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Environmental, Social, and Governance Reporting and Financial Reporting Quality in Emerging Markets

[1]Rafaqat Majeed
[2]Marc Audi
[3]Amjad Ali

[1]Lahore School of Accountancy and Finance, University of Lahore, Pakistan

[2]Abu Dhabi School of Management, Abu Dhabi, United Arab Emirates

[3]Lahore School of Accountancy and Finance, University of Lahore, Pakistan

The study investigates the impact of environmental, social, and governance disclosure on Pakistani listed companies' ability to engage in earnings management. The study uses panel data from Pakistan Stock Exchange-listed 45 companies from 2020 to 2024, which represents a period when Pakistan's corporate sector began to adopt sustainability reporting and governance reforms. The study assesses environmental, social, and governance disclosure through Refinitiv environmental, social, and governance scores, which include aggregate and pillar-level measurements of environmental, social, and governance disclosure dimensions. The data was gathered from financial and governance information by examining the audited annual reports and corporate governance disclosures of the selected firms. The study uses ordinary least squares regression models, which include standard firm-level control variables that already contain profitability, leverage, and firm size, market-to-book ratio, and board size and board independence as standard controls. The study establishes a negative connection between environmental, social, and governance disclosure, both at the total and pillar levels, and accrual-based earnings management through the application of stakeholder theory, legitimacy theory, and agency theory. The findings from the empirical research show that there exists no statistically significant link between total environmental, social, and governance disclosure and its separate disclosure pillars and earnings management across all tested models. The results demonstrate that Pakistani listed companies' sustainability disclosure practices currently lack sufficient strength to operate as effective governance systems, which would restrict managerial freedom in financial reporting. Firm profitability and firm size emerge as the most influential determinants of discretionary accrual behavior, while the market-to-book ratio demonstrates significance within the signed discretionary-accrual models. The result provides one of the first studies that assesses environmental, social, and governance disclosure at both firm and pillar levels, which shows its impact on earnings management in Pakistan while delivering important insights for regulators, investors, and corporate governance policymakers.

Keywords: Environmental, Social, and Governance Disclosure, Earnings Management, Corporate Governance, Pakistan Stock Exchange

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1. Introduction

Corporate communication with the shareholders has experienced a considerable transformation over the past three decades (Goodman, 2019; Ruban & Yashalova, 2022; Siddique et al., 2025). Financial reporting is one of the most popular ways of corporate reporting, but it has gradually been supplanted, and in certain jurisdictions even displaced, by a fast-growing collection of non-financial reporting focusing on environmental, social, and governance (ESG) performance (Gaia et al., 2024; Abbasi et al., 2025; Primec et al., 2026). Growing stakeholder demand for sustainability-related information, increasing regulatory pressure emerging from the European Union and other jurisdictions, and heightened skepticism following major accounting scandals and climate-related controversies have collectively transformed ESG reporting into a central component of corporate disclosure practices (Christensen et al., 2024; de Weber, 2024; Arshi et al., 2025; Ormazabal, 2026). The formation of the International Sustainability Standards Board by the International Financial Reporting Standards Foundation in 2021, the gradual implementation of the Corporate Sustainability Reporting Directive of the European Union, and the blossoming of the ESG data industry of Refinitiv, MSCI, and Sustainalytics are all evidence of the institutionalization of sustainability reporting. Empirical literature of theoretical and applied accounting has continued to focus on the persistent issue of earnings management, which refers to managerial intervention in financial reporting intended to influence stakeholders' perceptions of firm performance (Khan, 2022; Bansal, 2024; Audi & Al Masri, 2024; Batool et al., 2025; Banerjee et al., 2026). Both the distortion of accruals through earnings management and the realistic operations through earnings management are among the most enduring threats to the quality of information available in the context of financial reporting, as well as to the integrity of the process of capital allocation that financial markets conduct. The pioneering work of Jones (1991) and Dechow et al. (1995) defines the mechanisms involved that limit the nature of earnings management, such as corporate-governance structure, the quality of audit, the following of analysts, institutional ownership, and, latterly, sustainability engagement.

The existing literature relies on broad corporate social responsibility indicators or environmental, social, and governance performance measures rather than firm-level environmental, social, and governance disclosure intensity derived from standardized reporting practices (Shaikh, 2022; Marc & Yu, 2024; Nadeem et al., 2025; Yip et al., 2025). Conceptually, environmental, social, and governance performance and environmental, social, and governance disclosure represent distinct constructs (Marc, 2016; Wasiuzzaman et al., 2023; Ali et al., 2025). A firm may demonstrate relatively strong environmental, social, and governance performance but may be providing limited disclosure, whereas another firm may disclose extensive sustainability-related information without corresponding substantive environmental, social, and governance practices (Marc et al., 2021; Farooq & Muhammad, 2025; Ali et al., 2025). As a result, the disclosure channel itself warrants direct empirical evidence. Most of the literature is based on developed economies and there are few studies available on emerging markets, especially recently growing emerging market, a stock exchange the roots of which can be traced back to 1947, located in Pakistan has been of a minimum interest in the body of scholarly literature on firm level environmental, social and governance punishment hand in hand with the earnings management that is still active, though voluntary. The theoretically intriguing feature of the institutional profile of Pakistan is that the country is both more concentrated in terms of ownership as well as its high levels of CEO-chairman duality, and to a substantial extent, the codes of

corporate governance established by the Securities and Exchange Commission of Pakistan (SECP, 2019). These institutional characteristics make Pakistan a particularly relevant context for examining whether ESG disclosure operates as a substantive monitoring mechanism or merely as a symbolic legitimacy tool.

There is still a discrepancy between the theoretical content of mainstream negative-relationship prediction and the contrarian theory of symbolic-disclosure (Muttakin et al., 2015; Angsoyiri et al., 2025; Ali et al., 2025), as it has not been weak environmental regulations due to symbolic-disclosure. Under the symbolic-disclosure perspective, environmental, social, and governance reporting can work as a legitimation tool that exists alongside and does not limit earnings manipulation (Zhu et al., 2025; Ali et al., 2025). This theoretical inconsistency requires further investigation in institutional settings where regulatory enforcement, governance monitoring, and sustainability reporting practices remain relatively underdeveloped. Against this background, the present study examines whether environmental, social, and governance disclosure constrains earnings management among Pakistani listed firms. Specifically, the study investigates both aggregate environmental, social, and governance disclosure and the separate effects of environmental, social, and governance disclosure pillars on accrual-based earnings management. Drawing upon stakeholder theory, legitimacy theory, and agency theory, the study predicts a negative relationship between environmental, social, and governance disclosure and discretionary accrual manipulation. Using panel data from Pakistan Stock Exchange-listed firms over the period 2020–2024, the study contributes to the emerging literature on environmental, social, and governance disclosure and financial reporting quality within developing-market contexts.

2. Literature Review

Financial reporting quality assessments depend on the earnings relationship with corporate social responsibility implementation (Brahem et al., 2022). Corporate social responsibility includes corporate governance and diversity efforts, product development, employee relations, and environmental management (Grougiou et al., 2014; Zaman et al., 2022; Ali et al., 2025). The results showed that companies that practice social responsibility experienced greater stakeholder examination, which resulted in reducing their chances of committing financial fraud. The study did not differentiate between the level of sustainability disclosure and the actual sustainability performance of organizations, even though the two concepts exist as separate entities. Scholtens and Kang (2013) established a framework between social responsibility and corporate governance through their analysis of international corporate data, which they studied. The study demonstrated that socially responsible companies had lower rates of conducting aggressive earnings manipulation, which showed that their sustainability activities led to improved accounting standards. Cho and Chun (2016) studied how corporate social responsibility activities impacted real earnings management practices in Korean listed companies. The study expanded beyond traditional studies, which only examined accrual manipulation, by including operational decision-making areas that included production manipulation, discretionary expenditure reductions, and sales timing strategies that distort performance reports. Through their result, the team discovered that organizations that establish social responsibility initiatives experience reduced actual earnings management activities at their organizations, which becomes more evident when corporate governance practices of the organization function effectively.

The study conducted by Ben Amar and Chakroun (2018) studied how different aspects of corporate social responsibility affected earnings management in French companies. The result showed that specific sustainability dimensions could better explain how people control their spending on discretionary accruals. Velte (2019) studied how environmental, social, and governance performance impacts earnings management in German companies through a two-way relationship. The study discovered that environmental, social, and governance performance decreases accrual-based earnings management between the two relationships, which shows that governance performance functions as the most effective breakdown measure between the three components. Gerged et al. (2021) studied how environmental, social, and governance disclosure affects earnings management in Middle Eastern and North African companies. The result showed that companies with better environmental, social, and governance disclosure activities experienced less discretionary accrual manipulation, which means that sustainability transparency helps companies in emerging markets to maintain their financial reporting trustworthiness. Emerging economies demonstrate that sustainability disclosure practices serve to reduce earnings manipulation, according to the evidence that has emerged from these regions. The study by Kumala and Siregar (2021) showed that better corporate social responsibility disclosure in Indonesian companies led to less earnings management because companies established better information sharing and corporate accountability mechanisms. The results showed that corporate social responsibility hurt South African companies' earnings management, according to their results, while Chemingui et al. (2023) discovered that companies with better social disclosure attained higher earnings quality in Tunisia. The findings from these studies demonstrate that sustainability disclosure practices affect how different institutional and emerging-market environments lead managers to prepare their financial statements.

El-Halaby and Ragab (2018) studied that the Islamic banks in Gulf Cooperation Council countries used earnings management to achieve their corporate social responsibility goals. The study showed that banks that practiced sustainability showed less earnings manipulation because sustainability efforts worked as governance tools that improved their financial reporting accuracy. Flayyih and Khiari (2023) found that Iraqi listed banks practiced less earnings management because their corporate social responsibility efforts and corporate governance practices worked together to reduce this behavior. The findings demonstrate that sustainability practices impact accounting standards, which apply to heavily regulated sectors that experience intense financial scrutiny. Sustainability practices increasingly attract study interest because they affect real-activities earnings management practices. Gaio et al. (2022) studied how corporate social responsibility affects earnings management by testing its effect through sustainability-related measures, which applied to all listed firms. The results showed that companies that practiced sustainability showed better reporting standards because they reduced earnings manipulation. García-Sánchez et al. (2020) argued that economic conditions and firm-specific characteristics determine how sustainability engagement affects earnings management. The study results proved that sustainability reporting quality depends on both situational factors and institutional elements, which create specific sustainability reporting requirements.

The existing literature demonstrates a clear link between sustainability disclosure and earnings management, although key theoretical frameworks and empirical results continue to show opposing findings. Researchers in the field assume that sustainability disclosure shows ethical managerial behavior and actual transparency, according to the existing

literature. Muttakin et al. (2015) proposed the symbolic disclosure perspective, which contradicts this basic assumption. The view holds that sustainability disclosure serves as a legitimacy tool because institutional environments with weak regulations require organizations to establish their lawfulness. Organizations may practice sustainability reporting while their managers use financial reports for personal advantage. The situation applies mainly to emerging markets because their systems for governance monitoring and investor protection, and their enforcement of sustainability reporting laws, remain underdeveloped. Subsequent literature found backing for the symbolic disclosure perspective through studies that focused on how industry and institutional factors affect its operation. Moratis & van Egmond (2018) found that companies balance their sustainability efforts with earnings management activities according to their industry visibility and the presence of stakeholder activists who influence their work. The researchers found that organizations use sustainability activities as their actual operational system and as their symbolic representation. The researchers found that organizational performance and economic cycles create different relationships between sustainability practices and earnings management activities. The study findings demonstrate that sustainability disclosure does not serve to enhance accounting quality across all types of institutional environments. The institutional environment determines how institutional context affects economies in Middle Eastern and Gulf region countries. The researchers Gerged et al. (2020) studied how environmental disclosure affects earnings management and found that sustainability disclosure directly impacts accounting quality in Kuwaiti listed companies. The study provided evidence from an emerging Gulf economy that demonstrated lower sustainability-reporting practices than Western countries. Alodat et al. (2024) found that companies that disclosed more sustainability information experienced less earnings management through their financial reporting. The studies show that sustainability disclosure acts as a governance instrument that improves transparency in emerging-market environments. The existing studies in the region still depend on general sustainability and corporate social responsibility disclosure methods instead of using specific environmental, social, and governance pillar-level assessments.

The rising need for companies to disclose their environmental, social, and governance practices in international financial markets has driven researchers to study sustainability reporting methods. Adams and Abhayawansa (2022) demonstrated that the growing use of environmental, social, and governance factors in investment choices has increased the need for global sustainability reporting standards. The research by Buallay (2019) showed that sustainability reporting now connects to all aspects of corporate success, while Chouaibi et al. (2022) proved that environmental, social, and governance disclosure drives financial and innovation results for organizations. The study proves that companies now use sustainability disclosures in their corporate governance and reporting systems according to modern corporate governance standards. Researchers have conducted extensive studies about how corporate governance systems affect companies' financial results through their assessment of their earnings performance. Fama & Jensen (1983), Jensen & Meckling (1976), and Shapiro (2005) established that agency conflicts between managers and shareholders result in managers creating false financial reports that serve their personal interests. Governance systems that enhance monitoring while reducing managerial freedom will lead to better financial reporting, according to experts. The research studies by Arif et al. (2021) and Mardini & Lahyani (2022) showed that board structures, audit committees, and governance-related disclosure systems play a vital role in

determining how organizations handle their environmental, social, and governance reporting. The study applies methodological and theoretical foundations that exist in the field of earnings management literature. Jones (1991), Dechow et al. (1995), Kothari et al. (2005), Roychowdhury (2006), and Healy & Wahlen (1999) created the two main methods that researchers use to assess earnings management through discretionary accruals and real activities. The studies that established foundational findings set the stage for future research, which assesses how sustainability-related disclosure practices affect the ability of managers to control financial report content. The earlier research work has provided valuable findings, yet multiple shortcomings still exist. The existing literature mostly focuses on developed countries, while there is a lack of empirical literature from South Asian emerging markets. Most scholars in research work depend on general corporate social responsibility metrics and environmental social governance performance standards instead of company-specific sustainability reporting, which uses standardized reporting methods. Our study investigates the relationship between environmental, social, and governance disclosure and earnings management for Pakistani listed companies. The study investigates both total environmental, social, governance disclosure and its separate environmental, social, and governance components, which affect accrual-based earnings management according to its research design. The study provides evidence from Pakistan, which represents an important emerging market that has not been extensively studied regarding sustainability reporting systems, ownership structures, and corporate governance frameworks.

3. Theoretical Framework

The relationship between environmental, social, and governance disclosure and earnings management exists within different theoretical frameworks, which researchers have established in the fields of accounting and corporate governance studies (Alahdal et al., 2025; Ali et al., 2025; Longston et al., 2025). The present study uses stakeholder theory, legitimacy theory, and agency theory to investigate how sustainability-related disclosure practices affect managerial reporting behavior. The theories establish that organizations that practice environmental, social, and governance disclosure through their operations will develop stronger external monitoring systems, which decrease information asymmetry and increase corporate accountability, thus limiting their ability to conduct financial reporting misconduct. Companies should treat all stakeholders, who include employees, customers, creditors, regulators, investors, suppliers, and local communities, as their responsibility according to the stakeholder theory framework (Awa et al., 2024; Ali et al., 2025; Esposito et al., 2025). According to this perspective, firms engage in environmental, social, and governance disclosure to show their commitment to responsible and sustainable business practices. The increase in disclosure shows stakeholders more non-financial information, which enables them to monitor company management activities more effectively (Monteiro et al., 2022; Ali et al., 2025). The increased monitoring by stakeholders decreases the chances that managers will show accounting results through financial reporting practices because such behavior can harm both corporate reputation and stakeholder trust and the long-term legitimacy of their organization. Companies that show better environmental, social, and governance disclosure should demonstrate reduced earnings management activities because their transparency limits managerial power and strengthens accountability systems, according to this viewpoint. The practice of companies disclosing sustainability-related information comes from their need to fulfill legitimacy

requirements, which explains their activities. Organizations use legitimacy theory to present their activities as socially acceptable according to the current social norms, expectations, and values of society (Burlea & Popa, 2013; Deegan, 2014; Ali et al., 2025). Environmental, social, and government disclosure serves as a tool that organizations use to obtain social acceptance while safeguarding their organizational legitimacy. Companies that want to gain legitimacy through their sustainability disclosure will avoid conducting financial reporting practices that include earnings manipulation because such actions can damage their corporate reputation and public trust. The theory of legitimacy establishes that companies that want to maintain their reputation will show more transparent financial reporting, which leads to reduced environmental, social, and governance disclosure and increased earnings management by organizations. The connection between environmental, social, and governance disclosure and earnings management is also based on agency theory. The theory emphasizes conflicts of interest between managers and shareholders, which stem from the separation of ownership and control in modern corporations (Jensen & Meckling, 1976; Shapiro, 2005). Managers use earnings management to gain personal advantages while protecting their pay structures, shaping market views, and maintaining their employment status. Environmental, social, and governance disclosure works as a solution to agency conflicts because it creates transparent information, which enables investors, analysts, regulators, and other stakeholders to conduct their external monitoring activities. The process of increased disclosure decreases information asymmetry between managers and shareholders, which results in reduced managerial capacity to manipulate accounting information through operational activities (Arshad et al., 2025; Yahaya, 2026). The agency perspective predicts that organizations will use stronger environmental, social, and governance disclosure to limit earnings-management activities because these disclosures provide better governance and monitoring processes (Alahdal et al., 2025; Ali et al., 2025; Shahi et al., 2025; Moharram et al., 2026). Following the theoretical discussion, the mathematical model can be written as follows:

$$EM_{it} = f(ESG_{it}, ROA_{it}, LEV_{it}, SIZE_{it}, MTB_{it}, CEOD_{it}, BSIZE_{it}, BIND_{it})$$

Where:

- EM_{it}= Earnings management for firm *i* at time t
- ESG_{it} = ESG disclosure score for firm *i* at time t
- ROA_{it}= Return on assets
- LEV_{it} = Leverage
- $SIZE_{it}$= Firm size
- MTBit = Market-to-book value
- $CEOD_{it}$= CEO duality
- $BSIZE_{it}$ = Board size
- $BIND_{it}$ = Board independence

Based on a mathematical model, the econometric model can be written as:

$$EM_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 ROA_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 MTB_{it} + \beta_6 CEOD_{it} + \beta_7 BSIZE_{it} + \beta_8 BIND_{it} + \varepsilon_{it}$$

Where:

- β_0 = intercept
- β_1 . . . . β8= coefficients
- ε_{it} = error term

If ESG disclosure is broken down into environmental, social, and governance components, the model becomes:

$$EM_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 MTB_{it} + \beta_8 CEOD_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \varepsilon_{it}$$

This model allows for the independent effects of Environmental, Social, and Governance disclosure to be tested separately.

Table 1: Definitions and Measurements of Variables

Variables	Symbols	Types	Measurements	Sources
Discretionary Accruals	DA	Dependent	Residual from Modified Jones Model	Dechow et al. (1995)
Absolute Discretionary Accruals	|DA|	Dependent	Absolute value of DA	Velte (2019)
ESG Disclosure Score	ESG	Independent	Aggregate Refinitiv ESG score (0–100)	Refinitiv
Environmental Pillar	ENV	Independent	Refinitiv environmental pillar score (0–100)	Refinitiv
Social Pillar	SOC	Independent	Refinitiv social pillar score (0–100)	Refinitiv
Governance Pillar	GOV	Independent	Refinitiv governance pillar score (0–100)	Refinitiv
Return on Assets	ROA	Control	Net income / Total assets	Annual reports
Leverage	LEV	Control	Total debt / Total assets	Annual reports
Firm Size	SIZE	Control	Natural logarithm of total assets	Annual reports
Market-to-Book Ratio	MTB	Control	Market cap / Book value of equity	PSX market data
CEO Duality	CEOD	Control	1 if CEO is also board chair, else 0	Governance reports
Board Size	BSIZE	Control	Total number of directors	Governance reports
Board Independence	BIND	Control	Independent directors / Total directors	Governance reports

The study used a deductive research design, which follows the standard research methods that are typically used in environmental, social, and governance disclosure and earnings management (Kim et al., 2012). The study uses firm-year as its analytical unit to study environmental, social, and governance disclosure patterns and earnings management practices, which vary between different companies at different periods in time. The initial sampling frame included all companies that were listed on the Pakistan Stock Exchange, which operated in both financial and non-financial sectors. The study examines corporate reporting practices from 2020 to 2024, which includes five years after the pandemic of 2020, when environmental, social, and governance disclosure standards began to evolve in Pakistan, according to the governance reforms established by the Securities and Exchange Commission of Pakistan and the voluntary sustainability reporting practices adopted by major companies in Pakistan. The final sample consists of 45 Pakistan Stock Exchange-listed companies that provided complete environmental, social, and governance disclosure data through the Refinitiv database, while their financial and corporate governance data were accessible through their audited annual reports throughout the study duration.
The study uses three distinct types of data. Financial data were collected through manual data extraction from the audited annual reports, which firms submitted to the Pakistan Stock Exchange. The Refinitiv database (Refinitiv, 2022) provides environmental, social, and governance disclosure data, which includes total environmental, social, and governance scores as well as their component scores for environmental, social, and governance metrics through its standard content analysis method for sustainability data disclosed to the public. The researchers manually coded the corporate governance variables, board size, board independence, and chief executive officer duality, which they derived from annual corporate governance reports and directors' reports that the selected companies published. The process of combining financial data, sustainability data, and governance data from different independent sources leads to higher data accuracy because it eliminates the chance of relying on one data source.

4. Results and Discussion

Table 2 presents the descriptive statistics of the variables used in the study. The results indicate a moderate level of discretionary accrual activity among the sampled Pakistani listed firms during the study period. The signed discretionary-accrual measure reports both positive and negative values, suggesting the presence of both income-increasing and income-decreasing reporting behavior across firms. However, the positive average value implies that income-increasing accrual practices remain relatively more common within the sample. The environmental, social, and governance disclosure scores indicate that sustainability-reporting practices among Pakistani firms remain at a developing stage. Governance disclosure reports comparatively higher average values than environmental and social disclosure, reflecting the stronger institutional emphasis placed on governance-related regulation and corporate-compliance practices within Pakistan. In contrast, environmental disclosure remains comparatively weaker, suggesting that sustainability-reporting mechanisms in the Pakistani market are still evolving and may not yet be fully integrated into corporate reporting systems. The control variables enable researchers to study the structural features found in the selected companies. The observations show that firm profitability varies between different points, while companies maintain financing structures that use less debt. The sample contains mostly large listed firms that have environmental, social, and governance disclosures, so firm size remains constant. The

statistics on board size and board independence reveal that the sampled firms operate governance systems that fall between basic and advanced levels of development. The corporate environment in Pakistan demonstrates persistent executive leadership structures because chief executive officer duality has not changed since the establishment of concentrated leadership systems. The evidence from the study shows that Pakistani listed firms have improved their sustainability disclosure practices, but the institutional framework for environmental, social, and governance reporting shows different levels of development across various disclosure areas. The governance disclosure system of the sampled firms shows better performance than their environmental and social disclosure systems, yet the companies still exhibit discretionary accrual behavior.

Table 2: Descriptive Statistics

Variables	Mean	Median	SD	Min	Max	Skewness	Kurtosis
DA	0.030	0.000	0.054	−0.046	0.129	0.694	−1.13
|DA|	0.042	0.017	0.045	0.000	0.129	0.798	−0.98
ESG	38.50	36.10	12.50	15.40	64.70	0.386	−0.46
ENV	30.00	22.00	15.90	13.40	65.80	0.835	−0.47
SOC	37.90	36.70	16.30	12.10	75.20	0.247	−0.60
GOV	47.60	47.30	21.40	6.02	88.10	0.033	−0.64
ROA	0.049	0.015	0.055	−0.037	0.158	0.715	−1.05
LEV	0.210	0.222	0.130	0.000	0.501	−0.160	−0.71
SIZE	20.50	20.60	1.21	18.40	22.50	−0.047	−1.22
MTB	0.760	0.600	0.474	0.140	1.990	1.08	0.29
BSIZE	9.76	9.00	1.88	7.00	14.00	0.520	−0.80
BIND	0.351	0.333	0.086	0.231	0.600	0.851	0.39
CEOD	1.00	1.00	0.000	1.00	1.00	0.231	0.28

The Pearson correlation matrix for all variables analyzed in the study appears in Table 3. The study found that total environmental, social, and governance disclosure negatively affected discretionary accruals, yet this effect remained statistically insignificant. The relationship direction between the two variables matches the theoretical prediction that increased sustainability disclosure decreases financial reporting opportunistic behavior by managers. The governance disclosure pillar shows a stronger negative relationship with discretionary accruals than both the environmental and social disclosure pillars. The study provides evidence that governance-related disclosure functions as an improved monitoring tool because governance mechanisms directly control managerial oversight, together with executive accountability systems and reporting transparency requirements. The weak correlation strength shows that sustainability disclosure practices fail to provide effective governance control in the institutional environment of Pakistan. The correlation matrix

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reveals strong positive relationships between total environmental, social, and governance disclosure and its separate disclosure components. The relationships between the two variables confirm that the disclosure framework maintains internal consistency while showing that companies with higher sustainability disclosure levels tend to produce greater environmental, social, and governance disclosure results. The correlation coefficients fall below standard multicollinearity thresholds, which indicates that the regression models do not experience major collinearity issues from their explanatory variables. Discretionary accrual measures show a particularly strong positive relationship with profitability. The finding shows that accrual estimation depends on accounting performance because more profitable firms have better financial-reporting decision-making capabilities. The correlation analysis establishes initial evidence about what drives earnings-management behavior while it boosts the validity of multivariate regression analysis.

Table 3: Pearson Correlations

Variable pair	r	p-value
DA ↔ ESG	−0.196	0.202
|DA| ↔ ESG	−0.187	0.304
DA ↔ ROA	0.989	0 .001
|DA| ↔ ROA	0.944	0 .001
|DA| ↔ GOV	−0.565	0 .001
|DA| ↔ LEV	−0.540	0 .01
|DA| ↔ SIZE	−0.369	0 .05
ESG ↔ ENV	0.762	0 .001
ESG ↔ SOC	0.717	0 .001
ESG ↔ GOV	0.644	0 .001

Table 4 displays regression outcomes that analyze how environmental, social, and governance disclosure affects absolute discretionary accruals in Pakistani companies. Model 1 assesses how total environmental, social, and governance disclosure affects results, while Model 2 evaluates each disclosure pillar of environmental, social, and governance separately. The regression models demonstrate their capability to explain data and their statistical validation since the chosen factors account for significant discretionary-accrual variance in the firms being studied. The results show that total environmental, social, and governance disclosure fails to show any meaningful connection with absolute discretionary accruals. The positive relationship exists between sustainability disclosure practices and their ability to function as a governance mechanism that restricts managerial control over financial reporting at Pakistani listed firms. The finding opposes evidence from developed market studies, which shows that better sustainability disclosure results in higher reporting quality and less earnings management (Ali et al., 2025). The results support Muttakin et al. (2015), which maintains that companies in areas with weak regulations use sustainability disclosure primarily to establish credibility and boost their public image

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instead of creating actual governance improvements. The environmental disclosure pillar establishes an insignificant connection with discretionary accruals. The result indicates that Pakistani firms use environmental-reporting practices mainly to meet compliance requirements and to build their reputation instead of using those practices to change how their managers handle accounting tasks. Environmental disclosure within emerging economies often remains driven by external visibility concerns and stakeholder expectations rather than by strong institutional enforcement or sustainability integration within strategic decision-making processes (Itan et al., 2025; Kanwal et al., 2025). The capacity of environmental disclosure to monitor financial reporting practices that involve opportunistic behavior remains incomplete at this stage.

The social disclosure pillar does not show any statistically significant connection with earnings management according to the study results. The study results show that social-reporting activities, which include employee welfare, community engagement, and social responsibility program disclosures, do not create managerial incentives that affect discretionary-accrual conduct. The present situation in Pakistan shows that sustainability-reporting practices remain in their initial development stage because social disclosure practices exist as voluntary standards, which investors, regulators, and market participants have not yet evaluated (Khan et al., 2023; Ali et al., 2025). The implementation of social disclosure practices will continue to serve as a tool for organizations to manage their reputational standing because organizations lack the necessary systems to demonstrate genuine accountability. The governance disclosure within the three sustainability pillars depends on its theoretical foundation, which predicts that governance disclosure will create a negative effect on discretionary accruals, even though this relationship lacks statistical significance (Tuo et al., 2023; Ahmad et al., 2025). The finding that shows that governance organizations expect disclosure to have the biggest impact on managerial reporting behavior establishes an important connection. The relationship shows a negative trend, which indicates that companies with stronger governance disclosure will face higher rates of oversight and accountability, which will discourage them from engaging in opportunistic reporting behavior. The governance disclosure system in Pakistan lacks enforcement power, monitoring capability, and stakeholder impact, which would restrict institutions from executing earnings management methods according to the study results.

The relationship between return on assets and discretionary accruals shows a strong positive correlation, which reaches statistical significance in both research models. The study results show that more profitable companies show increased discretionary accrual activities compared to their less profitable counterparts. Highly profitable companies have better accounting options because they can control earnings to meet market expectations, maintain performance trends, and sustain their financial results (Mesioye & Bakare, 2024; Nasir et al., 2025). The result matches the existing earnings-management research, which demonstrates that the way companies perform their business directly affects their accrual-estimation activities. The transaction shows a negative correlation between leverage and discretionary accruals, yet this connection lacks statistical significance. The negative direction suggests that companies with higher debt obligations face more monitoring pressure from their creditors and financial institutions, which reduces their motivation to engage in aggressive earnings management. The absence of significance indicates that debt-related monitoring mechanisms within the sampled firms may not be sufficiently strong to materially influence discretionary-accrual practices. The finding shows that

financial structures in Pakistani firms use debt-related mechanisms to build stringent monitoring systems, which have adverse effects on discretionary accrual activities.

The results show that companies with larger sizes exhibit lower rates of discretionary accruals according to both regression models. The study indicates that firms that have larger operational scales show reduced patterns of aggressive accrual-based earnings manipulation. The extensive monitoring activities from regulators, institutional investors, financial analysts, external auditors, and market participants result in increased reputational and regulatory expenses, which large firms must bear for their opportunistic financial reporting practices (Zhao et al., 2024; Anus et al., 2025). The organizational structure of larger firms shows they have stronger governance systems, better internal control systems, and higher levels of transparency in their disclosure practices, which together result in reduced discretionary accrual activities.

The market-to-book ratio shows a negative relationship with discretionary accruals, but the relationship lacks statistical significance. The results show that market valuation pressures do not have enough impact on accrual-based reporting behavior within the sampled firms, despite growth-oriented firms needing to satisfy investor expectations through earnings manipulation. The market environment in Pakistan remains stable because of its concentrated ownership structures, which results in an insignificant relationship between the two variables studied. The relationship between board size and discretionary accruals shows a positive outcome, which lacks statistical significance. The positive direction may suggest that larger boards do not necessarily improve monitoring efficiency within the sampled firms and may occasionally create coordination and decision-making challenges. The absence of statistical significance shows that board size does not have a significant impact on earnings management practices in the studied models. Board independence shows a positive relationship with discretionary accruals, but its statistical significance remains unproven. The finding shows that independent directors cannot enhance their oversight effectiveness at Pakistani institutions through their mere presence. The role of independent directors shows that they can fulfill their formal role as board members without having practical authority to exert control over how directors present their financial reports to shareholders who own their securities. The board independence system functions as a governance requirement that provides formal governance controls while executing discretionary accrual practices monitoring as its core function (Ibrahim & Al-Matari, 2022).

Table 4: Regression Results — Dependent Variable: |DA|

Predictor	Model 1 β (SE)	p	Model 2 β (SE)	p
Intercept	0.133 (0.042)	.003	0.116 (0.043)	.011
ESG	0.000178 (0.000176)	.317	—	—
ENV	—	—	0.000159 (0.000180)	.384
SOC	—	—	0.000172 (0.000173)	.326
GOV	—	—	−0.000210 (0.000143)	.151
ROA	0.707 (0.044)	0.001	0.660 (0.052)	0.001

Predictor	Model 1 β (SE)	p	Model 2 β (SE)	p
LEV	−0.032 (0.021)	.132	−0.006 (0.023)	.786
SIZE	−0.007 (0.002)	0.001	−0.006 (0.002)	.002
MTB	−0.004 (0.005)	.449	−0.007 (0.005)	.183
BSIZE	0.001 (0.001)	.406	0.002 (0.001)	.112
BIND	0.023 (0.029)	.425	0.007 (0.029)	.817
R^2	0.933		0.941	
Adjusted R^2	0.921		0.925	
F (p)	74.0	0.001	61.6	0.001
N	45		45	

The regression results in Table 5 show how Pakistani companies disclose environmental, social, and governance information, which affects their signed discretionary accruals. Model 3 establishes the total environmental, social, and governance disclosure effects while Model 4 assesses each environmental, social, and governance disclosure pillar separately. The regression models demonstrate exceptionally strong explanatory power and overall statistical significance, indicating that the selected explanatory variables collectively capture a substantial proportion of variation in accrual-based earnings-management behavior within the sampled firms. The result shows that total environmental, social, and governance disclosure lacks any significant connection to signed discretionary accruals. The insignificant relationship suggests that sustainability disclosure practices among Pakistani listed firms do not currently function as effective monitoring mechanisms capable of materially influencing managerial reporting discretion. Sustainability disclosure should provide transparent information to users. However, the findings show that organizations in Pakistan use environmental, social, and governance reports mainly for reputation management instead of actual governance functions. The environmental disclosure pillar demonstrates a positive but statistically insignificant relationship with discretionary accruals. The result shows that environmental reporting practices at the studied companies do not lead to any meaningful changes in their managerial accounting activities. Stakeholders in emerging-market environments typically drive environmental disclosure requirements through their obligation to uphold their public image, while their new governance systems face challenges to reach sustainability standards. Environmental disclosure practices enable organizations to enhance their public presence, while they do not limit their ability to report financial information according to their discretion. The social disclosure pillar of the study shows a negative association with discretionary accruals, which does not reach statistical significance. The negative direction of the relationship is broadly consistent with stakeholder theory expectations, suggesting that firms engaged in stronger social disclosure may experience greater stakeholder monitoring and accountability pressure. The absence of statistical significance indicates that social disclosure practices among Pakistani firms may still lack sufficient institutional influence to materially affect earnings-management incentives. Companies use social-reporting

activities primarily for their symbolic value because they help communicate their message to others instead of making these activities part of their corporate governance systems (Hossain et al., 2022; Kargbo et al., 2025).
The governance disclosure shows a negative association with discretionary accruals, which fails to achieve statistical significance. The governance disclosure functions as the most effective disciplinary mechanism among the three sustainability pillars because governance mechanisms enable organizations to establish their oversight structures, their managerial accountability systems, and their transparency of reporting procedures. The relationship maintains its theoretical value because it exists in a negative direction. The result demonstrates that Pakistani corporate governance systems lack sufficient monitoring power to control fraudulent accounting practices. The outcome demonstrates that emerging-market governance systems face institutional challenges, which include concentrated ownership structures, developing regulatory systems, and weak external monitoring requirements. The result shows that return on assets establishes a strong positive connection that maintains statistical significance across both models to discretionary accruals. The finding shows that more profitable companies engage in higher levels of accrual-based earnings-management activity. Companies that report higher profitability levels tend to have stronger reasons to stabilize their earnings trends because they need to meet market expectations and maintain their positive financial performance. The higher profitability level enables companies to have more freedom in accounting decisions, which leads to increased chances of practicing earnings management. The result maintains consistency with earlier research on earnings management, which shows that accounting performance measurement directly affects the level of accrual manipulation (Im et al., 2025; Qaiser & Ahmed, 2026).
The outcome identifies a negative relationship between leverage and discretionary accruals, which fails to achieve statistical significance. The negative direction suggests that firms with higher debt obligations may experience relatively stronger creditor monitoring and financial discipline, thereby reducing incentives for aggressive earnings-management behavior. The result shows that leveraging monitoring systems fails to deliver the necessary control power to enforce restrictions on discretionary accrual activities within the studied organizations.
The results show that larger companies practice less earnings manipulation because their size creates a connection with decreased discretionary accruals, which the two regression models confirm. The media, financial analysts, auditors, institutional investors, and regulatory bodies all apply stricter scrutiny to large organizations, which leads to increased costs that result from their need to protect their corporate reputation and follow regulations against fraudulent reporting. Larger firms need to operate with advanced governance frameworks and verified internal control systems and better disclosure practices, which together create conditions that lead to better financial reporting outcomes (Manginte, 2024). The market-to-book ratio shows a positive relationship with discretionary accruals, which reaches statistical significance in both models. The results show that companies with stronger growth potential and higher market valuation need more employ accrual-based earnings management techniques. Companies that focus on growth need to maintain their positive market image and meet performance goals, which creates greater motivation for them to manipulate their earnings reports. The study results match existing accounting research, which shows that market value pressures create stronger financial reporting incentives for managers to exercise their discretionary

reporting rights. The relationship between board size and discretionary accruals shows positive results, which lack statistical significance. The positive direction may suggest that larger boards do not necessarily improve governance effectiveness within the sampled firms and may occasionally reduce monitoring efficiency because of coordination and decision-making complexities. The study found that board size does not impact discretionary-accrual behavior, which shows that board size operates as a control variable in the estimated models. Board independence shows a positive connection with discretionary accruals, which becomes significant in one specification, but the relationship weakens when researchers include environmental, social, and governance disclosure pillars. The positive direction appears contrary to conventional governance expectations because independent directors are generally expected to strengthen monitoring and reduce opportunistic reporting practices. Emerging market institutional environments that show ownership structures and poor governance systems create situations where independent directors lose their ability to control managerial decisions. Earnings management behavior becomes less controlled through board independence because it functions as a regulatory compliance system instead of an effective governance framework (Sulieman et al., 2024).

Table 5: Regression Results — Dependent Variable: DA

Predictor	Model 3 β (SE)	p	Model 4 β (SE)	p
Intercept	0.006 (0.022)	.788	0.009 (0.023)	.716
ESG	−0.00000671 (0.0000916)	.942	—	—
ENV	—	—	0.000103 (0.0000972)	.297
SOC	—	—	−0.0000588 (0.0000933)	.532
GOV	—	—	−0.0000483 (0.0000772)	.536
ROA	0.937 (0.023)	0.001	0.937 (0.028)	0.001
LEV	−0.007 (0.011)	.516	−0.001 (0.013)	.913
SIZE	−0.002 (0.001)	.021	−0.002 (0.001)	.024
MTB	0.009 (0.002)	0.001	0.009 (0.003)	.002
BSIZE	0.001 (0.001)	.220	0.001 (0.001)	.173
BIND	0.031 (0.015)	.046	0.026 (0.016)	.108
R^2	0.987		0.988	
Adjusted R^2	0.985		0.985	
F (p)	408	0.001	313	0.001
N	45		45	

5. Conclusions

This study investigated how environmental, social, and governance disclosure impacts earnings management for publicly traded companies in Pakistan. The study analyzed panel data from Pakistan Stock Exchange-listed 45 companies during the years 2020 to 2024. To assess total environmental, social, and governance disclosure while evaluating how each environmental, social, and governance disclosure pillar affected accrual-based earnings management. The empirical findings showed that both total environmental, social, and governance disclosure and its individual environmental, social, and governance disclosure pillars failed to demonstrate any statistically significant connection with discretionary accruals. The results show that Pakistani listed firms do not use their sustainability disclosure practices as effective governance tools, which would restrict their earnings management activities. The two control variables, profitability and firm size, show greater explanatory power to predict discretionary accrual behavior, which shows that established firm-level characteristics continue to determine financial reporting practices. The findings extend the existing sustainability-accounting research by providing empirical data from Pakistan, which represents an emerging market that has less developed environmental, social, and governance disclosure practices. The absence of statistically significant relationships provides critical evidence about how institutional factors restrict emerging economies from achieving effective sustainability reporting practices. Companies in Pakistan will begin using sustainability-related reporting to establish a better corporate reputation, which helps them meet stakeholder expectations while their actual financial reporting quality stays unaffected.

The study offers essential policy advice to Pakistani regulators, investors, corporate managers, and market participants. The findings show that organizations need to develop more environmental, social, and governance disclosure practices, together with better institutional monitoring and enforcement procedures, to achieve better financial reporting standards. The Securities and Exchange Commission of Pakistan and other regulatory bodies must improve environmental, social, and governance reporting standards through better sustainability reporting guidelines and standardized disclosure and external assurance methods, which will increase their environmental, social, and governance reporting credibility and effectiveness. The results show that companies need to develop stronger corporate-governance systems, which will help managers become more accountable and transparent in their financial reports. The operational effectiveness of environmental, social, and governance reporting for Pakistani companies will improve through better board independence, stronger audit controls, enhanced stakeholder monitoring, and improved sustainability assessment methods. Investors and financial analysts should interpret sustainability-related disclosure with caution because extensive reporting does not guarantee better reporting quality and reduced earnings-management incentives.

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