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Is the Quality of Sustainability Reporting Practice Factor Driven?-Evidence from Listed Companies in Bangladesh

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Abstract

A company can effectively communicate their measures taken for achieving sustainability in economic, environmental, social areas through their reporting practices. That makes sustainability reporting practices an effective strategy. The objective of this study is to investigate whether any factor affects the quality of sustainability reports produced by listed companies in Bangladesh. Using a disclosure checklist based on Global Reporting Initiative (GRI) guidelines pertaining to economic, social, and environmental issues, this study investigated the sustainability reporting practices of listed firms in Bangladesh. The study collected data from the 2023 annual reports of 107 sample companies listed on the Dhaka Stock Exchange (DSE). The findings of the study show that separate sustainability reports (P=0.001) improve the quality of sustainability reporting. Other factors, such as the size of the company, age, the firm's profitability, and the leverage of the firm, do not affect the sustainability reporting quality significantly. It reflects that the companies that include separate sections for sustainability disclosure in their annual reports have higher reporting quality than others. The findings will support businesses to understand their comparative position in showcasing their sustainability measures through reporting practices to the stakeholders. The results will also aid regulatory agencies in Bangladesh to build policy recommendations for implementing GRI-based sustainability reporting for listed companies.

Keywords: Bangladesh, Global Reporting Initiative, Reporting Practice, Sustainability Reporting.

Introduction

The role that contemporary corporate organizations play in attaining sustainable growth in the economy and global social development has come under scrutiny due to growing worries about global warming and pervasive income disparity (1). Nowadays, there is more pressure on organizations to satisfy the stakeholders and make profit at the same time. Organizations need to focus on meeting every expectation so that they can easily keep their operating license intact (2). To address stakeholder expectations, businesses adopt sustainability reports presenting insights into their sustainability-related operations, including data on economic, environmental, and social activities (3). By using these sustainability reports, companies can enhance their corporate recognition, connect with stakeholders more efficiently, and demonstrate their validity in the eyes of the public (2). As a result, executives and all other stakeholders are increasingly realizing the significance of sustainability reporting as it discloses a wealth of information to evaluate a company (4). Additionally, though sustainability reporting, businesses may fulfill their commitments to the surroundings, society, and community. Along with that, they also mitigate their risks and enhance stability in financial conditions (4, 5). Sustainability reporting, in contrast to other prior published environmental and corporate social responsibility reports, is often prepared using the well-known Global Reporting Initiative principles. Among the most accepted and well-known sustainability reporting systems worldwide is the GRI (6). It gives businesses a set of SR components that they can use to present sustainability reports more consistently and comparably across nations (7). The majority of developing countries currently allow only voluntary adoption of SR standards, and corporate entities have not yet realized the significance of these reporting procedures (8). Adopting such standardized reporting procedures, however, could enhance the information's acceptability and reliability among a variety of stakeholder groups in

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emerging economy environments (9). Given the significance of sustainability reporting and its presumed advantages, many enterprises are preparing as well as sharing these regularly. This gives them a competitive edge over the other similar firms (10). GRI-based reporting research is required in developing countries so that organizations can determine the further developments of sustainability reporting practices (4) as drivers of SR are changing and evolving (2).

Prior research has shown that different countries have adopted standardized reporting methods differently (8). These external as well as internal drivers have a considerable effect on the implementation of various standards of reports (11). Nevertheless, there isn't much empirical research looking at the variables affecting SR and how SR practices differ in emerging economies (5). Although the implementation of voluntary reporting methods could eventually increase the firm's worth (12), the corporate bodies in developing countries are currently ignorant of the need and desire for such policies (13). Due to variations in institutional systems, social organizations, policy formulation, regulatory structures, and stakeholder expectations, study findings from industrialized countries cannot be applied to emerging economies (13). Besides, the fundamental elements that influence such reports in developing nations could differ from those in advanced nations (8).

In Bangladesh, an agreement was made in 2017 linking DSE to train regulators as well as businesses about the standards of GRI. As listed firms on stock markets began voluntarily releasing reports to publicly declare their commitment to sustainability, such release shows sustainability reports in Bangladesh has steadily advanced. Regulatory organizations have attempted to encourage this growth. However, 15% listed companies on the DSE, submitted sustainability reports in 2019 in terms of standardized reporting. A quarterly report on sustainable investments is now required of banks and non-banking financial entities by the Bangladesh Bank. For all other Bangladeshi publicly traded firms, it is still optional. While many countries now mandate non-financial disclosures to exhibit their sustainability measures to their stakeholders, only a small portion of the listed firms disclose sustainability information which gives a unique context to inspect factor driven sustainability reporting quality in Bangladesh. Studying the type and scope of publicly disclosed information in developing market will add to the scholarly discussion since knowledge of SR practices in these areas gives some insight into how much business, the environment, and economic development influence sustainability initiatives (14).

Table 1 shares the findings from previous literature that were collected, reviewed and summarized to identify key themes and establish theoretical framework of the research.

Table 1: Key Findings of Previous Studies

SN	Authors	Objectives	Findings
1.	Orazalin and Mahmood (4)	This study was aimed at determining sustainability reporting practices of Russian companies.	The study found out that the most significant determinants of sustainability information dissemination in Russian firms are single sustainability reporting and age of the company.
2.	Dissanayake *et al.* (6)	The authors conducted a study on companies in Sri Lanka to establish the relationship between sustainability reporting and corporate variables.	It was found out that the size of the company plays a major role on the disclosure of sustainability reporting by the listed companies in Sri Lanka.
3.	Kuzey and Uyar (14)	Identify the motivators of the sustainability reporting and their effects on the firm value.	This analysis indicated that there is a weak relationship between leverage and sustainability reporting. Conversely, the size of the firm is a significant influencer in the sustainability reporting.
4.	Orazalin and Mahmood (15)	The study assessed publicly traded companies in Kazakhstan	According to the report, each factor of sustainability disclosures should be

		to determine their sustainability performance.	focused on enhancing overall disclosure quality.
5.	Adegboye *et al.* (3)	The study was carried out to find out the impact of audit committee attributes on the sustainability disclosure of the Nigerian banks.	The independence of the audit committee and gender diversity of the audit committee was found to increase the sustainability disclosure significantly.
6.	Mehjabeen (16)	Determine the connection between the company's sustainability reporting practices and the characteristics of top management.	Establish the relationship between the sustainability reporting practices by the company and the traits of the top management.
7.	Kılıç and Kuzey (17)	Identify the determinants of the disclosure of sustainability issues in corporate reports.	This study offers that a sustainability committee, industry type, size of the firm and profitability are significant factors of stand-alone sustainability reporting yet leverage is not.
8.	Liu and Anbumozhi (18)	The article examined Chinese firms to establish which elements would affect the provision of the environmental disclosure in the sustainability reporting.	The research found out that the size of the firm will significantly influence the level of disclosure of the firm.
9.	Ruhnke and Gabriel (19)	The authors researched German markets and attempted to identify factors influencing the need for voluntary assurance for sustainability reporting.	The researchers concluded that the type and scope of reporting is dependent on the size of firm and presence of sustainability department.
10.	Thayaraj and Karunarathne (20)	The authors examined Sri Lankan companies to establish the effects of sustainability reporting on financial performance.	The results reveal that ROA on financial performance and sustainability reporting which includes social environmental and economic disclosures have a positive relationship.
11.	Bhat and Abdullah (21)	The authors investigated the factors impacting sustainability reporting practices in Oman's listed companies.	The article has found out that the degree of firm size affects the sustainability reporting practices in a positive way; the financial leverage, on the other hand, affects it negatively.
12.	Ikpor *et al.* (22)	The authors have tried to establish the factors that determine the practices of sustainability reporting in Nigeria.	The researchers discovered that the factors which affect sustainability reporting are firm size, profitability, age and leverage.
13.	Dienes *et al.* (23)	The research was a systematic review of sustainability reporting practices that have been undertaken by corporations.	The research findings reached the conclusion that the most significant variables affecting the disclosure of sustainability reports are firm size. There is no significant relationship between profitability and age of the company.
14.	Yusuf and Emmanuel (24)	The research examined how sustainability reporting impacts on financial performance of non-	In the process of giving sustainability reporting, the authors found that there was a positive relationship between size

		financial companies in Nigeria.	and financial performance, negative relationship between age and financial performance.
15.	Pal *et al.* (25)	The research examined the correlation between sustainability reporting and financial outcomes of the Indian listed companies.	Financial performance is significantly improved by ROE and firm size.
16.	Khan *et al.* (26)	The authors examined the sustainability reporting of the large commercial banks in Bangladesh.	This study discovered that information about society has been shared extensively by the banks in Bangladesh.
17.	Akhter and Dey (5)	The authors examined the sustainability reporting practice of the listed companies in Bangladesh.	According to this study, Bangladeshi listed companies share inadequate information on sustainability reporting.
18.	Alam *et al*. (7)	The authors examined the sustainability reporting by non-bank financial institutions in Bangladesh.	It was found that non-bank financial institutions in Bangladesh do not follow GRI requirements of sustainability reporting.
19.	Rahman and Nazrul (27)	The study examined a Bangladeshi manufacturing sector's corporate sustainability reporting practices.	The survey revealed a low level of disclosure of economic, social and environmental aspects with Bangladesh listed manufacturing enterprises not disclosing enough.
20.	Haque and Khanam (28)	The analyzed research included non-financial enterprises in Bangladesh to identify the factors that impact economic, environmental and social performance.	The authors discovered that company performance and size are key drivers of sustainability performance.

Table 1 shares that research across different countries reveals that firm size, age, leverage, profitability, a separate section for sustainability reporting are among the most influential determinants of sustainability reports. Collectively, these studies were drawn on signaling theory, legitimacy theory, agency theory, stakeholders' theory. These theories were used to describe the reason that drives companies to disclose sustainability information and how internal and external drivers shape the degree of such reports.

In Bangladesh, reviewing previous research reveals that little has been done on this theme, given the paucity of information on SR convention in emerging markets, to determine whether the integrity of SR practice is dependent on any factors. This lack of investigation presents an opportunity to identify the important factors that drive the quality of sustainability reporting by the companies of Bangladesh so that the level of influence can be determined.

Therefore, the research aims to identify whether the quality of sustainability reporting practice is dependent on any factors along with the level of influence. The understanding will not only enrich academic literature but also encourage corporations to effectively increase sustainability disclosures.

Theoretical Framework

While developing the framework of this research, signaling theory, legitimacy theory, agency theory, and stakeholders' theory has been explored. The study's theoretical foundation was strengthened by incorporating the four GRI-driven quality attributes: assurance, completeness, comparability, and credibility.

Signaling Theory

Signaling theory offers a lens to understand corporate behavior. Where two parties don't have

access to similar information. The sender, such as management, decides the level of information to be shared. While the recipient such as, stakeholders or investors have to decide how to infer the signal (29). In this context, sharing financial data in the form of accounting reports with the stakeholders is considered a strategic signal from the company to the stakeholders and also future investors. The publication of financial reports serves as a powerful tool that projects companies' performance, stability, and market position. Companies use financial information as a signaling mechanism when they share inside knowledge about the future of their companies (30). Companies with solid economic stability are more driven in conveying their financial information to the market, which leads to reduced information asymmetry (31). Financial information shared by the companies is viewed as a positive signal, which effectively reduces information asymmetry (32).

Legitimacy Theory

Legitimacy theory creates an avenue to look after the organizational activities to see if these are following the standard practices or not. In a brief, whether the companies are conducting their operations according to social standards (33). This is particularly important to understand corporate social and environmental disclosures, as companies frequently use these practices to meet societal expectations and norms (34). Relating legitimacy theory with sustainability reporting practices can be an absolute way for organizations. Thus, organizations can use it as a tool to legitimize whether the business operations are practicing it or not (35). Orientation between corporate values with societal values is critical, as discrepancies can lead to a legitimacy gap. According to this theory, organizations aim to gain and maintain credibility by demonstrating their dedication to sustainability, which is increasingly considered crucial for competitive advantage.

Agency Theory

Based on the agency theory, disclosure of information between principal and agents are motivated by self-interest (36). Which actually acts as a way of decreasing information imbalance due to division of the two (37). Hence, shareholders rely on such disclosures to monitor actions of managers, while managers are assumed to provide information voluntarily. An agency problem usually occurs when managers get an information advantage over their principal (38). Since sustainability reporting involves voluntary disclosures, agency theory matters to assess the quality of the reports, as it can shed light on potential conflicts of interest where managers might selectively disclose positive information to protect their own interest or enhance the reputation of the firm rather than addressing shareholders' concerns.

Stakeholders Theory

Stakeholder theory focuses on how different groups of people having similar interests in mind work together to secure the organizational goals (39). Relationships between the organization and stakeholders take place on an ethical basis. This theory emphasizes that sustainability extends beyond achieving profits. It's about the impacts generated by the operations of companies (40, 41). This theory has changed the view of traditional financial reporting. There are a wide range of businesses where stakeholder theory seems to be practiced. Businesses try to integrate stakeholder theory to monitor and report organizations in a better way.

Signaling theory suggests assurance and credibility by explaining how firms reduce information asymmetry through transparent disclosure. Legitimacy theory relates to completeness and comparability as firms disclose broader sustainability information to align their operations with stakeholders' expectations. Agency theory highlights assurance and credibility, as voluntary reporting reduces monitoring costs and information gaps between stakeholders and managers. Stakeholder theory reinforces completeness by emphasizing the need to address diverse stakeholder information needs collectively. Collectively, these theories provide a comprehensive foundation for analyzing determinants of sustainability reporting quality. This also presents why Bangladeshi firms adopt different reporting strategies and help identify the determinants of SR quality and government pressure differ significantly than from developed economies.

Hypothesis Development

Separate Section of Sustainability Reporting

Previous researchers have stressed issuing independent sustainability reports based on signaling theory (42-45). According to previous studies, companies that publish independent

sustainability reports in compliance with the GRI principles offer more thorough and superior information, which functions as a signaling instrument for legitimacy (46).

Worldwide, using standalone sustainability reports to communicate sustainability practices has become very popular. In Bangladesh, publishing standalone reports is not as common as in developed companies. The concept of having a separate section for sustainability reporting in annual reports is an emerging trend in Bangladesh. Standalone reports are supported by signaling theory and indicate assurance and completeness. Thus, the following hypothesis was developed based on previous studies, but in light of the situation of Bangladeshi firms:

H1: The quality of sustainability reporting is positively correlated with the publication of a separate report or the creation of a separate section for sustainability in the annual report.

Firm Size and Sustainability Reporting Practices

Prior research indicates that firm size, volume, and the level of sustainability reporting are positively correlated (38-43, 47-50). As a result of more social pressure, larger entities are willing to reveal more information to shareholders in order to legitimize their activities by giving more information (51, 52). The same opinion was expressed by other researchers, who stated that larger firms are under tremendous pressure to reveal their social and environmental initiatives to broader stakeholder groups because of their public profile (53).

Company size is a major factor impacting the amount of sustainability information since larger organizations face greater stakeholder scrutiny and external pressures (54). Large corporations are more likely to provide CSR information due to their concern for credibility (55). The legitimacy theory can help explain the issue as it predicts that larger corporations will reveal more sustainability information. Firm size is supported by agency and signaling theory and indicates assurance and completeness. Thus, the following hypothesis was developed based on previous studies:

H2: The quality of sustainability reporting is positively and significantly impacted by firm size.

Profitability and Sustainability Reporting Practices

Another key determinant of sustainability reporting is the firm's profitability. Previous researchers emphasized that profitable companies are more inclined to disclose high-quality CSR information (56-58). It was concluded by the author, that enterprises with higher profit produce sustainability reports based on GRI principles (59). Profitable companies release thorough and explicit information on sustainability for public validation (60-62). Profitability is supported by agency and signaling theory and indicates assurance and credibility. Based on legitimacy theory, the following hypotheses have been proposed:

H3: The quality of sustainability reporting is positively and significantly impacted by profitability.

Leverage and Sustainability Reporting Practice

Many researchers advocate that SR practice is positively associated with leverage. Company with greater leverage is inclined to provide added information to prove its capability to meet its requirements and satisfy debt holders' concerns (63-65). Thus, a highly leveraged company gives more information via sustainability reports in order to lower agency costs. Leverage is supported by agency theory which reflects assurance. Thus, the following hypothesis was developed based on previous studies:

H4: The quality of sustainability reporting is positively and significantly impacted by leverage.

Firm Age and Sustainability Reporting Practice

Age of an organization can be considered a key factor in determining the quality of sustainability reporting, as older firms demonstrate greater visibility and more involvement with voluntary reporting. Though there are some conflicting findings regarding this but, major portion of previous studies suggest positive association between firm age and sustainability reporting's quality (6, 13, 18, 66). Firm's age is supported by legitimacy theory which reflects assurance. Thus, we hypothesize the subsequent association:

H5: The quality of sustainability reporting is positively and significantly impacted by the age of the firm.

Methodology

Sample Design and Sources of Data

A total number of firms listed on the DSE is 657 across 22 categories. Among these 22 categories, mutual funds, bonds, and debentures have been excluded. Consequently, the population is 236 companies, which constituted the sampling frame. From the sampling frame, this study selected 107 companies using random sampling technique.

Random sampling technique was applied to ensure that each firm had an equal probability of inclusion, thus reducing bias of selection and improving representativeness of the sample across sectors. This ensured that the final sample captured sufficient variation in firm characteristics that is line with previous studies on emerging markets. From a practical perspective, this study considered collecting information only from annual reports. Our study had planned to utilize the data of 2024; however, the study relied on data from the sample companies' annual reports of 2023 as the annual reports for 2024 were not available. Table 2 represents detailed sample descriptions.

Table 2: Sample Descriptions

SN	Sector Distribution	Sample Size
1	Cement	4
2	Ceramics	3
3	Engineering	10
4	Food and Allied	8
5	Fuel and power	8
6	IT sector	3
7	Jute	1
8	Miscellaneous	4
9	Paper and Printing	2
10	Pharmaceuticals and chemicals	12
11	Services and Real Estate	2
12	Tannery Industries	2
13	Telecommunication	3
14	Textile	15
15	Travel and Leisure	3
16	Bank	15
17	Financial institution	12
Total		107

These 107 sample companies were investigated for sustainability information disclosure according to the checklist prepared. Among them, 19 companies did not disclose any information at all and were excluded from the sample list. As a result, the final sample size comprised 88 companies.

Data Analysis

A content analysis approach was created to analyze the amount and extent of sustainability disclosure in Bangladeshi enterprises using previous literature research and applicable recommendations. Previous scholars have extensively used content analysis techniques in descriptive research by converting qualitative content into quantitative format (67). To perform content analysis, a sustainability reporting index was prepared which was applied to the annual reports of the sample companies using a dichotomous approach, with a value of 1 assigned if related information was reported and 0 otherwise. The most recent version of GRI guidelines, G4, was published in 2013. The GRI-G4 guidelines provide 91 performance indicators to assess an organization's economic, environmental, and social impacts (4). GRI standards improve qualities such as assurance, completeness, compatibility and credibility of sustainability reporting. The factors in the hypothesis were chosen by addressing some of these reporting qualities. This study prepared a checklist of 41

indicators (see Appendix A) from these guidelines based on previous studies (27). Table 3 shares the list of indicators.

Description of the Study Variables

Dependent Variable

The dependent variable in this study is the quality of companies' sustainability reporting. The quality of reporting is measured using a content analysis of the GRI-compliant sustainability reporting index. The variable Sustainability Reporting is expressed as each company's percentage of disclosure, which is computed by dividing the total number of items revealed in all three categories by the total number of indicators.

Table 3: List of Indicators

Aspects of Disclosure	No. of indicators
Economic	5
Environmental	14
Social	22

Independent Variables

The study considers five variables as independent variables to find out the quality of sustainability reporting. These variables are separate sections for sustainability reports, age, size, firm performance, and leverage. When a separate section is designated in the company's report on sustainability, it generates a dummy variable coded 1 for the separate sustainability report. Firm age (AGE) refers to the number of years after the company's incorporation. The firm's size (SIZE) is calculated as the natural logarithm of the company's total assets. The firm's leverage (LEV) is computed using the ratio of total debt to total assets. The firm's profitability performance has been measured using a proxy variable, Return on Equity (ROE) that is computed as net profit divided by total equity. Table 4 summarizes description of the variables.

Table 4: Description of the Variables

Variables	Acronym	Operational Definition
Dependent variable		
Sustainability Reporting Score	SRS	Sum of the scores of the items disclosed divided by the maximum possible score.
Independent variables		
Separate Section for Sustainability Reporting in Annual Report	SSFSR	Value 1 is provided if the firm has a separate section for the sustainability report in the annual report, 0 otherwise.
Firm Age	AGE	Number of years since company's incorporation
Firm Size	SIZE	The natural logarithm of total assets.
Leverage	LEV	The percentage of total debt to total assets.
Firm Performance	ROE	The percentage of net income after tax divided by total equity.

Specification of the Model

To evaluate the association between the quality of sustainability reporting and firm-specific characteristics, this study employed the model shown below in Equation [1]:

$$SRit = \beta 0 + \beta_1 (SSFSR) + \beta_2 (AGE) + \beta_3 (SIZE) + \beta_4 (LEV) + \beta_5 (ROE) + \varepsilon_{it} \quad [1]$$

In this equation, SRit represents the quality of sustainability reporting practices under economic, environmental, and social performance indicators of the sample company i at time t; SSFSRit is a dummy variable that determines how SR is disclosed (separate section for SR in the annual report or not), AGEit is the age of the firm, SIZEit is the size of the firm, LEVit is the leverage of the firm, ROEit is the return on equity, and εit is the error term. Here, i represent the company, and t represents time. This study employed the statistical software Stata to analyze the data.

Results and Discussion

Descriptive Statistics

Table 5 shows the descriptive statistics of the dependent and independent variables. Including observation, mean, standard deviation, minimum, and maximum. The average sustainability reporting score is 20%, with a standard deviation of 15.5%. This means that the sample companies report an average of 20% of the data from the disclosure list. The reporting score ranges from 2 to 73%. A high standard deviation indicates that the quality of sustainability reporting varies significantly among businesses. Findings are comparable to those of the studies by, where the average sustainability performance ratings are 22.42% and 9.88%, respectively (15, 67, 68).

Descriptive studies for the independent variables show that the average age of Bangladeshi firms is 33 years and spans from 10 to 115 years, showing a broad variation in company age, which is also supported by the high level of standard deviation (15.9) of AGE.

The mean value for ROE is 10.93%, while the standard deviation is 50.32%, which is substantially greater. The companies' ROE varies significantly, ranging from -116.700% to 374.800%, which explains the huge standard deviation. According to the LEV data, the average leverage is 68.184%, with a range of 5.40% to 178.00% and a large standard deviation of 32.085%. The values vary significantly as well.

The SIZE average is $23.578, and it ranges from $17.70 to $27.20, with a low standard deviation of 2.193. SSFSR's report indicates that 71.43% of enterprises prefer to report on sustainability separately in their annual reports. It is clear that most businesses in Bangladesh are concerned with attracting the attention of their stakeholders to sustainability information.

Table 5: Descriptive Statistics

Variables	Obs	Mean	SD	Min	Max
AGE	88	33.432	15.879	10.000	115.000
ROE	88	10.925	50.323	-116.700	347.800
LEV	88	68.184	32.085	5.400	178.000
SIZE	88	23.578	2.193	17.700	27.200
SRS	88	0.203	0.155	0.020	0.730
Dichotomous variables		Yes (1)	No (0)		
SSFSR (%)	88	71.43	28.57		

To avoid potential multicollinearity issues, the VIF of independent variables has been checked. If correlation coefficient between the independent variables exceeds 0.700, multicollinearity issues may arise (69). Table 6 shows that the values of VIF are less than 5 and the 1/VIF values are less than 1. This demonstrates that our model is free of multicollinearity issues.

Table 6: VIF of Independent Variables

Variable	VIF	1/VIF
SSFSR	1.12	0.89046
AGE	1.06	0.944971
ROE	1.07	0.931802
LEV	1.18	0.848768
SIZE	1.34	0.745143
Mean VIF	1.15	

The functional form of the model was tested using the Ramsey RESET test. There is no statistical indication of missing variables or incorrect model specification because all p-values fall between 0.35 and 0.92, which is significantly higher than 0.05. Additionally, the Breusch-Pagan-Godfrey test reveals a p-value of 0.1959 > 0.05 at the 5% significance level, indicating that heteroskedasticity is not significantly supported. This implies that the findings of our regression model are reliable since our model satisfies constant variance of residuals.

The Pearson correlation between each variable is shown in Table 7. The findings demonstrate a positive correlation between sustainability reporting quality and SSFSR, LEV, and SIZE. The

quality of sustainability reporting is unrelated to AGE and ROE. With a score of 0.4157, SSFSR and sustainability reporting quality are strongly positively correlated. That means companies with separate sections for sustainability reporting in annual reports have better sustainability reporting quality, as they disclose more information. Thus, H1 is supported.

LEV (0.203) and SIZE (0.2890) have a positive association with the sustainability reporting index, but it is not substantial. It suggests that highly leveraged companies and firms with large asset values are more likely to submit sustainability information, but the quality of their sustainability reports is unaffected by these criteria. Thus, H4 and H5 are partially supported.

Table 7: Pearson Correlations among Dependent and Independent Variables

	SRS	SSFSR	AGE	ROE	LEV	SIZE
SRS	1					
SSFSR	0.4157**	1				
AGE	0.0331	-0.0138	1			
ROE	0.0153	0.0472	0.1157	1		
LEV	0.203	0.1872	-0.1157	0.0487	1	
SIZE	0.2890**	0.3015**	-0.2096*	-0.1911	0.3594**	1

Note: Significant correlations are shown by (**) at the 0.01 level and (*) at the 0.05 level.

Regression Analysis

This section discusses the regression results of the model. Most prior studies have used OLS regression to identify the variables affecting quality of sustainability. In order to explain how the independent variables affected the dependent variable, this study also employed OLS regression. Table 8 shows that the model explains approximately 21.5% of the variation in SRS (R=0.215). The coefficient of SSFSR (0.1097) is positively related to sustainability reporting quality**.** Among the independent variables, SSFSR emerged as the significant predictor (β=0.1097, p<0.01). The relationship is significant at the 1% level. This positive significant result implies that companies with dedicated areas for sustainability reporting reveal more information. Thus, their sustainability reporting quality is better. Thus, Hypothesis 1 is supported. This finding is similar to (4, 70-72).

Other variables, including AGE, ROE, LEV, and SIZE, have positive coefficients but did not show statistical significance (p>0.05), indicating that their relationships with SRS are not strong. This suggests that these factors have no effect on the quality of sustainability reporting of the selected companies of this study. Thus, hypotheses 2, 3, 4, and 5 are not supported. These findings are similar to the findings of (4, 6, 73-75).

Table 8: Regression Result with Robust OLS Estimation

SRS	Coefficient	Std. err.	t statistics	P-values
SSFSR	0.1097**	0.0327	3.35	0.001
AGE	0.0008	0.001	0.82	0.417
ROE	0.0001	0.0003	0.18	0.854
LEV	0.0004	0.0005	0.79	0.433
SIZE	0.0123	0.008	1.54	0.127
_cons	-0.2097	0.1852	-1.13	0.261
R-squared	0.215			

Note: ** denotes significance (p < 0.01) at the 0.01 level

The standard error values indicate that the coefficient estimates for most variables are subject to a moderate level of uncertainty, with SSFSR having the smallest standard error, suggesting a highly reliable estimate. At the 1% level, the t-statistics for SSFSR (t=3.35) show a statistically significant correlation with SRS. In contrast, the other independent variables (AGE, ROE, LEV, SIZE) have low t-values (< 2), implying that their coefficients are not significantly different from zero and may not meaningfully influence SRS in this model.

Conclusion

The study is aimed at identifying the factors that could impact quality of sustainability reporting for

companies listed of Bangladesh. Previous research has revealed that sustainability reporting quality of a company is influenced by its individual sustainability reports, profitability, age, size, and leverage. According to this study, the inclusion of separate sustainability reports has a substantial effect on the amount and scope of sustainability reporting in annual reports. Other criteria like profitability, age, and size have virtually little impact on the quality of sustainability reporting. Therefore, our study accomplished its research objectives. According to the study, firms that create distinct sustainability reporting sections in their annual reports provide more sustainability information ensuring completeness which can be compared over times. The signaling theory is supported by this finding. Firms with higher profits, assets, leverage, and age tend not to disclose more sustainability information to stakeholders. The scenario is valid for the Bangladeshi firms even though the findings differ from many previous studies. Because of a non-competitive share market and weak and corrupted regulatory authorities, the listed Bangladeshi companies may not have the urgency to disclose voluntary sustainability information to stakeholders, as there is no practice of accountability to shareholders in Bangladesh.

The findings of the study propose that firms with high leverage must enhance quality of their sustainability report to assure their ability to pay debts to their present and potential debt holders and to reduce agency cost. The study also suggests that older companies with higher profitability and larger sizes need to publish extended information to legitimize the operations as well as meet stakeholder expectations. To improve data quality, the Bangladesh Securities and Exchange Commission should enforce distinct sustainability reporting sections and implement internationally acknowledged standards. The Institute of Chartered Accountants of Bangladesh can help by developing professional competency based training guidelines that may assist organizations in preparing high-quality sustainability reports. They can collaborate on information compliance to promote uniform, consistent, and comparative sustainability reporting for Bangladeshi companies.

Implications

The study implies that companies who want to improve their quality of sustainability reporting should include it in a standalone report or a specific section of the annual report. Stakeholders such as investors, regulators, policymakers, and organizations will be affected by this study in several ways. The findings are a wake-up call for policymakers, regulators and corporate governance organizations to pressurize the companies to implement GRI guidelines for improving SR quality to ensure an efficient and competitive capital market.

Limitations

The primary constraint of this study is the number of samples. A more complete picture would be obtained by including a few additional samples. Another limitation is the time period. The study would have been more conclusive if it had considered data from multiple years of all listed companies in Bangladesh.

Future Research Areas

Future researchers should conduct additional research on SR practices in Bangladesh, emphasizing the influential factors, as few studies have been conducted on Bangladeshi companies. By focusing on other theories such as institutional, political, and social contract theories researchers can investigate the breadth and depth of SR practices.

Abbreviations

None.

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Author Contributions

Faria Akter: Conceptualization, Methodology, Data Collection, Analysis, Writing the original and review draft, Validation, Asma Akter Faria: Data Collection, Software, Analysis, Writing the original and review draft, Editing and Formatting, Validation, Nandita Rani Saha Nitu: Data Collection, Data curation, Writing the original and review draft, Editing and Formatting, Validation, Mohammad Azhar Hossain: Data Collection, Writing the original and review draft, Validation.

Conflict of Interest

The authors have no conflict of interest to declare.

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Appendix A: Checklist of Indicators

Economic Aspects	
1	Direct economic value generated and distributed (EVG&D)
2	Defined benefit plan obligations and other retirement plans
3	Infrastructure investments and services supported
4	Significant indirect economic impacts
5	Operations assessed for risks related to corruption
Environmental Aspects	
1	Materials used by weight or volume
2	Recycled input materials used
3	Reclaimed products and their packaging materials
4	Energy consumption within the organization
5	Energy consumption outside of the organization

6	Reduction of energy consumption
7	Water withdrawal by source
8	Water recycled and reused
9	Significant impacts of activities, products, and services on biodiversity
10	Direct (Scope 1) GHG emissions
11	Energy indirect (Scope 2) GHG emissions
12	Other indirect (Scope 3) GHG emissions
13	Reduction of GHG emissions
14	Non-compliance with environmental laws and regulations
Social Aspects	
1	New employee hires and employee turnover
2	Benefits provided to full-time employees that are not provided to temporary or part-time employees
3	Parental leave
4	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities
5	Workers with high incidence or high risk of diseases related to their occupation
6	Health and safety topics covered in formal agreements with trade unions
7	Average hours of training per year per employee
8	Programs for upgrading employee skills and transition assistance programs
9	Percentage of employees receiving regular performance and career development reviews
10	Ratio of basic salary and remuneration of women to men
11	Incidents of discrimination and corrective actions taken
12	Security personnel trained in human rights policies or procedures
13	Employee training on human rights policies or procedures
14	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening
15	Operations with local community engagement, impact assessments, and development programs
16	Operations with significant actual and potential negative impacts on local communities
17	Political contributions
18	Assessment of the health and safety impacts of product and service categories
19	Incidents of non-compliance concerning the health and safety impacts of products and services
20	Incidents of non-compliance concerning product and service information and labelling
21	Substantiated complaints concerning breaches of customer privacy and losses of customer data
22	Non-compliance with laws and regulations in the social and economic area

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