating management, which is consistent with agency theory. Consequently, the likelihood and impact of ESG controversies are reduced.

Conversely, there is evidence that the relationship between ESG controversies and equity values is negatively moderated by board gender diversity, suggesting that the negative impact of corporate controversies is worsened by board gender diversity (Al-Hiyari 2024). However, previous research has identified a more positive than negative correlation between firm performance and board gender, and ESG controversies. According to agency theory, board gender diversity is expected to increase the overall performance of the firm under ESG controversies by decreasing agency costs and increasing the quality of governance. Hence, it is proposed that the link between ESG controversies and firm performance is moderated by board gender diversity that lessens the impacts of such controversies.

H2. *Board gender diversity positively moderates the relationship between ESG controversies and firm performance.*

2.3 | Sustainability Committee as Moderating Variable

Sustainability committees are subcommittees of the board of directors whose responsibility is to oversee the management of sustainability development programs in a firm (Abdullah et al. 2023; Gennari 2019). These committees oversee the sustainability report and guarantee the implementation of the board's sustainability policies and strategies (Hussain et al. 2018). Members normally possess good experience and knowledge in various sustainability fields (Javeed et al. 2022). From an agency theory perspective, the role of sustainability committees are to provide a watchdog role to ensure that managers address long-term sustainability goals and not just focus on short-term goals (Qaderi et al. 2022). This alignment helps in addressing the conflicts that are related to ESG issues. Also, sustainability committees effectively manage ESG controversies by communicating and engaging the relevant stakeholders to address potential conflicts (Orazalin et al. 2023).

Empirical evidence has found that sustainability committees have a role to play in ESG practices. Companies that adopt such committees generally perform better than their counterparts in terms of ESG ratings and scores, likely have better ESG policies and practices, and encounter significantly lower ESG risks and incidents, as affirmed by Elmaghrabi (2021) who also found that firms with sustainability committees were more likely to have better ESG performance. Besides, the formation of a sustainable committee suggests that the board values ESG practices, which are beneficial to the company's reputation and stakeholders (Burke et al. 2019; Del Valle et al. 2019). Such engagement helps to prevent or at least reduce the negative consequences of potential ESG controversies.

In addition, the studies reveal that these committees enhance the quality of sustainability reporting and provide a better ESG disclosure rating. Companies that have sustainability committees work toward fulfilling better ESG performance rankings compared to firms that lack the committees. Similarly, in a recent study, Baraibar-Diez and Odriozola (2019) found that companies with active sustainability committees had substantially better ESG scores and non-financial performance than firms without such committees. Similarly, Menicucci and Paolucci (2022) found positive effects of the sustainability committee on the ESG score, specifically in the financial sector. Based on the above, it can be seen that the presence of a sustainability committee within a firm's board of directors can mitigate the adverse effects of ESG controversies on firm performance. Therefore, it is postulated that:

H3. *Sustainability committee positively moderates the relationship between ESG controversies and firm performance.*

3 | Research Design

3.1 | Data and Sample Selection

The sample period runs from 2017 to 2023, beginning in 2017 due to the modification of corporate governance rules in several ASEAN-5 countries and the availability of adequate ESG data. ESG controversies and firm performance data were acquired from the Thomson Reuters Eikon Database. This database is a comprehensive financial data source that provides real-time and historical market data, company financials, ESG metrics, and analytics, making it essential for robust empirical research and investment analysis. On the other hand, data on board gender and sustainability committees was manually gathered from the annual reports of firms listed on ASEAN-5 stock exchanges. The sample originally contained 245 firms; however, after eliminating 43 firms with incomplete data, the final sample consisted of 202 firms with 1414 observations. Table 1 shows the initial sample and the distribution of firms among the ASEAN-5 countries, with Singapore having the most observations (27.3%), followed

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TABLE 1 | Sample selection and sample distribution based on country.

Study's sample	Total firms	Pooled observations	
Preliminary sample	245	1715	
(−) Firms with missing data	−43	−301	
Total sample	**202**	**1414**	
Countries	**No. of firms**	**Total observations**	**%**
Indonesia	34	238	16.7%
Malaysia	50	350	24.8%
Philippines	19	133	9.4%
Singapore	55	385	27.3%
Thailand	44	308	21.8%
Total	**202**	**1414**	**100%**

by Malaysia (24.8%), Thailand (21.8%), Indonesia (16.7%), and the Philippines (9.4%).

3.2 | Variables Definition and Measurement

3.2.1 | Dependent Variable

Firm Performance. The dependent variable in the study is firm performance, which is assessed using two indicators: Tobin's Q and Return on Equity (ROE). ROE is a metric that quantifies the profitability of a company in relation to its total equity. It is determined by dividing net income by total equity. Tobin's Q, a metric that evaluates market-based business performance, is calculated by summing the fair market value of common stock and the book value of total liabilities, and subsequently dividing the sum by the value of total assets (García-Amate et al. 2023; Alshdaifat, Abdul Hamid et al. 2024; Alharasis et al. 2024).

3.2.2 | Independent and Moderating Variable

ESG Controversies. To measure ESG controversies, this study took the data from Refinitiv. The ESG controversies score reflects the extent of a company's exposure to environmental, social, and governance controversies and unfavorable events as reported in the media (Xue et al. 2023). *Moderating variables*: Board gender (BG) and Sustainability Committees (SC). Board gender and sustainability committee were manually collected from the annual report. Board gender diversity refers to the percentage of women on board, and the sustainability committee uses a dummy variable, 1 if the firm has a sustainability or ESG committee, otherwise 0 (Al-Hiyari 2024; Elmaghrabi 2021).

3.2.3 | Control Variables

This study used five control variables related to firm characteristics: firm size (SIZE), leverage (LEV), liquidity (LIQ), family ownership (FO), and a COVID-19 dummy (COVID-19). These variables, selected based on prior empirical research (Aziz et al. 2024; Li et al. 2019; Amara et al. 2025) are used to control for firm-level characteristics that may influence the dependent variable. For instance, leverage and firm size, and liquidity may impact financial performance. While the COVID-19 dummy was used to control the effect of COVID-19 on firm performance. Table 2 gives a summary of variable measures used for this study.

3.3 | Descriptive Analysis

Table 3 Panel A presents a descriptive analysis of the continuous variables examined in this study. Regarding the independent variables, the mean ESG Controversies (ESGC) score is 97.68%, with a range from 68.37% to 100%. This wide range suggests significant variation in the ESG controversies scores among firms in the ASEAN-5 countries with 100% indicating firms with no controversies. On the other hand, for proxies of firm performance, the ROE shows a mean of 0.115, ranging from −0.079 to 0.442, while Tobin's Q shows a mean of 1.643, ranging from 0.66 to 4.73. Moving to moderate variables, Board gender diversity (BG) demonstrates an average of 16.41%, ranging from 0% to 60%. This variation suggests a significant disparity in gender representation on corporate boards across the ASEAN-5 region. Some firms have no women on their boards, while others have a relatively high proportion of female board members. Table 3 Panel B presents the frequency of two dichotomous variables, which are the sustainability committee (SC) and COVID-19. The table indicates that 78.22% of the observations have a sustainability committee. Additionally, 57% of the sample data falls within the COVID-19 period, spanning from 2020 to 2023.

Multiple tests were conducted in this study to evaluate the appropriateness of the proposed models. The analysis encompassed the following: identifying outliers in the data, assessing the normal distribution of the data, checking for possible high correlations among variables, as outlined by Hair et al. (2010). Consistent with prior research, this study applies winsorization to all continuous variables at the 1% and 99% levels to mitigate the influence of potential outliers (Ab Aziz et al. 2024; Alshdaifat, Abdul Hamid et al. 2024; Baatwah et al. 2022). Additionally, we scrutinize skewness and kurtosis values for each variable post-winsorization. In this study, data is considered to have a normal distribution since the skewness falls between −2 and +2, and kurtosis lies within the range of −7 to +7 (Hair et al. 2010). Furthermore, the residuals exhibit a normal distribution, as outlined in Appendix 1. In order to mitigate multicollinearity concerns, Hair et al. (2010) recommends that the correlation value be less than 0.8. All variables are not highly correlated, as illustrated in Table 4. The VIF values for all variables were less than two, which suggested that there was no significant correlation between them (Neter et al. 1996). To address the issue of heteroscedasticity, the study implemented the robust standard error approach within the main model of this study.

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TABLE 2 | Summary of the variables measurements.

Variable	Acronym	Expected sign	Measurement	Sources
Return on Asset	ROE		Ratio of net income to total equity	García-Amate et al. 2023; Alshdaifat, Abdul Hamid et al. 2024; Alharasis et al. 2024
Tobin's Q	Tobin's Q		Ratio of market value + total debt to total asset	
ESG controversies	ESGC	(−)	Scores ranging from 0 to 100 are assigned to firms based on their controversies appear in news or media related to environmental, social and governance.	Xue et al. 2023; Ab Aziz et al. 2024
Board gender	BG	(+)	Percentage of female directors on board.	Ab Aziz et al. 2024; Elmaghrabi 2021
Sustainability Committee	SC	(+)	1 if the firm have sustainability or ESG committee, otherwise 0	
Size	SIZE	(−)	The natural logarithm of total assets.	
Leverage	LEV	(+)	The ratio of total liabilities to total assets.	Aziz et al. 2024; Li et al. 2019; Saleh and Maigoshi 2024; Al-Matari and Alosaimi 2022; Alshdaifat, Saleh et al. 2024
Liquidity	LIQ	(+)	The ratio of current assets to total current liabilities.	
Family ownership	FO	(+)	Percentage of family shareholdings.	
COVID-19	COVID-19	(−)	1 refers to years affected by COVID (2017 until 2019), otherwise 0	

TABLE 3 | Descriptive statistics.

Panel A: Continuous variables

Variables	Obs	Mean	SD	Min	Max	Skew.	Kurt.
ROE	1414	0.115	0.117	−0.079	0.442	1.052	2.401
Tobin's Q	1414	1.643	1.074	0.66	4.73	1.607	2.735
ESGC	1414	97.684	7.894	68.367	100	−3.25	2.795
BG	1414	16.413	13.041	0	60	0.498	2.671
SIZE	1414	21.993	1.228	18.284	25.315	−0.242	2.847
LEV	1414	0.491	0.171	0.184	0.783	0.027	2.069
LIQ	1414	1.681	0.982	0.391	4.028	0.889	3.064
FO	1414	15.313	24.996	0	97.88	1.268	3.078

Panel B: Dichotomous variables

Variables	Obs	Frequency		Percent	
		0	1	0	1
SC	1414	308	1106	21.78%	78.22%
COVID-19	1414	606	808	43%	57%

3.4 | Research Models

In this study, static panel regression was used to examine the relationship between ESG Controversies (ESGC) and firm performance (FP), measured by Return on Equity (ROE) and Tobin's Q, while controlling for the moderating effects of board gender diversity (BG) and sustainability committee (SC). Model specification tests suggest that the random effects model is preferable. The random effects model assumes that individual firm effects are uncorrelated with the independent variables, which is suitable

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TABLE 4 | Pearson correlations.

Variables											VIF
ROE	1.000										—
Tobin's Q	0.584*	1.000									—
ESGC	−0.015	0.029	1.000								1.044
BG	−0.006	0.088*	−0.002	1.000							1.042
SC	0.067*	0.067*	−0.031	0.053*	1.000						1.041
SIZE	−0.294*	−0.489*	−0.165*	−0.110*	0.019	1.000					1.112
LEV	0.104*	−0.084*	−0.145*	−0.061*	−0.071*	0.253*	1.000				1.687
LIQ	−0.024	0.102*	0.095*	0.006	−0.009	−0.190*	−0.609*	1.000			1.639
FO	0.017	0.123*	0.028	−0.068*	−0.040	0.042	−0.023	0.131*	1.000		1.032
COVID-19	−0.085*	−0.097*	−0.054*	0.135*	0.160*	0.076*	0.050*	−0.028	0.005	1.000	1.056

*Shows significance at $p < 0.10$.

given the data and the study. Other studies such as Setiarini et al. (2023) and Ab Aziz et al. (2024) used this method in a similar ASEAN context. To account for unobservable time-variant and industry-specific factors that may influence the dependent variable, this study includes year-fixed effects and industry-fixed effects in the regression model. The panel regression models are as follows:

Model 1:

Model 1 is the main model to test the relationship between ESG controversies and firm performance (FP) controlling for firm-specific factors (SIZE, LEV, LIQ), ownership structure (FO), COVID-19, year (YearEF), and industry (IndFE).

$$\begin{aligned} FP\left(ROE, Tobin's\ Q\right) = \ & \beta 0 + \beta 1\ ESGCit + \beta 2\ SIZEit \\ & + \beta 3\ LEVit + \beta 4\ LIQit \\ & + \beta 5\ FO + \beta 6\ COVID-19 \\ & + YearEF + IndFE + \mathcal{E} \end{aligned}$$

Model 2:

Model 2 adds board gender diversity (BG) as a moderator and tests the interaction between ESG controversies (ESGC) and firm performance (FP).

$$\begin{aligned} FP\left(ROE, Tobin's\ Q\right) = \ & \beta 0 + \beta 1\ ESGCit + \beta 2\ BGit \\ & + \beta 3\ ESGCit^{*}\ BGit + \beta 4\ SIZEit + \beta 5\ LEVit \\ & + \beta 6\ LIQit + \beta 7\ FO + \beta 8\ COVID-19 \\ & + YearEF + IndFE + \mathcal{E} \end{aligned}$$

Model 3:

Model 3 adds sustainability committees (SC) as a moderator and tests the interaction with ESG controversies (ESGC) and firm performance (FP).

$$\begin{aligned} FP\left(ROE, Tobin's\ Q\right) = \ & \beta 0 + \beta 1\ ESGCit + \beta 2\ SCit \\ & + \beta 3\ ESGCit^{*}\ SCit + \beta 4\ SIZEit + \beta 5\ LEVit \\ & + \beta 6\ LIQit + \beta 7\ FO + \beta 8\ COVID-19 \\ & + YearEF + IndFE + \mathcal{E} \end{aligned}$$

4 | Empirical Results and Discussion

4.1 | Regression Analysis

The Breusch-Pagan Lagrange multiplier test and the Hausman test are both less than 0.05 (i.e., significant), as demonstrated in Table 5. Consequently, the random effects model is the preferred choice for this investigation. The model was deemed statistically significant and appropriate for analysis when the p-value was less than 0.01. The statistical validity of the firm performance (ROE and Tobin's Q) model is suggested by the associated r-squared values of 16.55% and 27.81%. These values are statistically valid.

For hypothesis 1, the result showed that ESGC is negatively and significantly related to both ROE and Tobin's Q, as highlighted in Table 5. Therefore, hypothesis 1 is supported and consistent with the stakeholder theory which posits that controversies related to ESG factors are perceived to erode stakeholder trust and enhance perceived risks (Treepongkaruna et al. 2024). When ESG controversies affect companies, stakeholders may question the company's ESG policies, which in turn decreases investor confidence and consequently firm performance (Elamer and Boulhaga 2024; De Abreu Passos and De Campos-Rasera 2024). Furthermore, these controversies lead to negative effects such as loss of reputation, sanctions, increased risks, and considerable financial losses (Xue et al. 2023; Shakil 2021). This means that when such controversies occur, they result in unfavorable media coverage, costs including legal fees and fines, and lasting consequences including a decline in market value and restrictions in capital markets. These adverse effects highlight the value of proactive ESG activities in the creation of stakeholder loyalty to minimize the risks (Saci et al. 2024). Furthermore, we also assess the tangible economic benefit of ESG

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TABLE 5 | Random effect regression results for ESG controversies with firm performance (ROE and Tobin's Q).

Variables	ROE	Tobin's Q
ESGC	−0.00658 ** (0.00334)	−0.00206 * (0.00187)
SIZE	−0.0319 *** (0.00474)	−0.498 *** (0.0656)
LEV	0.0677 *** (0.0315)	−0.307 ** (0.206)
LIQ	0.00369 (0.00467)	−0.0333 (0.0285)
FO	0.00138 (0.00238)	0.00592 *** (0.00218)
COVID-19	−0.0154 *** (0.00438)	−0.114 *** (0.0246)
_cons	0.846 *** (0.111)	1.98 *** (1.737)
Std. error adj	Robust Cluster	Robust Cluster
Industry and Year effect	Included	Included
R^2 within	16.55	27.81
VIF	1.23	1.25
N	1414	1414
Breusch and Pagan LM test	858.14***	1923.84***
Hausman test	12.75	13.43

Note: *Significant at the 0.10 level; **significant at the 0.05 level; ***significant at the 0.01 level.
Source: Authors' own creation.

controversies on firm performance (Joni et al. 2020). An increase in ESG controversies leads to a decline in ROE, which reflects an enormous decline in firm profitability. Similarly, a decline in Tobin's Q reflects a negative market valuation effect. So, firms facing ESG controversies not only underperform but also lose investor confidence. The findings emphasize the actual impact of ESG controversies on company performance.

Table 6 presents the results from regression analyses examining the impact of ESG controversies (ESGC) on firm performance, moderated by board gender diversity (BG) in order to test hypothesis 2. The model demonstrated a robust fit, explaining 19.22% of the variance in ROE and 28.73% in Tobin's Q, as indicated by the R-squared values. The findings reveal a positive moderating role of BG in between ESGC and firm performance relationship for both ROE and Tobin's Q. Thus, hypothesis 2 is supported, which suggests that BG weakens the negative influence of ESG controversies on firm performance within ASEAN-5 firms.

Consistent with prior research and theoretical frameworks, agency theory suggests that a diverse board can mitigate agency costs and enhance oversight by aligning managerial incentives with shareholder interests (Amin et al. 2022). Several studies have established that board gender diversity increases the credibility of sustainability reports and the commitment level toward ESG practices (Cucari et al. 2018; Wu et al. 2021; Temiz and Acar 2023). Further, a board with gender diversity helps minimize the negative impacts of ESG controversies (Elamer and Boulhaga 2024). Issa and Hanaysha (2023) also provide some evidence supporting this, revealing that organizations with boards that have three or more women directors are less likely to report ESG controversy. This moderation effect is consistent with the theoretical perspective of the role of diverse boards in not only helping reduce possible financial risk from ESG controversies, but also in enhancing firm performance indicators, ROE, and Tobin's Q.

Table 6 also displays the regression analysis of ESGC on firm performance with SC as a moderating variable to test hypothesis 3. The model exhibited a strong fit, explaining 20.78% of the variance in ROE and 24.34% in Tobin's Q, as indicated by the R-squared values. In relation to the moderating role of SC on the relationship between ESGC and firm performance, the study reveals significance in ROE. Hence, hypothesis 3 is supported through ROE. This indicates that SC has the effect of reducing the detrimental relationship between ESG controversies and the firm profitability of the ASEAN-5 firms.

This result therefore showed the importance of sustainability committees as a crucial factor that helps to influence managerial decisions to consider sustainability plans in the long term instead of focusing on short-term revenue maximization, in the agency theory perspective (Qaderi et al. 2022). This alignment helps to mitigate conflicts that may arise due to ESG-related issues. Moreover, sustainability committees are directly engaged in the management of ESG controversies by ensuring stakeholder engagement and overseeing communication in case of such controversies (Orazalin et al. 2023). Companies that have implemented sustainability committees appear to deliver higher ESG results with lower controversies (Elmaghrabi 2021). Thus, this approach of engaging proactively in ESG helps to avoid or at least reduce the negative impacts that relate to possible ESG controversies. This implies that firms can enhance their ESG risk management by adopting the right structures of governance that consist of specific oversight mechanisms in the areas of sustainability committees. Furthermore, this strategic approach improves not only the performance of the firm but also strengthens stakeholders' perceptions of the firm's trustworthiness in ESG matters in the generally growing ESG market environment. While for the economic benefit of sustainability committees and gender in moderating the relationship between ESG controversies and firm performance, it showed that firms with more gender-diverse boards and a sustainability committee in place are better positioned to minimize the negative impact of ESG controversies.

Our findings reveal an interesting insight where, when the moderating variables are introduced, a reversal of ESGC sign suggests that board diversity and sustainability committees play a pivotal role in shifting ESG controversies influence from negative to positive. This implies that diverse boards bring broader perspectives and improved decision-making to address ESG controversies, while sustainability committees focus on strategies to manage and resolve ESG controversies, thereby minimizing their negative effects. The change in sign from negative to

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TABLE 6 | Moderating effect of board gender diversity and sustainability committee.

	Board gender diversity		Sustainability committee	
Variables	**ROE**	**Tobin's Q**	**ROE**	**Tobin's Q**
ESGC	0.000560* (0.00049)	0.00577* (0.0045)	0.00722** (0.0031)	0.00868 (0.0085)
BG	0.00587** (0.0026)	0.0514** (0.0239)	—	—
ESGC × BG	0.00182*** (0.00079)	0.000566** (0.00024)	—	—
SC	—	—	0.119*** (0.0342)	0.147 (0.0587)
ESGC × SC	—	—	0.00114*** (0.00034)	0.00201 (0.0036)
SIZE	−0.0160*** (0.0036)	−0.529*** (0.1027)	−0.0137*** (0.0048)	−0.626*** (0.0950)
LEV	−0.0805*** (0.0235)	0.318* (0.2465)	−0.122*** (0.0397)	−0.506* (0.2582)
LIQ	0.00207 (0.0034)	−0.0331 (0.0331)	0.00184 (0.0226)	−0.0415 (0.0361)
FO	0.00107 (0.0043)	0.00471* (0.0027)	0.00121 (0.0039)	0.00254*** (0.0009)
COVID-19	−0.0166*** (0.0031)	−0.138*** (0.0288)	−0.00942*** (0.0021)	−0.0800*** (0.0182)
_cons	0.403*** (0.0957)	12.75*** (2.461)	0.344*** (0.1127)	0.761*** (0.1463)
Std. error adj.	Robust Cluster	Robust Cluster	Robust Cluster	Robust Cluster
Industry and Year effect	Included	Included	Included	Included
R^2 within	19.22	28.73	20.78	24.34
VIF	2.31	1.68	2.03	2.87
N	1414	1414	1414	1414
Breusch and Pagan LM test	430.52***	1042.30***	1073.02***	1880.30***
Hausman test	9.06		11.88	

Note: Standard errors are in parentheses. $^{*}p<0.10$, $^{**}p<0.05$, $^{***}p<0.01$.
Source: Authors' own creation.

positive indicates that board gender diversity and sustainability committees can turn ESG controversies into opportunities for improvement or signal that the firm is taking corrective action, which may enhance stakeholder confidence and performance.

The results show that the COVID-19 pandemic has had a statistically significant negative impact on firm performance, as seen in the coefficients and p-values across the models. In Table 5, the COVID-19 variable has a negative coefficient for ROE (−0.0154, $p<0.01$) and Tobin's Q (−0.114, $p<0.01$) which means firms experienced decline in return on equity and market valuation during the pandemic. This is consistent even when we control for moderating variables like board gender diversity and sustainability committees where COVID-19 is still negative in both ROE and Tobin's Q models, as depicted in Table 6. The pandemic has shown how it can disrupt firm operations, market dynamics, and broader economic conditions, and we need robust strategies to mitigate these systemic risks. This is in line with global trends during COVID-19, where financial performance across industries was broadly affected by economic contractions, supply chain disruptions, and reduced investor confidence.

4.2 | Additional Test for Endogeneity

4.2.1 | System GMM

In order to prevent endogeneity issues and ensure the persistence of the results obtained, this study employed dynamic panel regression of two systems GMM coefficients. The Sargan test of over-identifying restrictions was applied to check the validity of the instruments and the accurate specification of the model as shown in Table 7. The validity of the instruments and the appropriate specification of the model would be indicated if the null hypothesis is not rejected in this test. In addition, the serial correlation test was implemented in the disturbances using the methodology proposed by Arellano and Bond (1991). The null hypothesis of first-order serial correlation (AR1) was rejected, thereby demonstrating serial correlation. However, the absence of second-order serial correlation (AR2) was not proven, in line with GMM theory. The results are consistent with the primary findings of the study, which demonstrated that ESGC has a significant and negative impact on Tobin's Q and ROE, as illustrated in the tables.

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TABLE 7 | Endogeneity test using system GMM.

Variables	ROE (sys. GMM)	Tobin's Q (sys. GMM)
ROE L1.	0.298176*** (0.0725)	—
Tobin's Q L1.	—	0.870925*** (0.2398)
ESGC	−0.001836*** (0.00057)	−0.000569* (0.0016)
SIZE	0.016432 (0.0329)	−0.254510*** (0.0928)
LEV	−0.148229* (0.0932)	1.009717** (0.4809)
LIQ	−0.006879 (0.0063)	0.017760 (0.0379)
FO	−0.002069* (0.0012)	0.0052467 (0.0045)
COVID-19	−0.022915*** (0.0052)	0.023227 (0.0242)
_cons	0.020262 (0.0674)	1.200293** (0.4941)
Sargan test of overid. restrict.	20.44578	20.80561
Arellano-Bond test for AR (1)	−3.1801***	−3.5298***
Arellano-Bond test AR (2)	−1.3159	0.81653
Observations	1414	1414
Number of Firms	202	202

Note: Standard errors are in parentheses. $^{*}p<0.10$, $^{**}p<0.05$, $^{***}p<0.01$.
Source: Authors' own creation.

Consequently, it is possible to infer that there is no substantive evidence of endogeneity issues.

4.2.2 | 2SLS Regression

To address endogeneity concerns, the Two-Stage Least Squares (2SLS) model was employed to isolate the causal effect of ESG controversies (ESGC) on firm performance. The 2SLS approach first predicts the values of the endogenous variable (ESGC) using an instrumental variable (IV) and then uses these predicted values in the second stage to estimate the relationship between ESGC and firm performance. Following previous studies, the mean industry-year ESG controversies level was chosen as the instrumental variable (Wu et al. 2023). This variable is assumed to be correlated with ESGC but uncorrelated with the error term in the firm performance equations so the estimation is valid. This approach gives unbiased and consistent estimators and a more precise estimate of ESG controversies.

The results in Table 8 showed the coefficient of the instrumental variable is significant and the first stage F-statistic is above the critical value, so there is no weak instrument problem. The second stage results show that ESGC is still significantly negative across all models, so ESG controversies negatively affect ROE and Tobin's Q.

4.3 | Additional Test Using Alternative Measurement

Table 9 presents the results using ROA as an alternative measure of firm performance to further validate the robustness of the main findings. The negative and significant relationship between ESG controversies and ROA confirms that firms facing higher ESG controversies experience weaker financial performance, consistent with the results observed for ROE and Tobin's Q. This consistency across different performance metrics reinforces the argument that ESG-related risks have a detrimental impact on firms, affecting both profitability and market valuation.

5 | Conclusion

The purpose of this study is to examine the relationship between ESG controversies and firm performance, with board gender diversity and sustainability committees functioning as moderating factors among public listed firms in the ASEAN-5 countries of Malaysia, Thailand, Singapore, Indonesia, and the Philippines. The sample of the research comprises 1414 firm-year observations that span the years 2017 through 2023. The results of the study, which employs a random-effects panel regression model, suggest that ESG controversies have a significant and negative impact on the performance of firms in ASEAN-5 countries. Thus, firms that have fewer ESG controversies exhibit superior performance.

The study also discovered an intriguing aspect of the relationship between board gender diversity and firm performance: it has a positive impact and diminishes the negative link between ESG controversies and firm performance. This showed that board gender positively moderates the negative impact of ESG controversies while also improving the performance of the firm. This implies that having diverse boards increases company performance as well as decreases the possible financial risk from ESG controversies. In the same vein, the results suggest that sustainability committees have positive impacts and moderate the negative association between ESG controversies and firm performance. This implies that sustainability committees do not only uphold the firm's reputation when addressing the ESG controversies, but also enhance the firm's performance.

This research fills the literature gap by providing a more comprehensive understanding of the effects of ESG controversies on firms. Moreover, this study is one of the few to highlight the importance of sustainability committees and board gender diversity in the relationship between ESG controversies and firms' performance based on the under-researched ASEAN region. This paper's findings thus pose several practical implications for policymakers and firms in the ASEAN-5 countries.

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TABLE 8 | Endogeneity test using 2SLS regression.

Variables	Second stage (ROE)	Second stage (Tobin's Q)
Mean Industry-Year ESGC	−0.00712** (0.00329)	−0.00234* (0.00195)
SIZE	−0.0294*** (0.00461)	−0.482*** (0.0628)
LEV	0.0643*** (0.0302)	−0.291** (0.195)
LIQ	0.00321 (0.00451)	−0.0312 (0.0276)
FO	0.00117 (0.00229)	0.00558*** (0.00209)
COVID-19	−0.0147*** (0.00421)	−0.109*** (0.0237)
_cons	0.812*** (0.107)	1.92*** (1.689)
Industry and Year effect	Included	Included
VIF	1.30	1.28
N	1414	1414
R^2	16.87	18.91
F-value 2sls	15.72	18.45
LM test	845.19***	1902.78***

TABLE 9 | Additional analysis using alternative measurement.

Variables	ROA
ESGC	−0.000243*
	(0.000140)
SIZE	−0.0140***
	(0.00216)
LEV	−0.0916***
	(0.0137)
LIQ	0.000709
	(0.00201)
FO	0.000142
	(0.000110)
COVID-19	−0.00892***
	(0.00183)
-cons	0.433***
	(0.0502)
Std. error adj	Robust Cluster
Industry and Year effect	Included
R^2 within	22.25
VIF	1.29
N	1412
Breusch and Pagan LM test	937.21***
Hausman test	11.38

Note: Standard errors are in parentheses. *$p<0.10$, **$p<0.05$, ***$p<0.01$.
Source: Authors' own creation.

For policymakers and regulators, this means implementing and enforcing tougher corporate governance rules that require the setting up of sustainability committees and gender diversity on boards. Regulators should introduce incentives or compliance frameworks that encourage companies to have these governance structures as part of their ESG strategy. Besides, mandatory ESG reporting and stricter disclosure requirements should be introduced to increase transparency and accountability. For managers, the research shows that having gender-diverse boards and setting up sustainability committees can help mitigate ESG risks and improve performance. Firms should go beyond bare minimum representation and actively include gender-diverse perspectives in decision-making. Sustainability committees should have real power to influence corporate policy and risk management around ESG issues. For investors, the research shows that firms with good corporate governance mechanisms, specifically those with gender-diverse boards and sustainability committees, tend to be more resilient to ESG controversies. Investors should consider these governance elements when making investment decisions and choose companies that are genuine about sustainable and ethical practices. ESG ratings and due diligence should prioritize companies with proactive governance structures to reduce long-term investment risks.

This research is subject to a few limitations, as applicable to many studies. This study focuses on firms in ASEAN-5, mainly operating under a one-tier board system, except for Indonesia's two-tier structure. We do not explicitly differentiate the impact of this governance variation on sustainability committees. Future research could examine how one-tier versus two-tier systems influence sustainability oversight and effectiveness. The study's primary concentration is on non-financial firms. Thus, future research may consider financial institutions with different regulations as part of the sample to determine whether comparable outcomes can be achieved. The moderating variables in this study are board gender and sustainability committees.

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Future research could incorporate alternative corporate governance mechanisms like other aspects of board characteristics. Moreover, this study exclusively concentrates on the ASEAN-5 countries: Malaysia, Thailand, Singapore, Indonesia, and the Philippines, as a result of the database's availability of ESG data. Thus, future research may wish to examine other ASEAN countries and undertake a comparative analysis between them.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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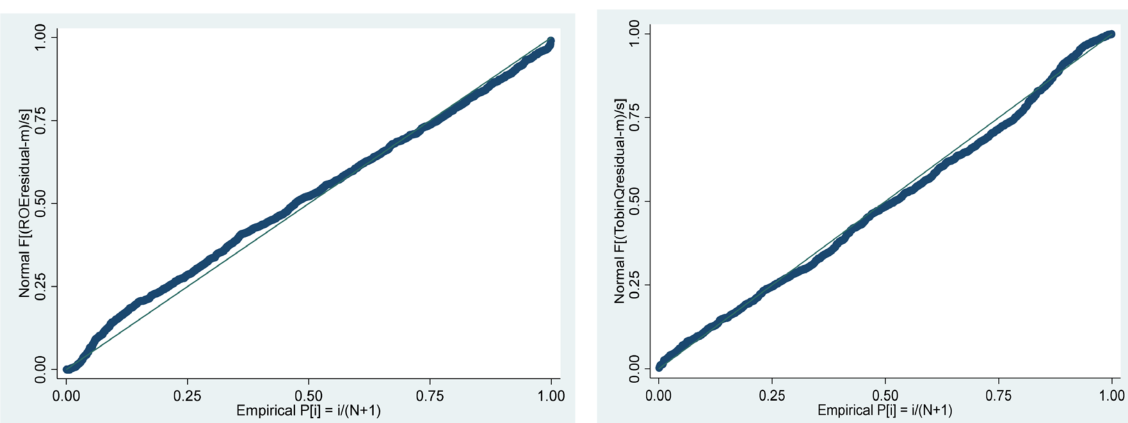
Appendix 1

Probability Plot of Residuals ROE and Tobin's Q



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