Impact of Corporate and Sustainability Reporting Quality on Firm's Performance: Pakistan's Perspective

Zahra Ashfaque Nizami* Nauman J. Amin** Saqib Sharif***

Abstract

Corporate sustainability reporting (CSR) is an essential component of corporate governance. This study examines the effect of corporate sustainability reporting on firm performance. The research examines the quality of disclosures for corporate sustainability practices and their implications for operating, financial, and market performance, as well as the holding period return of the stocks. A scoring index is constructed based on the hierarchical awards announced for best corporate and sustainability reports, published jointly by the Institute of Chartered Accountants, Pakistan (ICAP) and the Institute of Cost and Management Accountants, Pakistan (ICMAP). Empirical evidence indicates that the quality of disclosures and reporting related to Corporate Sustainability Practices has an insignificant effect on corporate performance in the context of Pakistan. The evidence can be ascribed to determinants such as economic and political instability, lack of commitment by boards and top management team, limited stakeholder engagement and over-investment in ESG initiatives. To effectively navigate the unique challenges associated with Pakistan, development of tailor-made indigenous framework is required, to facilitate corporate transparency in the form of CSR / ESG initiatives' reporting that can improve firm valuation.

Keywords: Corporate sustainability reporting (CSR); quality disclosures; operating performance; financial performance; market performance; stock price holding returns; emerging economy; best corporate and sustainability report awards; Pakistan.

JEL Classification: G10, G32, M14

1. Introduction

"When sustainability is viewed as being a matter of survival for your business, I believe you can create massive changes." Cameron Sinclair (Architect, humanitarian & Innovator).

*Student MS Department of Finance, IBA Karachi, Pakistan. Email: z.nizami.23465@khi.iba.edu.pk
**Assistant Professor Department of Finance, IBA Karachi, Pakistan. Email: namin@iba.edu.pk (Corresponding Author)
***Associate Professor Department of Finance, IBA Karachi, Pakistan. Email: ssharif@iba.edu.pk

Corporate sustainability is grounded in a firm's value system and its commitment to conducting business with a values-based approach. It's argued that reporting of social and environmental aspects creates a shared value and serves as a payoff for their usage of the scarce economic resources (Mobus, 2005). Moreover, the pursuit of sustainable development necessitates active stakeholder participation, which depends on transparent reporting and effective communication of sustainability-related activities.

Hence, in compliance with reporting of daily operations, reporting of socio-economic and environmental effects incorporated in the business strategies is another major requirement these days (Amran & Ooi, 2014). The main aim of publicly reporting the sustainability development goals and corporate social responsibility measures taken by the corporations is to gain social acceptance (Wilmshurst & Frost, 2000).

To reduce divergence of opinion from its stakeholders, firms maintain congenial compatibility between business activities and the social suppositional reckoning just like the assurance of their legal, ethical, and economic boundaries. Therefore, to legitimize the business activities for their intervener groups, corporations and businesses maintain their image as socially responsible citizens towards the society to offset the use of economic resources for their business operations (Fernando & Lawrence, 2014). Effectively managing corporate sustainability requires systematically addressing economic, environmental, and clearly communicating relevant issues and mitigation efforts to stakeholders.

In 1970s, terms like 'assessing, quantifying, tracking, and disclosing socioeconomic impacts of corporate activities were used to define the tenacities intended for internal management and reporting for external stakeholders of the business (Epstein et al., 1976). However, 1980s witnessed reduced motivation with recession & unemployment, shifting stakeholder's focus more towards economy and wealth maximization concerns to attract investors. As a result, market-oriented policies emerged as the the center of attention rather than the social and environmental reporting factors (Meinolf et al., 1986). In the late 1980s, push from Non-Governmental Organizations (NGOs), led to the trend of "publishing separate environmental reports". A Survey was conducted by Klynveld Peat Marwick Goerdeler (KPMG) every three years, with the first edition released in 1993, involving 5,200 companies in 52 countries that reported on their corporate social responsibility and environmental practices (KPMG, 2011).

This rise in sustainability reporting gained prominence as a credible source of information for research and evaluation, aided by the publication of various environmental and corporate responsibility reports. Moreover, ranking and reporting competitions were subjected to these reports specifically because they reflected current reporting developments. These rankings aim to improve sustainable reporting quality, as they often include recommendations and suggestions that help further to enhance it (Herzig & Schaltegger, 2006). Globally and in Pakistan, ranking systems and award initiatives by Association of Certified Chartered Accountants (ACCA),

Institute of Chartered Accountant of Pakistan (ICAP), South Asian Federation of Accountants (SAFA,) and Institute of Cost and Management Accountant (ICMAP) have driven improvements in transparency and accountability.

The ICAP & ICMAP jointly have been giving "Best Corporate and Sustainability Report Awards" (BCSRA) to Pakistani firms and winners are then nominated for the international awards held by the South Asian Federation of Accountants (SAFA). There is a distinct section for Non-Profit Organizations (NPOs), however, they are beyond the scope of this research. Organizations are recommended to complete the self-evaluation form available on their respective website.
The Awards are granted in the following sectors:

1. Banks
2. Insurance
3. NBFIs & Mutual Funds
4. Chemicals & Fertilizers
5. Cement
6. Sugar
7. Engineering & Autos
8. Fuel & Energy
9. Textile
10. FMCG
11. Pharmaceuticals
12. NPOs
13. Other

The business leaders can be disciplined for the damaging impact of their actions on the overall society, workers, and the environment. The accounting crimes and staff abuse ultimately affect the company's soundness, evaluation, public opinion, and confidence (Ehsan et al., 2018). A firm's sole focus on wealth maximization has several detrimental repercussions on society, especially in a developing country like Pakistan. However, anecdotal evidence suggests businesses don't give much importance to environmental issues in Pakistan.

In order to keep up with the constantly varying demands of consumers, suppliers and regulatory agencies, markets have become more competitive. The effect of sustainable standards reporting on firm's financial performance has received a lot of attention in recent years, and it continues to do so in today's business landscape. Enhancing corporate social responsibility plans and converting businesses to care about social and environmental issues are critical requirements to perform and contribute to future markets. In developing nations like Pakistan, few studies have been conducted in this area. Hence responsible reporting and how it affects business performance in Pakistan requires further exploration.

This study evaluates how the quality of corporate sustainability reporting (CSR) influences various aspects of firm performance in Pakistan. It explores whether CSR impacts operating, financial, and market performance, and whether firms with higher-quality CSR disclosures earn better returns. The aim is to offer a thorough understanding of how tangible and transparent sustainability practices influence firm value across multiple performance dimensions.

The primary contribution of our research is to provide insights and empirical evidence that can advise both corporate practices and policy considerations in Pakistan. As sustainability

reporting gains prominence, the conclusions of this study can guide businesses in aligning their strategies with sustainability goals, fostering a more transparent and responsible corporate environment.

Furthermore, the research contributes to the academic discourse by filling the existing gaps in the literature in the interplay between CSR reporting quality and different dimensions of firm performance, specifically tailored to the Pakistani business setting.

2. Literature Review

The publications by firm and ranking, drew the attention of academia towards the impactful link between sustainability disclosures and profitability (Chochran & Wood, 1984). It is believed that socially responsible companies contribute more towards the creation of wealth and economic and social value in the long term. Beck et al. (2018) tried to demonstrate a relationship between organization's performance and its Corporate Social Responsibility (CSR) activities and found a significant link between the two, predicated on the Global Reporting Initiative (GRI) Framework. Raza et al. (2021) reported a positive correlation between stock price and CSR disclosures, which attract investors and help in setting up the industry trends, validating the work of Clarkson et al. (2013). Buallay (2020) examined the effect of sustainability disclosures and firm's performance with relative analysis between the manufacturing and banking sector and found that the financial performance of the manufacturing sector is positively impacted by implementation of Environmental, Social and Governance (ESGs) issues in the corporate models. Al Hawaj and Buallay (2022) documented that the influence of sustainability reporting on firm performance varies within industries. In the context of Pakistan, regulatory and economic environment might dilute relationships observed elsewhere. Fahad and Busru (2020) examined the effect of disclosing corporate accountability measures and firms' performance for Indian firms and reported that companies that actively report their corporate sustainability achieve better shareholders' wealth maximization goals than those that do not report. Arayssi et al. (2016) studied the implications of women directors on corporate board (WDOCB) and reported a positive effect of WDOCB on the ESG-performance and financial outcomes, yielding increased risk-adjusted and buy-and-hold abnormal returns while simultaneously lowering firm risks.

Khan et al. (2021) investigated two dimensions in the case of Pakistan; in determining the effect of the environmental part of sustainability on firm's financial performance and the mediation of environmental sustainability (ES) in relation to financial performance and integrated management strategies (IMS) of a firm by implementation of the GRI Framework. The results revealed that both ES and IMS have a positive influence on the financial performance of firms and ES mediates the link between IMS and financial performance. Weak CSR policies in pursuit of profits may only cause externalities, and according to Bagh et al. (2017) CSR is vital for financial performance in Pakistan's banking sector. Masud et al. (2018) studied the effects of reporting corporate governance activities by the firms in Bangladesh, India, and Pakistan using the GRI

Database and documented that most of sustainability indicators have a significant positive impact on firms' performance. Moving across the different sectors, researchers tested this theory for the financial sector as well. Szegedi et al. (2020) studied the financial sector firms of Pakistan and the results indicated that these disclosures helped the banking sector to improve its accounting-based financial performance. Considering the evidence in the context of developing countries, any relationship between sustainability reporting and performance may be weakened as corporate governance regulations and its enforcement may be weak. There might not even be any pressure from stakeholders to enforce due to lack of literacy on sustainability or governance related issues.

Adding to the extant literature about sustainable disclosure and financial returns, (Chen et al., 2015) showed a significant positive relationship relating to social and financial performance in manufacturing firms using GRI indicators and financial metrics. Laskar (2018) empirically demonstrates that corporate sustainability reportage exerts a direct influence on firm performance in Asia. The study reveals that firms engaging in transparent disclosure of sustainability practices achieve superior financial outcomes, improved firm reputation, and stakeholder ties, highlighting the key role of ESG reporting in supporting long-term economic success. Carvajal and Nadeem (2023) suggest that only financially significant ESG disclosures, which may directly be linked to business value, typically enhance performance in developed nations like New Zealand. However, such disclosures are sometimes more symbolic than practical in the context of developing countries like Pakistan, hence a strong relationship may not be observed.

From our review of the literature, few studies have examined the association between sustainability reporting and firms' performance in Pakistan. Hongming et al. (2020) examined a sample of 50 firms on 42 metrics related to environmental, social, and health & safety calculated a sustainability reporting index. The results demonstrated the positive impact of all three indices on business performance. Awan et al. (2017) formed a link between business stakeholders and sustainable supply chain practices & sustainable performance, and concluded that these play a vital function in increasing the financial base of the manufacturing industry in Pakistan. Using Blau's Index, seven-dimensional estimates were used to approximate the board diversity, besides, three financial performance indicators were used, and a relationship was drawn between board diversity and CSR information quality on a sample of 57 firms of Pakistan. The outcome confirmed a sustainable advantage to well-diversified firms in terms of their board of directors and national diversities promoting the CSR information, which has a positive impact on firms' performance. Khan (2019) used content analysis techniques and examined the banking sector of Pakistan for the existence of a correlation between corporate sustainability practices and financial performance, and found it to be a positive relationship. He concluded that disclosure of sustainable reporting augments the profit yields of the banks and other financial institutions. Murtaza et al. (2014) studied the food sector of Pakistan and concluded that CSR disclosures tend to enhance the public opinion about the firm in the client's mind, hence promising higher benefits. Malik and Kanwal (2018) conducted content analysis of the 10 annual reports for pharmaceutical companies of Pakistan and observed an increasing trend towards disclosing the CSR activities annually. Using brand equity as a mediator, they found a significant relationship between CSR disclosures and financial yields.

Zhang et al. (2018) examined the Chinese financial market to study whether sustainability commitment affects stock return volatility. Their study finds that firms with higher levels of sustainability engagement tend to exhibit lower stock return volatility. This suggests that sustainability initiatives can reduce financial market uncertainty by signaling stable and responsible corporate behavior. The results highlight the potential of sustainability practices to contribute to market stability, particularly in emerging markets like China, where such engagement may build investor confidence and mitigate risks associated with volatile market conditions. Tasnia et al. (2020) reported that a positive relationship exists between CSR activities and stock price volatility in the US banking sector. This depicts that the major owners of the US banks do not focus on the CSR activities due to the excessive costs of implementation of CSR. Their study also focuses on the link between tax payments and stock price volatility, which validates the general taxpaying theory, that is, when tax rates increase the shareholders swap the market in which they are investing to avoid increased tax payments. Despite this, there is no substantial evidence linking CSR activities to tax payments.

Cho et al. (2013) investigated the effect of CSR performance on information asymmetry and found CSR to be a reducing factor for information asymmetry. However, negative CSR performance lowers the information asymmetry much more than positive CSR. They also reported that the negative association between CSR and liquidity, as measured by bid-ask spread, lower for firms with high institutional investor levels relative to those with low levels. This suggests that better informed investors may exploit their CSR information advantage. Overall, CSR performance positively affects investors by reducing information asymmetry, and regulatory action may be necessary to mitigate adverse choice for less informed investors. Xu and Liu (2018) conducted an event study on Chinese listed firms to study the role of CSR disclosures in controlling the information asymmetry in the Chinese stock market, i.e., the role of voluntary CSR disclosures made by these firms and its effect on share price volatility and liquidity. Results showed that the share price volatility decreases in the month of disclosure but increases for the following three months. The same goes for liquidity, it increases in the first month and then decreases. They classified the CSR Disclosures into two; soft disclosures are qualitative, non-quantifiable information about corporate social responsibility (CSR), including narratives on a company's ethical commitments and sustainability goals. In contrast, hard disclosures consist of quantifiable CSR data, such as environmental impact metrics and financial investments, providing tangible evidence for stakeholders to assess firm performance and documented that hard disclosures better control and cause a reduction in information asymmetry as compared to soft disclosures.

Another scenario-based experimental study was conducted by Ferreira et al. (2010) on consumer pricing patterns in relation to CSR disclosures concluded that consumers are prepared to pay an additional 10% for similar product offerings of a socially responsible firm. Hence CSR activities of a firm influence the customer buying patterns directly. For US firms, Harjoto and Jo (2015) exploited CSR intensities with analyst's earnings forecast variability, cost of equity capital, the stock price returns volatility, and the intrinsic value of the firm. The study depicted

that the intensities in CSR reduced the earnings predicted distribution, cost of equity capital, and return instability; nevertheless, it increased the firms' value. However, the effect of CSR intensities reduces for the firm value with better accounting policies and good quality disclosures. An international study on the textile sector was conducted to investigate the effect of firms' environmental, social, and governance (ESG) performance on their stock price volatility and concluded an inverse relationship between the two i.e., it reduces if the firm performs better in its ESG estimates and vice versa (Shakil, 2020).

As far as can be ascertained from existing evidence, only some studies have dealt with the existence of an association between sustainable reporting by a firm and its effect on stock price volatility, especially from a Pakistani perspective, however, the works of Hunjra et al. (2020) cannot be ignored. They used the Generalized Method of Moments for data analysis on 353 firms from the manufacturing sectors of India and Pakistan and observed that the firms which report their sustainable development activities rigorously are less exposed to stock price crash risk. They also concluded that the ownership of the management in the company has a positive impact on the price crash risk, board size and Chief Executive Officer (CEO) duality has a negative impact on this crash risk.

Chang et al. (2018) examined how the decision-making ability, regarding CSR engagement, of the managers is affected by the liquidity condition of the stock. They stated a statistically significant negative relationship between stock liquidity and CSR performance engagement by the firms deriving a lower CSR rating for highly liquid stocks. Another study in MENA emerging markets by Akrout and Ben Othman (2016) links higher levels of environmental disclosure with increased stock market liquidity, indicating that transparent environmental practices can boost investor confidence and participation. Focusing on the liquidity risk of a firm, Zhao et al. (2021) defined liquidity risk as the connection between market-wide liquidity shocks and individual firms' stock returns, and reported a negative link between CSR engagement and liquidity risk.

Nguyen et al. (2021) evidenced a statistically significant positive link between Corporate Social Responsibility Disclosure (CSRD), and the financial performance measured by return on assets (ROA) and return on equity (ROE). In a similar vein, Ali et al. (2021) confirmed that the proposed determinants of board size, foreign directors on the board, and female directors positively influence potential for corporate sustainability disclosure within Pakistan's banking sector. The specified performance indicators, namely profitability, and liquidity exhibit a statistically significant positive association with corporate sustainability disclosure with only few noted exclusions. Studies have proved that Pakistani companies may disclose sustainability reports if they have gender-diverse boards, larger audit committees and higher institutional ownership. Moreover, Hasan et al. (2021) documented more concentrated, managerial, foreign ownership, which negatively affect the firms' sustainability disclosures. Consistent with legitimacy theory, larger firms exhibiting higher profitability disclose greater levels of corporate social responsibility

(CSR) information. Empirical analysis confirms that both firm size and return on assets (ROA) show a statistically significant positive link with the degree of CSR reporting.

Sheikh (2019) analyzes the relationship of CSR with firm leverage and reported that in highly competitive markets, CSR lowers both book and market leverage. The negative relationship is mainly driven by CSR activities related to community, diversity, employee relations, and the environment, while the product dimension is not significant. Results also indicate that CSR boosts firm value only when competition is intense. Karaman et al. (2018) finds that while firm size and leverage encourage GRI-based sustainability reporting in the aviation sector, ownership has a negative link, growth is negatively tied to report application levels, and overall, sustainability reporting shows no significant effect on firm performance. Lastly, Syed and Butt (2017) reported a statistically significant positive link between family ownership, industry type and firm size with CSR disclosures in Pakistan, plus, firms with greater financial risk volunteer less CSR disclosures. Study on the banking sector of Pakistan revealed that listed status, size, and financial leverage significantly influence the disclosures of sustainable development measures (Sajida et al., 2019).

2.1 Hypotheses Development

Following propositions can be drawn considering extant literature, as depicted in Figure 1 & 2.

Source: Author's Illustration
Figure 1: Preposition # 1 for Hypothesis Development

Source: Author's Illustration
Figure 2: Preposition # 2 for Hypothesis Development

On the basis of aforementioned propositions, we posit the following hypothesis.
Hypothesis # 1: Quality disclosures of corporate sustainability have a significant impact on firm outcome, controlling for firm-specific characteristics:
Hypothesis 1A: On the operating performance
Hypothesis 1B: On the financial performance
Hypothesis 1C: On the market performance

The first hypothesis relates to the effect of reporting disclosures of corporate sustainability measures taken by the company, on its financial, operating and market performance. The same approach used by Buallay (2020) has been employed to measure the performance parameters of the corporations in relation to sustainability reporting. Return on Asset, can be calculated as a ratio between net income and total assets of the firm, and has been set as the required key performance indicator for its operational performance. Return on Equity, a ratio between net income and shareholders' equity of the firm is employed as an alternative for its financial performance. For market performance, ratio between total asset value of the firm and the total market value of the firm, is used.

Hypothesis 2: Firms with better quality of corporate sustainability reporting have higher holding period return after controlling for firm specific characteristics.

Eccles et al. (2014) made a comparison between the high and low sustainability firms and found that firms categorized as high sustainability firms tend to have better stock price returns and have an edge over their market opponents. This implies that after controlling for firm specific characteristics, companies with good quality reporting disclosures for corporate sustainability have a positive effect on their holding periods returns. However, considering 'signaling theory', weaker information channels and ESG literacy issues in a developing country, may make sustainability related signals emanated by firms less effective and hence, ESG success might not even lead to financial gains. Hierarchical awards announced for best corporate and sustainability reports considered in this study may signal successful CSR/ESG initiatives, but broader stakeholders in Pakistan may not be very receptive to such signals due to highlighted issues, which in turn may not be reflected in the financial performance of our firms. We may reach a similar conclusion from

the 'stakeholder theory' perspective, as lower ESG awareness coupled with economic pressures in developing countries, may force stakeholders to choose a firm's survival over sustainability. Hence, any statistically significant relationship may not be observed between the quality of disclosures and firm performance, as indicated in the hypothesis.

3. Data and Methodology

This section establishing an appropriate and suitable design for the research.

3.1 Data Cleaning & Sample Construction

Firms registered on the Pakistan Stock Exchange (PSX), including all the financial and non-financial companies, are taken in this research. The sample period is from July 01, 2015 till June 30, 2022. The total number of companies listed on the PSX amounts to 1,027. After the initial screening of dead firms, 564 companies were active. Among these, the companies which are not traded for more than 30 trading days annually were considered as highly illiquid firms and hence have been removed from the data sample. Hence, the final sample of 185 companies listed and traded actively on PSX is used for analysis.

3.2 Data

This research employs a quantitative approach and uses secondary data. All the data to test the hypotheses has been downloaded from Thomson Reuters DataStream, except for the Market Index Data, which is KSI (Karachi All Share Index) in our case, for which the official data portal of PSX has been used. Firm specific variables, namely market-to-book value, leverage, age, size, dividend yield and stock price liquidity, are downloaded from Thomson Reuters DataStream. For this research, market data of the firms, including stock prices (closing, high, low, bid and ask) and trading volume was also required, for which the same source has been used. However, for the purpose of the focus/independent variable, a scoring index has been constructed based on data collected from the ICMA and ICAP websites. Frequency for all the variables has been set to annually. A natural logarithmic transformation, denoted by ln, was employed, where required, to address potential non-linearity, reduce skewness, convert multiplicative effects into additive effects, and achieve homoscedasticity in the statistical analysis.

3.3 Methodology

Data for all the variables, which includes a few Profit and Loss Statement items and various Balance Sheet items and a few items from Statement of Changes in Equity, which have been discussed in detail. To examine the linear relationship between the two quantitative variables, ordinary least squares method (OLS) is the best choice. The Gauss Markov Theorem suggests that if the six assumptions of the OLS regression model are satisfied, then the regression model is said

to be BLUE which means that unbiased estimates which have the smallest variance of all possible linear estimators are produced (Hallin, 2014). Following the same methodology, a relationship has been derived between the dependent and independent variables of concern in a controlled environment. The following steps make up the proposed methodology for this research.

Step 1: Construct the regression models according to the hypotheses developed.
Step 2: Gather the required data from all the secondary sources.
Step 3: Clean the data based on the set criteria.
Step 4: Construct the scoring index.
Step 5: The data gathered is in time series form; convert it into panel data.
Step 6: Run the OLS regression model and infer the results with the hypotheses developed.

3.4 The Variables

Three types of variables have been used in this research. Dependent variables, which are being evaluated and are being measured in the regression model, independent variables, which are also called the explanatory variables, as theypredict and explain the values of the dependent variable and the control variables which are the firm specific characteristics, included to see how our focus variable of corporate sustainability reporting score influences dependent variables.

3.4.1 Descriptive Statistics

Table 1 presents the descriptive statistics of the data under consideration. The number of observations in the data is depicted by a count of 1656 whereas the mean shows the average value. Standard deviation shows the deviation from mean, for instance, a mean of 0.04 with a standard deviation of 0.17 means that the range for the mean is from -013 (0.04-0.17) to 0.21 (0.04+0.17).

Table 1
Descriptive Summary Stats

Variables	Measuring Unit	Count	Mean	Standard Deviation	Maximum	Minimum
MTB	Ratio	1,656	3.173	9.547	50.000	-61.540
AGE	Absolute values	1,621	3.429	0.593	4.690	1.100
CSRDQ	Index	1,656	0.052	0.144	1.000	0.000
SPR	Ratio	1,480	16.452	79.244	1,608.200	-81.540
MPR	Ratio	1,656	5.875	16.348	43.190	-9.340
ROA	Ratio	1,455	0.045	0.191	5.569	-2.007
ROE	Ratio	1,455	0.251	13.358	500.820	-59.376
TQ	Ratio	1,441	1.168	1.258	16.825	0.002
SPLIQ	Ratio	1,528	0.017	0.103	2.000	0.000
DY	Ratio	1,096	0.058	0.062	0.926	0.000
SIZE	Absolute values (natural log)	1,455	16.788	2.094	22.186	8.010
LEV	Ratio	1,455	0.567	0.239	0.999	0.004

3.4.2 The Dependent Variables

3.4.2.1 Return on Assets (ROA)

Buallay (2020) used return on assets to measure the operational performance of the firm as a ratio between the net income of the firm and its total assets. It measures the ability of the company to generate profit by efficiently utilizing its assets.

Return on Assets=(NetIncome)\/(TotalAssets)

3.4.2.2 Return on Equity (ROE)

Buallay (2020) employed return on equity as an alternative for the financial performance of the firm. He calculated ROE as a ratio of net income and the total shareholder's equity. It shows the efficiency of the firm's management in generating profits by maximizing the utilization of the equity raised by them.

ROE=(NetIncome)\/(Shareholders^' Equity)

3.4.2.3 Tobin's Q (TQ)

Buallay (2020) measures the market performance of a firm by Tobin's Q which expresses a relationship between a firm's market value and its intrinsic values; in other words, it tells whether

a stock is overvalued or undervalued. In extant literature, it has been measured as a ratio between a firm's book value and a firm's market value.

*Tobin's Q = (Total Assets Value of Firm)/(Total Market Value of Firm)= (Total Assets - Total Liabilities)/(No of Shares outstanding * Price per share)*

3.4.2.4 Stock Price Returns (SPR)

Stock price returns have been calculated as a percentage change in stock prices over the year i.e., the holding period return, which can be defined as the return an investor earns by holding the stocks for one year, generally expressed in the form of ratio. It has been supported by many literature sources, however, Zhang et al. (2018) used stock price returns as a dependent variable to measure the impact of sustainability commitment on stock price return volatility. The same approach has been followed in this research.

$$SPR= (P_{-1}- P_{-0})/P_{-0}$$

where P_{-1} is the price at the end of the holing period and P_{-0} is the price at the beginnig of the holding period

3.4.3 The Independent Variables

3.4.3.1 Scoring Index Construction

We have constructed a scoring index based on the hierarchical awards announced for best corporate and sustainability reports published jointly by ICAP and ICMAP, for Pakistani firms.

3.4.3.2 Corporate Sustainability Reporting Disclosures Quality (CSRDQ) Index

According to the practices established by the joint evaluation committee, the awards are assessed on the basis of n-1 phenomenon whereas announcement takes place on the basis of n+1 phenomenon where n is the year for which the awards are being assessed and announced. In order to examine the effect of the good quality reportage on the firm's performance, this research uses the methodology used by Wang and Chen (2017). They have used a 250-day period in the exploration of the effects of the publication on the key performance indicator being analyzed. This whole phenomenon can be summarized in the form of flow diagram (Figure: 3).

(CSRDQ) Index

Source: Author's Illustration

Figure 3: Measuring Corporate Sustainability Reporting Disclosures Quality

n-1 Phenomenon for Assessment: Companies are given an evaluation criterion a year before the announcement of the awards i.e., for the awards of year n, the criterion is published in the year n-1. This criterion contains 14 indicators with 120 sub-indicators for the Best Corporate Report Award and 9 indicators with 50 sub-indicators for the Best Sustainability Report Awards, upon which companies are assessed. The assessment period is set to 1 year i.e., the companies will incorporate annual data of one year for the evaluation criteria (BCR Evaluation Criteria 2021[1]; BSR Evaluation Criteria 2021[2]). The Evaluation Criteria intends to standardize corporate and sustainability reporting, enhancing information quality and utility for stakeholders. Moreover, it encourages coordinated thinking by studying together financial and non-financial factors. Its design is inspired by the 'Content Elements' in the International Integrated Reporting Framework (IR Framework). Participating entities are persuaded to fully implement the IR Framework by employing its 'Fundamental Concepts' and 'Guiding Principles' to their reporting practices. For example, the Joint Evaluation Committee published the "Evaluation Criteria 2019" in August 2019 which will continue to be applicable for the published annual report 2020 and sustainability report 2020 (FAQs for BCSRA Criteria 2019).

n+1 Phenomenon for Announcement: After one year (i.e., year n+1), all the companies are required to submit the checklist, along with the required documentation of the annually published reports, mentioned in the evaluation criteria. After the finalization of the results, the awards for the year n are announced in the year n+1. Continuing the above example, in August 2021, the Joint Evaluation Committee announced the "BCSRA 2020" awards for the year 2020. The criteria used for assessment was named as the "Evaluation Criteria 2019" which was made public in August 2019.

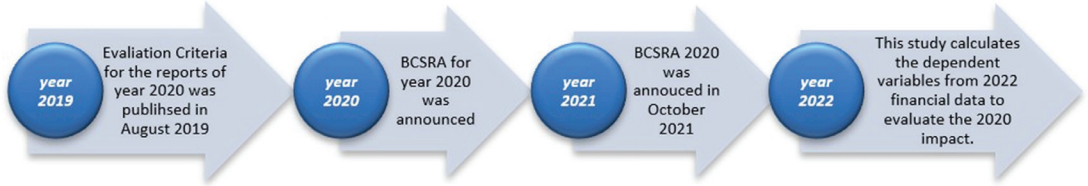

Figure 4: 3-step phenomenon for CSRDQ Index Construction

Source: Author's Illustration

[1]See https://www.icap.net.pk/wp-content/uploads/bcr/BCREvaluationCriteria2021.pdf

[2]https://www.icap.net.pk/wp-content/uploads/bcr/BSR-Criteria-2021-for-website.pdf

After incorporating the above three-step phenomenon, an index of Corporate and Sustainability Reporting Disclosure Quality (CSRDQ) is developed. The construction of CSRDQ has been explained below. The data of the BSCRA for the construction purpose, has been used since 2013, the timeframe for which has been entailed below in tabular form (Table: 2)

Table 2
Timeframe for BSCRA

Award for the year	Award announced in	Impact of Quality Reporting will reflect in data from	Impact of Quality Reporting will reflect in data till
2013	Quarter 3 of 2014	Quarter 3 of 2014	Quarter 2 of 2015
2014	Quarter 3 of 2015	Quarter 3 of 2015	Quarter 2 of 2016
2015	Quarter 3 of 2016	Quarter 3 of 2016	Quarter 2 of 2017
2016	Quarter 3 of 2017	Quarter 3 of 2017	Quarter 2 of 2018
2017	Quarter 3 of 2018	Quarter 3 of 2018	Quarter 2 of 2019
2018	Quarter 3 of 2019	Quarter 3 of 2019	Quarter 2 of 2020
2019	Quarter 3 of 2020	Quarter 3 of 2020	Quarter 2 of 2021
2020	Quarter 3 of 2021	Quarter 3 of 2021	Quarter 2 of 2022

Best Corporate Report (BCR) and Best Sustainability Report (BSR) Awards are given to top three to five firms followed by Merit Certificates. For the construction of the scoring index in this research, both BCRA and BSRA have been given equal weightages, as both are considered mutually exclusive events in this research. CSRDQ Scores have been calculated by converting the ordinals announced for the awards into weighted scores by following the weighted k-coefficient methodology used by Jakobsson and Westergren (2005), whereby weights to ordinals of each award, have been assigned according to hierarchy in which the award was given i.e., 6/6 to first position holder, 5/6 to second, 4/6 to third, 3/6 to fourth, 2/6 to fifth, 1/6 to the merit certificate holder and 0/6 to the one which couldn't qualify. However, equal weightage has been assigned to each award, i.e., ½ to BCRA and ½ to BSRA.

The scoring index phenomenon of the ordinals is given below in tabular form (Table: 3)

Table 3
Scoring Index Phenomenon of the Ordinals

Positions	Weightage Scores for Ordinals	Weightage of BCRA	Weightage for BSRA
1st	6/6=1.00	1/2=0.5	1/2=0.5
2nd	5/6=0.83	1/2=0.5	1/2=0.5
3rd	4/6=0.67	1/2=0.5	1/2=0.5
4th	3/6=0.50	1/2=0.5	1/2=0.5
5th	2/6=0.33	1/2=0.5	1/2=0.5
Merit	1/6=0.17	1/2=0.5	1/2=0.5
Non-qualifiers	0/6=0.00	1/2=0.5	1/2=0.5

If we represent,

Weightage scores for ordinals in BCRA = BCRA Scores

Weightage scores for ordinals in BSRA = BSRA Scores

Then,

CSRDQ Scores

= (BCRA Scores x Weightage of BCRA)

+ (BSRA Scores x Weightage of BSRA)

Or in simple terms,

CSRDQ Scores

= (BCRA Scores+BSRA Scores)x 1/2

3.4.4 The Control Variables

According to Scholz and Schöner (1999), the control variables influence the outcome of analysis, hence it must be incorporated in the regression models. They are employed to regulate or observe link concerning the independent and dependent variables. Variables which revolve around the firms' specific characteristics including size, financial leverage, age and market valuation are considered, whereas for stock performance effects, the dividend yield, liquidity, the financial performance of the corporation, and the market index returns are considered.

3.4.4.1 Size of the firm (SIZE)

As per to Hormati et al. (2022), corporate size when calculated as a log function of the total assets, impact firm performance. Studies conducted on the link amongst firm's performance and size have demonstrated varied findings. For example, some studies found a strong positive relation between the two when it comes to countries like India, Portugal, Turkey, Nigeria, Iran

etc., (Doğan, 2013; Serrasqueiro & Nunes, 2008) whereas for countries like the United States, Sri Lanka etc., a negative or even insignificant relationship was observed (Azeez, 2015; Becker-Blease et al., 2010; Velnampy, 2013). In the context of Pakistan, Azhar and Ahmad (2019) found a significant negative relationship between the size of the firm and the return on assets, whereas it has been positive for the banking sector as depicted by Rolle et al. (2020). For return on equity as a proxy of firm performance, mixed finding has been reported i.e., a significant negative relationship holds between firms' financial performance and the firm's size (Ullah et al., 2020). Lastly, large firms have the financial muscle to undertake corporate and sustainable initiatives to maintain goodwill. However, the market performance indicator, Tobin's Q, shows a positive relation with firm's size. Moreover, stock price returns follow size premium effects, i.e., small size firms yield higher returns whereas large size firms yield comparatively lower returns (Khan et al., 2012). Hence, we used firm size as a control variable.

$$SIZE = ln(Total\ Assets)$$

3.4.4.2 Age of the firm (AGE)

Mature firms are found to be more productive and less profitable (Majumdar, 1997). In contrast, key performance indicators like return on asset and return on equity have a positive impact on the age of firm which means that older firms have high ratios for both the performance measures (Hunjra et al., 2014). We have employed firm's age as a control variable. Hasan et al. (2021) suggest age of firm can be calculated as the difference between the incorporation date of the firm and the last date being incorporated in the sample data., the last day of the data frame is 30th June 2022. Hence, following the above-mentioned mechanism, age of firms can be calculated as:

AGE = 30th June 2022 - Date of Incorporation of the Firm

The measuring unit of this variable is "years". The bigger the number, the older the firm and vice versa.

3.4.4.3 Firms' Valuation (MTB) and Dividend Yield (DY)

Firms' valuation can be measured by market to book (MTB) ratio (Chang et al. 2018). His findings show that market valuation and firms' performance are slightly correlated with one another in a positive direction i.e., firms with high MTB are overvalued and earn more return than those with low MTB. (Bukit & Anggono (2013) find market to Book (MTB), earnings per share (EPS), and dividend yield (DY) has a positive and significant impact on stock price returns (SPR), whereas return on equity (ROE) has an insignificant positive effect on SPR, and ROA has a significant negative effect on SPR. This phenomenon has been named the "value premium effect" documented by Hassan and Javed (2011) in Pakistan market.

Market to book ratio obtained from the London Stock Exchange Group DataStream, which calculates it as the ratio between market value of the firm and the book value of the firm. Whereas for dividend yield, the same methodology is used by Hasan et al. (2021) has been followed. This can be mathematically expressed as under.

$$MTB = \frac{Market\ Value\ of\ the\ Firm}{Book\ Value\ of\ the\ Firm} \qquad DY = \frac{Dividend\ per\ Share}{Price\ per\ Share}$$

3.4.4.4 Market Return (MPR), Return on Equity (ROE) & Stock Price Liquidity (SPLIQ)

KSI (Karachi Stock Exchange - All Share Index) has been used as the market index, and the holding period return on the market index value is defined as the market return. To know the effect of market index returns (MPR) on the stock returns (SPR), (Daniswara & Daryanto ,2019) depicted that market return has a significant positive effect on the stock market returns. These results are consistent with the evidence of Halimah and Nurmasari (2024). However, for KSI All Share Index, Pearson's Correlation shows a weak negative correlation between MRP and SPR. Following Pan et al. (2021), market index return has been calculated as under.

$$MPR = \frac{MP_1 - MP_0}{MP_0}$$

ROE has been used as a control variable for SPR. Few studies like (Daniswara & Daryanto ,2019) show that ROE doesn't significantly impact the stock price returns whereas few other studies like Agrawal et al. (2019) show the presence of a statistically significant relation between the two. Hence, ROE is used as a control variable to examine the effect of corporate sustainability reporting quality on SPR.

Amihud and Mendelson (1989) tested the correlation between liquidity when proxied by bid-ask spread and the stock excess returns when measured by the difference between the holding period returns and the risk-free rate, and found the existence of a positive relation between the two. The ability of a stock to be easily and efficiently converted into cash at fair market value decreases, causing it to become illiquid i.e., the greater the spread, the more the stock is illiquid and vice versa. Therefore, investors demand a liquidity premium to be incorporated in the stock price returns. Datar et al. (1998) uses turnover (number of shares traded as a fraction of the number of shares outstanding) as an alternative proxy for liquidity and tests the role of liquidity in determining the stock price returns. Empirical evidence indicates that liquidity is a significant determinant of cross-sectional deviation in stock returns. This relationship is significant with controlling for other firm characteristics. The stock price liquidity is denoted by SPLIQ and determined as under:

$$SPLIQ = \frac{Ask\ Price - Bid\ Price}{(Ask\ Price + Bid\ Price)/2}$$

3.4.4.5 Capital Structure of the firm (LEV)

Firms' capital structure helps determine the leverage conditions of the firms. It is determined as the ratio of total liabilities to total assets of the firm, following Chang et al. (2018). In the context of Pakistan, literature shows a significant negative result of leverage and sales growth on the performance of the corporation when determined by ROA, ROE and Tobin's Q i.e., an increase in leverage might cause a decrease in all the three key indicators of the firm's performance (Ahmed et al., 2018).

$$Leverage = \frac{Total\ Libilities}{Total\ Assets}$$

Table 4 shows the correlation matrix between Leverage depicting firms capital structure, and the dependent variables. These findings suggest that leverage is inversely associated with returns on assets and positively associated with returns on equity. Additionally, there is a slight positive link between leverage and Tobin's Q and that with stock price returns.[3]

Table 4
Pearson's Correlations between LEV and ROA, ROE, TQ, SPR

Variables	LEV	ROA	ROE	TQ	SPR
LEV	1.000				
ROA	-0.206***	1.000			
ROE	0.020	0.128***	1.000		
TQ	-0.063**	-0.124***	-0.017	1.000	
SPR	-0.061**	0.141***	0.031	-0.133***	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

3.5 The Model

To test the hypotheses, following regression models have been developed. All the variables are supported by the extant literature sources, which have been provided in the appendix. This can be mathematically expressed as under:

3.5.1 Regression Model 1A:

$ROA=\beta_0+\beta_1\ CSRDQ+\beta_2\ SIZE+\beta_3\ LEV+\beta_4\ AGE+\beta_5\ MTB+\beta_6\ TE+\beta_7\ IE+\varepsilon$

Where, ROA stands for Return on Assets which measures the operational performance of the firm,

[3] We run the correlation analysis on all the independent variables and the coefficients were less than +/-0.7; hence the problem of multicollinearity does not arise.

CSRDQ stands for Corporate Sustainability Reporting Disclosures Quality, SIZE is the size of the firm, LEV stands for firm's leverage, AGE is the firm's age in years, MTB is the ratio between market and firm's book value, TE & IE indicated the year and industry fixed effect respectively.

3.5.2 Regression Model 1B:

$ROE=\beta_0+\beta_1$ CSRDQ$+\beta_2$ SIZE$+\beta_3$ LEV$+\beta_4$ AGE$+\beta_5$ MB$+\beta_6$ TE$+\beta_7$ IE$+\varepsilon$
Where ROE stands for Return on Equity which is a proxy of financial performance.

3.5.3 Regression Model 1C:

$TQ=\beta_0+\beta_1$ CSRDQ$+\beta_2$ SIZE$+\beta_3$ LEV$+\beta_4$ AGE$+\beta_5$ MTB$+\beta_6$ TE$+\beta_7$ IE$+\varepsilon$
Where TQ stands for Tobin's Q which is a measure of market performance of the firm.

3.5.4 Regression Model 2:

$SPR=\beta_0+\beta_1$ CSRDQ$+\beta_2$ SIZE$+\beta_3$ DY$+\beta_4$ SPLIQ$+\beta_5$ MTB$+\beta_6$ LEV$+\beta_7$ ROE$+\beta_8$ MPR$+\beta_9$ TE$+\beta_{10}$ IE$+\varepsilon$

Where SPR stands for Stock Price Returns which measures 1-year holding period return of the stocks, DY is the dividend yield which represents the percentage of the share price which is given out as a dividend by the firm to its shareholders, SPLIQ is the stock price liquidity measured as a bid-ask price spread and MPR which is the Market Index Price Return measuring 1-year holding period returns on the market index. 4. Results and Discussion

3.6 Results of Hausman Test

The Hausman test looking at the characteristics of panel data provides the result about which regression model is more suitable to apply, and provides a correlation check between the unique error terms and regressors in the proposed model.

The Hausman test results suggest a violation of the random effects assumption for ROA and vice versa for ROE, TQ and SPR. Hence fixed effects (FE) model is applied, where ROA is the dependent variable and random effects (RE) for regression models with ROE, TQ, and SPR as dependent variables. This implies that unobserved individual-specific effects are correlated with the regressors and can be better analyzed through selected models. By using the FE model, we can obtain more reliable and unbiased estimates, accounting for individual-specific heterogeneity and eliminating potential endogeneity concerns.

3.7 Regression Analysis

The hypotheses developed in the Literature Review Section, is tested by regression

analysis. Regression results in Table 5 shows the relationship between the independent variable, which is the reporting quality index developed in this study and the dependent variables, which are proxies for firms' performance in three different dimensions (operating, financial and market), as well as the holding period returns over the sample period.

Table 5
Regression Analysis

Variables	MODEL # 1A ROA	MODEL # 1B ROE	MODEL # 1C Tobin's *Q*	MODEL # 2 SPR
CSRDQ	-0.016	0.942	-0.341	-4.557
	(0.790)	(0.710)	(0.130)	(0.820)
SIZE	0.002	-0.335	0.103***	-0.357
	(0.890)	(0.260)	(0.010)	(0.960)
LEV	-0.196***	2.375	-1.192***	-51.313**
	(0.001)	(0.260)	(0.001)	(0.050)
AGE	0.062	-0.704	0.028	
	(0.470)	(0.360)	(0.820)	
MTB	0.001	0.383***	-0.004	3.284***
	(0.170)	(0.001)	(0.300)	(0.010)
DY				-133.336***
				(0.009)
SPLIQ				126.077***
				(0.008)
ROE				19.940***
				(0.009)
MPR				11.226***
				(0.000)
Constant	-0.046	7.475	-0.36	153.498
	(0.900)	(0.130)	(0.600)	(0.140)

***, **, and * shows significance of p-value at 1%, 5% and 10% level respectively.

For the first hypothesis 1A, the beta coefficient of Model 1A between the reporting quality index (CSRDQ) and the operating performance measure of ROA is statistically insignificant the control variable of firm leverage has negative association with ROA which is mainly consistent with the prior literature.

For the second hypothesis 1B, the beta coefficient in Model 1B indicates a positive link concerning quality disclosures (CSRDQ) and ROE; the relationship is statistically insignificant. The insignificance of this relationship diminishes the importance of its direction, positive or negative, as it does not provide strong predictive or explanatory value.

For the third hypothesis 1C, the main variable (CSRDQ) demonstrates an insignificant relationship with the firm market performance, as determined by Tobin's Q in Model 1C. Overall, based on the p-values, all beta coefficients exceed the 5% threshold, hinting the non-rejection of the null-hypothesis that reporting quality has no impact on market performance.

For the fourth hypothesis 2, the regression analysis in Model 2 of Table 5 explores the relationship between the constructed index of CSRDQ for quality reporting on sustainability standards and the holding period returns when the stock of the firm is held for one year (i.e., one-year returns). Again, the relationship is statistically insignificant, as p-value is above the 5% conventional threshold. The control variables reveal mixed impacts when examined individually. Firm size has no effect on holding period returns, however, leverage, and dividend yield exhibit negative impacts, while firm valuation, stock price liquidity, return on shareholder equity, and market index returns show significant positive impacts on stock price holding returns over the study period.

4. Discussion

The evidence of our study is consistent with Chen et al. (2023), who also reported a statistically insignificant relationship between ESG performance and ROA for developing countries only. They attributed this insignificant relationship to limited resources and capacity constraints, which restrict the ability to implement, measure, and report ESG initiatives effectively. It may be argued, in the case of Pakistan that firms investing in ESG facets, focusing on the environment protection, social needs and stakeholders' expectations are not focused on profitability, which renders all four financial performance indicators insignificant.

There may be several other potential rationales for insignificant results regarding the quality of corporate sustainability reporting in Pakistan and firm performance metrics for this study. Hummel and Schlick (2016) contend that the link between sustainability performance and sustainability disclosure continues to be vague, theoretically, and empirically. Moreover, firms with poor sustainability performance frequently involve in low-quality disclosures in a bid to conceal their actual performance. This may be more evident among firms in developing nations, where applying high-quality sustainability reporting standards can significantly raise expenses and organizational complexity, leading to operational inefficiency for firms with limited resources, reducing the perceived financial benefits of increased sustainability transparency.

Consistent with Clarkson et al. (2013), it can be concluded that many investors are skeptical of the market value of sustainability disclosures, especially when such reports are apparently compliance-driven rather than voluntary. This investor skepticism may inhibit market response, which would result in an insignificant relationship. Frankel et al. (2025) argue that investors perceive some ESG announcements as compliance-oriented rather than providing significant insight into financial prospects and hence market reactions to such disclosures are

limited. Moreover, excessive disclosure regulation incurs expenses that are eventually borne by consumers. Christensen et al. (2021), in a comprehensive literature review, reported that although mandated CSR reporting can influence corporate behavior and capital market results, the evidence on how it affects firm performance is empirically uncertain.

Moreover, as discussed in the hypothesis section, signaling theory and stakeholder theory considered in the perspective of developing nations may also offer a possible explanation for the statistically insignificant results.

5. Conclusion

The research findings suggest that reporting quality on corporate social responsibility (CSR) and sustainability has an insignificant impact on the performance of firms in Pakistan. This evidence contrasts with the broad literature, which often identifies a positive relationship involving quality disclosures and firm performance. Several reasons for these puzzling findings can be considered within the context of Pakistan. Firstly, economic, and political instability in Pakistan significantly affects the business environment. This instability creates uncertainty, which can undermine firms' efforts to adopt and communicate sustainable practices effectively.

Secondly, the lack of commitment towards ESG investments and sustainability reporting among corporate management in Pakistan may contribute to inadequate implementation. Studies suggest that in developing economies, many firms lack the expertise or strategic vision to integrate CSR into their core operations, resulting in incomplete disclosures and reduced transparency (Mahmood et al., 2019). Moreover, limited stakeholder engagement poses another challenge. Effective sustainability communication relies on meaningful interactions with investors, customers, employees, and the general public. However, in Pakistan, stakeholder engagement remains underdeveloped due to socio-economic barriers and shifting priorities in a volatile environment (Nazish & Akhtar, 2021). Without robust engagement, the potential benefits of sustainability disclosures on firm performance cannot be fully realized.

Finally, unique market characteristics in Pakistan, including regulatory frameworks, investor preferences, and cultural norms, shape the impact of CSR and sustainability initiatives. To conclude, the insignificant relationship observed in this study can be attributed to Pakistan-specific factors, including economic pressure and political instability, lower ESG/CSR related awareness, limited stakeholder engagement, a possible lack of commitment among firms, and unique market dynamics. These challenges highlight the need for tailored strategies and further research to improve the understanding and efficacy of sustainability reportage in the Pakistani context.

5.1 Recommendations

The reporting of Corporate Social Responsibility and Sustainability standards in Pakistan currently remains a voluntary practice, lacking a regulatory framework that mandates their inclusion alongside financial reporting. To address this, it is crucial for policymakers and regulatory authorities to transition companies to disclose their sustainability measures mandatorily. By doing so, transparency and accountability can be enhanced, leading to better-informed stakeholders and improved firm performance. Policymakers should focus on creating a stable economic and political environment to foster businesses to embrace and execute sustainability practices effectively. Stability allows firms to allocate resources strategically toward CSR/ESG initiatives and sustainability reporting, rather than diverting them to short-term operational challenges.

Collaborations among academic institutions, government bodies, and business associations can help disseminate knowledge and best practices related to CSR and sustainability. Tailored workshops, training programs, and certifications should be offered to enhance board and managerial competence in this area. Business leaders must prioritize interaction with primary stakeholders, encompassing suppliers, investors, customers, employees, and the public, to foster trust and demonstrate the value of sustainability initiatives. Mandating disclosures on environmental, social, and governance (ESG) metrics can ensure consistency, standardization and corporate transparency. Incentives, such as tax benefits or government aids, especially to small and medium-sized firms could encourage them to comply with these regulations.

References

Agrawal, A., Mohanty, P., & Totala, N. K. (2019). Does EVA Beat ROA and ROE in Explaining the Stock Returns in Indian Scenario? An Evidence Using Mixed Effects Panel Data Regression Model. *Management and Labour Studies, 44*(2), 103-134. https://doi.org/10.1177/0258042X19832397

Ahmed, F., Awais, I., & Kashif, M. (2018). Financial Leverage and Firms' Performance: *Empirical Investigation of KSE-100 Index. Etikonomi, 17*(1), 45-56. https://doi.org/10.15408/etk.v17i1.6102

Akrout, M. M., & Ben Othman, H. (2016). Environmental disclosure and stock market liquidity: evidence from Arab MENA emerging markets. *Applied Economics, 48*(20), 1840–1851. https://doi.org/10.1080/00036846.2015.1109041

Al Hawaj, A. Y., & Buallay, A. M. (2022). A worldwide sectorial analysis of sustainability reporting and its impact on firm performance. *Journal of Sustainable Finance & Investment, 12*(1), 62–86https://doi.org/10.1080/20430795.2021.1903792

Ali, R., RehmSyedan, R. U., Kanwal, M., Naseem, M. A., & Ahmad, M. I. (2021). Determinants of corporate social responsibility disclosure of banking sector in Pakistan. *Social Responsibility Journal, 18*(5), 1019-1034. https://doi.org/10.1108/SRJ-08-2019-0272

Amihud, Y., & Mendelson, H. (1989). The Effects of Beta, Bid-Ask Spread, Residual Risk, and Size on Stock Returns. *Journal of Finance, 44*(2), 479-486. https://doi.org/10.1111/j.1540-6261.1989.tb05067.x

Amran, A., & Ooi, S. K. (2014). Sustainability reporting: Meeting stakeholder demands. *Strategic Direction, 30*(7), 38-41. https://doi.org/10.1108/SD-03-2014-0035

Arayssi, M., Dah, M., & Jizi, M. (2016). Women on boards, sustainability reporting and firm performance. *Sustainability Accounting, Management and Policy Journal, 7*(3), 376-401. https://doi.org/10.1108/SAMPJ-07-2015-0055

Awan, U., Kraslawski, A., & Huiskonen, J. (2017). Understanding the Relationship between Stakeholder Pressure and Sustainability Performance in Manufacturing Firms in Pakistan. *Procedia Manufacturing, 11*, 768-777. https://doi.org/10.1016/j.promfg.2017.07.178

Azeez, A. A. (2015). Corporate Governance and Firm Performance: Evidence from Sri Lanka. *Journal of Finance and Bank Management, 3*(1), 180-189. https://doi.org/10.15640/jfbm.v3n1a16

Azhar, K. A., & Ahmad, N. (2019). Relationship Between Firm Size and Profitability: Investigation from Textile Sector of Pakistan. *International Journal of Information, Business and Management, 11*(2), 62-73. ISSN 2076-9202

Bagh, T., Khan, M. A., Azad, T., Saddique, S. (2017). The Corporate Social Responsibility and Firms' Financial Performance: Evidence from Financial Sector of Pakistan. *International Journal of Economics and Financial Issues, 7*(2), 301-308. ISSN: 2146-4138BCR Evaluation Criteria 2021. (n.d.).

Beck, C., Frost, G., & Jones, S. (2018). CSR disclosure and financial performance revisited: A cross-country analysis. *Australian Journal of Management, 43*(4), 517-537. https://doi.org/10.1177/0312896218771438

Becker-Blease, J. R., Kaen, F. R., Etebari, A., & Baumann, H. (2010). Employees, firm size and profitability in U.S. manufacturing industries. *Investment Management and Financial Innovations, 7*(2), 7-23. ISSN 1810-4967

Buallay, A. (2020). Sustainability reporting and firm's performance: Comparative study between manufacturing and banking sectors. *International Journal of Productivity and Performance Management, 69*(3), 431-445. https://doi.org/10.1108/IJPPM-10-2018-0371

Bukit, I. N. H., & Anggono, I. A. H. (2013). The Effect of Price to Book Value (PBV), Dividend Payout Ratio (DPR), Return on Equity (ROE), Return on Asset (ROA), and Earning Per Share (EPS) toward Stock Return of LQ 45 for the period of 2006-2011. *Review of Integrative Business and Economic Research, 2*(2), 22-43. ISSN: 2304-1013

Carvajal, M., & Nadeem, M. (2023). Financially material sustainability reporting and firm performance in New Zealand. *Meditari Accountancy Research, 31*(4), 938–969. https://doi.org/10.1108/MEDAR-06-2021-1346

Chang, X. (Simba), Tan, W., Yang, E., & Zhang, W. (2018). Stock Liquidity and Corporate Social Responsibility. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3130572

Chen, L., Feldmann, A., & Tang, O. (2015). The relationship between disclosures of corporate social performance and financial performance: Evidences from GRI reports in manufacturing industry. *International Journal of Production Economics, 170*, 445-456. https://doi.org/10.1016/j.ijpe.2015.04.004

Chen, S., Song, Y., & Gao, P. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of environmental management, 345*, 118829. ISSN 0301-4797 https://doi.org/10.1016/j.jenvman.2023.118829

Cho, S. Y., Lee, C., & Pfeiffer, R. J. (2013). Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy, 32*(1), 71-83. https://doi.org/10.1016/j.jaccpubpol.2012.10.005

Chochran, P. L., & Wood, R. A. (1984). Corporate Social Responsibility and Financial Performance. *Academy of Management Journal, 27*(1), 42-56. https://doi.org/10.2307/255956

Christensen, H.B., Hail, L. & Leuz, C. (2021). Mandatory CSR and sustainability reporting: economic analysis and literature review. *Review of Accounting Studies 26*, 1176–1248https://doi.org/10.1007/s11142-021-09609-5

Clarkson, P. M., Fang, X., Li, Y., & Richardson, G. (2013). The relevance of environmental disclosures: Are such disclosures incrementally informative? *Journal of Accounting and Public Policy, 32*(5), 410-431. https://doi.org/10.1016/j.jaccpubpol.2013.06.008

Daniswara, H. P., & Daryanto, W. M. (2019). Earnings Per Share (EPS), Price Book Value (PBV), Return on Asset (ROA), Return on Equity (ROE), and Indeks Harga Saham Gabungan (IHSG) Effect on Stock Return. *South East Asia Journal of Contemporary Business, Economics and Law, 20*(1), 11-27. ISSN 2289-1560

Datar, V. T., Y. Naik, N., & Radcliffe, R. (1998). Liquidity and stock returns: An alternative test. *Journal of Financial Markets, 1*(2), 203-219. https://doi.org/10.1016/S1386-4181(97)00004-9

Doğan, M. (2013). Does Firm Size Affect the Firm Profitability? Evidence from Turkey. Research *Journal of Finance and Accounting, 4*(4), 53-59. ISSN 2222-1697

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835-2857. https://doi.org/10.1287/mnsc.2014.1984 https://doi.org/10.2139/ssrn.1964011

Ehsan, S., Nazir, M. S., Nurunnabi, M., Khan, Q. R., Tahir, S., & Ahmed, I. (2018). A multimethod approach to assess and measure corporate social responsibility disclosure and practices in a developing economy. *Sustainability, 10*(8), 1-18. https://doi.org/10.3390/su10082955

Epstein, M., Flamholtz, E., & McDonough, J. J. (1976). Corporate social accounting in the United States of America: State of the art and future prospects. *Accounting, Organizations and Society, 1*(1), 23-42. https://doi.org/10.1016/0361-3682(76)90005-2

Fahad, P., & Busru, S. A. (2020). CSR disclosure and firm performance: evidence from an emerging market. *Corporate Governance, 21*(4), 553-568. https://doi.org/10.1108/CG-05-2020-0201 FAQs for BCSRA criteria 2019. (n.d.).

Ferreira, D. A., Gonçalves Avila, M., & Dias Faria, M. (2010). Corporate social responsibility and consumers' perception of price. *Social Responsibility Journal, 6*(2), 208-221. https://doi.org/10.1108/17471111011051720

Frankel, R., Kothari, S.P. & Raghunandan, A. (2025). The economics of ESG disclosure regulation. *Review of Accounting Studies* ISSN 1573-7136 https://doi.org/10.1007/s11142-025-09900-9

Fernando, S., & Lawrence, S. (2014). A theoretical framework for CSR practices: integrating legitimacy theory, stakeholder theory and institutional theory. *Journal of Theoretical Accounting, 10*(1), 149-178. ISSN: 1641-4381

Halimah, J., & Nurmasari, I. (2024). Pengaruh Return on Asset (ROA) dan Debt to Equity Ratio " (DER) terhadap Harga Saham pada Pt. Telkom Indonesia Tbk Periode 2011-2023. Cakrawala: *Jurnal Ekonomi, Manajemen dan Bisnis, 1*(2), 359-368. https://doi.org/10.70451/cakrawala.v1i2.108

Hallin, M. (2014). Gauss–Markov Theorem in Statistics. In Wiley StatsRef: Statistics Reference Online. https://doi.org/10.1002/9781118445112.stat07536

Harjoto, M. A., & Jo, H. (2015). Legal vs. Normative CSR: Differential Impact on Analyst Dispersion, Stock Return Volatility, Cost of Capital, and Firm Value. *Journal of Business Ethics, 128*(1), 1-20. https://doi.org/10.1007/s10551-014-2082-2

Hasan, A., Hussainey, K., & Aly, D. (2021). Determinants of sustainability reporting decision: evidence from Pakistan. *Journal of Sustainable Finance and Investment, 12*(1), 214–237. https://doi.org/10.1080/20430795.2021.1964813

Hassan, A., & Javed, M. T. (2011). Size and value premium in Pakistani equity market. African *Journal of Business Management, 5*(16), 6747–6755. https://doi.org/10.5897/AJBM10.817

Herzig, C., & Schaltegger, S. (2006). Corporate sustainability reporting: An overview. In Sustainability Accounting and Reporting. https://doi.org/10.1007/978-1-4020-4974-3_13

Hongming, X., Ahmed, B., Hussain, A., Rehman, A., Ullah, I., & Khan, F. U. (2020). Sustainability Reporting and Firm Performance: The Demonstration of Pakistani Firms. *SAGE Open, 10*(3). https://doi.org/10.1177/2158244020953180

Hormati, A., Nurdin, N., Syahdan, R., & Buamonabot, I. (2022). An Empirical Study on Good Corporate Governance (GCG) and Financial Governance: Firm Size as Control Variable. *Society, 10*(1), 32–44. https://doi.org/10.33019/society.v10i1.257

Hunjra, A. I., Chani, D., Irfan, M., Javed, S., Naeem, S., & Ijaz, M. S. (2014). Impact of micro economic variables on firm's performance. *International Journal of Economics and Empirical Research, 2*(2), 65-73. https://mpra.ub.uni-muenchen.de/60792/

Hunjra, A. I., Mehmood, R., & Tayachi, T. (2020). How Do Corporate Social Responsibility and Corporate Governance Affect Stock Price Crash Risk? *Journal of Risk and Financial Management, 13*(2), 30. https://doi.org/10.3390/jrfm13020030

Hummel, K., & Schlick, C. (2016). The relationship between sustainability performance and sustainability disclosure–Reconciling voluntary disclosure theory and legitimacy theory. *Journal of accounting and public policy, 35*(5), 455-476. https://doi.org/10.1016/j.jaccpubpol.2016.06.001

Jakobsson, U., & Westergren, A. (2005). Statistical methods for assessing agreement for ordinal data. In *Scandinavian Journal of Caring Sciences, 19*(4), 427-431. https://doi.org/10.1111/j.1471-6712.2005.00368.x

Karaman, A. S., Kilic, M., & Uyar, A. (2018). Sustainability reporting in the aviation industry: worldwide evidence. *Sustainability Accounting, Management and Policy Journal, 9*(4), 362-391. https://doi.org/10.1108/SAMPJ-12-2017-0150

Khan, F., Hassan, A., & Ali, S. (2012). Size, Leverage and Stocks Returns: Evidence from Pakistan. *International Journal of Academic Research, 4*(1), 24-32. ISSN: 2348-7666

Khan, M. (2019). Corporate Sustainability Practices Impact on Firm Financial Performance: Evidence from the Banking Sector of Pakistan. *City University Research Journal, 9*(2), 427-438. ISSN: 2220-9174

Khan, M., Rahman, H. U., Baloch, Q. B., Ahmad, A., & Zahid, M. (2021). Is there any difference between the theory and practice for the association between environmental sustainability and firm performance in Pakistan? *Business Strategy and Development, 4*(3), 371–382. https://doi.org/10.1002/bsd2.164

KPMG. (2011). KPMG International Responsibility Reporting 2011. In KPMG International.

Laskar, N. (2018). Impact of corporate sustainability reporting on firm performance: an empirical examination in Asia. *Journal of Asia Business Studies, 12*(4), 571-593. https://doi.org/10.1108/JABS-11-2016-0157

Mahmood, Z., Ali, W., Iqbal, J., & Fatima, S. (2019). Drivers and Barriers of Sustainability Practices in Emerging and Developing Economies. *Journal of Business and Social Review in Emerging Economies, 5*(1), 213-222. https://doi.org/10.26710/jbsee.v5i1.683

Majumdar, S. K. (1997). The impact of size and age on firm-level performance: Some evidence from India. *Review of Industrial Organization, 12*(2), 231-241. https://doi.org/10.1023/A:1007766324749

Malik, M. S., & Kanwal, L. (2018). Impact of Corporate Social Responsibility Disclosure on Financial Performance: Case Study of Listed Pharmaceutical Firms of Pakistan. *Journal of Business Ethics, 150*, 69–78, https://doi.org/10.1007/s10551-016-3134-6

Masud, Md. A. K., Nurunnabi, M., & Bae, S. M. (2018). The effects of corporate governance on environmental sustainability reporting: empirical evidence from South Asian countries. *Asian Journal of Sustainability and Social Responsibility, 3*(1), 3. https://doi.org/10.1186/s41180-018-0019-x

Meinolf, D., Berthoin, A. B., & Antal. (1986). Whither Corporate Social Reporting: Is It Time to Legislate? *California Management Review, 28*(3). 106-121. https://doi.org/10.2307/41165205

Mobus, J. L. (2005). Mandatory environmental disclosures in a legitimacy theory context. *Accounting, Auditing and Accountability Journal, 18*(4), 492-517. https://doi.org/10.1108/09513570510609333

Murtaza, I. A., Akhtar, N., Ijaz, A., & Sadiqa, A. (2014). Impact of Corporate Social Responsibility on Firm Financial Performance: A Case Study of Pakistan. *International Review of Management and Business Research, 3*(4), 1914-1927. ISSN: 2307-5953

Nazish, M., & Akhtar, M. H. (2021). Impact of Corporate Social Responsibility on profitability of banks in Pakistan: Application of GMM Approach. *IRASD Journal of Management, 3*(3), 360–372. https://doi.org/10.52131/jom.2021.0303.0051

Nguyen, T. H., Vu, Q. T., Nguyen, D. M., & Le, H. L. (2021). Factors influencing corporate social responsibility disclosure and its impact on financial performance: the case of Vietnam. *Sustainability, 13*(15), 8197. https://doi.org/10.3390/su13158197

Pan, N., Xu, Q., & Zhu, H. (2021). The impact of investor structure on stock price crash sensitivity: Evidence from China's stock market. *Journal of Management Science and Engineering, 6*(3), 312-323. https://doi.org/10.1016/j.jmse.2021.06.003

Rolle, J.-A., Javed, B., & Herani, G. M. (2020). Micro and macroeconomic determinants of profitability of conventional banks and stock performance using Tobin's Q ratio: Evidence from the banking sector of Pakistan. *International Journal of Business and Economic Development, 8*(2), Article 05. https://doi.org/10.24052/IJBED/V08N02/ART-05

Raza, H., Gillani, S. M. A. H., Kashif, M. T., & Khan, N. (2021). The Impact of Corporate Social Responsibility on Share Price: A Systematic Review and Bibliometric Analysis. *Estudios de Economia Aplicada, 39*(4). 2-11. https://doi.org/10.25115/eea.v39i4.4311

Sajida, A., Khan, S., Yunis, M. S. (2019). Determinants of Corporate Social Responsibility Disclosure: The Case of Banking Sector in Pakistan. *Journal of Business & Economics, 11*(1), 101–121. ISSN: 2075-6909

Scholz, J. P., & Schöner, G. (1999). The uncontrolled manifold concept: Identifying control variables for a functional task. *Experimental Brain Research, 126*(3), 289-306. https://doi.org/10.1007/s002210050738

Serrasqueiro, Z. S., & MaçÃs Nunes, P. (2008). Performance and size: Empirical evidence from Portuguese SMEs. *Small Business Economics, 31*(2), 195-217. https://doi.org/10.1007/s11187-007-9092-8

Shakil, M. H. (2020). Environmental, social and governance performance and stock price volatility: A moderating role of firm size. *Journal of Public Affairs. 22*: e2574. https://doi.org/10.1002/pa.2574

Sheikh, S. (2019). Corporate social responsibility and firm leverage: The impact of market competition. Research in *International Business and Finance, 48*, 496-510 https://doi.org/10.1016/j.ribaf.2018.11.002

Syed, M. A., & Butt, S. A. (2017). Financial and non-financial determinants of corporate social responsibility: Empirical evidence from Pakistan. *Social Responsibility Journal, 13*(4), 780-797. https://doi.org/10.1108/SRJ-08-2016-0146

Szegedi, K., Khan, Y., & Lentner, C. (2020). Corporate social responsibility and financial performance: Evidence from Pakistani listed banks. *Sustainability, 12*(10), 4080. https://doi.org/10.3390/SU12104080

Tasnia, M., Syed Jaafar AlHabshi, S. M., & Rosman, R. (2020). The impact of corporate social responsibility on stock price volatility of the US banks: a moderating role of tax. *Journal of Financial Reporting and Accounting, 19*(1) 77-91. https://doi.org/10.1108/JFRA-01-2020-0020

Ullah, A., Pinglu, C., Ullah, S., Zaman, M., & Hashmi, S. H. (2020). The nexus between capital structure, firm-specific factors, macroeconomic factors and financial performance in the textile sector of Pakistan. *Heliyon, 6*(8), e04741. https://doi.org/10.1016/j.heliyon.2020.e04741

Velnampy, P. T. (2013). Corporate Governance and Firm Performance: A Study of Sri Lankan Manufacturing Companies. http://repo.lib.jfn.ac.lk/ujrr/handle/123456789/641

Wang, Y. S., & Chen, Y. J. (2017). Corporate social responsibility and financial performance: event study cases. *Journal of Economic Interaction and Coordination, 12*(2) 193-219. https://doi.org/10.1007/s11403-015-0161-9

Wilmshurst, T. D., & Frost, G. R. (2000). Corporate environmental reporting: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal, 13*(1), 10-26. https://doi.org/10.1108/09513570010316126

Xu, S., & Liu, D. (2018). Do Financial Markets Care about Corporate Social Responsibility Disclosure? Further Evidence from China. *Australian Accounting Review, 28*(1), 79-103. https://doi.org/10.1111/auar.12161

Zhang, J., Djajadikerta, H. G., & Zhang, Z. (2018). Does sustainability engagement affect stock return volatility? Evidence from the Chinese financial market. *Sustainability, 10*(10), 3361. https://doi.org/10.3390/su10103361

Zhao, H., Jiao, Z., Wang, J., & Kamar, A. (2021). Corporate social responsibility and firm liquidity risk: U.S. evidence. *Sustainability, 13*(22), 12894. https://doi.org/10.3390/su132212894

Appendix: List of Sectors

PSX provides a sector summary for all the listed firms. The data analyzed includes all the firms from every industry sector listed on Pakistan Stock Exchange as on June 30th, 2024.

1	Automobile Assembler	20	Oil & Gas Exploration Companies
2	Automobile Parts & Accessories	21	Oil & Gas Marketing Companies
3	Cable & Electrical Goods	22	Paper & Board
4	Cement	23	Pharmaceuticals
5	Chemical	24	Power Generation & Distribution
6	Close - End Mutual Fund	25	Property
7	Commercial Banks	26	Real Estate Investment Trust
8	Engineering	27	Refinery
9	Exchange Traded Funds	28	Sugar & Allied Industries
10	Fertilizer	29	Synthetic & Rayon
11	Food & Personal Care Products	30	Technology & Communication
12	Glass & Ceramics	31	Textile Composite
13	Insurance	32	Textile Spinning
14	Inv. Banks / Inv. Cos. / Securities Cos.	33	Textile Weaving
15	Jute	34	Tobacco
16	Leasing Companies	35	Transport
17	Leather & Tanneries	36	Vanaspati & Allied Industries
18	Miscellaneous	37	Woollen
19	Modarabas