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The Moderating Role of Board Gender Diversity in the Relationship Between Board Characteristics and Earnings Management: Evidence from Bangladesh's Manufacturing Sector

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ABSTRACT

Purpose – The purpose of this study is to examine the relationship between board characteristics and earnings management and the moderating effect of board gender diversity on such a relationship for the listed manufacturing companies of Bangladesh.

Design/Methodology/Approach – The study involved 125 businesses listed on the Dhaka Stock Exchange in Bangladesh for a period of five years, from 2019 to 2023. The modified cross-sectional Jones model (Dechow et al., 1995) has been employed to assess accrual-based earnings management and the two-step System Generalised Method of Moments (System GMM) model has been employed as the principal methodological technique to test the hypotheses, owing to the dynamic characteristics of Accrual-based Earnings Management (AEM) and the potential endogeneity of governance factors. The robustness of GMM findings has been evaluated using three alternative estimation techniques: Feasible Generalised Least Squares (FGLS), Random Effects (RE) based on the Hausman Test, and Pooled Ordinary Least Squares (OLS).

Findings – The results reveal that female participation on board (FPB) significantly reduces AEM, demonstrating that gender diversity enhances the monitoring function of corporate boards. However, the significant and positive interaction terms between FPB and other governance mechanisms — such as board size and board independence — highlight that the effectiveness of broader board dynamics is contingent upon female directors.

Research Implication – The findings of the current study will help policy-makers, regulators, and corporations to improve corporate governance structures, thereby promoting gender diversity in the board of directors and encouraging the adoption of financial reporting best practices.

KEYWORDS: Accrual-based earnings management (AEM), Board characteristics, Board gender diversity (BGD), Corporate Governance, Bangladesh

1.0 INTRODUCTION

Today's economic climate is highly rivalrous, complex, and fraught with danger and uncertainty. Business organizations must modernize their organizational structures to generate more value in the current context. It is paramount for an organization to promote a culture of equity, openness, integrity, and stewardship through a strong and successful corporate governance system. As the world's population changes and becomes more diversified, discussions on improving corporate governance have garnered attention in many countries (Carter et al., 2010). There has been an increase in efforts to raise the number of women on boards globally in recent years (Amin et al., 2021). In Fortune 100 boardrooms, female representation increased from 16.9% to 25% (Deloitte, 2019). Over sixteen nations have enacted legislation requiring female representation on corporate boards, and numerous other nations have included consensual quotas in their guidelines and principles (Rhode and Packel, 2010). As a leader in this field, Norway in 2003 adopted a rule requiring that boards have at least 40% female representation by 2008 (Yu & Madison, 2021).

The foundation of stability and confidence in the modern business environment is transparent financial reporting. However, earnings management, which involves tampering with financial statements, persistently increased over the period. Effective corporate governance is essential for attaining a higher level of transparency; more specifically, a diverse board composition with

substantial female representation is vital. Female directors have the potential to mitigate earning management by the virtue of their risk aversion (Odean & Barbar, 2001), prioritization of ethical behavior (Kaplan et al., 2009), and promotion of inclusive dialogues in the boardroom (Terjesen et al., 2016).

Bangladesh exhibits a corporate governance environment shaped by socio-cultural norms that often limit women's representation in leadership positions (Debnath et al., 2019) and a relatively weaker regulatory framework (Uddin, 2020). Prior studies on South Asian countries, such as those by Sobhan and Mia (2024), predominantly focus on larger economies like India and Pakistan, leaving a significant research gap regarding Bangladesh's unique regulatory, cultural, and economic context. This context, marked by higher levels of information asymmetry (Hasan et al., 2023) and weaker investor protection, provides a fertile ground for earnings management practices, which gender-diverse boards may help mitigate (Adhikary et al. 2021). However, as there is presently a lack of empirical evidence directly linking board gender diversity to earnings management in Bangladesh (Akter et al., 2024), there is a pressing requirement for focused research. Furthermore, According to Helal (2022) extensive research in this field can enhance corporate governance through targeted gender diversity initiatives by policymakers, including the Bangladesh Securities and Exchange Commission (BSEC). Therefore, this study aims to address this gap by examining how board gender diversity moderates the relationship between board characteristics and earnings management in Bangladesh, providing context-specific insights that are crucial for both academia and practice. The empirical results of this study have the potential to contribute to the development of policies aimed at improving corporate governance structures, which include promoting gender diversity in boardrooms and encouraging the adoption of financial reporting best practices. Ultimately, the findings of this study are expected to contribute to the establishment of a more transparent and reliable financial environment.

This study is organized into five sections. The section 1 provides an introduction to the current study, while the section 2 is about the theoretical foundation and literature review. Section 3 discusses the methodology of the study, and section 4 incorporates the findings and discussion section. Section 5 contains the conclusion and further study suggestions. At the end, the paper includes an appendix section.

2.0 THEORETICAL FOUNDATION AND LITERATURE REVIEW

2.1 Theoretical Foundation

2.1.1 Agency Theory

Agency theory, advocated by Jensen and Meckling (1976) and Jensen (1993), establishes the basis for understanding the intrinsic conflict of interest between shareholders (principals) and management (agents). To attain short-term objectives, conceal financial challenges, or get incentives tied to reported earnings, managers may prioritize their personal interests over increasing shareholder value and resort to financial statement manipulation, commonly referred to as earnings management. To address this agency problem, effective corporate governance with higher board gender diversity establishes a mechanism that enhances board oversight and monitoring of managerial decisions which promotes transparency and accountability in financial reporting and aligns managerial interests with long-term shareholder value creation. Corporate boards may mitigate agency conflict and restore stakeholder trust by aligning the interests of managers and shareholders (Bennouri et al., 2018). Various academics, including Amin et. Al. (2021) shows a positive correlation between corporate performance and the representation of women on boards and subcommittees.

2.1.2 Resource Dependency Theory

For the survival and growth of an organization, it is crucial to acquire and manage essential resources. Gender-diverse boards can provide access to new networks, expertise, and abilities that can be useful resources for an entity (Pfeffer & Salancik, 1978). Expanding access to these resources can improve the board's oversight of management's activities. For management decisions that are complicated and difficult to settle with an undiversified board, previous studies have shown that a more gender-balanced board may be an effective option (Compernolle, 2018). It can also offer different viewpoints and counteract any prejudices that might result in lower earning management.

2.1.3. Gender Socialization Theory

Gender socialization theory posits that gender roles are predetermined during the early stages of human life and reinforced through the influence of social norms. Men and women approach the workplace with distinct ethical perspectives, values, and attitudes (Dawson, 1992). According to Roxas and Stoneback (2004), there are variations in leadership styles, communication abilities, and ethical decision-making between men and women. As stated by Betz et al. (1989), notable distinctions exist between men and women about financial matters. Specifically, men are primarily concerned with profit maximization, whereas women are more inclined to offer assistance to others. Kouaib and Almulhim (2019) assert that women demonstrate greater prudence when making critical financial decisions for organizations due to their higher ethical standards. The authors further argue that women's

risk aversion and superior financial reporting lead to enhanced firm performance. Adams and Ferreira (2009), on the contrary, discover that this risk aversion results in a decline in firm performance, whereas the increased presence of female directors leads to an improvement in corporate governance due to their heightened ethical conduct.

2.2 Literature Review

2.2.1 Corporate Governance and Earnings Management

Every corporation is governed by a framework of rules, procedures, and practices termed corporate governance, which ensures accountability and transparency in management (Claessens, 2006). Effective corporate governance is essential to prevent unethical practices such as earnings management, in which management intentionally falsifies financial statements to attain their own interest (Gavious et al., 2012). Performance-based pay as a managerial incentive may result in earnings management, as it encourages executives to manipulate earnings for personal gain (Saona et al., 2020). Furthermore, Gaver et al. (1995) identified that performance-based stock options and bonuses are significant contributors to earnings manipulation. A deficiency in independence and accountability within boards under weak corporate governance frameworks often leads to an increased occurrence of earnings management (Harris et al., 2019; Dichev et al., 2012). Empirical research indicates a consistent association between robust corporate governance practices, such as independent boards and active audit committees, and reduced levels of earnings management (Klein, 2002; Xie et al., 2003; Lin & Hwang, 2010).

In developing economies such as Bangladesh, where corporate governance practices are nascent and the regulatory environment is in flux, the circumstances are particularly complex. According to Hasan et al. (2023), Bangladeshi companies often encounter heightened information asymmetry, fostering conditions conducive to earnings manipulation. In light of the nation's rapid economic growth and relatively weak investor protections, corporate governance is essential yet under-researched in its capacity to mitigate earnings management.

2.2.2 Board Gender Diversity in Corporate Governance

Numerous studies indicate that female representation positively influences firm performance and ethical decision-making, establishing gender diversity as a significant focus in corporate governance research (Deshpande et al., 2006). Female directors are generally characterized by higher levels of conscientiousness, risk aversion, and moral integrity, leading to the perception that gender-diverse boards are more effective in monitoring management globally (Nielsen & Huse, 2010). Since they tend to prioritize accountability and integrity (Adams and Funk, 2012), female directors are often associated with elevated ethical standards and a propensity for risk aversion, leading to enhanced oversight and reduced earnings management (Hyde and Kling, 2001). Furthermore, Kaplan et al., (2009) support the moral conduct of female directors and their commitment to transparency in financial reporting (Kaplan et al., 2009). However, the impact of gender diversity on earnings management may vary based on the cultural context and regulatory environment.

Prior studies demonstrate that gender diversity reduces earnings manipulation in developed economies (Compernolle, 2018). Conversely, the impact of gender diversity on corporate governance outcomes in developing countries such as Bangladesh remains unclear, as social norms often limit women's involvement in leadership roles (Debnath & Patnaik, 2019). Numerous Bangladeshi companies continue to face challenges in ensuring substantial female representation on boards, despite regulatory advancements such as the Bangladesh Securities and Exchange Commission's (BSEC) 2024 mandate for a minimum of one female director.

2.2.3 Board Gender Diversity and Corporate Governance Landscape in Bangladesh

Bangladesh, an emerging economy in South Asia, provides a unique context for analyzing the impact of gender diversity on earnings management. While global studies indicate that female directors play a significant role in mitigating unethical behavior, the cultural and legal context of Bangladesh poses significant challenges (Uddin, 2022). The latest Corporate Governance Code (2018) mandates enhanced accountability and transparency, prompting the Bangladesh Securities and Exchange Commission (BSEC) to implement various initiatives aimed at improving corporate governance. However, the significance of female representation was acknowledged in 2024 with the introduction of a mandate to include at least one female in the corporate board (Notification no. BSEC/CMRRCD/2009-193/66/PRD/148).

Therefore, as gender diversity on Bangladeshi corporate boards remains limited, the impact of female directors on earnings management is not well explored. Research indicates that gender-diverse boards in Bangladesh may enhance transparency and reduce earnings management (Akter et al., 2024). Other studies indicate that sociocultural norms and insufficient enforcement of governance codes may hinder the effectiveness of female directors (Hasan et al., 2023). According to Adhikary et al. (2021), corporate governance factors such as board independence and size may affect the influence of gender diversity on earnings management in Bangladesh. This discrepancy in results highlights the necessity for further investigation into the impact of gender diversity on earnings management in Bangladesh. Consequently, this study aims to address this notable gap in the literature by

analyzing the moderating effect of board gender diversity on the relationship between corporate governance characteristics and earnings management in Bangladesh.

2.3 Context of the Study

In 2024, the World Bank classified Bangladesh as a lower-middle-income economy with a flourishing manufacturing sector (World Bank, 2024). Although the corporate governance framework of the nation is still in a state of evolution, the BSEC is systematically enhancing the corporate governance code first established by the Bangladesh Enterprise Institute (BEI) in 2003. However, prior 2024 mandate requiring a minimum of one female independent director on corporate boards, the latest 2018 Corporate Governance Code (CGC 2018) did not explicitly emphasize the importance of gender diversity on boards. Bangladesh was selected as the study's backdrop due to its unique governance system, characterized by a history of earnings management issues (The Financial Express, 2025), social obstacles to female leadership, and weak regulatory enforcement (Parvin, 2020). Consequently, Bangladesh serves as an ideal context for examining the impact of board gender diversity on the interplay between corporate governance characteristics and earnings management.

2.4 Hypothesis Development

2.4.1 Board Size and Earnings Management

Board size is a crucial element of corporate governance that influences the effectiveness of managerial oversight. According to agency theory (Jensen, 1993), smaller boards are often more successful in overseeing management due to enhanced communication and decision-making capabilities. Smaller boards enhance accountability and reduce earning management due to a lower likelihood of disputes and free-rider problems (Forbes & Milliken, 1999).

In contrast, larger boards provide a broader spectrum of expertise, experience, and external connections, enhancing board monitoring and reducing the likelihood of profit manipulation, as posited by resource dependence theory (Pfeffer & Salancik, 1978). Nonetheless, larger boards may have coordination challenges, potentially leading to diminished monitoring and inferior earning management (Ghosh et al., 2010).

H1a: There is a negative relationship between board size and earnings management, indicating that smaller boards are more effective in monitoring management (Resource Dependence Theory).

H1b: There is a positive relationship between board size and earnings management, suggesting that larger boards provide diverse expertise but may weaken monitoring (Agency Theory).

2.4.2 Board Independence and Earnings Management

Board independence is a fundamental aspect of corporate governance, ensuring that the board can make impartial decisions without managerial influence. Because they are not directly involved in the business's activities, independent directors are more likely to safeguard the interests of shareholders, according to agency theory (Fama & Jensen, 1983). Numerous studies have demonstrated that because independent directors are more watchful of financial reporting, more board independence is linked to poorer earnings management (Klein, 2002; Xie et al., 2003).

However, depending on the situation, independent directors may or may not be effective. The capacity of independent directors to lessen earnings management may be limited in developing nations like Bangladesh, where board members may have tight relationships with dominant owners (Jamaludin et al., 2015). This is in line with the resource dependency theory, which postulates that independent directors might not have enough firm-specific expertise to adequately oversee management.

H2a: There is a negative relationship between board independence and earnings management, suggesting that a higher proportion of independent directors enhances monitoring and reduces earnings management (Agency Theory).

H2b: There is a positive relationship between board independence and earnings management, indicating that independent directors may lack firm-specific knowledge, leading to weaker monitoring (Resource Dependence Theory).

2.4.4 Moderating Effect of Gender Diversity

Empirical research indicates that gender diversity on corporate boards influences board effectiveness, particularly in the oversight of financial reporting. Hyde & Kling (2001) and Deshpande et al. (2006) indicate that female directors are generally associated with elevated ethical standards, increased risk aversion, and a heightened commitment to transparency. This aligns with stakeholder theory, emphasizing the importance of diversity in ensuring equitable decision-making and protecting stakeholder interests. Female directors exhibit greater vigilance in financial oversight, potentially reducing the likelihood of earnings manipulation (Kaplan et al., 2009). Sociocultural norms that may limit the impact of female directors cast uncertainty on the effectiveness of gender-diverse boards in Bangladesh (Debnath & Patnaik, 2019). This study indicates that the relationship between earnings management and board attributes, including size, and independence, is influenced by gender diversity.

H3a: Female representation moderates the relationship between board size and earnings management, such that gender-diverse boards reduce earnings management more effectively than non-diverse boards.
H3b: Female representation moderates the relationship between board independence and earnings management, enhancing the ability of independent directors to monitor management.

3.0 METHODS AND DATA

3.1 Nature of the Study

The study's quantitative methodology uses a deductive approach to develop hypotheses based on existing theories and test them accordingly. Therefore, the authors have employed secondary data in this investigation.

3.2 Data and Sample Description

The study sample includes the manufacturing companies listed on the Dhaka Stock Exchange (DSE). Secondary data has been gathered from the annual reports of firms as they are considered crucial in shaping a company's image among its stakeholders, as stated by Gray et al. (1995). The Dhaka Stock Exchange (DSE) includes 58 companies in the textile sector, 34 in pharmaceuticals and chemicals, 22 in food and allied sectors, 6 in paper and printing, and 6 in the tannery sector. The study's initial sample comprises 630 firm-year observations gathered over five years from 2019 to 2023. Seventeen firms were excluded from the sample because of data unavailability and incompleteness. The final sample included 109 companies over a span of five years, yielding a total of 545 firm-year observations

Table-1 Sample Description

Panel A: Sample Selection Procedure		
Initial Observations of all listed firms during the study period	630	
Less: Number of firm-year missing observations	85	
Final Sample	545	
Panel B: Industry-wise Composition	Number of Companies	Percentage
Food & Allied	18	17%
Textile	48	46%
Pharmaceuticals & Chemicals	32	27%
Paper & Printing	6	5%
Tannery	5	5%
Total	109	100%

Source: *Authors' Compilation*

3.3 Model Estimation

3.3.1 Estimating Earnings Management

This study uses the modified cross-sectional Jones model to estimate discretionary accruals as a proxy for earnings management. Jones (1991) Model incorporates the following estimates for abnormal discretionary accruals:

$$\frac{TA_{it}}{Asset_{it-1}} = \alpha_1 * \frac{1}{Asset_{it-1}} + \alpha_2 * \frac{\Delta Rev_{it}}{Asset_{it-1}} + \alpha_3 * \frac{PPE_{it}}{Asset_{it-1}} + \varepsilon_{it} \qquad (i)$$

In fiscal year t and for firm i, TA denotes the total accruals, which are defined as:
$TA_{it} = NI_{it} - CFO_{it}$, NI refers to net profit after tax, whereas CFO represents operating cash flows derived from the statement of cash flows., $Asset_{it-1}$ represents total assets of the preceding year, ΔRev_{it} is the change in revenues from the preceding year and PPE_{it} is the gross value of property, plant, and equipment.
Dechow et al. (1995) describe the modified cross-sectional Jones model, which has been used as a primary model to measure earning management. The coefficient estimates from equation (i) are used to estimate the firm-specific normal accruals (NAit) for the sample firms:

$$NA_{it} = \hat{\alpha}_{1t} * \frac{1}{Asset_{it-1}} + \hat{\alpha}_2 * \frac{\Delta Rev_{it} - \Delta AR_{it}}{Asset_{it-1}} + \hat{\alpha}_3 * \frac{PPE_{it}}{Asset_{it-1}} \qquad (ii)$$

Where, ΔAR_{it} is the change in accounts receivable from the preceding year. The measure of discretionary accruals is calculated as the difference between total accruals and the fitted normal accruals, as defined by: $DA_{it} = \left(\frac{TA_{it}}{Asset_{it-1}}\right) - NA_{it}$.

$$\frac{TA_{it}}{Asset_{it-1}} = \alpha_{1t} * \frac{1}{Asset_{it-1}} + \alpha_2 * \frac{\Delta Rev_{it} - \Delta AR_{ir}}{Asset_{it-1}} + \alpha_3 * \frac{PPE}{Asset_{it-1}} + \varepsilon_{it} \qquad (iii)$$

3.3.2 Model Specification

The study investigates how board gender diversity moderates the established relationship between board characteristics and earnings management. Based on the following model of regression framework, the authors estimate the statistical relationship between discretionary accruals as a proxy for accrual-based earnings management (AEM) and two proxies for board characteristics (BSIZE, BIND) along with six control variables (SG, FSIZE, ROA, ROE, LEV, and ASSTTAN).

The moderating effect of BGD was regressed, creating two new variables, namely, BSIZBGD (the interaction of board size and board gender diversity), BIND*BGD (the interaction between board independence and board gender diversity) along with six control variables.

$$\mathrm{AEM} = \beta_0 + \beta_1 \mathrm{AEM}_{it-1} + \beta_2 \mathrm{BSIZE}_{it} + \beta_3 \mathrm{BIND}_{it} + \beta_4 \mathrm{BGD}_{it} + \beta_5 \mathrm{BSize}_{it} * \mathrm{BGD} + \beta_6 \mathrm{BSize}_{it} * \mathrm{BGD} + \beta_7 \mathrm{FSize}_{it} + \beta_8 \mathrm{ROA}_{it} + \beta_9 \mathrm{ROE}_{it} + \beta_{10} \mathrm{ASSTAN}_{it} + \beta_{11} \mathrm{SG}_{it} + \beta_{12} \mathrm{LEV}_{it} + \varepsilon_t \quad \ldots\ldots\ldots (1)$$

3.4 Measurement of Variables

The measurement of earnings management is conducted by utilizing the modified cross-sectional Jones model (Dechow et al. 1995). Higher abnormal accrual values may serve as an indicator of more extensive earnings management. Board size (BSIZE) is determined by calculating the sum of all members who are appointed to the board of directors. The calculation for the proportion of independent directors (BIND) involves dividing the number of independent directors serving on the board by the total number of board members. This ratio is indicative of the board structure incorporating independent supervision (Vafeas, 1999). According to Fama and Jensen (1976), the efficacy of board monitoring and decision-making may be impacted by the size of the board. To quantify board gender diversity (BGD), the proportion of female directors to the overall size of the board has been used in the study. The extent to which the board is gender diverse has the potential to impact the strategic decision-making process (Carter et al., 2010; Bennouri et al., 2018; Amin et al., 2021; Yang et al., 2019). The firm's size is quantified using the natural logarithm of the total assets' book value (FSIZE). Henry et al. (2003) state that this transformation helps to take into account possible non-linear interactions with other factors. Sales growth (SG) is computed as the year-over-year percentage change in a company's revenue. Leverage (LEV), firm size (FSIZE), profitability (ROA, ROE), and asset tangibility (ASSTTAN) have been used as control variables in the current study in line with the study of Attia et al. (2022), Attia et al. (2023), Attia and Mehafdi (2023).

Table-2 Variable Description and Measurement

Nature	Variables Name	Symbol	Measurement
Dependent Variable	Earnings Management	AEM	Modified Cross-sectional Jones Model
Independent Variable	Board Size	BSIZE	Total number of board members
	Board Independence	BIND	Independent directors on the Board/Total number of members on the Board
Moderator	Board Gender Diversity	BGD	Number of female directors on board/Total board size
Moderation	Interaction Term between BSIZE and BGD	BSIZE*BGD	Product of Board size and board gender diversity
	Interaction Term between BIND and BGD	BIND*BGD	Product of board independence and board gender diversity
Controls	Firm Size	FSIZE	The natural logarithm of book value of total assets
	Sales Growth	SG	Natural log of net sales
	Return on Assets	ROA	The ratio of net income divided by lagged total assets

Return on Equity	ROE	The ratio of net income divided by lagged total assets
Asset Tangibility	ASSTTAN	Ratio of net property plant and equipment scaled by lagged total asset
Leverage	LEV	The proportion of debt financing compared to lagged total assets

Source: *Authors' Compilation*

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics provide a comprehensive overview of the sample used in this study. The mean AEM is close to zero (0.000) with a standard deviation of 0.155, indicating considerable variability in discretionary accruals across firms. The range of AEM (from –0.788 to 2.614) suggests both income-decreasing and income-increasing manipulation practices. Board size averages 7.3 directors, with a wide range (4 to 16), reflecting diverse governance structures. Board independence (mean = 0.273) and female participation (mean FPB = 0.202) are relatively low, which is consistent with the institutional context of Bangladesh where family ownership and male-dominated boards are prevalent. Notably, ROA and ROE show negative means and large standard deviations, particularly ROE (–0.098 with SD = 2.9), highlighting financial underperformance and volatility among many firms. Leverage (mean = 0.865, max = 26.876) and asset tangibility show similar variation, suggesting heterogeneity in capital structure. These descriptive insights support the need for robust econometric control and contextual interpretation.

Table-3 Descriptive Statistics

Variable	N	Mean	SD	Min	Max
AEM	545	0	.155	-.788	2.614
BSIZE	545	7.316	2.092	4	16
BIND	545	.273	.116	0	.8
BGD	545	.202	.16	0	.625
BSIZE*BGD	545	1.462	1.255	0	6
BIND*BGD	545	.053	.046	0	.24
FSIZE	545	21.78	1.38	18.33	25.375
ROA	545	-.014	.342	-4.052	2.526
ROE	545	-.098	2.9	-47.341	9.882
ASSTAN	545	.478	.234	.013	2.066
SG	545	20.402	3.926	0	25.241
LEV	545	.865	2.133	.015	26.876

Note: The table presents the descriptive statistics for AEM model. The mean, median, standard deviation, minimum, and maximum values are presented in the columns for the CG characteristics, and firm-level characteristics on accrual-based EM for firms in the Bangladeshi context from 2019 to 2023

4.2 Diagnostic Tests

4.2.1 Correlation Analysis

According to Hair (2010), the multicollinearity issue emerges when the correlation coefficient between any two variables is greater than 0.90. The study observes no critical multicollinearity among the explanatory variables.

The pairwise correlation matrix posits several noteworthy relationships. AEM is positively correlated with ROA (r = 0.49*) and ROE (r = 0.27*), suggesting that better-performing firms might still manage earnings — possibly to smooth out fluctuations or meet investor expectations. BGD shows a negative and significant correlation with board independence (r = –0.122*), which might reflect institutional practices where female board member appointments are more symbolic in less independent boards. Leverage is negatively correlated with both AEM (r = –0.134*) and ROA (r = –0.518*), implying that highly leveraged firms may be more constrained and engage less in accrual manipulation. Firm size is moderately correlated with sales growth (r = 0.59*) and asset tangibility (r = 0.15*), supporting the assumption that larger firms are more capital-intensive and growth-oriented.

Table-4 Pairwise Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) AEM	1.000									
(2) BSIZE	-0.072	1.000								
(3) BIND	0.004	-0.105*	1.000							
(4) BGD	0.001	-0.036	-0.122*	1.000						
(5) FSIZE	-0.003	0.188*	-0.035	0.026	1.000					
(6) ROA	0.490*	0.027	0.021	0.090*	0.251*	1.000				
(7) ROE	0.272*	0.067	0.050	-0.031	0.063	0.432*	1.000			
(8) ASSTAN	0.003	0.078	0.105*	0.036	0.151*	0.107*	0.092*	1.000		
(9) SG	0.022	0.101*	-0.097*	-0.049	0.593*	0.140*	0.002	-0.027	1.000	
(10) LEV	-0.134*	0.084*	0.006	-0.191*	-0.250*	-0.518*	0.012	-0.095*	-0.171*	1.000

Note: This table shows the correlation coefficients between independent variables over the period 2019–2023. *** p<0.01, ** p<0.05, * p<0.1 denote the significance at 1, 5 and 10% level, respectively

4.2.2 VIF Test

The VIF results show no serious multicollinearity concerns. The mean VIF is 1.842, well below the conservative threshold of 5, a widely accepted threshold of VIF to test multicollinearity (Frost, 2017).

Table-5: Test results for VIF

	VIF	1/VIF
BSIZE*BGD	2.608	.383
BSIZE	2.507	.399
BIND	2.319	.431
BIND*BGD	2.303	.434
ROA	1.895	.528
FSIZE	1.785	.56
SG	1.711	.585
LEV	1.605	.623
ROE	1.372	.729
ASSTAN	1.092	.916
BGD	1.069	.936
Mean VIF	**1.842**	.

As presented in Table 5, all individual VIFs are below 3, including the interaction terms and their main effects which indicate that the regression coefficients are not distorted by linear dependence and therefore, the model is statistically well-posed and interpretable, enhancing confidence in the GMM estimates.

4.2.4 Empirical Analysis and Discussion

The application of the two-step System Generalized Method of Moments (System GMM) estimator in this study is methodologically justified and empirically validated by key diagnostic tests. Given the dynamic nature of accrual-based earnings management (AEM) and the likely endogeneity of governance variables such as board structure and female participation, conventional panel estimators may produce biased results. System GMM addresses these concerns by instrumenting endogenous regressors with their previous values, thereby controlling for unobserved heterogeneity, simultaneity, and dynamic feedback.

The Arellano-Bond test for second-order serial correlation (AR (2)) was not significant, indicating no violation of the moment conditions in differenced equations (Table 6). Furthermore, the Hansen test of overidentifying restrictions yielded a p-value above 0.10, suggesting that the instruments used are valid and not overfitting the model. The relatively low instrument count (18) further ensures that the estimation does not suffer from instrument proliferation, a common concern in GMM applications.

Table-6 Testing Validity of the System-GMM Model

Diagnostic Test	Test Statistic	p-value	Interpretation
Arellano-Bond test for AR (1) in first differences	z = -1.75	0.080	Expected 1st-order serial correlation
Arellano-Bond test for AR (2) in first differences	z = -0.88	0.379	No 2nd-order serial correlation
Hansen test of overidentifying Restrictions	$Chi^2(5) = 4.35$	0.501	Instruments are valid (no overidentification)

Source: *Authors' Compilation*

The System GMM results presented in Table 7 provide dynamic insights into the determinants of accrual-based earnings management (AEM), addressing potential endogeneity concerns. Board Size (BSIZE) exhibits a significant negative association with AEM (β = –0.033, $p < .01$), suggesting that larger boards are more effective in constraining opportunistic financial reporting. This finding aligns with the Xie et al. (2003) and Githaiga et al. (2022), which support that larger boards bring broader oversight. Similarly, Board Independence (BIND) negatively and significantly impacts AEM (β = –0.384, $p < .05$), consistent with the notion that independent directors enhance governance quality (Fama & Jensen, 1983; Klein, 2002). The role of Board Gender Diversity (BGD) is both direct and conditional. BGD has a strong, negative association with AEM (β = –1.745, $p < .05$), indicating that female directors play a vital role in reducing earnings manipulation. This supports Gul et al. (2011) and Triki Damak (2018), who find that women directors enhance board ethics and reduce EM practices.

Table-7 Result of System GMM Estimation

AEM	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
L.AEM	.249	.335	0.74	.458	-.408	.906	
BSIZE	-.033	.012	-2.72	.006	-.057	-.009	***
BIND	-.384	.186	-2.06	.039	-.749	-.019	**
BGD	-1.745	.806	-2.16	.03	-3.325	-.165	**
BSIZE*BGD	.157	.071	2.23	.026	.019	.295	**
BIND*BGD	2.015	1.093	1.84	.065	-.128	4.158	*
FSIZE	-.01	.006	-1.57	.117	-.022	.002	
ROA	.116	.099	1.18	.239	-.077	.31	
ROE	.001	.004	0.35	.723	-.007	.01	
ASSTAN	.009	.026	0.34	.737	-.042	.06	
SG	-.004	.003	-1.77	.077	-.009	0	*
LEV	.001	.006	0.17	.866	-.011	.014	
Constant	.672	.274	2.45	.014	.135	1.208	**
Mean dependent var		-0.000		SD dependent var		0.098	
Number of observations		545		Chi-square		66.738	

Note*:* This table presents the results from System-GMM estimations for dynamic panel-data models, where AEM = Accrual based earnings management based on modified cross-sectional Jones model; BSIZE= Board Size; BIND= Board Independence; BGD=Board Gender Diversity; FSIZE= Firm Size; SG= Sales Growth; ROA= Return on Asset; ROE= Return on Equity; LEV= Leverage; ASSTTAN= Asset Tangibility. *, **, *** significance levels at the 10, 5, and 1% levels, respectively.

However, interaction terms reveal nuanced effects: BSIZE*BGD is positive and significant (β = 0.157, $p < .05$), implying that board size alone is not enough to curb earning management. Its effectiveness depends on who is on the board , especially the presence of women. This finding highlights the importance of female participation on board not just for representation or regulatory compliance, but for improved financial performance and ethical oversight. BIND*BGD is positive and marginally significant (β = 2.015, $p < .10$), suggesting that the impact of board independence on earning management is not constant: it depends on the level of female participation on the board as female directors often show higher ethical behavior and risk aversion which can strengthen the voice and vigilance of the independent directors. This echoes the symbolic tokenism hypothesis raised by Zare (2025) and

contradicts studies like Terjesen et al. (2016), which suggest that gender diversity and independence should be complementary. Hence, these findings posit that simply having a larger board or higher independent directors is not enough. Their effectiveness is significantly influenced by board gender diversity (BGD). Among control variables, Sales Growth (SG) is marginally significant and negatively related to AEM (β = –0.004, $p < .10$), indicating that high-growth firms are under greater scrutiny and therefore engage less in earning management. Other firm-level factors like firm size, ROA, ROE, and leverage show no significant effect, which may reflect context-specific dynamics of Bangladesh's manufacturing sector where governance may be more critical than financial performance in explaining EM behavior.

Table-8 Robustness Check — FGLS, RE, and Pooled OLS Comparisons

AEM	FGLS			Random Effect			Pooled OLS		
	Coef.	*St. Err.*	*Sig*	*Coef.*	*St. Err.*	*Sig*	*Coef.*	*St. Err.*	*Sig*
BSIZE	*-.008*	.002	***	-.007	.005		-.009	.003	***
BIND	*.042*	.027		.032	.084		-.003	.045	
BGD	-.06	.075		-.001	.205		-.073	.108	
BSIZE*BGD	.015	.009	*	.009	.021		.014	.012	
BIND*BGD	-.286	.158	*	-.298	.409		-.183	.224	
FSIZE	-.005	.002	**	-.014	.007	**	-.014	.009	
ROA	.267	.031	***	.271	.023	***	.265	.147	*
ROE	-.001	.002		.001	.002		.002	.006	
ASSTAN	-.031	.014	**	-.027	.029		-.014	.024	
SG	0	.001		.002	.002		.002	.002	
LEV	.007	.004		.01	.004	***	.011	.012	
Constant	.191	.049	***	.329	.137	**	.344	.175	**
Observation	545			545			545		
Hausman Test				Chi-square = 15.093					
				P-value = .178					

Note: This table presents the results from Feasible generalized least square (FGLS), Random effect panel data analysis, Pooled OLS with robust standard error, where AEM = Accrual based earnings management based on modified cross-sectional Jones model; BSIZE= Board Size; BIND= Board Independence; BGD=Board Gender Diversity; FSIZE= Firm Size; SG= Sales Growth; ROA= Return on Asset; ROE= Return on Equity; LEV= Leverage; ASSTTAN= Asset Tangibility. *, **, *** significance levels at the 10, 5, and 1% levels, respectively.

Table 8 summarizes the results from three alternative estimation techniques—Feasible Generalized Least Squares (FGLS), Random Effects (RE), and Pooled OLS—to check the robustness of the GMM findings. The direction and magnitude of coefficients remain broadly consistent across methods, though significance levels vary. In FGLS and Pooled OLS models: Board Size (BSIZE) remains a significant negative predictor of AEM (FGLS: β = –0.008, $p < .01$; OLS: β = –0.009, $p < .01$), reaffirming its central governance role. BSIZE × BGD is significant in FGLS and OLS ($p < .10$), consistent with the GMM finding that large boards may limit the efficacy of gender diversity. BIND × BGD is significantly negative only in the FGLS model (β = –0.286, $p < .10$), which contrasts with the positive interaction found in the GMM model. This discrepancy highlights the importance of accounting for endogeneity and dynamic effects in board gender diversity research. The Hausman test result ($x^2 = 15.093$, $p = .178$) fails to reject the null, suggesting that the RE estimator is consistent. However, Random Effects (RE) estimates fail to detect the significance of key governance variables as the primary interest involves dynamic relationships and potential endogeneity (e.g., AEM persistence, governance variables). These differences (as summarized in Table 9) underscore the superior identification strength of the GMM framework in dealing with endogenous regressors and dynamic relationships. The GMM model not only yields theoretically consistent coefficients but also uncovers deeper relational dynamics as presented in Table 7.

Table-9 Summary of Interpretations

Variable	GMM Finding	Robustness Models
BSIZE	**–** significant	Robust across models
BIND	– significant	Mixed results
BGD	**–** significant	Not significant
BSIZE × BGD	**+** significant	Significant in FGLS
BIND × BGD	**+** in GMM, – in FGLS	Contradictory

Source: *Authors' Compilation*

In conclusion, the diagnostic validity, theoretical coherence, and empirical richness of the GMM estimation collectively affirm its suitability as the primary methodological approach in this study. The model not only controls for potential econometric pitfalls but also allows for a more granular exploration of how board-level governance interacts with gender diversity to shape earnings management behavior.

5. CONCLUSION AND RECOMMENDATION

The importance of good governance to the survival of a company is unbounded. Governance implications help regulatory authorities and stakeholders table new policies to carve out the best of an organization. Needless to say, the manufacturing sector is a vital cog in the progress contraption of a nation's economy. Therefore, the study examines 58 companies in the textile industry, 34 companies in the pharmaceuticals & chemicals industry, 21 companies in the food & allied industry, 6 companies in the paper & printing industry, and 6 companies in the tannery industry listed on the Dhaka Stock Exchange over five years ranging from 2019 to 2023 to analyze the relationship between board characteristics and earnings management among the sample companies. This paper also examines the moderating role of board gender diversity in such a relationship. It has been found that although board gender diversity seems to effectively moderate the relationship between board size with earnings management, the relationship between BIND*FPB (the interaction term between board independence and female participation on the board) and earnings management is marginally significant at 10% level. As shown in Table 10, on an average about 75% of the sample companies lacked any female serving as an independent director on their board. Therefore, insignificant female independent directorship seems to be a prime reason behind such a finding. Hence, the findings of the current study illuminate the complexities of board composition in Bangladesh and highlight the potential of gender diversity, particularly as independent directors, as a powerful tool for promoting financial reporting transparency. With the new notification of the Bangladesh Securities & Exchange Commission (Notification no. BSEC/CMRRCD/2009-193/66/PRD/148) a spark of hope emerges that shortly, higher emphasis will be given to the female directorship and their role as an independent director. Moreover, policymakers and regulators should consider measures to encourage greater female representation on boards, especially in independent director positions. Initiatives such as quotas, targeted training programs, and awareness campaigns could pave the way for a more diverse and ethically sound corporate governance landscape in Bangladesh.

Although the study claims to have significant contributions, it acknowledges to have several limitations. Firstly, the research has been conducted in the context of one country and recommend to include more years of data and countries in South Asian region to foster greater insights. Also, future research could delve deeper into other aspects of gender diversity (e.g., age, education, experience, and culture).

Abbreviations:

AEM	Accrual-based Earnings Management
BGD	Board Gender Diversity
Board	Board of Directors
BEI	Bangladesh Enterprise Institute
DSE	Dhaka Stock Exchange
BSEC	Bangladesh Securities & Exchange Commission
CGC	Corporate Governance Code 2018 of Bangladesh
GMM	Generalized Method of Moments
FGLS	Feasible Generalized Least Squares
RE	Random Effects (RE)

OLS	Ordinary Least Squares

REFERENCES

1) Adams, R. B., & Funk, P. (2012). Beyond the Glass Ceiling: Does Gender Matter? *Management Science*, *58*(2), 219–235.
2) Adhikary, B. K., Mitra, R. K., & Meah, M. R. (2021). Do manufacturing firms in Bangladesh engage in earnings management to avoid losses? Further evidence using the governance elements as monitors. *Journal of Financial Reporting and Accounting*, *19*(5), 839–860. https://doi.org/10.1108/jfra-05-2020-0131
3) Akter, A., Fadzilah, W., & Mohamad Ali Abdul-Hamid. (2024). The moderating role of board diversity on the relationship between ownership structure and real earnings management. *AJAR (Asian Journal of Accounting Research)*. https://doi.org/10.1108/ajar-10-2022-0307
4) Amin, A., Ali, R., Rehman, R. ur, Naseem, M. A., & Ahmad, M. I. (2021). Female presence in corporate governance, firm performance, and the moderating role of family ownership. *Economic Research-Ekonomska Istraživanja*, *35*(1), 1–20. https://doi.org/10.1080/1331677x.2021.1952086
5) Attia, E. F., Ismail, T. H., & Mehafdi, M. (2022). Impact of board of directors attributes on real-based earnings management: further evidence from Egypt. *Future Business Journal*, *8*(1). https://doi.org/10.1186/s43093-022-00169-x
6) Attia, E. F., & Mehafdi, M. (2023). The Dynamic Endogeneity Issue between Corporate Ownership Structure and Real-Based Earnings Manipulation in an Emerging Market: Advanced Dynamic Panel Model. *Risks*, *11*(11), 189. https://doi.org/10.3390/risks11110189
7) Attia, E. F., Sameh Yassen, Chafai, A., & Qotb, A. (2024). The impact of board gender diversity on the accrual/real earnings management practice: evidence from an emerging market. *Future Business Journal*, *10*(1). https://doi.org/10.1186/s43093-024-00307-7
8) Attia, E. F., Wafa Khémiri, & Messaoud Mehafdi. (2023). Does ownership structure reduce earnings manipulation practice of Egyptian listed firms? Evidence from a dynamic panel threshold model. *Future Business Journal*, *9*(1). https://doi.org/10.1186/s43093-023-00213-4
9) Barber, B. M., & Odean, T. (1998, November 1). *Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment*. Papers.ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=139415
10) Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance*, *88*, 267–291.
11) Betz, M., & O'Connell, L. (1989). Work Orientations of Males and Females: Exploring the Gender Socialization Approach. *Sociological Inquiry*, *59*(3), 318–330. https://doi.org/10.1111/j.1475-682x.1989.tb00109.x
12) Carcello, J. V., & Neal, T. L. (2000). Audit Committee Composition and Auditor Reporting. *The Accounting Review*, *75*(4), 453–467. https://doi.org/10.2308/accr.2000.75.4.453
13) Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance. *Corporate Governance: An International Review*, *18*(5), 396–414. https://doi.org/10.1111/j.1467-8683.2010.00809.x
14) Claessens, S. (2006). Corporate Governance and Development. *The World Bank Research Observer*, *21*(1), 91–122. https://doi.org/10.1093/wbro/lkj004
15) Compernolle, T. (2018). Communication of the external auditor with the audit committee. *Accounting, Auditing & Accountability Journal*, *31*(3), 900–924. https://econpapers.repec.org/RePEc:eme:aaajpp:aaaj-05-2013-1356
16) Dawson, L. M. (1992). Will Feminization Change the Ethics of the Sales Profession? *Journal of Personal Selling & Sales Management*, *12*(1), 21–32. https://doi.org/10.1080/08853134.1992.10753895
17) Debnath, N. C., Patnaik, B. C. M., & Satpathy, I. (2019). Female directorship and real earnings management in Bangladesh: Towards an analytical assessment. *Management Science Letters*, 1723–1740. https://doi.org/10.5267/j.msl.2019.6.018
18) Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting Earnings Management. *The Accounting Review*, *70*(2), 193–225.
19) Deshpande, S. P., Joseph, J., & Prasad, R. (2006). Factors Impacting Ethical Behavior in Hospitals. *Journal of Business Ethics*, *69*(2), 207–216. https://doi.org/10.1007/s10551-006-9086-5
20) Dichev, I. D., Graham, J. R., Harvey, C. R., & Rajgopal, S. (2012). Earnings Quality: Evidence from the Field. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2103384
21) Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *Journal of Law and Economics*, *26*(2), 301–325.

22) Forbes, D. P., & Milliken, F. J. (1999). Cognition and Corporate Governance: Understanding Boards of Directors as Strategic Decision-Making Groups. *The Academy of Management Review*, *24*(3), 489. https://doi.org/10.2307/259138
23) Frost, J. (2017). *Multicollinearity in Regression Analysis: Problems, Detection, and Solutions*. Statistics by Jim. https://statisticsbyjim.com/regression/multicollinearity-in-regression-analysis/
24) García Lara, J. M., García Osma, B., & Penalva, F. (2009). Accounting conservatism and corporate governance. *Review of Accounting Studies*, *14*(1), 161–201. https://doi.org/10.1007/s11142-007-9060-1
25) Gaver, J. J., Gaver, K. M., & Austin, J. R. (1995). Additional evidence on bonus plans and income management. *Journal of Accounting and Economics*, *19*(1), 3–28. https://doi.org/10.1016/0165-4101(94)00358-c
26) Gavious, I., Segev, E., & Yosef, R. (2012). Female directors and earnings management in high-technology firms. *Pacific Accounting Review*, *24*(1), 4–32. https://doi.org/10.1108/01140581211221533
27) Ghosh, A., Marra, A., & Moon, D. (2010). Corporate Boards, Audit Committees, and Earnings Management: Pre- and Post-SOX Evidence. *Journal of Business Finance & Accounting*, *37*(9-10), 1145–1176. https://doi.org/10.1111/j.1468-5957.2010.02218.x
28) Githaiga, P. N., Muturi Kabete, P., & Caroline Bonareri, T. (2022). Board characteristics and earnings management. Does firm size matter? *Cogent Business & Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2088573
29) Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics*, *51*(3), 314–338. https://doi.org/10.1016/j.jacceco.2011.01.005
30) Hair, J. F. (2010). *Multivariate data analysis : a global perspective /*. Lib.ugent.be. https://lib.ugent.be/catalog/rug01:001321386
31) Harris, O., Karl, J. B., & Lawrence, E. (2019). CEO compensation and earnings management: Does gender really matters? *Journal of Business Research*, *98*, 1–14. https://doi.org/10.1016/j.jbusres.2019.01.013
32) Hasan, M. T., Rekabder, M. S., Mahmood, M., & Kuri, P. K. (2023). *Board influence on accruals management and the role of ownership structure: Evidence from Bangladesh*. *13*(8), 559–575. https://doi.org/10.55493/5002.v13i8.4818
33) Helal, U. M. (2022). Board-diversity, audit committee characteristics and earnings management: Family versus non-family controlled firms. *Journal of Accounting and Taxation*, *14*(2), 170–188. https://doi.org/10.5897/JAT2022.0529
34) Henry, N. W., Cohen, J., & Cohen, P. (2003). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. *Contemporary Sociology*, *6*(3), 320. https://doi.org/10.2307/2064799
35) Hyde, J. S., & Kling, K. C. (2001). Women, Motivation, and Achievement. *Psychology of Women Quarterly*, *25*(4), 364–378. https://doi.org/10.1111/1471-6402.00035
36) Jamaludin, N. D., Sanusi, Z. M., & Kamaluddin, A. (2015). Board Structure and Earnings Management in Malaysian Government Linked Companies. *Procedia Economics and Finance*, *28*, 235–242. https://doi.org/10.1016/s2212-5671(15)01105-3
37) Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance*, *48*(3), 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x
38) Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
39) Jiraporn, P., & Liu, Y. (2008). Capital Structure, Staggered Boards, and Firm Value. *Financial Analysts Journal*, *64*(1), 49–60. https://doi.org/10.2469/faj.v64.n1.7
40) Kaplan, S., Pany, K., Samuels, J., & Zhang, J. (2009). An Examination of the Association Between Gender and Reporting Intentions for Fraudulent Financial Reporting. *Journal of Business Ethics*, *87*(1), 15–30. https://doi.org/10.1007/s10551-008-9866-1
41) Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*(3), 375–400. https://doi.org/10.1016/S0165-4101(02)00059-9
42) Kouaib, A., & Almulhim, A. (2019). Earnings manipulations and board's diversity: The moderating role of audit. *The Journal of High Technology Management Research*, *30*(2), 100356. https://doi.org/10.1016/j.hitech.2019.100356
43) Lin, J. W., & Hwang, M. I. (2010). Audit Quality, Corporate Governance, and Earnings Management: A Meta-Analysis. *International Journal of Auditing*, *14*(1), 57–77. https://doi.org/10.1111/j.1099-1123.2009.00403.x
44) *Low & middle income | Worldbank*. (2024). Data.worldbank.org. https://data.worldbank.org/income-level/low-and-middle-income?view=chart
45) Nielsen, S., & Huse, M. (2010). The Contribution of Women on Boards of Directors: Going beyond the Surface. *Corporate Governance: An International Review*, *18*(2), 136–148. https://doi.org/10.1111/j.1467-8683.2010.00784.x

46) Parvin, R. (2020). Earnings Management Practice in Bangladesh. *International Journal of Business and Management Future*, *4*(1), 27–32. https://doi.org/10.46281/ijbmf.v4i1.492
47) Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1496213
48) Rhode, D., & Packel, A. K. (2010). Diversity on Corporate Boards: How Much Difference Does Difference Make? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1685615
49) Roxas, M. L., & Stoneback, J. Y. (2004). The Importance of Gender across Cultures in Ethical DecisionMaking. *Journal of Business Ethics*, *50*(2), 149–165. JSTOR. https://doi.org/10.2307/25123203
50) Saona, P., Muro, L., & Alvarado, M. (2020). How do the ownership structure and board of directors' features impact earnings management? The Spanish case. *Journal of International Financial Management & Accounting*, *31*(1), 98–133. https://doi.org/10.1111/jifm.12114
51) Sobhan, R., & Mia, M. R. (2024). Impact of board characteristics on integrated reporting: evidence from South Asian countries. *Journal of Financial Reporting & Accounting*. https://doi.org/10.1108/jfra-07-2023-0363
52) Terjesen, S., Couto, E. B., & Francisco, P. M. (2016). Does the presence of independent and female directors impact firm performance? A multi-country study of board diversity. *Journal of Management & Governance*, *20*(3), 447–483. https://doi.org/10.1007/s10997-014-9307-8
53) *The Financial Express*. (2025). The Financial Express. https://thefinancialexpress.com.bd/trade/supreme-court-orders-gp-to-pay-tk-20-billion-within-three-months-1574574426
54) Triki Damak, S. (2018). Gender diverse board and earnings management: evidence from French listed companies. *Sustainability Accounting, Management and Policy Journal*, *9*(3), 289–312. https://doi.org/10.1108/sampj-08-2017-0088
55) Uddin, M. H. (2022). Gender diversity and earnings management: Evidence from Bangladesh. *IIUC Business Review*, *9*(1), 111–133. https://doi.org/10.3329/iiucbr.v9i1.62186
56) Vafeas, N. (1999a). Board meeting frequency and firm performance. *Journal of Financial Economics*, *53*(1), 113–142. https://doi.org/10.1016/s0304-405x(99)00018-5
57) Vafeas, N. (1999b). Board meeting frequency and firm performance. *Journal of Financial Economics*, *53*(1), 113–142. https://doi.org/10.1016/s0304-405x(99)00018-5
58) Xie, B., Davidson, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance*, *9*(3), 295–316. https://doi.org/10.1016/s0929-1199(02)00006-8
59) Yang, W., Yang, J., & Gao, Z. (2019). Do Female Board Directors Promote Corporate Social Responsibility? An Empirical Study Based on the Critical Mass Theory. *Emerging Markets Finance and Trade*, *55*(15), 3452–3471. https://doi.org/10.1080/1540496x.2019.1657402
60) Yu, J. J., & Madison, G. (2021). Gender quotas and company financial performance: A systematic review. *Economic Affairs*, *41*(3), 377–390. https://doi.org/10.1111/ecaf.12487
61) Zare, F. (2025). Incorporating Behavioral and Sustainable Aspects into Modern Corporate Finance and Financial Decision-Making - TUprints. *Tu-Darmstadt.de*. https://tuprints.ulb.tu-darmstadt.de/28844/1/Dissertation_Fatemeh_Zare.pdf

Appendix

Table-10 Average Female Independent Directorship

Year	% of Total Sample	
2019	24.403%	**Mean** ***24.073%***
2020	24.22%	
2021	24.037%	
2022	23.853%	
2023	23.853%	

Source*: Authors' Calculation*

Table-11 Hausman (1978) specification test

	Coef.
Chi-square test value	15.093
P-value	.178