

ICTHM 2023**International Conference in Technology, Humanities and Management****BOARD GENDER DIVERSITY AND ESG DISCLOSURE: DOES
BOARD MEETING ATTENDANCE MATTERS?**

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Abstract

This study aims to explore the effect of board gender diversity on Environmental, social, and governance (ESG) disclosures of Fortune-500 non-financial firms in the United States, with board meeting attendance served as a moderator. This study employed a sample of non-financial US companies between 2013 and 2021. In this study we utilized panel data for 343 non-financial firms from the Bloomberg database, which included 2145 firm-year observations. The results indicate a significant positive association between board gender diversity and ESG disclosure. In addition, there is a significant positive relationship between board gender diversity and the individual components of ESG disclosure: environmental, social, and governance disclosures. This study also explores the moderating effect of board meeting attendance on the ESG disclosure score and its three individual components. The results indicate a significant positive effect of board meeting attendance when female board members are CEO and Chairperson of the board on the environmental and social components of the ESG score, however their contribution to the governance disclosure is insignificant. This study contributes to the limited but expanding literature on the relationship between corporate governance and ESG disclosure and motivates companies in developing nations to appoint more female CEOs and chairpersons.

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Keywords: Board Gender Diversity, Board Meeting Attendance, ESG Disclosure, Female CEO, Female Chairperson

1. Introduction

Environmental, social, and governance (ESG) standards are a new indicator of corporate responsibility that demonstrates a commitment to non-financial objectives (Arayssi et al., 2020). Birindelli et al. (2018) The ESG disclosure score is an ethical evaluation that attempts to validate a company's CSR quality or its non-financial performance in three pillars: environment, governance, and social. Companies have realized that ESG disclosure is necessary to convey their stakeholders' positive reputation and brand image in addressing environmental issues (Tarmuji & Maelah, 2016). Companies have realized that ESG disclosure is necessary to convey their stakeholders' positive reputation and brand image in addressing environmental issues (Tarmuji & Maelah, 2016). According to Tarmuji and Maelah (2016), the disclosure of ESG practices in the global data stream has increased exponentially over time as a result of businesses' efforts to remain sustainable. Non-financial information must be disclosed in corporate reports in the majority of countries (Otu Umoren, 2015). By incorporating financial and ESG data into a single integrated report that the company and its stakeholders can use to make better decisions, improved ESG practices can be achieved (Otu Umoren, 2015). Consequently, there are numerous regulations worldwide that mandate or encourage ESG disclosure, particularly in developed economies. For instance, the European Union, the United Nations, and the Organization for Economic Cooperation and Development have issued regulations and recommendations regarding the disclosure of non-financial information that should include ESG issues (Wasiuzzaman & Wan Mohammad, 2020). This study investigates the impact of board gender diversity on ESG disclosure and its component parts in the United States.

As ESG practices are essential to the long-term value and performance of a company, an independent, diverse, and diligent board improves ESG practices and transparency (Kamaludin et al., 2022). ESG has been found to have a positive correlation with the operational and market performance of a company (Lunawat & Lunawat, 2022). Arayssi et al. (2020) analyzed a 10-year study of publicly traded corporations and found that greater board independence and female board participation assist in conveying a company's favorable image by enhancing social responsibility. Manita et al. (2018) show that corporate governance influences the sustainability disclosure of U.S. and European firms. According to Mallin et al. (2013), corporate boards of directors are expected to incorporate social and environmental responsibilities into their fundamental decision-making processes, thereby enhancing the long-term value of businesses. Consequently, regulators should ensure that boards of directors have expertise in sustainability and can evaluate the ESG priorities of their constituents (Birindelli et al., 2018). Governance was the most influential of the three ESG factors on the investment decisions of individual stockholders, according to a recent study conducted in the Indian region by Sood et al. (2023). The environmental factor was the second most influential. The social factor was determined to have the least impact.

In addition, gender diversity is one of the most important aspects of board diversity that can enhance disclosure. This is because gender-diverse boards dedicate more time to monitoring (Adams & Ferreira, 2009). Female directors are also more likely than their male counterparts to serve on monitoring-related committees (Adams & Ferreira, 2009). According to a study by Giannarakis (2014), the presence

of women on the board increases CSR disclosure. Kumar and Ravi (2023) suggest that perceptions of women as risk-averse, ethical minded, and conflict-averse may no longer apply to women in executive positions. Consequently, the influence of women on the decision-making of top-management teams is still uncertain. Several empirical studies (Cucari et al., 2018; Husted & Sousa-Filho, 2019; Lavin & Montecinos-Pearce, 2021; Manita et al., 2018) have examined the effect of board gender diversity on ESG disclosure. However, these studies focused primarily on the effects of gender diversity on ESG disclosure without evaluating how it influences its environmental, social, and governance components individually. In addition, few international studies have been conducted (De Masi et al., 2021; Gurol & Lagasio, 2023; Harjoto & Rossi, 2019; Kamaludin et al., 2022; Tamimi & Sebastianelli, 2017; Wasizzaman & Wan Mohammad, 2020).

This study differs from previous studies in that it examines individual ESG disclosure components in the United States. Specifically, this study examines the effect of board gender diversity on ESG, environmental, social, and governance disclosures. This research contributes to the body of knowledge in three ways. First, the study is one of the few to examine the effect of gender diversity on environmental, social, and governance disclosures. Second, the study can assist policymakers and regulators in developing effective policies and regulations that could encourage firms to improve their component disclosure. Thirdly, the findings of this study will assist the management and board of directors of U.S. companies in enhancing the disclosure of non-financial information in order to attract and retain investors. Also, according to Kanter's theory, women's contributions become evident when a critical mass of three women is reached on boards, at which point women's opinions are heard and their impact becomes apparent (Kanter, 1987). According to De Masi et al. (2021), the critical mass of women on boards has a positive impact on all ESG factors when the utmost level of women's participation is achieved for the governance score. This study employs the critical mass theory to investigate the impact of women on boards on ESG disclosure. Specifically, the study will investigate the impact of the critical mass of women on boards on ESG components.

The remainder of the paper consists of four sections. Section 2 provides a literature review and research hypotheses. Section 3 presents the methodology, which examines the relationship between board gender diversity and ESG disclosure, as well as a description of the sample, a definition of the variables, and the analyses performed. Section 4 contains the results and analysis. In Section 5, concluding remarks are presented.

2. Literature Review

2.1. Women on board and ESG disclosure

Women on the Board tend to influence ESG disclosure. Hence, the changing business environment pressurizes boards to choose female directors across the globe (Adams & Ferreira, 2009). This is because women on board act as accelerators for achieving a balance between enterprises' financial objectives and social duties (Arayssi et al., 2020). Besides, Cucari et al. (2018) describe women as one of the significant influencers of ESG disclosure. Also, Manita et al. (2018) emphasized the participation of women on corporate boards, not only in the name of gender equality and organizational and legal requirements but

also in the context of organizational performance. ESG Disclosure provides a wide range of benefits to the organization, including enhanced corporate image and stakeholder engagement, recruitment and retention of talented personnel, and improved internal leadership and decision processes (Adams & Zutshi, 2004).

Regarding gender diversity on boards, a vast body of research has explored in depth the correlation between women on Board and corporate financial success (Manita et al., 2018). Some studies indicate a significant positive relationship between women on the board and ESG disclosure. For example, Dienes and Velte (2016) asserted that board gender diversity improves the quality of CSR disclosure. A study by Ismail and Latiff (2019) demonstrates that board gender diversity enhances a company's sustainable policies. Wasiuzzaman and Wan Mohammad (2020) examine the impact of board gender diversity on the transparency of environmental, social, and governance (ESG) disclosure in Malaysia by using a sample of 568 firm years of observations from the year 2005 to 2016. By applying OLS regression analysis, the study shows that presence of the women on the Board has a significant positive association with ESG disclosure. This study also revealed that women on the Board influenced environmental Disclosure. Kamaludin et al. (2022) found that gender diversity improves ESG disclosure standards dramatically for all industries, primarily due to legislative obligations. According to Adams and Ferreira (2009), female directors have a significant positive influence on board inputs and business results.

However, some studies revealed that women on the Board reduced ESG disclosure. For instance, Cucari et al. (2018) analyzed that the women on boards of directors are adversely associated. A study by Ismail and Latiff (2019) found women directors on the board women have a negative relationship with a company's sustainability practices. As per Husted and Sousa-Filho (2019), the presence of women on the Board has adversely influenced ESG disclosure. A study by Mashudi et al. (2021) found that women on the Board reduced ESG disclosure. Nevertheless, the preference of women directors for addressing a social problem as opposed to an environmental concern may not necessarily influence the amount of Disclosure since it may rely on the complication of the disclosure requirements (Wasiuzzaman & Wan Mohammad, 2020). The results finds that the female executives tend to be risk averse and are better monitors than their male counterparts could affect the relationship between performance and turnover (Cooper, 2017).

Moreover, Manita et al. (2018) examined how board gender diversity affects environmental, social, and governance (ESG) Disclosure. The findings established no relationship between board gender diversity and ESG disclosure. As per Birindelli et al. (2018) empirical findings, there is a non-linear link between the presence of women on a bank's Board of directors and its ESG performance. In Malaysia, Wasiuzzaman and Wan Mohammad (2020) found that gender diversity does not influence social and governance Disclosure. ESG disclosure is highly and favorably connected with a diversity of boards, whether the percentage of women is considerable or negligible (Manita et al., 2018). The representation of women on corporate boards enhances ESG disclosure, according to (Wasiuzzaman & Wan Mohammad, 2020). Adams and Ferreira (2009) demonstrated that higher women's representation in the boardroom might be detrimental to well-governed companies where further monitoring would be counterproductive.

2.2. Critical mass

Recent research indicates that the presence of a critical mass of women on a company's board of directors may have a favorable impact on the company's financial success (De Masi et al., 2021). A critical mass is described as a minimal number of female board members, which is normally between three and five, but may go as high in certain situations (Kanter, 1987). This critical mass is believed to provide a variety of viewpoints to the boardroom, which may assist the business in making better choices and being more inventive. Women board members may also serve as role models for other women in the organization, so contributing to the development of a culture that is more receptive to and accommodating of female workers. In addition, research have shown that organizations with gender-diverse boards tend to have superior corporate governance procedures, resulting in greater long-term financial success (Birindelli et al., 2018).

2.3. Female CEO

Regarding the relationship between CEO gender and ESG disclosure, the existing literature indicates a positive (if any) association between female CEOs and corporate social responsibility (Aabo & Giorici, 2023). With best of our knowledge, none of the previous study explicitly investigates the association using ESG scores from certain data providers to measure corporate social responsibility. Following Petersen (2009), we conduct a random effects regression analysis on our panel data of fortune 500 US firms.

2.4. Female chair

Female board chairs are essential because they offer a distinct perspective and set of skills (Aabo & Giorici, 2023; Bennouri et al., 2018). They can help to establish an environment that is more diverse and inclusive, which can contribute to enhanced decision-making and performance. Additionally, having a female chairperson can enhance the presence of women in leadership positions, which can encourage other women to pursue leadership roles. However, female chair has mixed findings, as per the findings of (Eberhardt-Toth, 2017) there are no statistically significant correlations between board chair membership on the board CSR committee and the proportion of female directors on the board CSR committee.

2.5. Board meeting attendance

The frequency of board meetings is frequently used as a measure of board diligence (Laksmna, 2008). It plays a vital role in improving the board's effectiveness and the extent of its monitoring activity (Laksmna, 2008; Vafeas, 1999). Vafeas (1999) found a negative correlation between the number of board meetings and organizational performance. However, it was discovered that an increase in board meetings following a crisis met the expectations of shareholders and led to enhanced company performance. With the incorporation of ESG initiatives into business operations, it is anticipated that ESG strategy and policy will be discussed at each board meeting, and presence of Female CEO and Female Chair reflecting their increasing significance in board meeting attendance in boardroom.

In line with the above literature, we propose the following hypotheses:

- i. **H1a:** There is a significant positive association between gender diversity and ESG disclosure.
- ii. **H1b:** There is a significant positive association between gender diversity and environmental disclosure.
- iii. **H1c:** There is a significant positive association between gender diversity and social disclosure.
- iv. **H1d:** There is a significant positive association between gender diversity and governance disclosure. **H1e:** There is a significant positive association between board gender diversity and ESG disclosure when board meeting attendance moderates the relationship.

3. Methodology

3.1. Data and sample

This research focused on U.S. Fortune 500 firms to test the developed hypothesis. The data were obtained from the Bloomberg Database for 2013–2022. This study considers only non-financial firms whose financial and non-financial data are available on the Bloomberg database. It is because financial institutions, like banks and insurance companies, have different disclosure requirements. Besides, companies with missing data were eliminated from the sample. After removing missing values, a final sample of 343 firms with a total of 2,145 firm-year observations was obtained. Table 1 represents the Firm wise classification of each sector.

Table 1. Firm-wise classification of each sector

No	Name of sector	No. of firms in each sector
1	Communication	15
2	Consumer Discretionary	69
3	Consumer Staples	34
4	Energy	25
5	Health Care	39
6	Industrial	68
7	Information Technology	36
8	Materials	27
9	Real Estates	05
10	Utilities	25
	Total	343

This study's final sample covers ten non-financial sectors segregated by the Global Industry Classification Standard (GICS) classification.

3.2. Variables of the study

This study examined the effect of board gender diversity on ESG, environmental, social, and governance disclosures. The dependent variables are ESG, environmental, social, and governance disclosures. The Independent variables are board gender diversity (BGD), critical mass (CMASS), female CEO (FEMCEO), and female Chair (FEMCHAIR), and Board meeting attendance (BMAT), whereas

control variables include CEO duality (CEODUAL), board size (BSIZE), firm size (FSIZE), and independent directors (INDEPDIR). The descriptions of variables are represented in Table 2.

Table 2. Description of variables

Variables	Abbreviation	Measure	References
Dependent variables			
Environment, Social, and Governance Disclosure	ESGD	The ESG Disclosure score from Bloomberg Terminal.	(Cucari et al., 2018; Galbreath, 2013; Giannarakis, 2014)
Environmental	ENV	Environmental disclosure score from Bloomberg.	(Tarmuji & Maelah., 2016; Wasiuzzaman & Wan Mohammad, 2020)
Social	SOC	Social disclosure score from Bloomberg.	(Harjoto & Rossi., 2019; Wasiuzzaman & Wan Mohammad, 2020)
Governance	GOV	Governance disclosure score from Bloomberg.	(Harjoto & Rossi, 2019; Tarmuji & Maelah, 2016; Wasiuzzaman & Wan Mohammad, 2020)
Independent variable			
Board gender diversity	BGD	Percentage of women directors on the company’s Board.	(Adams & Ferreira, 2009; Cucari et al., 2018)
Critical Mass	CMASS	It is a dummy variable that assumes the value 1 if a board has at least 3 women; 0 otherwise. It measures the critical mass.	(De Masi et al., 2021; Wasiuzzaman & Wan Mohammad, 2020)
Female CEO	FEMCEO	Dummy variable that assumes the value 1 if the board has Female CEO, otherwise; 0.	(Aabo & Giorici, 2023; Bennouri et al., 2018; Kumar & Ravi, 2023)
Female Chair	FEMCHAIR	Dummy variable that assumes the value 1 if the board has female chair, otherwise; 0.	(Bennouri et al., 2018; Eberhardt-Toth, 2017)
Board meeting attendance	BMAT	Percentage of Board meeting attendance.	(Laksmna, 2008; Suttipun, 2021)
Control variables			
CEO Duality	CEODUALITY	Dummy variable if CEO of firm is board of director as well assumes 1, otherwise; 0.	(Lagasio & Cucari, 2019)
Board Size	BSIZE	Number of directors on the company’s board.	(De Masi et al., 2021; Mashudi et al., 2021; Tamimi & Sebastianelli, 2017)
Firm Size	FSIZE	Log of total revenue	(Birindelli et al., 2018; Sharma et al., 2020)
Independent Director	INDEPDIR	Number of Independent directors on company’s board.	(De Masi et al., 2021; Mashudi et al., 2021)

3.3. Econometrics models

In this study we proposed two sets of econometric models. Models 1, 2, 3, and 4 examine the direct relationship of board gender diversity on ESG disclosure and also its individual components i.e., E, S, and G. Whereas, Models 5, 6, 7, and 8 examine the moderating effect of board meeting attendance

(BMAT) between board gender diversity and ESG disclosure and its including its individual components in the United States.

3.3.1. Direct relationship

$$ESG\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 CEODUALITY_{it} + \beta_7 BSIZE_{it} + \beta_8 FSIZE_{it} + \beta_9 INDEPDIR_{it} + \mu_{it} \quad (1)$$

$$ENV\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 CEODUALITY_{it} + \beta_7 BSIZE_{it} + \beta_8 FSIZE_{it} + \beta_9 INDEPDIR_{it} + \mu_{it} \quad (2)$$

$$SOC\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 CEODUALITY_{it} + \beta_7 BSIZE_{it} + \beta_8 FSIZE_{it} + \beta_9 INDEPDIR_{it} + \mu_{it} \quad (3)$$

$$GOV\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 CEODUALITY_{it} + \beta_7 BSIZE_{it} + \beta_8 FSIZE_{it} + \beta_9 INDEPDIR_{it} + \mu_{it} \quad (4)$$

3.3.2. Moderating Effect using Board meeting attendance

$$ESG\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 BGD * BMAT_{it} + \beta_7 CMASS * BMAT_{it} + \beta_8 FEMCEO * BMAT_{it} + \beta_9 FEMCHAIR * BMAT_{it} + \beta_{10} CEODUALITY_{it} + \beta_{11} BSIZE_{it} + \beta_{12} FSIZE_{it} + \beta_{13} INDEPDIR_{it} + \mu_{it} \quad (5)$$

$$ENV\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 BGD * BMAT_{it} + \beta_7 CMASS * BMAT_{it} + \beta_8 FEMCEO * BMAT_{it} + \beta_9 FEMCHAIR * BMAT_{it} + \beta_{10} CEODUALITY_{it} + \beta_{11} BSIZE_{it} + \beta_{12} FSIZE_{it} + \beta_{13} INDEPDIR_{it} + \mu_{it} \quad (6)$$

$$SOC\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 BGD * BMAT_{it} + \beta_7 CMASS * BMAT_{it} + \beta_8 FEMCEO * BMAT_{it} + \beta_9 FEMCHAIR * BMAT_{it} + \beta_{10} CEODUALITY_{it} + \beta_{11} BSIZE_{it} + \beta_{12} FSIZE_{it} + \beta_{13} INDEPDIR_{it} + \mu_{it} \quad (7)$$

$$GOV\ Disc_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 CMASS_{it} + \beta_3 FEMCEO_{it} + \beta_4 FEMCHAIR_{it} + \beta_5 BMAT_{it} + \beta_6 BGD * BMAT_{it} + \beta_7 CMASS * BMAT_{it} + \beta_8 FEMCEO * BMAT_{it} + \beta_9 FEMCHAIR * BMAT_{it} + \beta_{10} CEODUALITY_{it} + \beta_{11} BSIZE_{it} + \beta_{12} FSIZE_{it} + \beta_{13} INDEPDIR_{it} + \mu_{it} \quad (8)$$

4. Results and Discussions

4.1. Descriptive statistics

Table 3 presents descriptive data for the ESG, environmental, social, and governance disclosure factors utilized in this research. Control variables include CEO Duality (CEODUAL), Board Size (BSIZE), Firm Size (FSIZE), and independent directors (INDEPDIR).

Table 3 indicates that the average ESG disclosure score among the Fortune 500 firms in the United States is 37.628. The lowest ESG score is 11.98, while the highest is 77.18. GOV has the highest average score among the three individual ESG components, with a mean of 60.710 (minimum value = 32.14, maximum value = 85.71). According to Crifo and Forget (2013), good governance has the largest influence on investors' decision-making processes; thus, firms focus more on governance reporting.

Table 3 shows that the average percentage of gender diversity on the board is 21.87%, with the lowest and highest proportions of 0% and 57.14%, respectively. It illustrates that some companies have no female directors on their boards, while others have as many as 57.14%. CMASS, FEMCEO, FEMCHAIR, and CEODUAL are dichotomous variables with mean values of 38.70%, 0.56%, 0.48%, and 51.20%, respectively. Average BSIZE is 11.02, FSIZE is 3.86, and INDEPDIR is 84.14.

Table 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ESGD	2145	37.628	14.129	11.98	77.18
ENV	2145	29.238	18.795	0.78	80.62
SOC	2145	33.627	14.832	3.13	79.69
GOV	2145	60.710	8.066	32.14	85.71
BGD	2145	21.875	9.621	0	57.14
BMAT	2145	0.8103	0.094	0.72	1
CMASS	2145	0.390	0.488	0	1
FEMCEO	2145	0.056	0.231	0	1
FEMCHAIR	2145	0.048	0.215	0	1
CEODUALITY	2145	0.510	0.500	0	1
BSIZE	2145	11.028	1.972	5	18
FSIZE	2145	3.875	0.986	1.18	8.2
INDEPDIR	2145	84.140	9.641	16.67	100

4.2. Correlation Matrix

Table 4 presents the pairwise correlation coefficients, significance, and variance inflation factors (VIF) for each variable. Strong correlations are observed between ESG and its components. This is not a problem because the study does not intend to establish the relationship between ESG and its components. Besides, Table 4 shows that the correlation coefficients of the relationship between the independent variable (board gender diversity) and the dependent variables (ESG, environmental, social, and governance disclosures) are not high. These results suggest the absence of serious multicollinearity. This is justified by the multicollinearity results in Table 4, which vary from 1.04 to 2.92. Therefore, multicollinearity is tolerable because none of the VIF value exceeds 5 (Hair et al., 2010).

4.3. Regression Results

Table 5 illustrates the regression results for the eight models designed to evaluate the relationship between board gender diversity (BGD) and ESG disclosure and its individual components (Environmental (ENV), Social (SOC), and Governance (GOV)) of U.S. Fortune 500 companies using multiple regression heteroskedastic panels with corrected standard errors (HPCSE). A series of tests are performed to choose the most suitable pooled OLS, fixed effect, and random effect regression for each model. Each model's Hausman test result shows significance at 1%. Thus, this study utilizes a Fixed-effect panel regression rather than random effect and pooled OLS estimators. Each model is also tested for group-wise heteroskedasticity using a modified Wald test. Each model's outcome is 1% significant. Analyses use heteroskedastic panels corrected standard errors (HPCSE).

Table 4. Correlation Coefficients and VIF

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	V) IF
(1) ESGD	1.00 0													
(2) ENV	0.97 5 (0.0 00)	1.00 0												2. 92
(3) SOC	0.84 4 (0.0 00)	0.72 6 (0.0 00)	1.00 0											2. 32
(4) GOV	0.78 6 (0.0 00)	0.70 5 (0.0 00)	0.65 0 (0.0 00)	1.00 0										2. 22
(5) BGD	0.27 5 (0.0 00)	0.26 0 (0.0 00)	0.22 7 (0.0 00)	0.22 6 (0.0 00)	1.00 0									1. 71
(6) BMAT	0.10 5 (0.0 00)	0.10 1 (0.0 00)	0.08 4 (0.0 00)	0.10 7 (0.0 00)	0.10 3 (0.0 00)	1.00 0								1. 04
(7) CRITICAL MASS	0.24 9 (0.0 00)	0.23 6 (0.0 00)	0.21 0 (0.0 00)	0.20 2 (0.0 00)	0.58 9 (0.0 00)	0.11 1 (0.0 00)	1.00 0							1. 83
(8) FEMALECE O	0.07 8 (0.0 00)	0.06 9 (0.0 01)	0.06 7 (0.0 02)	0.06 3 (0.0 04)	0.21 9 (0.0 00)	0.06 9 (0.0 01)	0.19 0 (0.0 00)	1.00 0						1. 44
(9) FEMCHAIR PERSON	0.05 0 (0.0 20)	0.04 3 (0.0 49)	0.06 1 (0.0 05)	0.03 6 (0.0 96)	0.14 0 (0.0 00)	0.09 4 (0.0 00)	0.14 4 (0.0 00)	0.52 8 (0.0 00)	1.00 0					1. 41
(10) CEODUALI TY	0.14 6 (0.0 00)	0.16 3 (0.0 00)	0.07 9 (0.0 00)	0.12 1 (0.0 00)	0.07 8 (0.0 00)	0.06 0 (0.0 05)	0.14 3 (0.0 00)	0.00 5 (0.8 10)	0.01 3 (0.5 52)	1.00 0				1. 44
(11) BOARDSIZ E	0.35 9 (0.0 00)	0.35 2 (0.0 00)	0.27 6 (0.0 00)	0.32 0 (0.0 00)	0.08 5 (0.0 00)	0.11 6 (0.0 00)	0.35 5 (0.0 00)	0.06 4 (0.0 03)	0.07 3 (0.0 01)	0.10 9 (0.0 00)	1.00 0			1. 35
(12) FSIZE	- 0.25 7 (0.0	- 0.27 1 (0.0	- 0.18 0 (0.0	- 0.18 3 (0.0	0.06 1 (0.0	0.00 7 (0.7	0.05 2 (0.0	0.00 3 (0.8	0.07 8 (0.0	0.04 1 (0.0	- 0.10 0 (0.0	1.00 0		1. 12

	00)	00)	00)	00)	05)	61)	16)	90)	00)	59)	00)			
(13)	0.31	0.30	0.25	0.29	0.20	0.01	0.22	0.04	0.07	0.27	0.17	-	1.0	1.
INDEPDIR	1	2	2	9	1	8	0	9	3	0	0	0.01	00	22
												2		
	(0.0	(0.0	(0.0	(0.0	(0.0	(0.3	(0.0	(0.0	(0.0	(0.0	(0.0	(0.5		
	00)	00)	00)	00)	00)	98)	00)	23)	01)	00)	00)	76)		

Table 5. Multiple Regression Results Using Heteroskedastic Panels Corrected Standards Errors (HPCSE)

	<u>Direct Effect</u>				<u>Moderating Effect</u>			
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>	<u>Model 7</u>	<u>Model 8</u>
Exploratory Variables	DV= ESGD	DV= ENV	DV= SOC	DV= GOV	DV= ESGD	DV= ENV	DV= SOC	DV= GOV
BGD	0.3467 (0.000)** *	0.4417 (0.000)** *	0.2839 (0.000)** *	0.1631 (0.000)** *	0.3427 (0.000)** *	0.4417 (0.000)** *	0.2839 (0.000)** *	0.1631 (0.000)** *
BMAT	0.0689 (0.009)** *	0.0865 (0.015)**	0.05880 (0.050)**	0.0497 (0.002)** *	0.0689 (0.009)** *	0.0865 (0.015)**	0.0588 (0.050)**	0.0497 (0.002)** *
CMAS	-1.0394 (0.152)	-1.5161 (0.115)	-0.3157 (0.703)	-0.8910 (0.034)	-1.0394 (0.152)	-1.5161 (0.115)	-0.3157 (0.703)	-0.8910 (0.034)
FEMC	0.1227 (0.925)	-0.1516 (0.931)	-0.4606 (0.776)	0.2527 (0.754)	0.1227 (0.925)	-0.1516 (0.931)	-0.4606 (0.776)	0.2527 (0.754)
HAIR	-0.0297 (0.984)	-0.1373 (0.943)	1.5173 (0.416)	-0.5641 (0.502)	-0.0297 (0.984)	-0.1373 (0.943)	1.5173 (0.416)	-0.5641 (0.502)
BGD*					0.1023 (0.546)	0.0693 (0.760)	0.1833 (0.343)	0.1400 (0.160)
BMAT								
CMAS								
S*BM					3.6239 (0.578)	8.5071 (0.329)	-6.8881 (0.350)	2.0369 (0.593)
AT								
FEMC					55.5551	82.8773		
EO*B					(0.000)** *	(0.000)** *	49.0095 (0.003)**	9.5450 (0.225)
MAT								
FEMC					-55.4500 (0.000)** *	-88.2499 (0.000)** *	-25.2191 (0.170)	-11.5303 (0.136)
HAIR*								
BMAT								
CEOD	1.5000 (0.006)** *	2.8652 (0.000)** *	-0.0078 (0.990)	0.4747 (0.148)	1.5461 (0.004)** *	(0.000)** *	-0.0078 (0.972)	0.4747 (0.148)
UALITY	2.0145 (0.000)** *	2.6180 (0.000)** *	1.5892 (0.000)** *	1.0614 (0.000)** *	2.0043 (0.000)** *	2.6024 (0.000)** *	1.5892 (0.000)** *	1.0614 (0.000)** *
BFSIZE	-3.4559 (0.000)** *	-4.8766 (0.000)** *	-2.5487 (0.000)** *	-1.3440 (0.000)** *	-3.4463 (0.000)** *	-4.8584 (0.000)** *	-2.5487 (0.000)** *	-1.3440 (0.000)** *
Fysize	0.3016 (0.000)** *	0.3792 (0.000)** *	0.2733 (0.000)** *	0.1820 (0.000)** *	0.2967 (0.000)** *	0.3713 (0.000)** *	0.2711 (0.000)** *	0.1820 (0.000)** *
INDPDIR	-10.1139 (0.006)** *	-30.1733 (0.000)** *	-7.9196 (0.057)	31.4123 (0.000)** *	-4.0621 (0.171)	-22.4062 (0.000)** *	-2.8821 (0.401)	31.4123 (0.000)** *
CONS								

Prob>c	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
hi2	000	000	000	000	000	000	000	000
	***	***	***	***	***	***	***	***
Wald	107	106			113	112		
chi2	9.9	4.1	509	726	0.5	5.6	527	726
	4	3	.64	.49	6	0	.42	.49
R2	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.2
	958	908	774	213	006	981	799	213
Hausm	200.86(p	164.33(p	126.76	165.35	187.58(p	134.29(p	111.20(p	166.83
an's	=0.0000)	=0.0000)	(p=0.000	(p=0.000	=0.0000)	=0.0000)	=0.0000)	(p=0.000
test	***	***	0)***	0)*	***	***	***	0)*
Hetero.	2.2e+07(1.8e+31	2.4e+29(p	1.5e+07(p	8.7e+30(p	6.1e+07(p	1.5e+07(p	1.5e+07(p
Test	p=0.0000	(p=0.000	=0.0000)	=0.0000)	=0.0000)	=0.0000)	=0.0000)	=0.0000)
)***	0)***	***	***	***	***	***	***

Table 5 shows the multiple regression results using heteroskedastic panel corrected standard errors (HPCSE). Also, it illustrates the direct effect and moderating effect of board meeting attendance. Model 1 examines the association between board gender diversity (BGD) and ESG disclosure. The Wald chi2 (1079.94) and p-value (0.0000) suggest that the model is statistically significant at the 1% level, indicating that the model is fit. R2 shows that the BGD and control variables in the model account for 29.58% of the variance in the ESGD score. The regression outcome indicates a strong positive correlation between BGD and ESGD (Coeff=0.3467, p-value=0.000). Consequently, the result supports the proposed hypothesis (H1) that there is a significant positive association between gender diversity and ESG disclosure. The result is in line with the findings of most of the prior research, which shows a significant positive correlation between board gender diversity and firm ESG reporting (Adams & Ferreira, 2009; De Masi et al., 2021; Gurol & Lagasio, 2023; Kamaludin et al., 2022; Manita et al., 2018; Mashudi et al., 2021; Wasiuzzaman & Wan Mohammad, 2020). Contrary to the studies indicating a strong negative link between board gender diversity and ESG disclosure of enterprises (Dienes & Velte, 2016; Ismail & Latiff, 2019; Shahbaz et al., 2020). Also, critical mass (CMASS) and ESG disclosure (ESGD) show statistically insignificant results with ESGD (Coeff= -1.0394, P= 0.152). In contrast, FEMCEO is positive but statistically insignificant, FEMCHAIR is negative and insignificant. At the same time, Control variables CEODUAL, BSIZE, FSIZE, and INDEPDIR had a significant positive correlation with ESGD at 1%. Model 5 illustrates the moderating effect of BMAT on ESGD. The results shows that the presence of Female CEO (FEMCEO) significant impact and Female Chair (FEMCHAIR) has a significant impact on Board meeting attendance.

Model 2 evaluates the influence of board gender diversity (BGD) on environmental disclosure (ENV) of Fortune 500 companies in the United States. The findings indicate that BGD has a significant positive relationship with ENV (Coeff=0.4417, p-value=0.000). Therefore, the proposed hypothesis (H2) is accepted: a significant positive association exists between gender diversity and environmental disclosure. The findings validate previous research demonstrating that board gender diversity (BGD) improves environmental disclosure by corporations. Critical mass (CMASS) and environmental (ENV) shows statistically insignificant results (Coeff= -1.5161, p-value= 0.115). FEMCEO and FEMCHAIR have a negative and statistically insignificant relationship with ENV. Regarding the control variables, CEODUAL, BSIZE, FSIZE, and INDEPDIR are significant at the 1% level. Model 6 shows moderating

effect of BMAT on ENV. The results shows that the presence of Female CEO (FEMCEO) and Female Chair (FEMCHAIR) has a significant impact on Board meeting attendance. Model 6 demonstrates the moderating effect of BMAT on ENV. The results shows that the presence of Female CEO (FEMCEO) significant impact and Female Chair (FEMCHAIR) has a significant impact on Board meeting attendance.

Model 3 examines the relationship between board gender diversity (BGD) and social disclosure (SOC). The analysis shows a significant positive association between BGD and SOC (Coeff= 0.2839, p-value=0.000). Thus, the proposed hypothesis (H3) is accepted; that there is a significant positive association between gender diversity and social disclosure. Regarding critical mass (CMASS) and social disclosure (SOC), the results are negative and insignificant (Coeff= -0.3157, p-value= 0.703). Also, FEMCEO and FEMCHAIR are insignificant. The control variables BSIZE, FSIZE, and INDPEDIR showed a significant level of 1%, except CEODUAL. CEO duality, one of the corporate governance attributes (Laskar et al., 2022), describes a situation where the CEO works as the board's director. However, in this study, CEO duality shows insignificant results, in line with the finding of Lagasio and Cucari (2019). Model 7 represents the moderating effect of BMAT on SOC. The results shows that the presence of Female CEO (FEMCEO) has a significant impact whereas Female Chair (FEMCHAIR) has an insignificant impact on Board meeting attendance. Model 7 shows the moderating effect of BMAT on SOC. The results shows that the presence of Female CEO (FEMCEO) significant impact and Female Chair (FEMCHAIR) has a significant impact on Board meeting attendance.

Model 4 analyzes the association between board gender diversity and governance transparency (GOV). There is a significant positive relationship between board gender diversity BGD and GOV (Coeff= 0.1631, p-value=0.000). Also, Critical mass (CMASS) and Governance (GOV) show negative and statistically insignificant results (Coeff= -0.8910, p-value= 0.034). Therefore, the proposed hypothesis (H4) is supported, indicating a significant positive association between gender diversity and governance disclosure. The results support the findings of some studies (De Masi et al., 2021; Wasiuzzaman & Wan Mohammad, 2020). However, FEMCEO and FEMCHAIR show insignificant results. The association between the control variables BSIZE, FSIZE, and INDEPDIR is significant at 1%. In contrast, CEODUAL shows a positive but insignificant association with GOV disclosure. This CEODUAL result aligns with the finding of Lagasio and Cucari (2019). Model 8 shows the moderating effect of BMAT on GOV. The results indicates that the presence of Female CEO (FEMCEO) and Female Chair (FEMCHAIR) has an insignificant impact on Board meeting attendance. Model 8 explains the moderating effect of BMAT on GOV. The results shows that the presence of Female CEO (FEMCEO) significant impact and Female Chair (FEMCHAIR) has a significant impact on Board meeting attendance.

Thus, in Table 5 the regression findings suggest that gender diversity on corporate boards positively impacts ESG disclosure ratings. In line with the prior findings (Wasiuzzaman & Wan Mohammad, 2020), higher female board members enhance ESG reporting transparency. The result also confirms Bear's et al. (2010) conclusion that more women on boards improve non-financial reporting. Furthermore, this study's results indicate that gender diversity and ESG (Environmental, Social, and Governance) disclosure can significantly impact communities, government, and the environment. For the

community, board gender diversity brings a broader range of perspectives, experiences, and skills to decision-making processes. This diversity can lead to more inclusive and equitable outcomes for communities. It can help address issues such as gender inequality, discrimination, and social injustice.

Furthermore, board gender diversity and ESG disclosure can influence government policies. Companies with diverse boards and transparent ESG practices can be role models and advocate for policies promoting sustainability, social responsibility, and gender equality. Also, ESG disclosure encourages companies to disclose their environmental impact, resource consumption, and climate change strategies. This transparency helps identify environmental risks and opportunities, enabling companies to implement sustainable practices, reduce emissions, and promote conservation efforts. Overall, board gender diversity and ESG disclosure promote sustainable, responsible, and inclusive business practices. They can positively impact communities by addressing social issues, influencing government policies, and promoting environmental stewardship.

4.4. Robustness Check using Quantile regression.

To check the robustness, this study employed quantile regression technique (Chebbi & Ammer, 2022; Hoang, 2022). Also, the GLS results may suffer endogeneity problems. According to Zaid et al. (2020), using statistical models such as pooled OLS may provide biased findings since this estimator cannot account for the possibility of endogeneity. Earlier research emphasizes that the link between the board of directors' factors and firms' disclosure may encounter an endogeneity issue because of the homogeneity or omission of variables (Ben-Amar et al., 2017; Dwekat et al., 2022; Katmon et al., 2019). Consequently, the study estimates the proposed models by regressing the lagged governance variables on the dependent variables.

Table 6, 7 and 8 represents the multiple quantile regression results using 25th Percentile, 50th Percentile and 75th Percentile simultaneously following (Chebbi & Ammer, 2022). The findings in Table 6, 7 and 8 shows robust results across all models despite of changing percentiles, indicating significant positive results if on board meeting attendance if the board has Female CEO (FEMCEO) and Female Chairperson (FEMCHAIR). Results shows that board gender diversity is statistically significant and positively significant with ESGD (Model 5), ENV (Model 6), SOC (Model 7), and GOV (Model 8). These robustness results are corresponding with the main results as presented in Table 5.

Table 6. Simultaneous Quantile Regression Results (Cont.) 25th Percentile

	<u>Direct Effect</u>				<u>Moderating Effect</u>			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Exploratory Variables	DV= ESGD	DV= ENV	DV= SOC	DV= GOV	DV= ESGD	DV= ENV	DV= SOC	DV= GOV
BGD	0.317 (0.000)* **	0.394 (0.000)* *	0.167 (0.006)* **	0.097 (0.000)* **	1.117 (0.002)* **	1.103 (0.015)**	1.266 (0.004)* **	0.262 (0.145)
BMAT	8.844 (0.007)* **	12.489 (0.006)* **	8.245 (0.024)* *	6.404 (0.000)* **	26.263 (0.001)* **	22.234 (0.034)**	32.968 (0.001)* **	8.514 (0.030)* *
CMASS	0.639	-0.031	0.950	-0.053	-12.836	-27.358	-0.1	-3.857

	(0.460)	(0.985)	(0.364)	(0.926)	(0.165)	(0.000)**	(0.991)	(0.333)
						*		
FEMCEO	1.303 (0.488)	1.891 (0.441)	1.653 (0.499)	-0.563 (0.398)	-47.636 (0.028)*	-49.469 (0.013)**	-60.514 (0.028)*	-12.17 (0.159)
FEMCHAIR	-2.143 (0.176)	-2.881 (0.152)	-3.167 (0.291)	-0.627 (0.326)	29.924 (0.024)*	40.982 (0.003)**	24.942 (0.433)	12.81 (0.174)
BGD*BMAT					-1.018 (0.027)*	-0.872 (0.116)	-1.29 (0.015)*	-0.216 (0.352)
CMASS*BMAT					16.685 (0.134)	34.154 (0.000)**	0.637 (0.950)	4.94 (0.319)
FEMCEO*BMA T					61.469 (0.020)*	65.195 (0.009)**	75.855 (0.031)*	14.274 (0.192)
FEMCHAIR*B MAT					-39.692 (0.013)*	-53.55 (10.001)*	-36.303 (0.366)	-15.875 (0.158)
CEODUALITY	1.922 (0.021)*	2.8652 (0.000)*	0.210 (0.736)	0.723 (0.013)*	1.945 (0.010)*	2.817 (0.000)**	0.14 (0.799)	0.737 (0.058)
BSIZE	1.850 (0.000)*	2.6180 (0.000)*	1.449 (0.000)*	0.739 (0.000)*	1.789 (0.000)*	2.266 (0.000)**	1.512 (0.000)*	0.713 (0.000)*
FSIZE	-3.040 (0.000)*	-4.8766 (0.000)*	-1.304 (0.000)*	-0.966 (0.000)*	-2.936 (0.000)*	-4.259 (0.000)**	-1.417 (0.001)*	-1.005 (0.000)*
INDPDIR	0.231 (0.000)*	0.3792 (0.000)*	0.244 (0.000)*	0.113 (0.000)*	.234 (0.000)*	0.25 (0.000)**	0.267 (0.000)*	0.117 (0.000)*
CONS	-14.936 (0.001)*	- (0.000)*	-18.947 (0.000)*	33.603 (0.000)*	-28.486 (0.001)*	-40.799 (0.000)**	-41.716 (0.000)*	32.109 (0.000)*
		**	**	**	**	*	**	**

Notes: *p <0.10; **p <0.05; ***p <0.01 DV means dependent variable. Models 1,2 3, and 4 represent direct relationship. Whereas Models 5,6,7 and 8 shows moderation effect of Board meeting attendance.

Table 7. Simultaneous Quantile Regression Results (Cont.) 50th Percentile

	<u>Direct Effect</u>				<u>Moderating Effect</u>			
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>	<u>Model 7</u>	<u>Model 8</u>
Exploratory Variables	DV= ESGD	DV= ENV	DV= SOC	DV= GOV	DV= ESGD	DV= ENV	DV= SOC	DV= GOV
BGD	0.435 (0.000) ***	0.507 (0.000) ***	0.363 (0.000) ***	0.187 (0.000) ***	1.649 (0.000) ***	1.861 (0.000) ***	1.762 (0.000)***	0.207 (0.485)
BMAT	18.472 (0.000) ***	12.008 (0.003) ***	12.703 (0.012) **	7.841 (0.001) ***	39.526 (0.000) ***	38.578 (0.000) ***	43.307(0.000))***	8.513 (0.192)
CMASS	-2.067 (0.116)	-1.268 (0.479)	-1.044 (0.222)	-0.056 (0.913)	-17.886 (0.018)	-18.658 (0.062)	-8.564 (0.275)	1.212 (0.755)

					**	*		
FEMCEO	2.375 (0.083) *	2.299 (0.338)	0.983 (0.700)	0.324 (0.845)	-33.634 (0.003) ***	-58.13 (0.000) ***	-36.151 (0.055)*	-18.023 (0.152)
FEMCHAIR	-2.841 (0.202)	-3.956 (0.047) **	-0.327 (0.935)	-0.344 (0.711)	34.191 (0.040) **	71.175 (0.013) **	5.916 (0.871)	14.622 (0.253)
BGD*BMAT					-1.447 (0.000) ***	-1.621 (0.001) ***	-1.74 (0.006)***	-0.018 (0.961)
CMASS*BMA T					18.685 (0.036) **	20.302 (0.052) *	9.331 (0.350)	-1.732 (0.728)
FEMCEO*BM AT					42.603 (0.001) ***	73.197 (0.000) ***	46.883 (0.059)*	22.496 (0.138)
FEMCHAIR*B MAT					-42.294 (0.024) **	-87.364 (0.006) ***	-9.900 (0.827)	-19.194 (0.226)
CEODUALITY	1.738 (0.054) *	3.658 (0.000) ***	1.016 (0.245)	0.781 (0.083) *	1.742 (0.015) **	3.607 (0.001) ***	0.745 (0.361)	0.850 (0.028)
BSIZE	2.122 (0.000) ***	2.835 (0.000) ***	1.596 (0.000) ***	0.903 (0.000) ***	2.274 (0.000) ***	2.886 (0.000) ***	1.672 (0.000)***	0.909 (0.000) ***
FSIZE	-3.643 (0.000) ***	-5.471 (0.000) ***	-2.698 (0.000) ***	-1.509 (0.000) ***	-3.673 (0.000) ***	-5.526 (0.000) ***	-2.321 (0.000)***	-1.574 (0.000) ***
INDPDIR	0.361 (0.000) ***	0.441 (0.000) ***	0.271 (0.000) ***	0.162 (0.000) ***	0.341 (0.000) ***	0.456 (0.000) ***	0.295 (0.000)***	0.163 (0.000) ***
CONS	-27.524 (0.000) ***	-41.223 (0.000) ***	-16.002 (0.017) **	31.271 (0.000) ***	-44.86 (0.000) ***	-64.466 (0.000) ***	-44.731 (0.000)***	30.803 (0.000) ***

Notes: *p <0.10; **p <0.05; ***p <0.01 DV means dependent variable. Models 1,2 3, and 4 represent direct relationship. Whereas Models 5,6,7 and 8 shows moderation effect of Board meeting attendance.

Table 8. Simultaneous Quantile Regression Results (Cont.) 75th Percentile

Exploratory Variables	Direct Effect				Moderating Effect			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	DV= ESGD	DV= ENV	DV= SOC	DV= GOV	DV= ESGD	DV= ENV	DV= SOC	DV= GOV
BGD	0.393 (0.000)* **	.515 (0.000)* **	0.378 (0.000)* **	.215 (0.000)* **	0.703 (0.031)* *	2.023 (0.000)* **	1.019 (0.000)* **	0.679 (0.001)* **
BMAT	7.323 (0.010)* **	8.817 (0.217)	6.200 (0.123)	5.46 (0.032)* *	14.094 (0.123)	46.076 (0.004)* **	19.49 (0.002)* **	12.743 (0.035)* *
CMASS	-1.350 (0.250)	-1.785 (0.351)	-0.057 (0.957)	-1.097 (0.088)*	-6.381 (0.396)	-14.549 (0.329)	-5.953 (0.245)	-10.514 (0.011)* *
FEMCEO	-1.524 (0.400)	-2.345 (0.298)	.572 (0.836)	1.261 (0.526)	-60.646 (0.000)*	-82.129 (0.000)*	-48.19 (0.024)*	0.536 (0.969)

					**	**	*	
FEMCHAIR	3.279 (0.053)*	3.614 (0.099)*	4.031 (0.138)	-1.477 (0.475)	72.417 (0.000)*	100.804 (0.000)*	40.038 (0.145)	10.567 (0.518)
BGD*BMAT					-0.377 (0.363)	-1.878 (0.007)*	-0.750 (0.008)*	-0.55 (0.028)*
CMASS*BMAT					5.992 (0.535)	15.521 (0.386)	6.856 (0.236)	11.177 (0.032)*
FEMCEO*BMA T					74.098 (0.000)*	100.172 (0.000)*	55.642 (0.034)*	2.008 (0.906)
FEMCHAIR*B MAT					-86.186 (0.000)*	-122.443 (0.000)*	-40.978 (0.194)	-14.719 (0.452)
CEODUALITY	1.224 (0.110)	3.282 (0.003)*	-0.374 (0.750)	0.376 (0.462)	1.717 (0.021)*	3.750 (0.008)*	-0.242 (0.788)	0.320 (0.545)
BSIZE	2.127 (0.000)*	2.964 (0.000)*	1.581 (0.000)*	1.203 (0.000)*	2.157 (0.000)*	2.927 (0.000)*	1.804 (0.000)*	1.238 (0.000)*
FSIZE	-4.426 (0.000)*	-6.011 (0.000)*	-4.291 (0.000)**	-1.762 (0.000)*	-4.502 (0.000)*	-5.883 (0.000)*	-3.962 (0.000)*	-1.75 (0.000)***
INDPDIR	0.306 (0.000)*	0.378 (0.000)*	0.328 (0.000)*	0.210 (0.000)**	0.305 (0.000)*	0.364 (0.000)*	0.313 (0.000)*	0.214 (0.000)*
CONS	-0.454 (0.946)	-20.277 (0.034)*	0.949 (0.875)	32.294 (0.000)*	-6.187 (0.472)	-49.315 (0.000)*	-12.864 (0.126)	25.307 (0.000)*

Notes: *p <0.10; **p <0.05; ***p <0.01 DV means dependent variable. Models 1,2 3, and 4 represent direct relationship. Whereas Models 5,6,7 and 8 shows moderation effect of Board meeting attendance.

5. Conclusion

Using a dataset of 343 non-financial US-listed firms from 2013 to 2022, the study seeks to determine how board gender diversity influences ESG disclosure (and its individual components). ESG components have varying firm-year overall observations. Overall, the results indicate that the presence of more women on the Board of Directors of U.S. companies improves ESG disclosure and its component disclosures. Achieving a critical mass of female directors, defined as at least three women on boards, enhances ESG disclosure, according to this study. Specifically, the critical mass of women on boards has a positive effect on the environmental and governance components of ESG, while the minimum level of women's participation is met for the social score. This study contributes to the existing literature on ESG disclosure and gender diversity on corporate boards in global markets. Also, Attendance at board meetings has significant implications for ESG (Environmental, Social, and Governance) disclosure, especially when the board is managed by a female CEO and Female chairperson. According to research, the presence of women in executive leadership positions enriches decision-making processes with a novel perspective and a variety of experiences. When both the CEO and chairperson are women, their combined influence can cultivate an environment where ESG issues are prioritized, and transparent reporting is

encouraged. Board meetings are crucial forums for discussing and deciding initiatives, policies, and disclosures related to environmental, social, and governance (ESG). With women at the forefront, these gatherings are more likely to address ESG issues comprehensively, consider a broader range of stakeholder perspectives, and advocate for sustainable practices. By emphasizing ESG disclosure in board meetings, organizations managed by female CEOs and chairwomen demonstrate their commitment to responsible governance and stakeholder engagement, ultimately contributing to a more inclusive and sustainable business landscape. The study examines the relationship between board gender diversity and board meeting attendance with regards to Environmental, Social, and Governance (ESG) disclosure. This investigation has the potential to reveal the impact of many views on a company's environmental, social, and governance (ESG) strategy, which might lead to improved transparency and reporting. Moreover, comprehending the impact of board meeting attendance on ESG disclosure displays the board's dedication to ethical and sustainable concerns, thus enhancing stakeholder trust. The results of this study may also have implications for corporate governance practices, as they might contribute to the promotion of more diverse board compositions and the establishment of more robust disclosure rules related to environmental, social, and governance (ESG) factors. In addition to its implications for business, this study has a significant impact on wider societal advancement through fostering gender parity and inclusivity in leadership roles, as well as tackling environmental and ethical issues in accordance with global sustainability objectives. Nevertheless, this investigation has a few limitations. First, the sample of Fortune 500 non-financial firms across ten industries in the United States is limited. Consequently, future research should consider the remaining enterprises in the nation. This study only utilizes Bloomberg as a secondary source for data collection. Thus, future research can be conducted by accumulating samples of primary data from various regions. Thirdly, the scope of this study does not include all governance variables. Consequently, future research should evaluate other corporate governance characteristics of the ESG and its component disclosures. Lastly, the survey is limited to the United States. Consequently, future research may contemplate an international investigation.

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