Board Composition and ESG Risk: Evidence from the COVID-19 Shock

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Abstract

This research explores the influence of board attributes on environmental, social, and governance (ESG) controversies pertaining to firms listed on the S&P 500, as well as their development throughout the timeframe of 2017 to 2022. Emphasising the timeframes preceding and succeeding the COVID-19 pandemic, the objective is to ascertain whether and in what manner board attributes affect ESG controversies. We analyzed a sample comprising 500 publicly traded companies over the years 2017 to 2022. Comprehensive data for all S&P 500 entities, including the ESG controversies score alongside various other factors, were extracted from the Refinitiv Workspace database and assessed utilizing two-way fixed effects ordinary least squares regression with robust standard errors. The findings from our examination indicate an absence of a significant correlation between board characteristics (in regard to gender diversity, board tenure, and specific skills) and ESG controversies score in the pre-COVID-19 phase. In the post-COVID-19 phase, we observe that board gender diversity markedly diminishes ESG controversies, consistent with stakeholder and resource dependency theories. In contrast, extended board tenure intensifies ESG controversies post-pandemic, implying that entrenched boards may resist adaptive governance methodologies. The presence of board-specific skills demonstrates no significant impact, thereby questioning the presumption that technical expertise alone alleviates ESG risks. These results enhance the discourse surrounding corporate governance by emphasizing the intricate relationship between board characteristics and the reduction of ESG risks, providing valuable guidance for both policymakers and organizations addressing sustainability issues in the aftermath of a crisis.

KEYWORDS
ESG controversies; board gender diversity, board tenure, board specific skills, COVID-19; S&P 500

1 | INTRODUCTION

In contemporary discourse, environmental, social, and governance (ESG) considerations have become a pivotal element within corporate finance, influenced by heightened stakeholder vigilance, regulatory demands, and the financial significance of sustainability-related risks. Consequently, organisations are increasingly orienting their sustainable initiatives and practices to harmonise with not only the interests of their shareholders but also those of stakeholders, consumers, clients, and society, with whom they engage (Arvidsson & Dumay, 2022). The practical implementation of these ESG strategies propels companies toward enduring sustainable growth and robust long-term financial outcomes (Kolsi et al., 2023; Wu et al., 2023)

Although many companies successfully incorporated the ESG metrics in their operational activities, many other firms failed, leading to deterioration in their reputation, financial performance, loss of public trust and a decrease in their market value (Al-Hiyari, 2024; Aouadi & Marsat, 2018; Sheehan et al., 2023). Consequently, to enhance their ESG performance, companies are undertaking extensive measures to mitigate their ESG-related contentious practices (Shakil et al., 2021). However, in the pursuit of addressing ESG controversies, relatively scant attention has been devoted to the influence of corporate governance, particularly the composition and attributes of corporate boards. Notably, recent scholarly investigations have indicated that these factors can play a pivotal role in diminishing ESG-related disputes (Issa & Fang, 2019). For example, the existing literature suggests that gender diversity on boards is significantly correlated with reductions in carbon emissions, advancements in environmental innovation, and improvements in recycling and waste management practices, as well as enhancements in both ESG and financial performance (Gull et al., 2023; Issa & Bensalem, 2023; Issa & Hanaysha, 2023; Kyaw et al., 2022; Paolone et al., 2024).

While prior research has investigated various dimensions of board characteristics and their influence on ESG disclosures, a study specifically analysing the interplay between board tenure, board-specific skills, and the mitigation of controversies associated with ESG matters has yet to be conducted. Importantly, to the author's best knowledge, this research represents the inaugural empirical study into this relationship. Additionally, by examining both the pre-COVID-19 and post-COVID-19 contexts, this study uniquely contributes a temporal analysis of the effects of board tenure, specialised skills, and gender diversity on ESG controversies across the crisis's different phases. In light of the increasing recognition of sustainability and environmental concerns by both public and private sectors as well as various stakeholders (Issa et al., 2022), it is crucial and pertinent to enhance our comprehension by investigating the connections among board gender diversity, tenure, specific skills, and the ESG-related controversies that firms may encounter during typical operational circumstances as well as in the face of unprecedented external challenges.

Thus, this study examines the interplay between various determinants of corporate governance, specifically board gender diversity, board tenure, board-specific skills, and ESG controversies before and following the onset of COVID-19. We utilize a comprehensive panel dataset encompassing S&P 500 500 corporations and implement interaction terms to delineate the impact of each board characteristic on ESG controversies while capturing the distinct dynamics of the pre-COVID (2017-2019) and post-COVID (2020-2022) eras. The empirical results indicate that during the post-COVID timeframe, an increased representation of female directors correlates with a decrease in ESG controversies, whereas extended board tenure exhibits a more complex, positive association with ESG controversies. Furthermore, board-specific skills appear to have no significant correlation with ESG controversies. In the pre-COVID phase, our corporate governance variables were statistically insignificant, notwithstanding the negative coefficients for many of them. These conclusions remain consistent across various robustness tests, underscoring the critical function of the board in navigating ESG-related risks amid crises.

Our investigation presents several notable contributions to the prevailing scholarly discourse in various dimensions. Firstly, unlike prior studies that predominantly scrutinise the relationship between board attributes and ESG performance (Agnese et al., 2024; Arayssi et al., 2019; Paolone et al., 2024), our inquiry emphasises the link between board characteristics and ESG controversies. To the authors' best knowledge, there has been no prior empirical exploration that distinctly investigates how particular board traits—namely, board tenure and specific board competencies—interact with ESG controversies and how these characteristics may mitigate ESG-related risks. This research employs the ESG controversies metric derived from the Eikon Refinitiv database and introduces novel findings indicating that gender diversity on boards is inversely related to ESG controversies, whereas board tenure exhibits a significant positive correlation with ESG controversies in the post-COVID context, and board-specific skills present a statistically non-significant relationship.

Secondly, by examining and contrasting both the pre- and post-COVID-19 periods, our study constitutes the inaugural temporal analysis of governance efficacy concerning ESG controversies. Earlier research has predominantly concentrated on the association between board characteristics and ESG controversies either within the pre-COVID-19 timeframe or has overlooked the implications of the COVID-19 pandemic (Iannuzzi et al., 2023; Issa & Hanaysha, 2023; Mallidis et al., 2024), whereas this investigation has assessed these relationships in the post-COVID-19 period, during which firms have, on average, enhanced their ESG performance (Paolone et al., 2024). Thirdly, this research enriches the discourse on ESG controversy alongside resource dependency theory, agency theory and stakeholder theories, which underscore the importance of experience and representational legitimacy in the post-COVID-19 era. In this context, organisations may successfully navigate or alleviate ESG risks by increasing the representation of female board members and reducing prolonged board tenures. The implications of these findings can inform practical applications for firms, regulatory frameworks, and investor stewardship within an increasingly ESG-aware environment.

2 | THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

2.1 | Theoretical background

Recent global discourse has increasingly emphasised the significance of responsible and ethical investment practices, prompting corporations to align their operational methodologies with optimal sustainability frameworks and to establish rigorous standards pertaining to Environmental, Social, and Governance (ESG) initiatives, thereby enhancing their performance in relation to both environmental and social matters (Aboud et al., 2019; Al-Hiyari, 2024). The board of directors assumes a pivotal role in supervising the sustainable initiatives of the firm and formulating policies and strategies that facilitate the advancement of environmental, social, and governance goals (ESG) while concurrently alleviating the associated risks (Issa & Hanaysha, 2023). Nevertheless, controversies associated with ESG, which include social behaviours and scandals, have paradoxically garnered considerably less analytical scrutiny (Agnese et al., 2023; Mallidis et al., 2024).

Various theoretical lenses, such as legitimacy theory, stakeholder theory, resource dependency theory, and agency theory, can theoretically explain ESG controversies and board characteristics. This stands in contrast to previous scholarly investigations, including the research conducted by (Mallidis et al., 2024; Orazalin & Baydauletov, 2020), which predominantly employs two influential frameworks, specifically resource dependency theory and legitimacy theory.

Legitimacy theory, essential in social and environmental accounting, asserts that firms must align their actions with societal norms, principles, and standards to maintain legitimacy (Suchman, 1995). This implicit social compact requires corporations to continually adapt to evolving societal expectations and legal requirements (Lokuwaduge & Heenetigala, 2017; Shocker & Sethi, 1973). When corporations deviate from these expectations—through unethical practices, climate breaches, or governance scandals—a legitimacy breach comes along, jeopardising reputation, reducing access to finance, and altering stakeholder behaviour (Aguilera et al., 2007; Aouadi & Marsat, 2018; Deegan, 2002; Treepongkaruna et al., 2024). In particular, ESG controversies, arising from fraud, environmental catastrophes, or unethical behaviour, can significantly erode stakeholder trust and threaten a company's long-term value (Agnese et al., 2023; La Rosa & Bernini, 2022; Mallidis et al., 2024; Mendiratta et al., 2023).

In order to alleviate these risks, corporations routinely engage in corporate social responsibility initiatives and strategic disclosures as manifestations of their commitment to ethical and sustainable practices (Seufert, 2013). Furthermore, the integration of gender diversity within corporate boards can enhance legitimacy, thus reducing controversies associated with environmental, social, and governance (ESG) factors (Issa & Hanaysha, 2023; Tran et al., 2024). Nonetheless, the increasing incidence of "greenwashing", characterised by companies amplifying their ESG efforts while concealing significant challenges, adds complexity to this relationship (Zahid et al., 2025; Zhang et al., 2023).

Stakeholder theory posits that corporations should take into account the requirements of a varied spectrum of stakeholders—including shareholders, employees, consumers, communities, and ecological considerations—rather than solely focusing on maximising shareholder value (Freeman, 2010; Lu et al., 2025). Additionally, comprehensive corporate governance structures—by fostering shared interests between organizations and their stakeholders—augment effective stakeholder participation and reinforce a firm's long-term legitimacy (Aouadi & Marsat, 2018; Godfrey et al., 2009; Treepongkaruna et al., 2024). In contrast, engagement in controversial or unethical practices engenders heightened stakeholder scepticism, eroding trust and amplifying suspicions of corporate malfeasance. Such behaviors disrupt the implicit social contract between firms and their stakeholders, thereby diminishing organisational legitimacy and precipitating a decline in business valuation (Godfrey et al., 2009; Treepongkaruna et al., 2024). Furthermore, the incorporation of gender diversity within the board and expertise would facilitate the consideration of a broad spectrum of viewpoints, addressing a variety of stakeholder concerns, which ultimately contributes to the mitigation of ESG-related controversies (Heubeck, 2024; Issa & Hanaysha, 2023).

Resource Dependency Theory posits that enterprises, functioning as open systems, rely on a diverse array of both tangible and intangible resources for their survival and competitive edge (Pfeffer & Salancik, 2015). In this framework, the configuration of the board is of paramount importance, as directors provide both strategic guidance and the necessary social capital and expertise to secure vital resources and alleviate organizational volatility (Kyaw et al., 2017; Paolone et al., 2023). In particular, the cumulative experience, sector-specific knowledge, and diverse perspectives of board members, inclusive of female directors, enhance the organization's ability to formulate and implement successful strategies, thereby mitigating ESG-related controversies and promoting ethical corporate behavior (Hillman & Dalziel, 2003; Mallidis et al., 2024; Paolone et al., 2023). Furthermore, boards characterised by female participation and varied competencies possess the capacity to optimise the organisation's diverse resources effectively, which in turn improves ESG performance, while reducing and managing controversies (Alawadi et al., 2024). Ultimately, by leveraging these unique resources, corporations can enhance their management of ESG risks and capitalise on emerging opportunities, thereby fostering stakeholder confidence and ensuring sustainable value creation (Al-Hiyari, 2024; Busch et al., 2023; Lu et al., 2025).

Finally, agency theory posits that conflicting motivations between managers (agents) and shareholders (principals) engender agency conflicts, wherein self-interested executives may prioritise short-term gains or contentious strategies, consequently undermining long-term shareholder value (Meckling & Jensen, 1976). Effective corporate governance mechanisms, particularly those administered by the board of directors, are imperative for mitigating conflicts by aligning managerial decisions with the interests of a broader spectrum of stakeholders (Paolone et al., 2024; Treepongkaruna et al., 2024). In this context, robust governance frameworks bolster managerial commitment to diverse stakeholders, thereby reducing information asymmetries and alleviating ESG-related controversies (Agnese et al., 2023).

Moreover, a heterogeneous board composed of individuals possessing specialized competencies enhances oversight, elevates supervisory practices, and refines decision-making processes by integrating diverse perspectives, while also curbing free-riding tendencies by ensuring the incorporation of external, independent voices within the monitoring framework (Galletta & Mazzù, 2023; Homroy & Slechten, 2019; Paolone et al., 2023). Collectively, these findings underscore that resilient corporate governance—through the diligent oversight of managerial behavior and the promotion of sustainable practices—serves as an essential safeguard against the deleterious effects of agency conflicts on organisational reputation and enduring performance, thereby facilitating superior management of ESG risks and related controversies (Lewellyn & Muller-Kahle, 2024).

2.2 | Hypothesis development

2.2.1 | Board gender diversity and ESG controversies

Agency theory posits that the implementation of effective corporate governance mechanisms is imperative for mitigating agency conflicts that arise when the incentives of management diverge from those of shareholders (Meckling & Jensen, 1976). A heterogeneous board can enhance decision-making efficacy by incorporating a wider spectrum of viewpoints, thus promoting innovation, facilitating problem-solving, providing access to diverse resources and networks, and augmenting the board's understanding of various stakeholder requirements (Freeman, 2010; Issa & Hanaysha, 2023). Additionally, diversity may result in heightened intra-board scrutiny, as directors hailing from different cultural backgrounds engage in discourse and critically assess one another's judgements (Cumming et al., 2015; Wahid, 2019; Zalata et al., 2022). This augmented level of internal oversight is vital for diminishing the incidence of ESG controversies and bolstering corporate legitimacy by mitigating management nepotism.

Empirical studies reveal that boards featuring three or more female directors, in conjunction with organisations led by adept and seasoned chief executive officers, are associated with a reduction in ESG-related controversies (Issa, 2023; Khalid et al., 2024; Muhammad, 2025). This phenomenon is particularly accentuated when moderated by variables such as industry characteristics or governance frameworks (Issa & Hanaysha, 2023; Khalid et al., 2024). Furthermore, research indicates that an increase in female representation is positively correlated with enhanced environmental performance, improved transparency in CSR disclosures, and a lower likelihood of environmental litigation (Al-Hiyari, 2024; Issa & Hanaysha, 2023; Zahid et al., 2025; Zhang et al., 2023). Nevertheless, studies illustrate that women often exhibit a greater propensity for risk aversion in comparison to their male counterparts (McGuinness et al., 2017), which results in a more cautious and vigilant approach to identifying and addressing environmental and societal challenges. Furthermore, other research posits that the relationship between board gender diversity and ESG performance is frequently non-linear, with benefits emerging only upon reaching a critical mass of female directors (Birindelli et al., 2019; Issa & Hanaysha, 2023).

Drawing on the theoretical framework and current empirical evidence, we propose the subsequent hypotheses:

H1a.*Before the COVID-19 pandemic, having women on the board is positively associated with the ESG controversies of a firm.*

H1b.*After the COVID-19 pandemic, having women on the board is negatively associated with the ESG controversies of a firm.*

2.2.2 | Board Tenure and ESG controversies

The duration of board tenure assumes a crucial and substantial role in overseeing and directing corporate governance practices, which subsequently influences controversies, resulting in the academic literature reflecting inconclusive, relatively unexplored, complex, and heterogeneous findings regarding the correlation between board tenure and controversies. This correlation may yield beneficial, detrimental, or potentially minimal impacts on a corporation's sustainability initiatives. On one hand, prolonged tenure may signify a wealth of experience and an extensive understanding of operational procedures and the entirety of the organizational supply chain, thereby facilitating proficient oversight and regulation of operational activities and decision-making frameworks. Consequently, this allows for accurately identifying and mitigating ESG-related issues that could adversely affect the company's operations and reputation (Almaqtari et al., 2023; Paolone et al., 2023). Furthermore, individuals with extended tenure within stable governing bodies, particularly in industries characterised by stability, may consistently furnish the requisite expertise and strategic guidance essential for the proficient management of Environmental, Social, and Governance (ESG) risks while simultaneously sustaining a forward-looking stance toward ESG-related challenges (Marrone et al., 2024).

On the other hand, an elongated tenure may engender a predilection for maintaining the status quo, thereby leading to a reduced propensity for product innovation pertaining to sustainability and environmental issues, alongside a hesitation to adopt new environmental regulations, ultimately intensifying challenges associated with Environmental, Social, and Governance (ESG) criteria (Iannuzzi et al., 2023; Sepulveda-Nuñez et al., 2024). Furthermore, novel insights, ideas, and viewpoints are requisite for effectively tackling ESG dilemmas; however, protracted tenure may hinder this, consequently resulting in an escalation of ESG-related controversies (Halid et al., 2022). Additional research also has demonstrated that there exists a negligible correlation between board tenure and the social responsibility or ESG performance of corporations (Wu et al., 2023).

Drawing on the theoretical framework and current empirical evidence, we propose the subsequent hypotheses:

H2a.*Before the COVID-19 pandemic, board tenure is positively associated with the degree of ESG controversies of a firm.*

H2b.*After the COVID-19 pandemic, board tenure is negatively associated with the ESG controversies of a firm.*

2.2.3 | Board-Specific Skills and ESG controversies

Corporate ESG strategies and initiatives can be shaped by the board's specific skills and expertise. A board with financial knowledge and industrial expertise can enhance long-term sustainability strategies and initiatives by improving facilities' access to green financing; it can also monitor and boost ESG performance and help promote the experience of younger members, thereby mitigating ESG risks and controversies (Agnese et al., 2024; Al-Hiyari et al., 2023; Katmon et al., 2019; Mahadeo et al., 2012). Furthermore, a governance board possessing expertise in sustainability can significantly enhance the quality of decision-making processes and alleviate corporate conflicts; consequently, it bolsters the implementation of Environmental, Social, and Governance initiatives while concurrently diminishing the likelihood of arising controversies (Al-Hiyari et al., 2022; Güner et al., 2008; Homroy & Slechten, 2019; Velte, 2024)

Nevertheless, previous investigations have also demonstrated that boards possessing financial or industrial expertise frequently exhibit overconfidence and an inherent resistance to transformation, culminating in a diminished output of environmentally innovative products and an increased likelihood of failure (Almaqtari et al., 2023; H.-L. Chen, 2013). While the advantageous and detrimental effects of board competencies have been acknowledged, alternative research has revealed an insignificant correlation (Gallego-Álvarez & Pucheta-Martínez, 2020; Harjoto et al., 2019). Given these complexities, and building on the theoretical framework in conjunction with contemporary empirical findings, we put forth the following hypotheses:

H3a.*Before the COVID-19 pandemic, board-specific skills are positively associated with the degree of ESG controversies of a firm.*

H3b.*After the COVID-19 pandemic, board-specific skills are negatively associated with the ESG controversies of a firm.*

3 | SAMPLE, DATA DESCRIPTION, AND RESEARCH METHODOLOGY

3.1 | Sample selection and empirical setting

Leveraging corporate data sourced from Refinitiv Workspace, which is widely acknowledged as the preeminent ESG rating system globally (Paolone et al., 2024), we established a comprehensive database pertaining to the S&P 500 , which includes approximately 500 corporations listed within the United States market from the years 2017 to 2022. This dataset incorporates both ESG controversy scores and information regarding board characteristics, as well as the financial and non-financial data of the corporations. Observations deemed missing in the course of our analysis were omitted from the dataset, culminating in a final sample size of 2,736 observations corresponding to approximately 500 organizations. The temporal dimensions represented in our dataset and under analysis are delineated into two distinct categories: the pre-COVID era, which comprises data from 2017 to 2019, and the post-COVID phase, which encompasses data from 2020 to 2022.

At the conclusion of each fiscal year, all data are computed. Table 1 delineates the descriptive statistics for the variables.

3.2 | Variables Selection and Measurement

Table 2 delineates the independent, dependent, and control variables employed in our regression analyses. The descriptions of the variables are provided by Refinitiv Workspace.

3.2.1 | Dependent variable

To execute our analytical framework and scrutinise our hypothesis, we extracted the Environmental, Social, and Governance (ESG) controversies score from the Refinitiv Eikon database, employing it as our independent variable. This score assesses 23 contentious themes, organized into seven distinct categories, and serves as a metric for evaluating a corporation's susceptibility to ESG-related controversies and negative incidents as documented in contemporary global media outlets. The ESG controversy score is measured on a scale from 0% to 100%: A score of 100 or a value closely approaching that percentage indicates that a corporation has not been associated with any controversies or that entities demonstrate a diminished level of contentiousness. Consequently, a heightened score is indicative of a reduced vulnerability of corporations to ESG-related issues. The inquiry remains regarding the existence of controversies when the score falls below 100% (Issa & Hanaysha, 2023; Refinitiv, 2024).

3.2.2 | Independent variables

This study emphasises board gender diversity, board tenure, and board-specific abilities as our independent variables.

Board gender diversity is defined as the percentage of females on the board of directors. This corresponds with the methodologies examined in previous research, including (Issa & Hanaysha, 2023; Mallidis et al., 2024; Paolone et al., 2024).

The term "board-specific skills" refers to the ratio of board members possessing either a background specific to the industry or substantial financial expertise (Agnese et al., 2023; Paolone et al., 2024).

Board tenure represents the mean duration of years that the Board of Directors has been in service to the organisation Paolone et al., 2023.

3.2.3 | Control variables

We identified numerous control variables utilised in corporate governance studies, consistent with previous research (Agnese et al., 2023; Al-Hiyari, 2024; F. Chen et al., 2011; Paolone et al., 2024). We account for board features, specifically CEO duality as a binary variable, the frequency of board meetings, and the sustainability committee as a binary variable. We incorporated additional controls for financial variables, specifically total assets, to adjust for firm size. To ensure an accurate assessment of profitability, we also incorporate return on assets and return on equity to mitigate potential bias in the study that may arise from the influence of the ESG controversy score on the financial health of the firms in the sample (Dong et al., 2023; Mallidis et al., 2024).

3.2.4 | Empirical Modeling

In order to assess the correlation between board characteristics and ESG-related controversies, we utilise the subsequent panel regression framework incorporating firm (α_i) and year (λ_t) fixed effects:

$$\begin{aligned}\text{ESG\_Controversies}_{it} = {} & \beta_0 + \beta_1 \text{Board\_Gender\_Diversity}_{it} + \beta_2 \text{Board\_Specific\_Skills}_{it} \\ & + \beta_3 \text{Board\_Tenure}_{it} + \beta_4 (\text{Board\_Gender\_Diversity} \times \text{Post\_COVID}_{it}) \\ & + \beta_5 (\text{Board\_Specific\_Skills} \times \text{Post\_COVID}_{it}) \\ & + \beta_6 (\text{Board\_Tenure} \times \text{Post\_COVID}_{it}) \\ & + \sum \gamma_j \text{Control\_Variables}_{it} + \alpha_i + \lambda_t + \epsilon_{it}\end{aligned} \tag{1}$$

TABLE 1 Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
ESG Controversies Score	2736	81.07	31.14	0.41	100.00
Board Tenure	2736	8.87	3.33	0.25	29.44
Board Specific Skills	2736	57.35	17.22	0.00	100.00
Board Gender Diversity	2736	27.06	9.58	0.00	100.00
Board Gender Diversity × Post-COVID	2736	15.30	16.35	0.00	100.00
Board Tenure × Post-COVID	2736	4.43	4.92	0.00	26.28
Board Specific Skills × Post-COVID	2736	28.87	30.85	0.00	100.00
Return on Assets	2736	8.71	7.13	0.00	77.12
Return on Equity	2736	71.53	89.25	0.01	31.56
Number of Board Meetings	2736	8.17	3.88	0.00	41.00
Total Assets (ln)	2736	17.00	1.41	12.68	22.04
CEO-Chairman Duality	2736	0.49	0.50	0.00	1.00
CSR Sustainability Committee	2736	0.76	0.43	0.00	1.00

where:

- $ESG\_Controversies_{it}$ represents the ESG controversies score for the firm i at time t.
- $Post\_COVID_{it}$ is a dummy variable equal to 1 for years 2020–2022 and 0 otherwise.
- $\sum \gamma_j Control\_Variables_{it}$ includes key financial and governance control variables: CEO duality, return on assets, return on equity, number of board meetings, CSR sustainability committee presence, and total assets.
- α_i denotes firm fixed effects, λ_t denotes time fixed effects, and ϵ_{it} is the error term.

Due to the panel structure of the dataset, we employed a two-way fixed effects (FE) regression model to control for both firm-specific and time-specific unobserved heterogeneity, hence enabling the assessment of the net influence of the predictors on the result variable (Micheal & Abiodun, 2014; Treepongkaruna et al., 2024). The model is evaluated utilising robust standard errors clustered at the firm level to mitigate any heteroskedasticity and autocorrelation. Issues of multicollinearity among the independent variables and the control variables have been checked by calculating the variance inflation factors (VIFs). The investigation revealed that no VIFs exceeded the threshold of 5. This observation, which aligns with the relevant scholarly literature (Lu et al., 2025; Paolone et al., 2024), demonstrates the absence of multicollinearity among the variables employed in the current research endeavour.

4 | EMPIRICAL RESULTS

4.1 | Regression Analysis

Table 3 illustrates our empirical research results, focusing on the pre- and post-COVID-19 periods.

The results of our first hypothesis indicate that, before COVID-19, board gender diversity is not significantly associated with ESG controversies ($\beta = -0.1346$, $p = 0.2427$), thus, we reject H1a, although the negative coefficient is linked to gender diversity. In contrast to H1b, the interaction term *Board Gender Diversity* × *Post-COVID* is negative and statistically significant ($\beta = -0.2242$, $p = 0.0395$), suggesting that post-pandemic, firms with enhanced board gender diversity reduce ESG controversies. This result is aligned with the presumption that gender-diverse boards will mitigate ESG risks.

Similarly, our findings regarding H2a; nevertheless, the negative coefficient of board tenure showed no significant link with ESG controversies prior to the pandemic ($\beta = -0.5259$, $p = 0.1867$). The post-COVID interaction term for board tenure is positive and statistically significant ($\beta = 0.5152$, $p = 0.0447$), hence rejecting H2b, which posited a negative connection. This indicates that extended board tenures did not necessarily lead to a reduction in ESG controversy; instead, they contributed to a rise.

Concerning board-specific skills, we observe no substantial correlation with ESG controversies over either timeframe. The coefficient for board-specific skills is statistically insignificant prior to COVID-19 ($\beta = 0.0309$, $p = 0.5597$), and the same with the interaction term with the post-COVID period remains insignificant ($\beta = 0.0414$, $p = 0.4278$), hence not supporting H3a and H3b. These data indicate that technical expertise on the board did not significantly influence ESG outcomes, challenging the belief that proficient directors are more adept at managing ESG risks(Agnese et al., 2023).

Overall, following the pandemic, an increased representation of women on corporate boards diminishes environmental, social, and governance (ESG) controversies, whereas the length of board tenure is associated with an escalation in ESG controversies, potentially due to increased scrutiny or challenges in governance adaptation. Board-specific competencies do not significantly impact ESG controversies, indicating that technical proficiency alone is inadequate for managing ESG-related risks.

TABLE 2 Selected Variables in Our Analysis

Type of Variable	Variable	Description	Data Source
Dependent Variable			
	ESG controversies score	The Refinitiv ESG controversies score appraises 23 contentious topics, which are systematically categorised into seven distinct classifications, and is employed to gauge a corporation's vulnerability to ESG-related controversies and negative incidents as documented in contemporary global media, with score ranges from 0% to 100%.	Refinitiv
Independent Variables			
	Board Gender Diversity	The representation or proportion of females within the board of directors.	Refinitiv
	Board Tenure	The mean duration of years that the Board of Directors has been in service to the organisation.	Refinitiv
	Board Specific Skills	The ratio of board members possessing either a background specific to the industry or substantial financial expertise.	Refinitiv
Control Variables			
	CEO duality	A dummy variable, in which a value of 1 denotes that the Chief Executive Officer simultaneously occupies the role of chairman, whereas a value of 0 signifies the opposite.	Refinitiv
	Number of Board Meetings	The average number of board of directors formal meetings per year.	Refinitiv
	Sustainability Committee	A binary variable is employed, wherein a value of 1 denotes the existence of the sustainability committee, while a value of 0 reflects its absence.	Refinitiv
	Return on equity (ROE)	A financial metric indicative of profitability is calculated by dividing the net profit of an organisation by the aggregate equity of common shares.	Refinitiv
	Return on assets (ROA)	A financial metric that evaluates a corporation's efficacy in generating returns relative to its invested capital.	Refinitiv
	Total Assets(ln)	The aggregate assets disclosed by a corporation.	Refinitiv

Note: This table delineates the principal variables employed in the analysis, accompanied by their definitions and data sources. All information is derived from Refinitiv.

4.2 | Robustness Check

To verify and affirm the resilience of our primary findings, we have conducted a robustness assessment of our model, which encompasses implementing censoring, applying two-way clustered standard errors, and changing control variables.

TABLE 3 Regression Results: Impact of Board Characteristics on ESG Controversies

Variable	Coeff.	Std. Err.	P-value
Constant	84.942	5.8761	0.0000***
Board Gender Diversity	-0.1346	0.1152	0.2427
Board Tenure	-0.5259	0.3981	0.1867
Board Specific Skills	0.0309	0.0530	0.5597
Board Gender Diversity × Post-COVID	-0.2242	0.1088	0.0395**
Board Tenure × Post-COVID	0.5152	0.2565	0.0447**
Board Specific Skills × Post-COVID	0.0414	0.0521	0.4278
CEO-Chairman Duality	0.6949	1.8146	0.7018
Return on Assets	0.1241	0.1076	0.2488
Return on Equity	-0.0003	0.0006	0.5989
Number of Board Meetings	-0.7954	0.1910	0.0000***
CSR Sustainability Committee	1.6878	1.7306	0.3295
Total Assets	-0.0001	0.0013	0.6905
Num. Obs.		**2736**	
F-statistic		**3.2070**	
P-value		**0.0001**	
F-statistic (Robust)		**2.6650**	
P-value		**0.0015**	

Notes: Fixed effects panel regression estimates for the **original model**. Statistical significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

4.2.1 | Addressing Censoring

We undertake a censoring adjustment as an initial robustness assessment to corroborate the validity of our findings. Fixed-effects models may yield biased estimates due to the existence of left-censored or right-skewed observations. This phenomenon arises because firms with robust ESG policies may report either zero or minimal disputes, whereas other firms may display significantly skewed distributions of controversy scores. We implement censoring by reducing the sample through the application of varying degrees of right and left censoring (1%, 2%, 5%) and assessing the consistency of the results.

Tables A1-A3 (located in the Appendix) illustrate that our findings are not subject to censoring bias and retain statistical validity even when considering the constrained nature of ESG controversies. The consistency of these relationships across diverse estimation methodologies reinforces the robustness of our conclusions.

4.2.2 | Exclusion of Control Variables

In order to assess the integrity of our results and ascertain that the findings are not swayed by one or more control variables, we implement a control variable exclusion assessment, systematically eliminating one control variable sequentially and recalibrating the model. This approach guarantees that our principal conclusions remain unaffected by any single control variable and evaluates the resilience of our estimations under considerably altered model configurations.

We sequentially exclude each control variable —return on assets (ROA), return on equity (ROE), number of board meetings, CEO-chairman duality, CSR sustainability committee, and total assets—and rerun the fixed-effects regression. The results, reported in Tables A4-A9, indicate that our primary coefficients of interest remain qualitatively similar across all model variations and do not change, with slight variations in impact sizes and significance levels in a single control variable. This indicates that the fundamental links we discern are not influenced by a specific control variable, so strengthening the validity of our primary conclusions.

4.2.3 | Two-Way Clustered Standard Errors

We re-evaluate our model utilising two-way clustered standard errors to ensure the durability of our findings against possible interdependencies among corporations and temporal dimensions(Cameron et al., 2011; Petersen, 2008). The findings presented in Table A10 exhibit qualitative consistency; there is no significant change in the direction or size of coefficients, despite standard errors having marginally increased for certain variables, indicating that dependencies at both the firm and time levels do not affect our findings.

5 | DISCUSSION

In the contemporary business environment, organisations are increasingly compelled to confront environmental and social issues, a shift propelled by augmented shareholder consciousness and rising stakeholder demands. A firm's valuation and overall efficacy may be impacted negatively if they do not address the risks associated with ESG. Therefore, companies that want to attain enduring financial stability and a sustainable competitive edge should align their operations with sustainability initiatives and consider the different factors of ESG in their decisions. Given the importance and scarcity of studies on ESG controversies and board characteristics, our study aims to investigate the relationship between board gender diversity, board tenure, board-specific skills and ESG controversies in the US stock market over two time frames, namely before COVID-19 (2017-2019) and after COVID-19 (2020-2022).

The results of our study find that there is a negative and significant correlation between gender diversity and ESG controversies in the post-COVID-19 period. This suggests that an increase in female representation on corporate boards correlates with a decrease in ESG-related controversies for the organisation, while in the pre-COVID period, there is no significant relationship. These findings corroborate current scholarly discourse (Issa & Hanaysha, 2023) and align with the tenets of resource dependency theory and stakeholder theory as well as existing literature on risk aversion. Numerous studies have indicated that women tend to exhibit a greater propensity for ethical ESG practices and align their decision-making processes with responsible corporate conduct (Ben-Amar et al., 2017; Katmon et al., 2019; Samara et al., 2019). Furthermore, females are often characterised by their cautious and protective nature, which contributes to a reduction in ESG controversies (Arnaboldi et al., 2021; Dadanlar & Abebe, 2020; Hutchinson et al., 2015). Additionally, in accordance with board independence theory, the incorporation of female directors, as a heterogeneous group, can provide enhanced perspectives that facilitate the development and execution of effective ESG strategies, thereby mitigating ESG-related controversies (Pfeffer & Salancik, 2015).

Surprisingly, in the pre-COVID period, there is no significant relationship between gender diversity and ESG. This phenomenon can be attributed to the observation that the influence of gender is substantially amplified when organizations have a minimum of three women on their boards (De Masi et al., 2021; Issa & Hanaysha, 2023; Liu et al., 2014; Manita et al., 2018; Shoham et al., 2017).In relation to the hypotheses concerning board tenure and board-specific competencies, prior to the advent of COVID-19, the relationship with ESG controversies was found to be statistically insignificant.

However, in the post-COVID-19 context, board tenure is associated with a positive and significant coefficient, indicating that an increase in the duration of service of the current Board leads to a high level of ESG controversies. This observation is consistent with contemporary scholarly discourse suggesting that extended tenure may hinder the acceptance of innovative changes and the adoption of novel, sustainable policies and initiatives, thereby leading to an increase in ESG-related disputes (W. T. Chen et al., 2019; Halid et al., 2022; Iannuzzi et al., 2023; Sepulveda-Nuñez et al., 2024). Conversely, board-specific skills demonstrate an insignificant correlation with ESG controversies in the post-COVID period. This finding aligns with recent academic literature (Gallego-Álvarez & Pucheta-Martínez, 2020; Harjoto et al., 2019; Katmon et al., 2019; Manita et al., 2018), which similarly concludes that there is no significant relationship and suggests that board-with-knowledge is not enough to manage ESG-related risks.

Our research offers several significant advancements to the existing body of literature concerning the influence of board characteristics and ESG controversies. Firstly, in contrast to earlier investigations that primarily examine the association between board attributes and ESG performance (Agnese et al., 2024; Arayssi et al., 2019; Paolone et al., 2024), our analysis focuses on the connection between board characteristics and ESG controversies. To the best of the authors' knowledge, no previous empirical research has distinctly explored how specific board features—specifically, board tenure and board-specific skills—interrelate with ESG controversies and how these attributes may serve to alleviate ESG-related risks. Secondly, by analysing and comparing both the pre- and post-COVID-19 eras, our study considers the first temporal comparison of governance effectiveness concerning ESG controversies. Thirdly, this research enriches the discourse on ESG controversy alongside resource dependency theory and stakeholder theories, which underscore the importance of experience and representational legitimacy in the post-COVID-19 context. In this scenario, organisations may effectively manage or mitigate ESG risks by enhancing the proportion of female board members and curtailing extended board tenures.

6 | CONCLUSIONS

The objective of our research is to analyse the influence of specific board attributes —specifically, board tenure, board specific skills and gender diversity— on the reduction of ESG controversies both prior to and subsequent to the COVID-19 pandemic. Focusing primarily on the epochs preceding and succeeding the COVID-19 crisis, we aspire to ascertain whether the observed reduction in ESG controversies can be attributed, among other determinants, to these board characteristics, especially within the post-COVID-19 framework.

According to the existing literature, prior investigations have explored the correlation between gender diversity (Issa & Hanaysha, 2023; Mallidis et al., 2024) and ESG controversies. However, to the best of our understanding, no earlier research has systematically analysed the effects of board tenure and board-specific skills on ESG controversies. Furthermore, there exists a gap in scholarship regarding the influence of board attributes, including gender diversity, on ESG controversies in the context of the post-COVID-19 landscape. Our study finds that more women on the board in the period 2020–2022 (post-COVID-19 era) leads to fewer ESG controversies. Moreover, we found a significant and positive relationship between board tenure and ESG controversies in the same period. The study adds an important contribution and lays the groundwork for further investigations, given the lack of studies on the ESG controversies, especially in the context of the post-COVID-19 era.

These results possess significant practical ramifications for corporations, policymakers, and investors alike. For corporations, they underscore that both board tenure and gender diversity represent vital governance resources, particularly during periods of systemic unpredictability, while board-specific ESG competencies seem to yield minimal efficacy in alleviating ESG controversies. Therefore, corporations should contemplate prioritizing experiential and demographic diversity over mere symbolic expertise in their board composition, which may assist in alleviating ESG controversies and enhancing overall reputation. Policymakers are urged to advocate for governance frameworks that prioritize long-term outcomes and resilience instead of solely focusing on formal structures. This can be accomplished by formulating recommendations and policies that promote increased female representation on boards and within board appointments. Institutional investors, in response, should incorporate these dynamic board characteristics into their ESG risk evaluations and stewardship strategies. Ultimately, this research accentuates the necessity of assessing board effectiveness through a forward-thinking, context-sensitive approach, particularly as firms confront shifting stakeholder expectations and intensified ESG scrutiny in the post-crisis landscape.

While our analysis yields novel insights, we recognise that this investigation is subject to various limitations. First, the study is applied to a sample of firms in the US, and only the S&P 500 companies, meaning that the sample size is limited; as a result, we may not generalise the results to other regions. Hence, subsequent research could explore the same variables and hypotheses in different contexts, such as Europe and emerging economies, particularly in China and Africa, to ascertain whether the outcomes are consistent across diverse environments and regulatory frameworks. Secondly, future inquiries may wish to investigate the implications of this relationship on financial performance. Lastly, considering the limited range of variables associated with board characteristics examined in our study, future research might incorporate additional board attributes that could influence ESG controversies; furthermore, subsequent studies could integrate moderating variables in this relationship, such as board independence and/or the presence of a sustainability or CSR committee.

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APPENDIX

TABLE 1 Robustness Checks with 1% Censored

Variable	Coefficient	Std. Error	P-value
Constant	86.036	5.9784	0.0000***
Board Gender Diversity	-0.1477	0.1164	0.2046
Board Tenure	-0.5238	0.3993	0.1896
Board Specific Skills	0.0262	0.0535	0.6245
Board Gender Diversity × Post-COVID	-0.2372	0.1085	0.0288**
Board Tenure × Post-COVID	0.5508	0.2582	0.0330**
Board Specific Skills × Post-COVID	0.0491	0.0526	0.3501
CEO-Chairman Duality	0.5884	1.8414	0.7493
Return on Assets	0.1263	0.1097	0.2495
Return on Equity	-0.0003	0.0006	0.5954
Number of Board Meetings	-0.7991	0.1974	0.0001***
CSR Sustainability Committee	1.5384	1.7371	0.3759
Total Assets	-0.0062	0.0014	0.6703
Number of Observations		2708	
F-statistic		3.2316	
P-value		0.0001	
F-statistic (Robust)		2.7105	
P-value (Robust)		0.0012	

Notes: Regression results after 1% censoring. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE 2 Robustness Checks with 2% Censored

Variable	Coefficient	Std. Error	P-value
Constant	86.786	6.0149	0.0000***
Board Gender Diversity	-0.1706	0.1169	0.1447
Board Tenure	-0.3623	0.3858	0.3478
Board Specific Skills	0.0222	0.0534	0.6781
Board Gender Diversity × Post-COVID	-0.2396	0.1111	0.0312**
Board Tenure × Post-COVID	0.5171	0.2550	0.0427**
Board Specific Skills × Post-COVID	0.0433	0.0533	0.4171
CEO-Chairman Duality	0.9535	1.8410	0.6045
Return on Assets	0.1202	0.1162	0.3010
Return on Equity	-0.0003	0.0006	0.5730
Number of Board Meetings	-0.8096	0.2040	0.0001***
CSR Sustainability Committee	1.4649	1.7301	0.3972
Total Assets	-0.0097	0.0015	0.5430
Number of Observations		2681	
F-statistic		3.1553	
P-value		0.0002	
F-statistic (Robust)		2.6354	
P-value (Robust)		0.0017	

Notes: Regression results after 2% censoring. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A3 Robustness Checks with 5% Censored

Variable	Coefficient	Std. Error	P-value
Constant	87.177	6.1482	0.0000***
Board Gender Diversity	-0.1507	0.1160	0.1940
Board Tenure	-0.1949	0.3782	0.6063
Board Specific Skills	0.0219	0.0525	0.6770
Board Gender Diversity × Post-COVID	-0.2627	0.1170	0.0249**
Board Tenure × Post-COVID	0.4996	0.2532	0.0487**
Board Specific Skills × Post-COVID	0.0437	0.0555	0.4317
CEO-Chairman Duality	1.3421	1.8007	0.4562
Return on Assets	0.0658	0.1041	0.5274
Return on Equity	-0.0006	0.0004	0.1227
Number of Board Meetings	-0.7083	0.2045	0.0005***
CSR Sustainability Committee	1.5594	1.7297	0.3674
Total Assets	-0.0023	0.0024	0.3331
Number of Observations		2599	
F-statistic		3.0495	
P-value		0.0003	
F-statistic (Robust)		2.4063	
P-value (Robust)		0.0043	

Notes: Regression results after 5% censoring. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A4 Change of Control Variables (Excluding CEO-Chairman Duality)

Variable	Coefficient	Std. Error	P-value
Constant	85.269	5.8693	0.0000***
Board Gender Diversity	-0.1346	0.1153	0.2431
Board Tenure	-0.5226	0.3991	0.1905
Board Specific Skills	0.0296	0.0531	0.5771
Board Gender Diversity × Post-COVID	-0.2230	0.1088	0.0405**
Board Tenure × Post-COVID	0.5184	0.2561	0.0431**
Board Specific Skills × Post-COVID	0.0419	0.0521	0.4210
Return on Assets	0.1250	0.1077	0.2461
Return on Equity	-0.0003	0.0006	0.5991
Number of Board Meetings	-0.7921	0.1905	0.0000***
CSR Sustainability Committee	1.7012	1.7312	0.3259
Total Assets	-0.0052	0.0013	0.6919
Number of Observations		2736	
F-statistic		3.4839	
P-value		0.0001	
F-statistic (Robust)		2.8993	
P-value (Robust)		0.0008	

Notes: Fixed effects panel regression estimates excluding the CEO-Chairman Duality variable. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A5 change of control variables (Excluding Return on Assets)

Variable	Coefficient	Std. Error	P-value
Constant	85.876	5.8361	0.0000***
Board Gender Diversity	-0.1308	0.1150	0.2555
Board Tenure	-0.5320	0.3985	0.1821
Board Specific Skills	0.0330	0.0528	0.5324
Board Gender Diversity × Post-COVID	-0.2226	0.1091	0.0414**
Board Tenure × Post-COVID	0.5161	0.2570	0.0447**
Board Specific Skills × Post-COVID	0.0411	0.0522	0.4314
CEO-Chairman Duality	0.7390	1.8152	0.6840
Return on Equity	-0.0003	0.0006	0.6217
Number of Board Meetings	-0.7902	0.1910	0.0000***
CSR Sustainability Committee	1.6623	1.7314	0.3371
Total Assets	-0.0057	0.0012	0.6642
Number of Observations		2736	
F-statistic		3.3559	
P-value		0.0001	
F-statistic (Robust)		2.6896	
P-value (Robust)		0.0019	

Notes: Fixed effects panel regression estimates excluding the Return on Assets variable. Statistical significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

TABLE A6 change of control variables (Excluding Return on Equity)

Variable	Coefficient	Std. Error	P-value
Constant	84.982	5.8723	0.0000***
Board Gender Diversity	-0.1326	0.1150	0.2490
Board Tenure	-0.5314	0.3979	0.1818
Board Specific Skills	0.0305	0.0529	0.5647
Board Gender Diversity × Post-COVID	-0.2247	0.1088	0.0391**
Board Tenure × Post-COVID	0.5100	0.2562	0.0466**
Board Specific Skills × Post-COVID	0.0422	0.0521	0.4187
CEO-Chairman Duality	0.6938	1.8148	0.7023
Return on Assets	0.1219	0.1073	0.2560
Number of Board Meetings	-0.7973	0.1907	0.0000***
CSR Sustainability Committee	1.6701	1.7290	0.3342
Total Assets	-0.0053	0.0013	0.6876
Number of Observations		2736	
F-statistic		3.4673	
P-value		0.0001	
F-statistic (Robust)		2.8905	
P-value (Robust)		0.0009	

Notes: Fixed effects panel regression estimates excluding the return on equity variable. Statistical significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

TABLE A7 change of control variables (Excluding Number of Board Meetings)

Variable	Coefficient	Std. Error	P-value
Constant	78.279	5.5775	0.0000***
Board Gender Diversity	-0.1326	0.1181	0.2618
Board Tenure	-0.4309	0.4008	0.2824
Board Specific Skills	0.0348	0.0531	0.5131
Board Gender Diversity × Post-COVID	-0.2155	0.1098	0.0499**
Board Tenure × Post-COVID	0.4663	0.2626	0.0759*
Board Specific Skills × Post-COVID	0.0297	0.0522	0.5699
CEO-Chairman Duality	0.2613	1.7894	0.8839
Return on Assets	0.1103	0.1079	0.3067
Return on Equity	-0.0004	0.0006	0.5413
CSR Sustainability Committee	1.9152	1.7329	0.2692
Total Assets	-0.0064	0.0033	0.6278
Number of Observations		2736	
F-statistic		1.0622	
P-value		0.3884	
F-statistic (Robust)		1.1072	
P-value (Robust)		0.3509	

Notes: Fixed effects panel regression estimates excluding the Number of Board Meetings variable. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A8 change of control variables (Excluding CSR Sustainability Committee)

Variable	Coefficient	Std. Error	P-value
Constant	86.129	5.5286	0.0000***
Board Gender Diversity	-0.1238	0.1151	0.2822
Board Tenure	-0.5256	0.3973	0.1859
Board Specific Skills	0.0302	0.0528	0.5673
Board Gender Diversity × Post-COVID	-0.2125	0.1097	0.0529*
Board Tenure × Post-COVID	0.5114	0.2561	0.0460**
Board Specific Skills × Post-COVID	0.0447	0.0518	0.3884
CEO-Chairman Duality	0.7280	1.8169	0.6887
Return on Assets	0.1229	0.1076	0.2538
Return on Equity	-0.0003	0.0006	0.6121
Number of Board Meetings	-0.7996	0.1903	0.0000***
Total Assets	-0.0056	0.0031	0.6686
Number of Observations		2736	
F-statistic		3.4035	
P-value		0.0001	
F-statistic (Robust)		2.7435	
P-value (Robust)		0.0016	

Notes: Fixed effects panel regression estimates excluding the CSR Sustainability Committee variable. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A9 change of control variables (Excluding Total Assets)

Variable	Coefficient	Std. Error	P-value
Constant	84.622	5.8467	0.0000***
Board Gender Diversity	-0.1360	0.1151	0.2375
Board Tenure	-0.5248	0.3989	0.1885
Board Specific Skills	0.0307	0.0530	0.5620
Board Gender Diversity × Post-COVID	-0.2205	0.1078	0.0409**
Board Tenure × Post-COVID	0.5139	0.2568	0.0455**
Board Specific Skills × Post-COVID	0.0403	0.0522	0.4403
CEO-Chairman Duality	0.6888	1.8122	0.7039
Return on Assets	0.1260	0.1076	0.2417
Return on Equity	-0.0003	0.0006	0.5968
Number of Board Meetings	-0.7971	0.1908	0.0000***
CSR Sustainability Committee	1.7152	1.7295	0.3215
Number of Observations		2736	
F-statistic		3.4779	
P-value		0.0001	
F-statistic (Robust)		2.8814	
P-value (Robust)		0.0009	

Notes: Fixed effects panel regression estimates excluding the Total Assets variable. Statistical significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

TABLE A10 Regression Results with Two-Way Clustered Standard Errors

Variables	Coefficient	Standard Error	P-value
Constant	84.942	4.2542	0.0000 ***
Board Gender Diversity	-0.1346	0.1208	0.2653
Board Tenure	-0.5259	0.3567	0.1406
Board Specific Skills	0.0309	0.0403	0.4430
Board Gender Diversity × Post-COVID	-0.2242	0.0787	0.0044***
Board Tenure × Post-COVID	0.5152	0.2764	0.0624*
Board Specific Skills × Post-COVID	0.0414	0.0549	0.4511
CEO-Chairman Duality	0.6949	1.4368	0.6287
Return on Assets	0.1241	0.0943	0.1882
Return on Equity	-0.0003	0.0005	0.5289
Number of Board Meetings	-0.7954	0.1247	0.0000***
CSR Sustainability Committee	1.6878	1.7321	0.3300
Total Assets	-0.0052	0.0012	0.6747
Fixed Effects (Firm & Time)		Yes	
Observations		2736	

Notes: The dependent variable is *ESG Controversies Score*. The model includes firm and time fixed effects. Standard errors are two-way clustered at the firm and time level. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.