ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

FIRM-SPECIFIC DETERMINANTS OF SUSTAINABILITY DISCLOSURE: EVIDENCE FROM PAKISTAN STOCK EXCHANGE LISTED COMPANIES

Saman Masaud
Lahore School of Accountancy and Finance, University of Lahore, Pakistan
Marc Audi
Abu Dhabi School of Management, Abu Dhabi, United Arab Emirates
Zojaja Naveed
COMSATS University, Islamabad, Pakistan

Abstract
This study investigates the firm-specific factors influencing sustainability disclosure among 380 companies listed on the Pakistan Stock Exchange for the financial year 2024. Sustainability disclosure quality is measured using a comprehensive Sustainability Disclosure Score Index (SDSI), developed in accordance with the Securities and Exchange Commission of Pakistan's ESG Disclosure Guidelines and internationally recognized reporting frameworks, including the Global Reporting Initiative (GRI), the International Sustainability Standards Board (ISSB), and the Task Force on Climate-related Financial Disclosures (TCFD). The index comprises four disclosure dimensions: environmental, social, governance, and economic. Ordinary Least Squares regression is employed to examine the effects of firm size, environmental sensitivity, international exposure, assurance quality, firm age, and financial leverage on sustainability disclosure quality. The findings reveal that firm size, environmental sensitivity, international exposure, and assurance quality significantly enhance overall sustainability disclosure, whereas firm age has a significant negative influence and financial leverage does not significantly affect reporting quality. Additional analysis across the four disclosure dimensions confirms that assurance quality, international exposure, and firm size consistently strengthen environmental, social, governance, and economic reporting. The study contributes to the emerging literature on mandatory sustainability reporting by providing one of the first comprehensive empirical evaluations of Pakistan's newly implemented ESG reporting framework. The findings offer practical implications for regulators, policymakers, corporate managers, and assurance providers seeking to improve the quality, credibility, and comparability of sustainability reporting in emerging economies undergoing regulatory transition.
Keywords: *Sustainability Disclosure, ESG Reporting, Sustainability Disclosure Score Index*

INTRODUCTION

Corporate sustainability has become a central priority in modern business as organizations face increasing environmental, social, and governance expectations (Naciti et al., 2022; Farag, 2026). While corporate success was traditionally evaluated primarily through financial performance, investors, regulators, customers, employees, lenders, and society now expect organizations to demonstrate environmental responsibility, social accountability, ethical governance, and transparent reporting (Hahn & Kühnen, 2013; Ioannou & Serafeim, 2017; Khan & Ullah, 2020; Altaf & Shahzad, 2021; Zumente & Bistrova, 2021; Radas, 2023; Khalid et al., 2025; Annesi et al., 2025; Ali et al., 2026; Sharma, 2026). Consequently, sustainability reporting has evolved from a voluntary communication tool into an important mechanism for improving corporate accountability, strengthening stakeholder confidence, supporting investment decisions, and promoting long-term value creation (Bernardi & Stark, 2018; Muslu et al., 2019; Velte, 2022; Mehdi et al., 2025; Chia et al., 2025; Rehman & Chowdhury, 2025). As climate change, environmental degradation, resource scarcity, and governance challenges increasingly affect economic development, sustainability disclosures have become an integral component of corporate reporting (Siew, 2015; Rosati & Faria, 2019; Urban & Radas, 2021; Abeysekera, 2022; Abbasi et al., 2025; Haladu et al., 2025; Alvi & Mudassar, 2025; Nour, 2026). This transformation has been driven by major regulatory reforms worldwide. Governments have increasingly replaced voluntary disclosure with mandatory sustainability reporting to improve the transparency, comparability, and reliability of environmental, social, and governance information (Tariq, 2025; Arshi et al., 2025; Paridhi et al., 2025; Zohaib et al., 2026; Ketterling, 2026). Examples include the European Union's Corporate Sustainability Reporting Directive (European Commission, 2022), Singapore's mandatory climate-related disclosure requirements (Loh et al., 2017; Ahmad, 2019; Yoon et al., 2025; Batool et al., 2025; Fayou, 2026; Li et al., 2026), and India's Business Responsibility and Sustainability Reporting

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

framework (KPMG, 2024). These developments demonstrate that sustainability reporting is now regarded as a core element of corporate governance and sustainable economic development rather than a voluntary public relations activity (Churet & Eccles, 2014; Doni et al., 2022; Achim et al., 2023; Zahid et al., 2025; Hristov & Searcy, 2025; Tausch & Liu, 2026; Audi et al., 2026; Azzahra & Taqwa, 2026).

Mandatory reporting has also expanded corporate governance responsibilities by requiring firms to establish reliable sustainability data systems, strengthen board oversight, integrate sustainability into strategic decision-making, and improve disclosure credibility (Amran et al., 2014; Cohen & Simnett, 2015; Naeem et al., 2025; Mangiuc & Kagitci, 2025; Zamir et al., 2026). However, the transition has progressed unevenly across emerging economies, where weak institutional capacity, limited regulatory enforcement, and inadequate reporting expertise continue to constrain disclosure quality and comparability (Fifka, 2013; Marquis & Qian, 2014; Ntim et al., 2017; Khan & Bhutto, 2022; Ali et al., 2025; Moreira et al., 2025; Farooq et al., 2026; Azzahra & Taqwa, 2026). Consequently, evidence from developed economies cannot be readily generalized to developing countries (Cho et al., 2006; Rosati & Faria, 2019; Ali et al., 2025; Buboi, 2025; Naseer et al., 2026; Audi et al., 2026; Ogbonnaya, 2026).

Pakistan represents an important example of this institutional transition. Before 2024, sustainability reporting among listed companies was largely voluntary and concentrated in a limited number of large firms. Although some organizations adopted internationally recognized frameworks such as the Global Reporting Initiative (Global Reporting Initiative, 2021), reporting quality and disclosure practices varied considerably, and many firms provided limited environmental, social, and governance information (Aburaya, 2012; Adel et al., 2018; Ali et al., 2021; Rehman et al., 2023; Hoang, 2024; Ali et al., 2025; Alodat & Hao, 2025; Naeem et al., 2026; Ozata Canli & Sercemeli, 2026). A major institutional change occurred in June 2024 when the Securities and Exchange Commission of Pakistan introduced the Sustainability Reporting Mandate, requiring eligible listed companies to disclose environmental, social, and governance information under standardized reporting requirements (Securities and Exchange Commission of Pakistan, 2024a, 2024b). This reform transformed sustainability reporting from a voluntary initiative into a regulatory obligation, strengthening corporate accountability, improving regulatory oversight, and encouraging firms to establish structured reporting systems, enhance board oversight, and integrate sustainability into corporate governance (International Sustainability Standards Board, 2023; Institute of Chartered Accountants of Pakistan, 2024). The reform is also expected to improve investor confidence, promote responsible investment, and align Pakistan's reporting practices with internationally recognized sustainability reporting standards.

The mandate is particularly significant because Pakistan faces pressing sustainability challenges, including climate change, floods, water scarcity, energy insecurity, environmental degradation, and governance weaknesses (Hassan et al., 2025; Ali et al., 2025; Baloch et al., 2025; Majeed et al., 2026; Farooq, 2026). At the same time, many organizations must develop new reporting systems, strengthen internal governance, and build the capabilities needed to comply with the new requirements (KPMG, 2024; Institute of Chartered Accountants of Pakistan, 2024). The reform is also expected to expand the market for sustainability assurance and advisory services by increasing demand for independent verification of environmental, social, and governance information and encouraging greater investment in sustainability expertise. Despite the importance of these developments, empirical evidence on their implications for corporate reporting and the sustainability assurance market remains limited, particularly in emerging economies. Thus, this study examines listed companies' compliance with mandatory sustainability disclosure requirements, evaluates sectoral differences in disclosure quality using a structured scoring framework, and assesses the implications of the new reporting regime for the sustainability assurance market and audit firms.

LITERATURE REVIEW

Corporate sustainability reporting has evolved from a voluntary communication practice into a core element of corporate governance, accountability, and stakeholder engagement (Naciti et al., 2022; Farag, 2026; Hristov & Searcy, 2025). Growing concerns over climate change, environmental degradation, social inequality, human rights, and governance failures have increased demands for organizations to disclose environmental, social, and governance information alongside financial statements (Abeysekera, 2022; Paridhi et al., 2025; Hoang, 2024). Investors, regulators, creditors, customers, and other stakeholders increasingly rely on such disclosures to evaluate long-term sustainability, corporate resilience, and non-financial risks (Adel et al., 2019; Achim et al., 2023; Alodat & Hao, 2025). As a result, sustainability reporting has become an important mechanism for improving transparency, reducing information asymmetry, strengthening stakeholder confidence, and supporting sustainable

development (Chia et al., 2025; Haladu et al., 2025; Moreira et al., 2025). The growing importance of sustainability reporting has been accompanied by major developments in international reporting standards. Earlier reporting relied on voluntary frameworks such as the Global Reporting Initiative, the Sustainability Accounting Standards Board, the Integrated Reporting Framework, and the Task Force on Climate-related Financial Disclosures (Ketterling, 2026; Li et al., 2026). To improve consistency and comparability, the International Sustainability Standards Board introduced International Financial Reporting Standards Sustainability Disclosure Standard S1 and International Financial Reporting Standards Sustainability Disclosure Standard S2, providing a globally consistent framework for sustainability and climate-related disclosures (KPMG, 2024; Sharma, 2026; Mangiuc & Kagitci, 2025; Tariq, 2025; Yoon et al., 2025).

Pakistan has also adopted this global trend. In June 2024, the Securities and Exchange Commission of Pakistan introduced the Sustainability Reporting Guidelines and amended the Listed Companies (Code of Corporate Governance) Regulations, requiring eligible listed companies to disclose environmental, social, and governance information (Securities and Exchange Commission of Pakistan, 2024). These reforms encourage stronger sustainability governance, board oversight, improved data collection, and the integration of sustainability into corporate decision-making. Mandatory sustainability reporting is expected to improve information quality, reduce information asymmetry, strengthen investor confidence, and enhance access to external finance (Ioannou & Serafeim, 2017; Longston et al., 2025; Fatima et al., 2026). As Pakistan aligns its reporting framework with the International Sustainability Standards Board, these reforms are expected to improve the transparency and credibility of listed companies. However, their success will depend on organizational readiness, institutional capacity, disclosure quality, and credible sustainability assurance, making these issues central to contemporary sustainability reporting research.

THE GLOBAL EVOLUTION OF MANDATORY SUSTAINABILITY REPORTING

The evolution of sustainability reporting reflects a shift from voluntary corporate disclosure to mandatory regulatory compliance. Early studies viewed sustainability reporting as a voluntary mechanism through which firms enhanced legitimacy, accountability, and stakeholder relationships. Gray et al. (1995) argued that organizations disclosed environmental and social information primarily to maintain societal legitimacy rather than meet regulatory requirements. However, voluntary reporting resulted in considerable differences in disclosure quality and quantity, reducing the consistency, comparability, and reliability of sustainability information. Hahn and Kühnen (2013) found that firm size, industry characteristics, ownership structure, profitability, and public visibility were key determinants of sustainability disclosure. Larger firms and those operating in environmentally sensitive industries generally provided more comprehensive reports, while many organizations disclosed only limited information. These disparities strengthened the case for mandatory reporting frameworks. In response, governments and regulators introduced mandatory sustainability reporting requirements. The European Union's Corporate Sustainability Reporting Directive represents a major reform by requiring standardized sustainability disclosures that improve comparability across firms and industries. Churet and Eccles (2014) argued that standardized reporting enhances market efficiency by providing investors with more reliable and decision-useful sustainability information while reducing selective disclosure. Ioannou and Serafeim (2017) found that mandatory corporate social responsibility reporting improves environmental and social performance, particularly in countries with strong regulatory enforcement and institutional quality. However, they emphasized that reporting requirements alone are insufficient without effective monitoring and enforcement. Evidence from Asia highlights similar challenges. Loh et al. (2017) reported that mandatory sustainability reporting in Singapore increased reporting participation, although many firms initially focused on regulatory compliance rather than meaningful sustainability integration. Likewise, Chauhan and Kumar (2022) found that, following India's Business Responsibility and Sustainability Reporting framework, many organizations treated sustainability reporting primarily as a compliance requirement instead of integrating sustainability into corporate strategy.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE DISCLOSURE QUALITY: MEASUREMENT AND DETERMINANTS

As sustainability reporting has become more institutionalized, research has shifted from examining whether firms disclose sustainability information to evaluating the quality, completeness, and credibility of those disclosures. Although mandatory reporting has increased the availability of sustainability information, concerns remain about whether disclosures accurately reflect firms' environmental, social, and governance performance. Consequently, disclosure quality has become a central focus because it improves transparency, reduces information asymmetry,

and supports informed stakeholder decision-making. A major contribution to this literature was made by Clarkson et al. (2008), who distinguished between hard and soft sustainability disclosures. Hard disclosures include objective and verifiable measures, such as greenhouse gas emissions, energy use, and workplace safety statistics, whereas soft disclosures consist of qualitative narratives and policy statements. They found that quantitative disclosures are more closely associated with actual environmental performance, while qualitative disclosures are more vulnerable to impression management and greenwashing. Their framework has become widely used for assessing sustainability disclosure quality.

Mahoney et al. (2013) found that environmentally sensitive industries provided more comprehensive quantitative disclosures than service sectors because of greater regulatory oversight and stakeholder pressure. These findings indicate that disclosure quality depends not only on reporting requirements but also on industry characteristics and environmental risk. Efforts to improve comparability have also led to the development of global reporting standards. While earlier frameworks such as the Global Reporting Initiative, the Sustainability Accounting Standards Board, and the Integrated Reporting Framework advanced sustainability reporting, differences among them reduced consistency across firms. Accountancy Europe (2021) argued that multiple frameworks increased reporting complexity, leading to the establishment of the International Sustainability Standards Board and the introduction of International Financial Reporting Standards Sustainability Disclosure Standard S1 and International Financial Reporting Standards Sustainability Disclosure Standard S2. However, implementation remains uneven, particularly in emerging economies. These challenges are evident in Pakistan, where sustainability reporting was largely voluntary before recent regulatory reforms. Ali et al., (2021) found that listed companies provided stronger governance disclosures than environmental disclosures and relied mainly on narrative descriptions rather than measurable environmental indicators. Consequently, sustainability reporting lacked consistency, comparability, and credibility, limiting stakeholders' ability to assess firms' actual sustainability performance.

MANDATORY SUSTAINABILITY REPORTING AND INSTITUTIONAL READINESS IN EMERGING MARKETS

The effectiveness of mandatory sustainability reporting depends not only on regulatory requirements but also on the institutional environment in which they are implemented. Improvements in disclosure quality and corporate transparency are shaped by regulatory enforcement, governance structures, and organizational capabilities. Accordingly, recent research identifies institutional readiness as a key determinant of successful sustainability reporting, particularly in emerging economies. Fifka (2013) argued that institutional conditions determine whether mandatory reporting leads to meaningful improvements in disclosure quality or simply increases formal compliance. Factors such as regulatory enforcement, capital market development, stakeholder pressure, and corporate governance influence firms' ability to provide credible sustainability disclosures. While developed economies generally benefit from stronger institutional support, developing countries often face weaker enforcement, limited organizational capacity, and resource constraints that reduce the effectiveness of mandatory reporting. Ntim et al., (2017) found that many African listed companies engaged in isomorphic mimicry, complying with reporting requirements without developing the internal systems needed to produce high-quality sustainability information. Weak data collection systems, limited expertise, and inadequate reporting infrastructure often reduced disclosure quality, indicating that regulatory mandates alone cannot ensure meaningful transparency. Similarly, Amran et al. (2014) reported that Malaysian firms with stronger board independence and corporate governance produced more comprehensive sustainability reports. Their findings highlight the importance of governance in strengthening accountability, internal controls, and the integration of sustainability into corporate strategy. Mandatory sustainability reporting also requires organizations to develop reliable data collection systems, reporting procedures, and governance mechanisms to ensure accurate and verifiable disclosures. Firms lacking technological infrastructure, skilled personnel, or sustainability expertise may face significant implementation challenges, particularly during the transition from voluntary to mandatory reporting. These issues are especially relevant in Pakistan following the introduction of the Securities and Exchange Commission of Pakistan's Sustainability Reporting Guidelines in 2024. As listed companies implement mandatory sustainability reporting for the first time, differences in governance quality, organizational resources, and institutional preparedness are likely to produce considerable variation in disclosure quality. Examining these differences will help determine whether the new reporting framework promotes genuine corporate transparency or merely regulatory compliance.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

TRANSFORMATION OF SUSTAINABILITY ASSURANCE SERVICES UNDER MANDATORY ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORTING

The expansion of mandatory sustainability reporting has increased the importance of sustainability assurance in corporate reporting. As environmental, social, and governance disclosures become more significant for investors, regulators, and other stakeholders, concerns regarding their credibility and reliability have grown. Consequently, independent sustainability assurance has emerged as a key mechanism for improving confidence in sustainability reports and reducing the risk of inaccurate reporting and greenwashing. Cohen and Simnett (2015) argue that sustainability assurance differs from traditional financial auditing because environmental, social, and governance information is more diverse, less standardized, and often forward-looking. Assurance engagements require the evaluation of environmental performance, climate-related risks, governance practices, and social impacts, frequently involving multidisciplinary expertise beyond conventional accounting. Simnett et al., (2009) found that companies operating in stakeholder-oriented environments and international capital markets were more likely to seek third-party assurance, strengthening stakeholder confidence in sustainability information. Similarly, recent regulatory reforms, particularly the European Union's Corporate Sustainability Reporting Directive, require limited assurance during the initial implementation stage, with a gradual transition to reasonable assurance, reinforcing the role of assurance as an essential component of high-quality sustainability reporting.

García-Benau and Sierra (2013) found that the market is dominated by major international accounting firms because of their technical expertise, multidisciplinary capabilities, and global experience. In addition, Hodge, Subramaniam, and Stewart (2021) reported that investors place greater confidence in sustainability reports assured by established accounting firms and supported by higher levels of independent assurance, demonstrating that assurance enhances both reporting reliability and stakeholder trust. These developments are particularly relevant for Pakistan following the introduction of the Securities and Exchange Commission of Pakistan's Sustainability Reporting Guidelines. Although sustainability assurance is not yet mandatory, compulsory environmental, social, and governance reporting is expected to increase demand for assurance services and encourage investment in sustainability expertise. However, empirical evidence on how these reforms are shaping Pakistan's sustainability assurance market remains limited, highlighting an important area for future research.

THEORETICAL FRAMEWORK

The introduction of mandatory sustainability reporting represents a fundamental shift in corporate reporting practices, requiring organizations to modify their governance structures, disclosure systems, and reporting processes in response to new regulatory expectations (Ketterling, 2026; Mangiuc & Kagitci, 2025; Sharma, 2026). This study therefore adopts institutional theory, particularly the neo-institutional perspective developed by DiMaggio and Powell (1983). Institutional theory argues that organizations respond to external institutional pressures by adopting structures and practices that conform to legal requirements, professional standards, and accepted organizational norms (Naciti et al., 2022; Hristov & Searcy, 2025). According to the theory, organizational convergence occurs through coercive, mimetic, and normative pressures. In the context of Pakistan, the Securities and Exchange Commission of Pakistan's 2024 Sustainability Reporting Guidelines represent a form of coercive institutional pressure, compelling listed companies to establish sustainability governance mechanisms and disclose standardized environmental, social, governance, and economic information (Tariq, 2025; Li et al., 2026; Yoon et al., 2025). However, Institutional Theory also recognizes that organizations differ in their ability to comply with regulatory requirements because of variations in organizational resources, industry characteristics, assurance quality, and institutional capacity (Abeysekera, 2022; Buboi, 2025; Paridhi et al., 2025). Consequently, differences in sustainability disclosure quality are expected despite a common regulatory framework (Achim et al., 2023; Adel et al., 2019; Annesi et al., 2025). The theory further explains the expansion of sustainability assurance services, as professional accounting firms respond to new regulatory demands by developing specialized sustainability reporting and assurance capabilities (Chia et al., 2025; Farag, 2026; Moreira et al., 2025).

Accordingly, the functional relationship is expressed as:

$$SDSI_i = f(SIZE_i, SECTOR_i, INTEXP_i, ASSURANCE_i, AGE_i, LEV_i) \quad (1)$$

where:

- SDSI = Sustainability Disclosure Score Index
- SIZE = Firm Size
- SECTOR = Environmental Sensitivity
- INTEXP = International Exposure

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

- ASSURANCE = Assurance Quality
- AGE = Firm Age
- LEV = Financial Leverage

The empirical model is estimated as follows:

$$SDSI_i=\beta_0+\beta_1 SIZE_i+\beta_2 SECTOR_i+\beta_3 INTEXP_i+\beta_4 ASSURANCE_i+\beta_5 AGE_i+\beta_6 LEV_i+\varepsilon_i \quad (2)$$

where β_0 denotes the intercept, β_1–β_6 are the estimated regression coefficients, and ε_i is the stochastic error term. To examine whether the determinants differ across disclosure dimensions, the following auxiliary models are estimated:

$$E_i= \beta_0+\beta_1 SIZE_i+\beta_2 SECTOR_i+\beta_3 INTEXP_i+\beta_4 ASSURANCE_i+\beta_5 AGE_i+\beta_6 LEV_i+\varepsilon_i \quad (3)$$

$$S_i= \beta_0+\beta_1 SIZE_i+\beta_2 SECTOR_i+\beta_3 INTEXP_i+\beta_4 ASSURANCE_i+\beta_5 AGE_i+\beta_6 LEV_i+\varepsilon_i \quad (4)$$

$$G_i= \beta_0+\beta_1 SIZE_i+\beta_2 SECTOR_i+\beta_3 INTEXP_i+\beta_4 ASSURANCE_i+\beta_5 AGE_i+\beta_6 LEV_i+\varepsilon_i \quad (5)$$

$$EC_i= \beta_0+\beta_1 SIZE_i+\beta_2 SECTOR_i+\beta_3 INTEXP_i+\beta_4 ASSURANCE_i+\beta_5 AGE_i+\beta_6 LEV_i+\varepsilon_i \quad (6)$$

where E, S, G, and EC represent the environmental, social, governance, and economic disclosure scores, respectively. Together, these models assess how institutional factors influence both the overall sustainability disclosure score and its individual reporting dimensions.

Table 1: Definitions, Measurements of Variables and Data Sources

Variables	Definitions	Measurements	Data Sources
Sustainability Disclosure Score Index (SDSI)	Overall quality and completeness of mandatory sustainability disclosures	Composite score ranging from 0–108, obtained by summing Environmental Score (0–36), Social Score (0–30), Governance Score (0–30), and Economic Disclosure Score (0–12) based on structured content analysis of sustainability reports	Sustainability Reports, Annual Reports, and Corporate Governance Reports of Pakistan Stock Exchange listed firms
Firm Size (SIZE)	Size of the company reflecting organizational resources and visibility	Natural logarithm of total assets	Audited Annual Reports; Pakistan Stock Exchange filings
Environmental Sensitivity (SECTOR)	Industry classification according to environmental exposure	Dummy variable: 1 = Environmentally sensitive industries (Energy & Power, Cement & Construction, Chemicals & Fertilizers); 0 = Other industries	Pakistan Stock Exchange sector classification
International Exposure (INTEXP)	Degree of firms' exposure to international capital markets and stakeholders	Dummy variable: 1 = Firm has foreign investors, cross-border listing, or significant international operations; 0 = Otherwise	Annual Reports, Company Profiles, Pakistan Stock Exchange disclosures
Assurance Quality (ASSURANCE)	Quality of external sustainability assurance	Dummy variable: 1 = Sustainability report assured by a Big Four or affiliated audit firm; 0 = Otherwise	Sustainability Reports, Assurance Statements, Audit Reports
Firm Age (AGE)	Organizational maturity and experience	Number of years since firm incorporation	Annual Reports, Securities and Exchange Commission of Pakistan Company Registry

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Financial Leverage (LEV)	Extent of debt financing used by the firm	Total liabilities divided by total assets	Audited Financial Statements, Annual Reports

Table 2: Construction of the Sustainability Disclosure Score Index (SDSI)

Components	Descriptions	Scores	Data Sources
Environmental Disclosure Score	Disclosure of environmental policies, emissions, energy, climate, water, waste, biodiversity, and related indicators	36	Sustainability Reports
Social Disclosure Score	Disclosure relating to employees, diversity, health and safety, human rights, community engagement, training, and supply chain practices	30	Sustainability Reports
Governance Disclosure Score	Disclosure on board governance, ethics, compliance, risk management, anti-corruption, and governance structures	30	Annual Reports and Sustainability Reports
Economic Disclosure Score	Disclosure on economic sustainability, value creation, procurement, taxes, and economic contribution	12	Sustainability Reports
Total Sustainability Disclosure Score Index	Sum of all four components	108	Calculated by the authors through structured content analysis

The study employs a cross-sectional research design to evaluate the first mandatory sustainability reporting cycle introduced by the Securities and Exchange Commission of Pakistan in 2024. The target population comprises all companies listed on the Pakistan Stock Exchange. Using purposive sampling, firms were selected based on the availability of complete sustainability reports, annual reports, corporate governance disclosures, and financial information for the 2025 reporting year. Companies with incomplete disclosures or missing financial data were excluded from the analysis. The final sample consists of 380 listed firms representing seven major sectors: Banking and Financial Services, Textiles and Apparel, Energy and Power, Services and Technology, Cement and Construction, Food and Beverages, and Chemicals and Fertilizers, ensuring broad sectoral representation and enhancing the generalizability of the findings.

RESULTS AND DISCUSSION

Table 3 presents the descriptive statistics for the study variables based on a sample of 380 listed companies. The results indicate considerable variation in firm characteristics and sustainability disclosure practices. The average firm size, measured as the natural logarithm of total assets, is 10.044, ranging from 7.04 to 13.48, suggesting that the sample includes both relatively small and large listed firms. The mean firm age is 34.742 years, with companies ranging from 4 to 75 years, indicating a balanced representation of both mature and relatively young firms. Financial leverage averages 0.447, implying that debt finances approximately 44.7% of total assets, although leverage varies substantially across firms. The mean Sustainability Disclosure Score Index is 64.78 out of a maximum of 108, while the average compliance ratio is 59.98%, indicating a moderate level of compliance with the Securities and Exchange Commission of Pakistan's mandatory sustainability reporting requirements during the first reporting cycle. However, the wide ranges observed for both variables suggest notable differences in disclosure quality among firms. Examining the individual disclosure dimensions reveals that the average environmental disclosure score is 19.25 out of 36, the social disclosure score is 17.28 out of 30, the governance disclosure score is 17.46 out of 30, and the economic disclosure score is 6.61 out of 12. These results indicate that none of the disclosure dimensions approaches the maximum attainable score, suggesting that listed companies are still in the early stages of adapting to the new mandatory reporting framework and that substantial opportunities remain for improving the quality, completeness, and consistency of sustainability disclosures across all reporting dimensions.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
Vol.04 No.02 (2026)

Table 3: Descriptive Statistics

Variables	N	Mean	Median	Std Dev	Min	Max
SIZE (Ln Total Assets)	380	10.044	10.04	1.322	7.04	13.48
AGE (Years)	380	34.742	33	15.061	4	75
LEV (Debt/Assets)	380	0.447	0.43	0.164	0.15	0.75
SDSI (0–108)	380	64.78	65	22	16	108
Compliance Ratio CR (%)	380	59.98	60.19	20.37	14.8	100
E_Score (0 - 36)	380	19.25	19	7.45	3	36
S_Score (0 - 30)	380	17.28	17	6.27	4	30
G_Score (0 - 30)	380	17.46	17	6.18	4	30
EC_Score (0 - 12)	380	6.608	6.5	3.225	0	12

Table 4 presents the sector-wise analysis of sustainability disclosure quality across 380 listed companies in Pakistan. The findings reveal substantial differences in compliance with the Securities and Exchange Commission of Pakistan's mandatory sustainability reporting framework across industries. The Banking and Financial Services sector demonstrates the strongest reporting performance, recording the highest average Sustainability Disclosure Score Index of 92.72, with scores ranging from 65 to 108, indicating a high compliance level. This is followed by the Energy and Power sector, which reports a mean score of 77.65, also reflecting high compliance, suggesting that firms operating in highly regulated and environmentally sensitive industries have adapted more effectively to the new reporting requirements. In contrast, the Cement and Construction, Food and Beverages, Chemicals and Fertilizers, and Services and Technology sectors exhibit partial compliance, with average scores ranging from 48.43 to 64.19, indicating moderate implementation of sustainability reporting practices and considerable variation in disclosure quality among firms within these industries. The Textiles and Apparel sector records the lowest mean Sustainability Disclosure Score Index of 36.89, with a maximum score of only 59, placing it within the minimal compliance category and suggesting that many firms in this sector remain at an early stage of adopting the mandatory reporting requirements. Overall, the full sample reports an average Sustainability Disclosure Score Index of 64.78, corresponding to partial compliance, indicating that although the first mandatory reporting cycle has encouraged sustainability disclosure among listed companies, substantial sectoral disparities remain. These findings suggest that industry characteristics, regulatory exposure, environmental sensitivity, and organizational readiness play important roles in shaping the quality of sustainability reporting during the initial implementation phase of Pakistan's mandatory disclosure framework.

Table 4: Sector and Group Level Analysis

Sectors	N	Mean SDSI	Std Dev	Min	Max	Compliance Mode
Banking & Financial Services	71	92.72	11.86	65	108	High Compliance
Energy & Power	57	77.65	15.2	39	106	High Compliance
Cement & Construction	52	64.19	12.85	33	99	Partial Compliance
Food & Beverages	43	59.6	11.99	31	87	Partial Compliance
Chemicals & Fertilizers	38	59.24	12.27	31	82	Partial Compliance
Services & Technology	54	48.43	11.07	16	74	Partial Compliance
Textiles & Apparel	65	36.89	9.61	20	59	Minimal Compliance
Full Sample	380	64.78	22	16	108	Partial Compliance

Table 5 presents the correlation matrix for the variables included in the study and provides preliminary evidence regarding the relationships among firm characteristics and sustainability disclosure quality. The results indicate that the Sustainability Disclosure Score Index is positively associated with firm size, environmental sensitivity, international exposure, and assurance quality, suggesting that larger firms, companies operating in environmentally sensitive industries, internationally exposed firms, and organizations obtaining higher-quality external assurance generally exhibit better sustainability disclosure practices. These findings imply that organizational resources, industry characteristics, global market participation, and credible assurance mechanisms contribute to more

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

comprehensive compliance with the mandatory sustainability reporting framework. In contrast, the Sustainability Disclosure Score Index shows weak negative associations with firm age and financial leverage, indicating that older firms and more highly leveraged firms tend to report slightly lower sustainability disclosure scores, although these relationships appear relatively modest. The correlations among the independent variables are generally low to moderate, suggesting limited overlap between the explanatory variables. This indicates that the variables capture distinct organizational characteristics rather than measuring the same underlying concept. Importantly, none of the pairwise correlations among the explanatory variables is sufficiently high to indicate potential multicollinearity concerns. Therefore, the correlation matrix provides preliminary support for including all explanatory variables in the subsequent regression analysis. Overall, the results suggest that sustainability disclosure quality is influenced by multiple firm-specific characteristics while confirming that the independent variables are sufficiently independent to permit reliable estimation of the regression models.

Table 5: Correlation Analysis

Variables	SIZE	SECTOR	INT_EXP	ASSURANCE	AGE	LEV	SDSI
SIZE	1						
SECTOR	0.07	1					
INT_EXP	0.121*	0.043	1				
ASSURANCE	0.263***	0.037	0.114*	1			
AGE	0.075	0.249***	-0.015	-0.046	1		
LEV	-0.017	-0.076	0.02	-0.115*	0.018	1	
SDSI	0.635***	0.162**	0.427***	0.596***	−0.051	−0.105*	1

The ordinary least squares (OLS) regression results presented in Table 6 examine the determinants of the Sustainability Disclosure Score Index (SDSI). Firm size exhibits a positive and highly significant effect on sustainability disclosure (8.137), indicating that larger firms disclose substantially more sustainability-related information than smaller firms. This finding is consistent with stakeholder theory and legitimacy theory, which argue that larger firms face greater public visibility, stronger stakeholder scrutiny, and higher political costs, motivating them to provide more comprehensive environmental, social, and governance disclosures (Freeman, 1984; Deegan, 2002; Suchman, 1995). Large organizations generally possess greater financial, technological, and human resources required to implement sophisticated sustainability reporting systems aligned with international standards such as the Global Reporting Initiative and the International Sustainability Standards Board frameworks (Global Reporting Initiative, 2021; International Sustainability Standards Board, 2023). The result is also consistent with prior empirical studies demonstrating that firm size is one of the strongest determinants of sustainability reporting quality (Fifka, 2013; Hahn & Kühnen, 2013; Amran et al., 2014; Braam et al., 2016; Naciti et al., 2022; Achim et al., 2023). Similar evidence has been reported in both developed and emerging economies where larger firms exhibit superior sustainability disclosure due to stronger governance structures, greater investor attention, and increased regulatory pressure (Adel et al., 2019; Paridhi et al., 2025; Hoang, 2024). Moreover, large firms are more likely to adopt integrated reporting and comprehensive environmental, social, and governance frameworks that improve transparency and long-term corporate reputation (Eccles & Krzus, 2010; Churet & Eccles, 2014; Chia et al., 2025; Hristov & Searcy, 2025; Farag, 2026).

Environmental sensitivity has a positive and statistically significant impact on sustainability disclosure (5.402), indicating that firms operating in environmentally sensitive industries disclose significantly more sustainability information than firms in less environmentally intensive sectors. Industries such as energy, chemicals, cement, mining, and manufacturing are exposed to greater environmental risks and therefore experience stronger regulatory oversight and stakeholder expectations. Consequently, these firms employ sustainability reporting as a mechanism to maintain legitimacy and demonstrate accountability for their environmental impacts (Gray et al., 1995; Deegan, 2002; Cho et al., 2006). The finding supports legitimacy theory, which argues that organizations voluntarily expand disclosure when their activities have greater environmental consequences. Previous studies consistently report that environmentally sensitive industries produce higher-quality environmental disclosures because they face greater pressure from regulators, investors, environmental organizations, and local communities (Clarkson et al., 2008; Braam et al., 2016; Abeysekera, 2022; Paridhi et al., 2025; Hoang, 2024). The result is further supported by recent developments in mandatory sustainability reporting, including the European Corporate Sustainability Reporting Directive and the Securities and Exchange Commission of Pakistan's environmental, social, and governance

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

disclosure guidelines, both of which impose greater reporting expectations on environmentally exposed firms (Yoon et al., 2025; Sharma, 2026). These findings also align with studies demonstrating that industry characteristics significantly influence environmental, social, and governance disclosure quality and corporate transparency (Khanchel, 2023; Ozata Canli & Sercemeli, 2026; Alodat & Hao, 2025).

International exposure demonstrates a strong positive and highly significant relationship with sustainability disclosure (14.177), suggesting that firms engaged in international markets provide considerably more extensive sustainability disclosures than domestically oriented firms. Companies operating across international markets must satisfy the reporting expectations of foreign investors, multinational customers, international lenders, and global supply chain partners. These stakeholders frequently require compliance with internationally recognized sustainability reporting standards and environmental, social, and governance practices (Global Reporting Initiative, 2021; International Sustainability Standards Board, 2023). Internationally exposed firms therefore enhance disclosure quality to reduce information asymmetry, improve transparency, and facilitate access to global capital markets (Bernardi & Stark, 2018; Chauhan & Kumar, 2022). Institutional theory further explains that firms become increasingly similar in their reporting practices because of coercive, normative, and mimetic institutional pressures arising from global markets (DiMaggio & Powell, 1983). Previous studies likewise demonstrate that firms with greater international operations adopt higher-quality sustainability reporting to strengthen legitimacy and competitiveness (Li et al., 2026; Tariq, 2025; Mangiuc & Kagitci, 2025). Within emerging markets such as Pakistan, international exposure also accelerates the adoption of environmental, social, and governance reporting practices due to increasing participation in global investment markets and international sustainability initiatives (Haladu et al., 2025; Hassan et al., 2025; Baloch et al., 2025).

Assurance quality records the largest positive coefficient among all explanatory variables (18.712), highlighting that externally assured sustainability reports are associated with substantially higher sustainability disclosure scores. External assurance enhances the credibility, reliability, completeness, and stakeholder confidence in sustainability reports by reducing concerns regarding selective disclosure and greenwashing. These findings strongly support signaling theory, whereby firms use independent assurance to communicate the credibility of their sustainability performance (Mahoney et al., 2013). The result is highly consistent with previous studies demonstrating that assurance improves both disclosure quality and stakeholder confidence (Simnett et al., 2009; Hodge et al., 2009; Cohen & Simnett, 2015; O'Dwyer & Owen, 2005). Recent international regulatory developments further emphasize the growing importance of assurance in sustainability reporting through standards such as the International Standard on Sustainability Assurance 5000 and national assurance guidance issued by the Institute of Chartered Accountants of Pakistan (International Auditing and Assurance Standards Board, 2023; Institute of Chartered Accountants of Pakistan, 2024). Empirical evidence also shows that assured sustainability reports enhance information credibility, improve analyst forecast accuracy, strengthen investment decision-making, and increase stakeholder trust (Accountancy Europe, 2021; Ketterling, 2026; Buboi, 2025; Moreira et al., 2025; Xiao & Shailer, 2022). Consequently, assurance has emerged as one of the most influential mechanisms for improving sustainability reporting quality.

Firm age exhibits a statistically significant negative relationship with sustainability disclosure (–0.136), indicating that older firms disclose relatively less sustainability information than younger firms after controlling for other organizational characteristics. This finding suggests that established firms may rely on traditional reporting practices and exhibit organizational inertia that slows the adoption of evolving environmental, social, and governance reporting frameworks. Institutional change theory argues that organizational routines developed over long periods may hinder rapid adaptation to emerging reporting requirements (Siti-Nabiha & Scapens, 2005). Younger firms, by contrast, often integrate sustainability reporting into their governance structures from inception and respond more rapidly to evolving stakeholder expectations, international reporting standards, and digital reporting practices. Recent regulatory developments, including mandatory sustainability disclosure initiatives in Europe and Pakistan, have encouraged newer firms to align more quickly with international environmental, social, and governance standards (Li et al., 2026; Sharma, 2026). Previous research has similarly suggested that organizational flexibility and responsiveness are important determinants of sustainability reporting quality (Abeysekera, 2022; Naciti et al., 2022; Annesi et al., 2025). The finding also reflects changing investor preferences toward transparent environmental, social, and governance reporting, encouraging younger firms to compete through higher disclosure quality (Farag, 2026; Ogbonnaya, 2026).

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Financial leverage has a negative coefficient (–5.995), but the relationship is statistically insignificant, indicating that debt financing does not significantly influence sustainability disclosure among the sampled firms. Although highly leveraged firms may experience financial constraints that limit voluntary sustainability initiatives, the insignificant coefficient suggests that leverage is not a primary determinant of sustainability disclosure after controlling for firm size, industry characteristics, international exposure, assurance quality, and firm age. One explanation is that increasing regulatory expectations and stakeholder demands encourage firms to maintain sustainability reporting regardless of their financing structure. Similar mixed findings have been documented in the literature, where leverage does not consistently predict sustainability disclosure quality across different institutional environments (Achim et al., 2023; Alodat & Hao, 2025; Ozata Canli & Sercemeli, 2026). Furthermore, recent mandatory environmental, social, and governance disclosure regulations and sustainability reporting standards may have reduced the influence of financial leverage by making sustainability reporting an institutional expectation rather than a discretionary managerial choice (Mangiuc & Kagitci, 2025; Tariq, 2025; Ketterling, 2026). Therefore, the evidence indicates that financial structure alone is insufficient to explain variations in sustainability disclosure practices, whereas organizational characteristics and external institutional pressures remain the dominant drivers.

Table 6: OLS Regression

Predictors	Coefficients	Std. Error	t-Statistic	p-value
Constant (β_0)	-26.916	5.103	-5.274	<0.001***
SIZE	8.137	0.482	16.88	<0.001***
SECTOR	5.402	1.297	4.165	<0.001***
INT_EXP	14.177	1.249	11.348	<0.001***
ASSURANCE	18.712	1.286	14.548	<0.001***
AGE	-0.136	0.042	-3.242	0.001**
LEV	-5.995	3.744	-1.601	0.110 ns

The ordinary least squares (OLS) regression results presented in Table 7 examine the determinants of the four sub-dimensions of sustainability disclosure, namely Environmental, Social, Governance, and Economic disclosure scores. Firm size has a positive and highly significant effect across all four dimensions of sustainability disclosure, namely Environmental, Social, Governance, and Economic disclosure. This finding indicates that larger firms provide more comprehensive sustainability information than smaller firms. Large organizations typically possess greater financial resources, specialized sustainability departments, and stronger governance structures that enable them to implement advanced sustainability reporting practices. In addition, they are subject to greater public visibility and scrutiny from investors, regulators, customers, and other stakeholders, encouraging broader disclosure to maintain organizational legitimacy and strengthen stakeholder confidence. From the perspectives of stakeholder theory and legitimacy theory, larger firms disclose more sustainability information to reduce information asymmetry, maintain their social license to operate, and demonstrate accountability to multiple stakeholder groups (Freeman, 1984; Deegan, 2002; Suchman, 1995). These findings are consistent with previous studies showing that firm size is one of the strongest determinants of sustainability reporting quality (Fifka, 2013; Hahn & Kühnen, 2013; Amran et al., 2014; Braam et al., 2016; Naciti et al., 2022; Achim et al., 2023). Furthermore, internationally recognized reporting frameworks such as the Global Reporting Initiative, International Sustainability Standards Board standards, and integrated reporting principles have further encouraged larger firms to enhance disclosure quality (Eccles & Krzus, 2010; Global Reporting Initiative, 2021; International Sustainability Standards Board, 2023; Chia et al., 2025; Hristov & Searcy, 2025).

Environmental sensitivity exhibits a positive and statistically significant relationship with Environmental, Social, and Governance disclosures, while its influence on Economic disclosure is statistically insignificant. This suggests that firms operating in environmentally sensitive industries provide more extensive disclosures regarding environmental management, stakeholder welfare, and governance practices because they face greater environmental risks and public scrutiny. Companies operating in industries such as energy, chemicals, cement, mining, and manufacturing experience stronger pressure from regulators, environmental organizations, investors, and local communities to demonstrate responsible environmental behavior. Consequently, these firms voluntarily disclose more sustainability information to maintain legitimacy and enhance corporate reputation (Gray et al., 1995; Deegan, 2002; Cho et al., 2006; Suchman, 1995). The findings are consistent with earlier empirical evidence

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

showing that environmentally sensitive industries generally produce higher-quality sustainability reports than firms operating in less environmentally intensive sectors (Clarkson et al., 2008; Braam et al., 2016; Hahn & Kühnen, 2013; Fifka, 2013; Abeysekera, 2022; Paridhi et al., 2025). Moreover, recent regulatory developments, including the Corporate Sustainability Reporting Directive, the Task Force on Climate-related Financial Disclosures recommendations, and Pakistan's Environmental, Social, and Governance Disclosure Guidelines, have intensified reporting expectations for environmentally exposed firms (European Commission, 2022; Task Force on Climate-related Financial Disclosures, 2023; Securities and Exchange Commission of Pakistan, 2024; Yoon et al., 2025; Sharma, 2026). The insignificant relationship with Economic disclosure suggests that economic reporting practices are relatively standardized across industries and are therefore less influenced by environmental sensitivity.

International exposure has a positive and highly significant effect on all four dimensions of sustainability disclosure, indicating that internationally active firms disclose substantially more sustainability information than firms operating primarily within domestic markets. Firms engaged in exports, foreign investment, multinational partnerships, or international capital markets encounter stronger expectations from global investors, foreign regulators, international customers, and multinational supply chains regarding transparency and sustainability performance. Consequently, these organizations adopt internationally recognized sustainability reporting standards to improve credibility, facilitate access to foreign capital, and enhance international competitiveness. Institutional theory explains this behavior through coercive, normative, and mimetic pressures that encourage organizations to conform to globally accepted reporting practices (DiMaggio & Powell, 1983). These findings support previous research demonstrating that internationalization significantly enhances sustainability disclosure quality and Environmental, Social, and Governance transparency (Bernardi & Stark, 2018; Ioannou & Serafeim, 2017; Rosati & Faria, 2019; Kanagaretnam et al., 2022; Lam et al., 2021; Li et al., 2026; Tariq, 2025). Within emerging economies, greater international exposure also encourages firms to align with evolving global sustainability standards such as the Global Reporting Initiative and the International Sustainability Standards Board frameworks, thereby improving disclosure quality and stakeholder confidence (Global Reporting Initiative, 2021; International Sustainability Standards Board, 2023; Haladu et al., 2025; Mangiuc & Kagitci, 2025).

Assurance quality demonstrates a strong positive and statistically significant influence across all sustainability disclosure dimensions, indicating that externally assured sustainability reports are substantially more comprehensive and credible than unaudited reports. Independent assurance improves the reliability, completeness, transparency, and credibility of sustainability disclosures by reducing information asymmetry and increasing stakeholder confidence. Assurance also limits concerns regarding symbolic reporting, selective disclosure, and greenwashing by subjecting sustainability information to independent verification. These findings are consistent with signaling theory, which argues that firms use external assurance to communicate the credibility of their sustainability commitments to stakeholders (Mahoney et al., 2013). Previous empirical studies similarly conclude that assurance significantly enhances disclosure quality, analyst confidence, investor trust, and the perceived reliability of sustainability reports (Simnett et al., 2009; Hodge et al., 2009; O'Dwyer & Owen, 2005; Cohen & Simnett, 2015; Bernardi & Stark, 2018; Zorio et al., 2013; Xiao & Shailer, 2022). Recent international initiatives, including the International Standard on Sustainability Assurance 5000, Pakistan's sustainability assurance guidance, and increasing professional emphasis on independent Environmental, Social, and Governance verification, further reinforce the importance of assurance in improving sustainability reporting practices (International Auditing and Assurance Standards Board, 2023; Institute of Chartered Accountants of Pakistan, 2024; Accountancy Europe, 2021; SGS, 2024; KPMG, 2024; Ketterling, 2026; Buboi, 2025; Moreira et al., 2025).

Firm age exhibits a negative and statistically significant relationship with Environmental, Social, and Governance disclosures, while its effect on Economic disclosure is statistically insignificant. This finding suggests that older firms tend to disclose relatively less sustainability information than younger firms. Established organizations may rely on traditional reporting practices and exhibit organizational inertia, making them slower to adopt evolving sustainability reporting standards and emerging Environmental, Social, and Governance frameworks. In contrast, younger firms often incorporate sustainability reporting into their organizational strategies from an earlier stage, enabling greater responsiveness to changing stakeholder expectations and regulatory developments. Institutional change theory argues that long-established organizational routines frequently delay adaptation to new institutional requirements (Siti-Nabiha & Scapens, 2005). Recent regulatory developments, including the Corporate Sustainability Reporting Directive and Pakistan's Environmental, Social, and Governance disclosure guidelines,

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

have further accelerated the adoption of modern sustainability reporting practices, particularly among organizations with greater organizational flexibility (European Commission, 2022; Securities and Exchange Commission of Pakistan, 2024; Li et al., 2026). These findings are consistent with earlier studies indicating that organizational adaptability, rather than organizational maturity, increasingly determines sustainability reporting quality (Fifka, 2013; Hahn & Kühnen, 2013; Doni et al., 2022; Velte, 2022; Annesi et al., 2025; Farag, 2026). The insignificant association with Economic disclosure suggests that economic reporting remains largely governed by mandatory financial reporting standards rather than firm maturity.

Financial leverage exhibits a negative but statistically insignificant relationship with all four sustainability disclosure dimensions. This finding indicates that debt financing does not significantly influence the extent of Environmental, Social, Governance, or Economic disclosures after controlling for other firm characteristics. Although highly leveraged firms may experience financial constraints that could reduce discretionary sustainability investments, increasing regulatory expectations and stakeholder pressures appear to minimize the influence of capital structure on sustainability reporting decisions. As sustainability disclosure becomes increasingly institutionalized through mandatory reporting frameworks and international reporting standards, organizations are expected to maintain transparent reporting regardless of their financing structure. Previous empirical studies similarly report mixed or insignificant relationships between leverage and sustainability disclosure quality (Fifka, 2013; Hahn & Kühnen, 2013; Ali et al., 2021; Velte, 2022; Achim et al., 2023; Alodat & Hao, 2025; Ozata Canli & Sercemeli, 2026). Moreover, the growing adoption of the Global Reporting Initiative standards, International Sustainability Standards Board standards, the Corporate Sustainability Reporting Directive, and Pakistan's Environmental, Social, and Governance disclosure guidelines suggests that sustainability reporting is increasingly driven by governance requirements and stakeholder expectations rather than financial leverage considerations (Global Reporting Initiative, 2021; European Commission, 2022; International Sustainability Standards Board, 2023; Securities and Exchange Commission of Pakistan, 2024; Tariq, 2025; Ketterling, 2026; Mangiuc & Kagitci, 2025). Consequently, leverage appears to play only a limited role in explaining differences in sustainability disclosure quality compared with organizational resources, international market participation, environmental sensitivity, and independent assurance.

Table 7: Sub-Dimensional Regression Results

Predictors	E_Score	S_Score	G_Score	EC_Score
Constant	−8.948***	−6.667***	−6.286***	−3.514***
SIZE	+2.670***	+2.195***	+2.115***	+0.911***
SECTOR	+1.783**	+1.631***	+1.490***	+0.498 ns
INT_EXP	+4.845***	+3.595***	+3.633***	+1.493***
ASSURANCE	+6.238***	+5.000***	+5.038***	+1.484***
AGE	−0.045*	−0.045***	−0.033*	−0.011 ns
LEV	−2.448 ns	−1.916 ns	−1.481 ns	−0.299 ns
R-squared	0.6135	0.6475	0.6415	0.3342
Adj. R-squared	0.6073	0.6418	0.6357	0.3235
F-statistic	98.67***	114.17***	111.24***	31.20***

CONCLUSIONS

Sustainability reporting has become an essential component of corporate transparency and accountability as regulators, investors, and other stakeholders increasingly demand credible environmental, social, governance, and economic information. Understanding the organizational characteristics that influence sustainability disclosure is therefore important for strengthening reporting quality, improving stakeholder confidence, and supporting sustainable corporate governance. This study examined the determinants of sustainability disclosure among 380 companies listed on the Pakistan Stock Exchange for the financial year 2024 using the Sustainability Disclosure Score Index (SDSI), which integrates environmental, social, governance, and economic disclosure dimensions into a comprehensive reporting measure. The empirical findings demonstrate that firm size, environmental sensitivity, international exposure, and assurance quality significantly enhance sustainability disclosure, whereas firm age negatively influences disclosure quality and financial leverage does not exert a statistically significant effect. Among all explanatory variables, assurance quality, international exposure, and firm size emerge as the strongest determinants, highlighting that institutional credibility, global market participation, and organizational resources

play a more influential role than financing structure in shaping sustainability reporting practices. The sub-dimensional analysis further confirms that these determinants consistently improve environmental, social, governance, and economic disclosures, although environmental sensitivity primarily affects the environmental, social, and governance dimensions, while its influence on economic disclosure remains insignificant. This study makes several important contributions to the sustainability reporting literature. It provides one of the earliest comprehensive empirical examinations of mandatory sustainability reporting in Pakistan following the introduction of the Securities and Exchange Commission of Pakistan's ESG disclosure guidelines. Furthermore, by employing a multidimensional Sustainability Disclosure Score Index rather than a single disclosure proxy, the study offers a more comprehensive assessment of reporting quality across all sustainability pillars. The findings also demonstrate that external institutional mechanisms, particularly independent assurance and international integration, are more influential than several traditional firm-specific characteristics in improving disclosure quality. From a policy perspective, the findings support continued efforts by the Securities and Exchange Commission of Pakistan, the State Bank of Pakistan, and professional accounting bodies to strengthen sustainability assurance, expand reporting guidance, and encourage broader adoption of internationally recognized reporting frameworks. Special attention should be directed toward smaller, domestically oriented firms and industries exhibiting relatively lower disclosure quality to reduce reporting disparities and improve overall corporate transparency. Strengthening assurance requirements and promoting capacity building in sustainability reporting are likely to enhance the credibility, comparability, and usefulness of sustainability information for investors and other stakeholders.

REFERENCES

Abbasi, U. Ali, A, & Audi, M. (2025). Advancing ESG Integration in Stock Market: A Sectoral Study of Sustainability Reporting in Pakistan. *Policy Journal of Social Science Review,* 3(5), 650–665.

Abeysekera, I. (2022). A framework for sustainability reporting. *Sustainability Accounting, Management and Policy Journal*, *13*(6), 1386-1409.

Aburaya, R. (2012). *The relationship between corporate governance and environmental disclosure: UK evidence* (Doctoral dissertation, Durham University).

Accountancy Europe. (2021). *Towards reliable non-financial information across Europe*. Accountancy Europe Publications.

Achim, M. V., Văidean, V. L., Sabau, A. I., & Safta, I. L. (2023). The impact of the quality of corporate governance on sustainable development: an analysis based on development level. *Economic research-Ekonomska istraživanja*, *36*(1), 930-959.

Adel, C., Hussain, M. M., Mohamed, E. K., & Basuony, M. A. (2019). Is corporate governance relevant to the quality of corporate social responsibility disclosure in large European companies? *International Journal of Accounting & Information Management*, *27*(2), 301-332.

Ahmad, S., Audi, A., & Ali, A. (2025). Leaders Versus Laggards: ESG Performance, Valuation Premiums, and the Cost of Capital. *Contemporary Journal of Social Science Review*, *3*(3), 1899-1935.

Ahmed, F. A. (2019). Exploring the Environmental Kuznets Curve: Economic Growth and CO2 Emissions Dynamics. *Journal of Business and Economic Options*, *2*(1), 35-44.

Ali, A., Abbas, N., & Ahmad, K. (2025). Technological Innovation and Green Finance: Catalysts for Sustainable Development in Developing Economies. *Qualitative Research Review Letter*, *3*(1), 46-82.

Ali, A., Agha, S., & Audi, A. (2025). Green Finance and Environmental Outcomes: Evidence from EU Countries. *Journal of Business and Management Research*, *4*(3), 610-629.

Ali, A., Haider, A., & Ismail, S. (2025). Climate Disclosure and Corporate Valuation: Evidence from S&P 500 Companies. *Policy Journal of Social Science Review*, *3*(4), 645–658.

Ali, A., Iqbal, M. A. J., & Irfan, M. (2025). Strategic Corporate Social Responsibility and Financial Performance: Sectoral Evidence and Governance Implications. *Journal of Business and Management Research*, *4*(2), 1053-1069.

Ali, A., Khamisa, M. A., & Rehman, A. (2025). Socioeconomic Determinants of Sustainable Development Goal Performance: A Global Perspective. *Journal of Social Signs Review*, 3(6), 296–318.

Ali, A., Khurram, M. H., & Alam, M. (2025). Green Finance and Sustainable Development Goals: Challenges and Opportunities in Developing Economies. *Policy Journal of Social Science Review*, 3(8), 364–382.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Ali, A., Usman, M., & Ahmad, K. (2025). Environmental Risks and Sovereign Credit Ratings: Evidence from Developed and Developing Economies. *Competitive Research Journal Archive*, *3*(01), 356-370.

Ali, H. Audi, M. M Naveed, A. Ali, (2026). Enterprise Resource Planning–Enabled Data Integration and Decision Support Performance in Smart Manufacturing. *Qualitative Research Review Letter* 4 (2), 142-172.

Ali, S., Rehman, R. U., & Khan, M. A. (2021). Environmental, social, and governance disclosure and firm performance: Evidence from KSE-100 companies. *Pakistan Journal of Commerce and Social Sciences, 15*(3), 640–661.

Alodat, A. Y., & Hao, Y. (2025). Environmental, social and governance (ESG) disclosure and firm performance: moderating role of board gender diversity and sustainability committee. *Sustainable Development*, *33*(1), 636-651.

Altaf, A., & Shahzad, S. (2021). Environmental innovation and sustainability in remanufacturing: A strategic review. *Journal of Policy Options*, *4*(2), 10-21.

Alvi, A. A., & Mudassar, M. (2025). Exploring the Psychological and Environmental Triggers of Impulse Purchases in Retail Markets. *Journal of Policy Options*, *8*(1), 31-42.

Amran, A., Lee, S. P., & Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility on sustainability reporting quality. *Business Strategy and the Environment, 23*(4), 217–235.

Annesi, N., Battaglia, M., Ceglia, I., & Mercuri, F. (2025). Navigating paradoxes: building a sustainable strategy for an integrated ESG corporate governance. *Management Decision*, *63*(2), 531-559.

Anus, M., Audi, A., & Ali, A. (2025). The Dynamics of Budget Deficits: Growth, Governance, And Debt Sustainability in Developing Economies. *Contemporary Journal of Social Science Review*, *3*(2), 2669-2675.

Arshad, R., Audi, M., & Ali, A. (2025). Environmental Disclosure and Financial Performance: Evidence from Environmentally Sensitive Sectors Across Global Markets. *Policy Journal of Social Science Review*, 3(8), 383–399.

Arshi, A., Ali, A., & Audi, M. (2025). Evaluating the Impact of Sustainability Reporting on Financial Performance: The Mediating Role of ESG Performance and the Moderating Role of Firm Size. *Bulletin of Business and Economics (BBE)*, *14*(2), 42-54.

Audi, M., & Yu, H. (2024). Strategic value creation through corporate social responsibility adoption for sustainable financial performance. *Journal of Policy Options*, *7*(4), 14-21.

Audi, M., Ali, A., & Poulin, M. (2026). Modelling Urban Expansion, Energy Consumption, and Environmental Sustainability: The Moderating Role of Environmental Taxes in Developing Countries. *Sustainability*, *18*(9), 4473.

Audi, M., ul Abideen, S. Z., & Ali, A. (2026). Investor Sentiment, Market Dynamics, and Stock Returns: Evidence from a Global Financial Markets. *Bulletin of Business and Economics (BBE)*, *15*(1), 12-23.

Azzahra, V., & Taqwa, S. (2026). Pengaruh Enviromental Social And Governance Dan Proporsi Dewan Komisaris Independen Terhadap Nilai Perusahaan:(Studi Empiris Pada Perusahaan Manufaktur 2022-2024). *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha*, *17*(02), 569-583.

Baloch, S. M., Rehman, T. U., & Ali, Y. (2025). From crisis to resilience: Climate change, environmental policy, and sustainable adaptation in Pakistan. *Journal of Applied Linguistics and TESOL (JALT)*, *8*(2), 908-918.

Batool, A., Ali, A., & Audi, M. (2025). Assessing the Impact of Sustainability Initiatives on Greenhouse Gas Emissions in Sweden and Finland. *Annual Methodological Archive Research Review*, *3*(6), 150-176.

Bernardi, C., & Stark, A. W. (2018). Environmental, social, and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *The British Accounting Review, 50*(1), 16–31.

Braam, G. J. M., de Weerd, L. U., Hauck, M., & Huijbregts, M. A. J. (2016). Determinants of corporate environmental reporting: The importance of environmental performance and assurance. *Journal of Cleaner Production, 129*, 724–734.

Buboi, A. (2025). Determinants of ESG Reporting Difficulty in the Absence of Global Standardization. *Acta Universitatis Danubius. Œconomica*, *21*(3), 59-82.

Chauhan, Y., & Kumar, S. B. (2022). Does accounting comparability alleviate the informational disadvantage of foreign investors? *International Review of Finance, 22*(1), 136–150.

Chia, H. S., Muhammad Hisham, M. H., & Voon, K. J. S. (2025). Fostering transparency, driving value creation and advancing SDGs: A review of integrated reporting. *International Journal of Service Management and Sustainability (IJSMS)*, *10*(1), 121-135.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Cho, C. H., Patten, D. M., & Roberts, R. W. (2006). Corporate political strategy: An examination of the relation between political expenditures, environmental performance, and environmental disclosure. *Journal of Business Ethics, 67*(2), 139–154.

Choudhary, S., Ali, A., & Audi, M. (2026). *The Relations between Internal Controls, Corporate Governance, and the Credibility of Post-Issuance Disclosures of Green Finance: Evidence using Issuer-Level Panel Data*. University Library of Munich, Germany.

Churet, C., & Eccles, R. G. (2014). Integrated reporting, quality of management, and financial performance. *Journal of Applied Corporate Finance, 26*(1), 56–64.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society, 33*(4–5), 303–327.

Cohen, J. R., & Simnett, R. (2015). CSR and assurance services: A research agenda. *Auditing: A Journal of Practice & Theory, 34*(1), 59–74.

Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures—A theoretical foundation. *Accounting, Auditing & Accountability Journal, 15*(3), 282–311.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160.

Doni, F., Corvino, A., & Martini, S. B. (2022). Understanding sustainability disclosure in a mandatory reporting context: Evidence from Italian listed companies. *Sustainability, 14*(5), 2644.

Eccles, R. G., & Krzus, M. P. (2010). *One report: Integrated reporting for a sustainable strategy*. John Wiley & Sons.

European Commission. (2022). *Directive (EU) 2022/2464 of the European Parliament and of the Council on corporate sustainability reporting (CSRD). Official Journal of the European Union.*

Farag, M. I. H. (2026). Sustainability as a management strategy: Integrating environmental, social, and governance practices into business administration. *Management Science Advances*, *3*(1), 20-44.

Farooq, F., Jadoon, A. K., Audi, M., & Ali, A. (2026). Artificial Intelligence Controls and Earnings Management Intention: The Mediating Role of Ethical Decision-Making. *Policy Journal of Social Science Review*, *4*(4), 391-411.

Farooq, M. U. (2026). Climate change and policy paralysis in Pakistan. *Journal of Social Systems and Policy Analysis*, *3*(1), 26-36.

Fatima, M., Audi, M., & Ali, A. (2026). Nexus Among Financial Risks and Financial Performance: A Moderating Role of Corporate Governance. *Policy Journal of Social Science Review*, *4*(1), 295-322.

Fayou, H. (2026). Foreign Capital Inflows, Trade Openness, and Sustainable Growth Dynamics in Morocco. *Journal of Business and Economic Options*, *9*(1), 1-15.

Fifka, M. S. (2013). Corporate responsibility reporting and its determinants in comparative perspective: A review of the empirical literature and a meta-analysis. *Business Strategy and the Environment, 22*(1), 1–35.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman Publishing.

Global Reporting Initiative. (2021). *GRI universal standards 2021*. Global Reporting Initiative.

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal, 8*(2), 47–77.

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production, 59*, 5–21.

Haladu, A., Bin-Nashwan, S. A., Yusuf, A., & Yaro, N. A. (2025). Lighting the path to sustainable development: the impact of sustainability disclosure, corporate tax, and economic growth. *World Development Perspectives*, *37*, 100655.

Hassan, B., Qadir, A., & Ahmad, R. I. (2025). Climate Change and Water Scarcity: Adaptation and Mitigation Strategies in Pakistan. *International Journal of Social Sciences Bulletin*, *3*(10), 1-23.

Hoang, H. V. (2024). Environmental, social, and governance disclosure in response to climate policy uncertainty: Evidence from US firms: Huy Viet Hoang. *Environment, Development and Sustainability*, *26*(2), 4293-4333.

Hodge, K., Subramaniam, N., & Stewart, J. (2009). Assurance of sustainability reports: Impact on report users' confidence and perceptions of information credibility. *Australian Accounting Review, 19*(3), 178–194.

Hristov, I., & Searcy, C. (2025). Integrating sustainability with corporate governance: a framework to implement the corporate sustainability reporting directive through a balanced scorecard. *Management Decision*, *63*(2), 443-467.

Institute of Chartered Accountants of Pakistan. (2024). *Sustainability assurance guidance for chartered accountants in Pakistan*. Institute of Chartered Accountants of Pakistan.

International Auditing and Assurance Standards Board. (2023). *International standard on sustainability assurance 5000*. International Auditing and Assurance Standards Board.

International Sustainability Standards Board. (2023). *IFRS S1 general requirements for disclosure of sustainability-related financial information; IFRS S2 climate-related disclosures*. IFRS Foundation.

Ioannou, I., & Serafeim, G. (2017). The consequences of mandatory corporate sustainability reporting. In *The Oxford handbook of corporate social responsibility* (pp. 452–489). Oxford University Press.

Javed, H., Audi, M., & Ali, A. (2026). Corporate Governance and Sustainability Disclosure: An Empirical Analysis of Environmental Reporting Practices.

Kanagaretnam, K., Lobo, G. J., & Whalen, D. J. (2022). Does voluntary adoption of the Task Force on Climate-related Financial Disclosures improve the quality of climate-related disclosures? *Journal of Business Finance & Accounting, 49*(7–8), 1209–1243.

Karim, A., & Habibullah, F. (2026). Governance Diversity, Macroeconomic Conditions, and Firm Value: A Panel Analysis of Malaysian Firms. *Journal of Business and Economic Options*, *9*(1), 43-58.

Karim, D., Audi, M., & Ali, A. (2026). *The Role of Artificial Intelligence in Shaping Skill Requirements within the Accounting Profession* (No. 129018). University Library of Munich, Germany.

Ketterling, C. I. (2026). From voluntary CSR to binding ESG frameworks: a legal perspective on sustainability disclosure standards. *Future Business Journal*, *12*(1), 95.

Khalid, U., Ali, A., & Audi, M. (2025). Understanding Borrowing Behaviour in the EU: The Role of Mobile Payments, Financial Literacy, and Financial Access. *Annual Methodological Archive Research Review*, *3*(5), 41-66.

Khan, H. U. Z., & Bhutto, N. A. (2022). Capital market development and ESG disclosure in Pakistan: An institutional perspective. *South Asian Journal of Business Studies, 11*(4), 503–521.

Khan, M. S., Audi, M., & Ali, A. (2025). Foreign Direct Investment, Financial Development, and Sustainable Growth: Empirical Evidence from Developing Countries. *Journal of Social Signs Review*, 3(8), 189–211.

Khan, M. U., & Audi, M. (2026). Financial Reporting Quality, Audit Quality, and Firm Performance: Evidence from Pakistani Listed Firms. *MPRA Paper*, (129173).

Khan, R., & Ullah, B. (2020). Examining the impact of firm sustainability practices on firm growth: Evidence from the United States. *Journal of Policy Options*, *3*(1), 11-25.

Khanchel, I. (2023). ESG disclosure and firm performance: Does the disclosure quality matter? *Social Responsibility Journal, 19*(3), 557–576.

KPMG. (2022). *Big strides but big gaps: KPMG survey of sustainability reporting 2022*. KPMG International.

KPMG. (2024). *Demystifying ESG disclosures*. KPMG Pakistan.

Lam, J., Liao, S., & Luo, J. (2021). Mandatory ESG disclosure and investment efficiency: Evidence from the China Securities Regulatory Commission. *Pacific-Basin Finance Journal, 70*, 101671.

Li, J., Xie, Y., & Dong, L. (2026). From voluntary to mandatory: the bibliometric and meta-analytical insights into effects of ESG disclosure practices and regulations. *Business Strategy and the Environment*, *35*(1), 1387-1402.

Loh, L., Thomas, T., & Wang, Y. (2017). Sustainability reporting and firm value: Evidence from Singapore-listed companies. *Sustainability, 9*(11), 2112.

Longston, P., Ali, A., & Audi, A. (2025). Environmental, Social & Governance Disclosures and Corporate Financial Performance: Evidence from Selected Asian Economies. *Pakistan Journal of Social Science Review*, *4*(1), 22–49.

Mahoney, L. S., Thorne, L., Cecil, L., & LaGore, W. (2013). A research note on standalone corporate social responsibility reports: Signaling or greenwashing? *Critical Perspectives on Accounting, 24*(4–5), 350–359.

Majeed, R., Audi, M., & Ali, A. (2026). Environmental, Social, and Governance Reporting and Financial Reporting Quality in Emerging Markets. *Policy Journal of Social Science Review*, *4*(3).

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Mangiuc, M. D., & Kagitci, M. (2025). CSRD as a paradigm shift in sustainability reporting: From voluntary practice to legal requirement. *Amfiteatru Economic*, *27*(70), 1193-1208.

Marquis, C., & Qian, C. (2014). Corporate social responsibility reporting in China: Symbol or substance? *Organization Science, 25*(1), 127–148.

Mehdi, H., Ali, A., & Audi, M. (2025). Tourism, Sustainability and Growth: An Empirical Investigation Of Long-Run Economic Impacts In Pakistan. *Contemporary Journal of Social Science Review*, *3*(1), 1479-1493.

Moreira, A., Rodrigues, A. C., & Ferreira, M. R. (2025). Where is human resource management in sustainability reporting? ESG and GRI perspectives. *Sustainability*, *17*(7), 3033.

Murat, M. (2026). Digitalisation and Economic Growth: Evidence from Leading E-Commerce Economies. *Journal of Business and Economic Options*, *9*(1), 70-78.

Muslu, V., Mutlu, S., Radhakrishnan, S., & Tsang, A. (2019). Corporate social responsibility report narratives and analyst forecast accuracy. *Journal of Business Ethics, 154*(4), 1119–1142.

Naciti, V., Cesaroni, F., & Pulejo, L. (2022). Corporate governance and sustainability: A review of the existing literature. *Journal of Management and Governance*, *26*(1), 55-74.

Naeem, A., Ali, A., Naveed, M., & Audi, M. (2026). Human Capital, Open Innovation, and Digital Engagement: Determinants of Innovation Performance in Micro-Enterprises. *Journal of Business and Management Research*, *5*(1), 1047-1069.

Naeem, H. Ali, A., & Audi, M. (2025). The Impact of Financial Stability on Environmental Degradation: Mediating Role of Green Investment and Moderating Role of Environmental Awareness. *Policy Journal of Social Science Review*, *3*(1), 448–469.

Naseer, M., Ali, A., & Audi, M. (2026). Autonomous Artificial Intelligence Agents in Decentralized Finance: Governance, Coordination, and Value Creation. *Bulletin of Business and Economics (BBE)*, *15*(1), 24-34.

Niaz, A., Audi, M., & Ali, A. (2025). Operational outcomes of mergers and acquisitions: evidence from PSX-listed firms. *Contemporary Journal of Social Science Review*, *3*(1), 753-763.

Nour, O. M. (2026). Renewable Energy, Rural Development, and Emission Mitigation: Evaluating Jatropha Biodiesel Systems. *Journal of Policy Options*, *9*(1), 29-39.

Ntim, C. G., Soobaroyen, T., & Broad, M. J. (2017). Governance structures, voluntary disclosures and public accountability: The case of UK higher education institutions. *Accounting, Auditing & Accountability Journal, 30*(1), 65–118.

O'Dwyer, B., & Owen, D. (2005). Assurance statement practice in environmental, social and sustainability reporting. *The British Accounting Review, 37*(2), 205–229.

Ogbonnaya, C. (2026). *Sustainable Human Resource Management: Integrating People Management with Social Responsibility*. Routledge.

Ozata Canli, S. N., & Sercemeli, M. (2026). The impact of environmental, social and governance (ESG) disclosures on corporate financial performance in the energy sector. *International Journal of Energy Sector Management*, *20*(2), 423-447.

Pakistan Stock Exchange. (2025). *PSX 2025 market statistics and sector performance report*. Pakistan Stock Exchange.

Paridhi, Saini, N., & Shri, C. (2025). Environmental, social, and governance reporting adoption factors for sustainable development at the country level. *Environment, Development and Sustainability*, *27*(3), 8003-8042.

Peel, M. J. (2022). Auditor quality and ESG reporting: The moderating role of mandatory sustainability disclosure. *Journal of International Accounting Research, 21*(2), 63–91.

Qaisrani, M. A., Audi, A., & Ali, A. (2025). Perceptions of ERM Adoption Across Industries: Firm Size, Regulation, And Maturity Effects. *Journal for Current Sign*, *3*(3), 917–941.

Radas, A. (2023). Inclusive business models as drivers of sustainable growth and social progress. *Journal of Policy Options*, *6*(3), 9-14.

Rahman, M., & Chowdhury, H. (2025). Sustainability, Digital Transformation, and Firm Outcomes: The Mediating Role of Digitalization. *Journal of Policy Options*, *8*(3), 30-44.

Rauf, S., Audi, M., & Ali, A. (2026). *Liquidity Risk Management in the Perspective of Asset Quality, Loan Quality & Governance: A Case Study of Pakistan Banking Industry*. University Library of Munich, Germany.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Rehman, M., Aslam, U., & Iqbal, A. (2023). Corporate governance and sustainability reporting: Evidence from Pakistan's regulated industries. *Corporate Governance: The International Journal of Business in Society, 23*(6), 1321–1345.

Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society, 17*(6), 595–612.

Rosati, F., & Faria, L. G. D. (2019). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production, 215*, 1312–1326.

Securities and Exchange Commission of Pakistan. (2024). *SECP issues ESG disclosure guidelines and strengthens the code of corporate governance*. Securities and Exchange Commission of Pakistan.

Securities and Exchange Commission of Pakistan. (2024). *Sustainability reporting requirements for listed companies*. Securities and Exchange Commission of Pakistan.

SGS. (2024). *ESG disclosures and sustainability report assurance*. SGS.

Sharma, R. (2026). Unveiling the effects of the Corporate Sustainability Reporting Directive (CSRD) on company sustainability reporting practices: A case of German companies. *Sustainability Accounting, Management and Policy Journal*, *17*(3), 922-960.

Siddique, A., Ali, A., & Audi, M. (2025). Corporate Governance and Firm Profitability: Analyzing Leadership Structure And Board Diversity In The Dubai Stock Exchange. *Contemporary Journal of Social Science Review*, *3*(2), 1166-1176.

Siew, R. Y. J. (2015). A review of corporate sustainability reporting tools (SRTs). *Journal of Environmental Management, 164*, 180–195.

Simnett, R., Vanstraelen, A., & Chua, W. F. (2009). Assurance on sustainability reports: An international comparison. *The Accounting Review, 84*(3), 937–967.

Siti-Nabiha, A. K., & Scapens, R. W. (2005). Stability and change: An institutionalist study of management accounting change. *Accounting, Auditing & Accountability Journal*, *18*(1), 44–73.

State Bank of Pakistan. (2021). *Green banking guidelines for banks and development finance institutions*. State Bank of Pakistan.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*(3), 571–610.

Tariq, A. (2025). Mandatory sustainability reporting and the disclosure-performance gap: insights from the EU directive. *Meditari Accountancy Research*, *33*(7), 536-567.

Task Force on Climate-related Financial Disclosures. (2023). *Task Force on Climate-related Financial Disclosures: Final status report*. Financial Stability Board.

Tausch, D., & Liu, H. (2026). Sustainability, Governance, and Value Creation: Evidence from Financial and Non-Financial Firms in South Africa. *Journal of Business and Economic Options*, *9*(1), 16-29.

Tausch, D., & Liu, H. (2026). Sustainability, Governance, and Value Creation: Evidence from Financial and Non-Financial Firms in South Africa. *Journal of Business and Economic Options*, *9*(1), 16-29.

Urban, D., & Radas, S. (2021). Managing Cruise Tourism for Sustainable Development in Dubrovnik: Revisited. *Journal of Policy Options*, *4*(4), 1-8.

Velte, P. (2022). Determinants and consequences of non-financial disclosure quality. *Journal of Applied Accounting Research, 23*(1), 229–263.

World Bank. (2023). *Pakistan development update: Restoring fiscal sustainability*. World Bank Group.

Xiao, X., & Shailer, G. (2022). Stakeholders' perceptions of factors affecting the credibility of sustainability reports. *The British Accounting Review, 54*(1), 101002.

Yoon, B., Choi, Y., & Kim, G. H. (2025). Regulatory trends in climate disclosure: A focus on implications for industrial transition. *Journal of Cleaner Production*, *521*, 146087.

Zahid, H. Ali, A., & Audi, M. (2025). Cryptocurrency Regulation and Financial Disclosure: Cross-Jurisdictional Evidence on Corporate Reporting Practices. *Bulletin of Management Review*, *2*(2), 348–377.

Zamir, S. Q., Audi, M., & Ahmad, K. (2026). Corporate Governance, IFRS Compliance, and Real Earnings Management: Evidence from GCC Capital Markets. *Bulletin of Business and Economics (BBE)*, *15*(2), 11-26.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Zohaib, M. Naveed, M. A. Ali, M. Audi, (2026). Enterprise Resource Planning Implementation Quality and Corporate Financial Performance: Evidence from South Asian Firms. *Bulletin of Management Review*, 3 (2), 340-377.

Zorio, A., García-Benau, M. A., & Sierra, L. (2013). Sustainability development and the quality of assurance reports: Empirical evidence. *Business Strategy and the Environment, 22*(7), 484–500.

Zumente, I., & Bistrova, J. (2021). ESG importance for long-term shareholder value creation: Literature vs. practice. *Journal of Open Innovation: Technology, Market, and Complexity, 7*(2), 127.