

Compliance of GRI G4 and Pattern of Sustainability Disclosure in the Corporate Sector of Bangladesh

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ABSTRACT

Purpose: The research is an attempt to find out the pattern and the level of sustainability disclosure as well as identify the relationship of sustainability disclosure with corporate characteristics.

Methodology: The study used secondary sources of data collected through content analysis of the annual report of the listed companies in DSE based on GRI G4 guidelines. The sustainability disclosure index (SDI) is used as a measure of the level of disclosure. Data for the study analyzed using both descriptive and inferential statistics such as frequency, mean, standard deviation, percentile, and ANOVA.

Findings: Statistical result implies that the mean SDI is poor (mean 12.19 and SD 9.61) compared to developed and developing countries where economic disclosure is five times higher than environmental and four times higher than social disclosure. Only about one-sixth of the companies prepared separate sustainability reports, and most of the companies disclose sustainability information in more than one place of the annual report. Sustainability disclosure is significantly related to category, nature, industry membership, ISO certification, multi-nationality, age, size, profitability, and leverage of the company.

Limitations: The research used only quantity ignoring the quality of sustainability information from the one-year annual report of the company based on GRI G4 guidelines.

Practical Implications: The research adds value to the existing knowledge of sustainability disclosure and provides a message to the policymakers.

Originality: This is one of the pioneer studies that examined the level and pattern of sustainability disclosure in Bangladesh as well as showed the relationship between sustainability disclosure and company characteristics, considered as an evolving economy.

1. Introduction

Corporate sustainability has evolved as a result of economic growth, environmental regulation stewardship, and a push for social justice and equity (Christofi, Christofi, & Sisaye, 2012). This idea of sustainability, having three dimensions, stems from the triple bottom line concept, which was coined by John Elkington in 1994 (Bhatia & Tuli, 2017a) where given the balanced emphasis on the economic, social, and environmental needs (Molla, Ibrahim, & Ishak, 2019). Sustainable development seems to increase company value, which is influenced by the relationship quality between internal and external stakeholders (Semuel, Hatane, Fransisca, Tarigan, & Dautrey, 2019). Sustainability disclosure is used to describe and justify a firm's approach and methods employed in dealing with social and environmental matters to legitimize corporate actions (Swarnapali, 2019). Through sustainability reporting companies objective to increase transparency, enhance brand value, exceeding benchmark in comparison to other entities, demonstrate competitiveness, motivate employees and support corporate information and control processes (Dissanayake, Tilt, & Qian, 2019; Hahn & Kühnen, 2013).

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Large numbers of sustainability reporting frameworks have been developed since 2000. The sustainability reporting guideline developed by Global Reporting Initiatives (GRI) is the most widely used framework in the developed and emerging economies (Carrots & Stick, 2013; Laskar & Maji, 2016). GRI is dedicated to providing companies with universal guidance for sustainability reporting (Wachira, Berndt, & Romero, 2019). GRI guidelines were developed in collaboration with experts from all stakeholder groups with consistent language and metrics. GRI guidelines contribute towards the preparation of trusted and credible voluntary sustainability reporting for organizations of any size, sector, and location (Christofi et al., 2012). The fast depletion of invaluable resources indicates that the increasing scarcity of resources is sure to affect future generations. Therefore, nutrition is enormously vital to safeguard the future of humankind (Bhatia & Tuli, 2017a). Understanding of the consequences of business operations on sustainability has evolved to cover a wide range of social, environmental, and governance issues from child labor to climate change, poverty, tax avoidance, and so on (Puroila & Mäkelä, 2019). It is a voluntary reporting practice that demonstrates the inclusion of social and environmental concerns in business operations as well as in the interaction with stakeholders (Bhatia & Tuli, 2017a; Marrewijk & Were, 2003). Corporate sustainability is a comprehensive approach comprising three major components, namely, economy, society, and environment (Laskar & Maji, 2016). Sustainability calls for a company to respond not only to its shareholders but also to other stakeholders, including employees, trade unions, contractors, suppliers, customers, creditors, affected communities, government, and NGOs (Azapagic, 2004; Ching & Gerab, 2017; Jenkins & Yakovleva, 2006).

Bangladesh is a highly populated developing country and going to be a middle-income country. The development should not only be economic development, it must be sustainable development with maintaining ecological, social, human development. The country has been suffering from acute environmental pollution and some of the areas social discrimination as part of a global problem. The responsibility of ecological imbalances, degradation of society, and humanity cannot avoid by the corporate sector of the country with all other actors and factors. Appropriate and well-accepted sustainability policy and practices of the same only can help to achieve the sustainable goal of the state vis-à-vis in the world. The issue is obvious for the present and future generation of Bangladesh vis-à-vis for the global perspective because equal importance should get emphasis by the planet for present and future. The time reaped to assesses the level and pattern of sustainability disclosure in the corporate sector of the country. From the theoretical point of view, the research will add value to the existing stock of knowledge in the field of voluntary disclosure, especially sustainability disclosure. From the practical point of view, the study will able to help the policymakers to formulate policies regarding sustainable development. The review may be also helpful for future researchers to conduct in-depth and wide-range research in that field.

So it is a matter of concern how much are practicing the GRI G4 guidelines by the companies listed in the DSE, Bangladesh. What is the pattern of reporting in the annual report? What type of companies gives more emphasis on the issue and which companies are not considered it as an essential need to understand? What are the factors that influence sustainability disclosure in the corporate sector in Bangladesh? The research is an attempt to find out the answer to the question using a methodological way.

2. Review of Literature

The review of related and relevant available literature on the internet all over the world to identify the research gap, establish research questions, and limit the scope of the present research. The outcome of the review of the literature is summarized below keeping an eye on the mentioned needs.

Akater and Dey (2017) stated that sustainability reporting was not mandatory till then; most of the companies were merely care about reporting sustainability issues in a structured way; most of the disclosures were positive and descriptive in nature in the annual reports of the listed companies in Bangladesh.

Akter, Akter, and Akhter (2018) identified that 100 percent of the sample banks in Bangladesh had prepared a sustainability report on labor, product responsibility, energy, emission using data from the annual report of 2016 considering GRI guidelines. Most of the banks used a separate section in the annual report for sustainability reporting as a narrative but lacked specificity and clear initiatives.

Alam, Ahmed, and Hasan (2018) observed that only a few non-banking financial institutions in Bangladesh followed GRI guidelines to report on sustainability, some others talked about sustainability but did not follow GRI guidelines, and the rest of the companies did not talk about sustainability at all using five years data of the companies listed in DSE, Bangladesh.

Barkemeyer, Preuss, and Lee (2015) noticed that the GRI has been successful in terms of output effectiveness by promoting the dissemination of sustainability reporting, in particular among Asian and South American companies.

Bhatia and Tuli (2017) found that the sustainability disclosure practices of selected companies are relatively low in the USA (average score of 39.1 percent) and the UK (average score of 34.5 percent).

Bhatia and Tuli (2017a) reported that companies with large size, older age, having multinational operations and belonging to Software, IT and ITES, and Oil and Gas industry have significant sustainability disclosure. However, the company's profits, leverage, growth, and advertising intensity are negatively related to the extent of sustainability disclosure in India.

Bhatia and Tuli (2018) noticed that the developing nations disclosed more information (59.04 percent) on sustainability issues as compared to companies in developed countries (36.47 percent).

Branco, Delgado, Gomes, and Eugenio (2014) observed that size, leverage, profitability, listing status, and industrial affiliation were determinants of SRA, whereas the type of ownership is not in Portugal applying bivariate and multivariate non-parametric statistics.

Buallay and Al-Ajmi (2019) witnessed a negative association between financial expertise and sustainability reporting whereas bank size, age and auditor type was positively associated with corporate sustainability reporting in the Gulf Cooperation Council.

Ching, Gerab, and Toste (2017) observed that there was no clear consensus on the financial performance of companies in sustainability indices relates to their sustainability performance.

Ching, Gerab, and Toste (2013) perceived that a good sustainability report is directly related to the excellent content in economic, environmental, and social aspects, regardless of the commercial segment and these reports still have a big area for improvement.

Dienes, Sassen, and Fischer (2016) found that firm size, media visibility, and ownership structure were the most significant for the sustainability disclosure, while corporate governance only seemed to have an impact on the presence of audit and sustainability committees. Other factors such as profitability, capital structure, firm age, or board composition do not show a vibrant tendency.

Dissanayake et al. (2019) found that the company size and usage of the GRI guidelines are the most relevant company characteristics whereas ownership and industry sector did not show strong influences on the extent of sustainability reporting of the listed companies in Sri Lanka using panel data analysis.

Hossain (2017) observed that only four financial services firms were preparing and publishing sustainability reports based on the GRI guidelines in the financial services industry of Bangladesh using both primary and secondary sources of data.

Laskar (2018) found that the average level of disclosure was more in the Japanese companies (90 percent), after that India (88 percent) and South Korea (85 percent) whereas only 72 percent in Indonesian firms. He also found that the relative effect of sustainability reporting on firm performance was more in developed countries than in developing countries of Asia.

Laskar and Maji (2018) noticed that the average level and quality of disclosure for Japanese firms were the highest, after that India and South Korea. Moreover, corporate sustainability practices in terms of level and quality relatively influence on firm performance was more in developed countries than the developing countries of Asia.

Laskar and Maji (2016) observed that the mean level of disclosure was 88 percent, but the quality of exposure was about 80 percent in India using secondary sources of data collected from the annual report on a four-point scale.

Mahmud, Biswas, and Islam (2017) revealed that only eight out of thirty banks (2011-0%, 2012-3.33%, 2013-6.67%, 2014-6.67%, and 2015-10%) disclosed sustainability information in their annual report in Bangladesh from the year 2011 to 2015 based on GRI reporting framework, but most of the cases, the sustainability information did not meet the standard of GRI guidelines.

Swarnapali and Wuhan (2017) mentioned that the corporate sustainability arena was growing still then and different methods were used to define measure and theorize corporate sustainability.

Wachira, Berndt, and Romero (2019) detected a significant positive relationship between the adoption of the GRI guidelines and the level of transparency of non-financial disclosures and environmental sensitiveness.

After reviewing the above literature, it is found that sustainability reporting is comparatively a new but rising and most discussing issue in the research world. Some studies were conducted in Bangladesh using content analysis and descriptive analysis. The researcher is intended to attend the present study based on quantitative analysis which may give a specific outcome. So there is visible scope to study the current scenario of sustainability disclosure practices of listed companies as well as the relationship between corporate characteristics and sustainability disclosure in Bangladesh.

3. The Methodology of the Study

The research is empirical in nature based on secondary sources of data collected through content analysis of the annual reports of the company listed in DSE, Bangladesh, based on GRI G4 guidelines.

3.1 Population and Sample

There were 316 companies listed in 2018 with Dhaka Stock Exchange (DSE), Bangladesh. According to Krejcie and Morgan (1970) for the determination of the sample size of the finite population, the study required sample size of about 175 (175 samples for population size 320). Sample of the study selected from 18 categories based on DSE classification.

Table 1. Population and Sample

Categories	Population	Sample	Percent
Bank	30	23	76.67
Financial Institutions	23	13	56.52
Insurance	47	15	31.91
Pharmaceuticals and Chemicals	31	15	48.39
Jute	3	2	66.67
Textile	55	30	54.55
Cement	7	5	71.43
Services and Real Estate	4	3	75.00
Foods & Allied	17	9	52.94
Tannery Industries	6	4	66.67
Engineering	38	19	50.00

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Ceramic Sector	5	4	80.00
Fuel and Power	19	14	73.68
Telecommunication	2	2	100.00
IT Sector	9	3	33.33
Paper and Printing	3	2	66.67
Travel & Leisure	4	3	75.00
Miscellaneous	13	9	69.23
Total	316	175	55.38

Source: DSE Website and Author's Calculation

3.2 Measurement Procedure

Different measurement procedures are used by different researchers to assess the level of sustainability reporting practices. Akter et al. (2018); Molla et al. (2019) used content analysis to collect data on sustainability disclosures from the one-year annual report and websites. Bhatia and Tuli, (2017); Bhatia and Tuli (2017a); Boiral (2013); Ong and Djajadikerta (2020) applied content analysis. Dissanayake et al. (2019) employed word count content analysis. Ferri, (2017) utilized content analysis of a seven-point Likert scale. Haladu and Salim (2017); Hossain (2017) used content analysis applying a disclosure checklist where a score of 1 awarded if an item reported; otherwise, a score of 0 was assigned by browsing the websites of the sample companies.

Aktas, Kayalidere, and Karğın (2013); Bhatia and Tuli (2018); Ching et al. (2013); Ching et al. (2017) exercised a content analysis method on the indicators of GRI framework; Alam et al. (2018) measured the level of sustainability reporting practices as per GRI G-3/3.1 reviewing annual reports and results shown as full disclosure, partial disclosure, and no discourse. Laskar and Maji (2018) employed content analysis based on GRI 3 and 3.1 frameworks to measure the disclosure score of corporate sustainability performance. Akater and Dey (2017) exploited content analysis techniques to analyze sustainability disclosures in the annual report and website based on GRI G4 guidelines. Laskar (2018) draws on content analysis (binary -0 and 1) to calculate the disclosure score of sustainability performance, based on the GRI format.

Argento et al. (2019) utilized content analysis to develop a sustainability disclosure index. Atan, Razali, Said, and Zainun (2016) employed content analysis of the annual report and stand-alone report to develop a modified index. Content analysis is a widely used tool in social science research for extracting information in a numeric form from the published report (Laskar & Maji, 2016). Szekely and Brocke (2017) exercised semi-automated text-mining techniques whereas Nur, Akther, and Rahman (2016) followed the UN Global Compact framework for sustainability reporting. Ismail and Latiff (2019) applied Thomson Reuters ESG Scores of public listed companies from Thomson Reuters Eikon™ DataStream.

In the study content analysis of the annual reports 2018 exercised to develop an un-weighted sustainability disclosure index (SDI) based on the GRI G4 guidelines. The annual reports considered as a source of data because it is compulsory as they required by legislation and they are regularly produced mainly by all listed companies and by these reasons making comparisons relatively easy (Akbas, 2014; Tilt, 2001).

3.3 Scoring in the SDI

Ninety-three items of GRI G4 guidelines were used to develop a suitable disclosure index. The sustainability disclosure score (SDS) of each company calculated as follows:

$$SDS = \sum_{i=1}^n d_i$$

Where,

$d = 1$ if the company disclosed the item d_i

$d = 0$ if the company does not disclose the item d_i

$n =$ number of items

SDI of each company as a dependent variable computed by using the following formula:

$$SDI = \frac{\text{SDS of Individual Company}}{\text{Maximum Possible Obtainable Score}} \times 100$$

3.4 Data Analysis Techniques

Based on the nature of data, descriptive analysis like frequency, mean, SD, percentile to identify the compliance level of sustainability disclosure of the company listed in DSE; and inferential statistics like ANOVA used applying the SPSS (Statistical Packages for Social Science) version 20 software, to investigate the relationships between corporate characteristics and the level of sustainability disclosure.

3.5 Hypothesis

Eleven hypotheses were developed regarding nine aspects and tested the same in the result and discussion section to show the relationship between corporate characteristics and sustainability disclosure.

4. Result and Discussion

The section is divided into two sub-sections and the result of the study is presented in the table with a brief discussion. Some literature at home and abroad encompassed as a reference to justify the impact of the research.

4.1 Descriptive Statistics

A descriptive analysis on SDI, as well as different subcategories of the disclosure presented in the table and discussion, is made in the sub-section.

4.1.1 Disclosure Indexes

Evident from table-2, SDI based on GRI G4 is not a satisfactory index (mean 12.19, SD 9.61, and range 42.39) under the study compared to develop and developing countries. The level of disclosure as per the GRI sustainability reporting guideline is 88 percent, and the disclosure quality is nearly 80 percent in India, which is quite satisfactory (Laskar & Maji, 2016). More sustainability information is provided by developing nations (mean disclosure score 59.04 percent) compared to the companies in the developed countries (mean disclosure score 36.47 percent) (Bhatia & Tuli, 2018). The average disclosure level is more in the Japanese companies (90 percent), followed by Indian (88 percent) and South Korean (85 percent) companies whereas the average disclosure level is only 72 percent in Indonesian firms (Laskar, 2018). Sustainability reporting in Indonesian listed banks is still low (Amidjaya & Widagdo, 2019). The overall mean sustainability disclosure score is 39.1 percent in the case of the USA, followed by the UK with 34.5 percent (Bhatia & Tuli, 2017). The quality of sustainability reports is better among financial institutions in developed countries (Chang, Amran, Iranmanesh, & Foroughi, 2019).

The mean economic disclosure index is 37.71 (SD 14.68 and range 77.78) which is about four times higher than the social disclosure index of 10.02 and almost five times higher than the environmental disclosure index of 8.59 under the study. The study result has consistency with the findings of Ching and Gerab (2017), which shows that economic disclosure and social dimensions are better than those of the environmental extent in Brazil. Sarkar, Ahmed, and Islam (2020) found that the mean corporate ecological disclosure in terms of sentences is 10.51 with a high standard deviation (SD 14.33) in Bangladesh. Akter et al. (2018) showed that all of the banks disclosed sustainability information in major three areas, i.e. economic, environmental and social issues. Akhter and Dey (2017) found that disclosure on the economic category is more remarkable than social and ecological issues in the companies of Bangladesh.

Table 2. Distribution of Disclosure Indexes

Disclosure Indexes	Mean	Median	Mode	SD	Range	Min.	Max.
1. Economic	37.71	33.33	22.22	14.68	77.78	11.11	88.89
2. Environmental	8.57	5.88	0	9.21	44.12	0	44.12
3. Social (3.1+3.2+3.3)	9.95	6.00	0	10.66	58	0	58
3.1 Labor Practices and Decent Work	19.86	12.50	0	19.31	68.75	0	68.75
3.2 Human Rights	2.08	0	0	7.31	50.00	0	50.00
3.3 Society	5.61	0	0	9.88	45.45	0	45.45
3.4 Product Responsibility	8.25	0	0	12.87	100	0	100
Sustainability Disclosure Index (1+2+3)	12.19	8.7	4.35	9.61	42.39	1.09	43.48

Source: Author’s Analysis of Primary Data.

4.1.2. Place of Sustainability Disclosure

Table-3 showed that only about one-sixth (17.71 percent) of the company have separate sustainability statements under the study. Akhter and Dey (2017) found that only 16 percent of the sample companies use separate sustainability reporting sections in the annual report of 2015 and 2016, Akter et al. (2018) showed that 20 percent of banks in Bangladesh prepared separate sustainability report. In the annual report 2018, the rate of preparation of separate sustainability reports increased.

Table 3. Distribution of Separate Sustainability Report

Prepared Separate Sustainability Report	Frequency	Percent
Yes	31	17.71
No	144	82.29
Total	175	100

Source: Author’s Analysis of Primary Data.

Table 3 also indicates that about five-sixth (82.29 percent) of the companies under the study have not prepared a separate sustainability report but all of those disclose sustainability information in the annual report. Table-4 indicates the places of disclosure on sustainability information. Maximum sustainability information announced in the director's commentary (70.29 percent), financial statements (37.14 percent), notes to the financial statements (21.71 percent), management discussion and analysis (18.29 percent), the message from the chairman (12.0 percent), the board of directors report (11.43 percent) of the company. It should mention here that a large number of companies disclosed their sustainability information in more than one place of the annual report.

Table 4. Distribution of Places of Sustainability Disclosure in the Annual Report

Place of Information in Annual Reports	Frequency	Percent
Director’s Report	123	70.29
Financial Statements	65	37.14
Management Discussion and Analysis	32	18.29
Corporate Social Responsibility	24	13.71
Notes to the Financial Statements	38	21.71
The message from the Chairman	21	12.00
Board of Directors Report	20	11.43
Human Resources Report	9	5.14
Value Added Statement	8	4.57
Financial Performance Highlights	6	3.43
Risk Management Report	3	1.71

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Corporate Governance	3	1.71
Sustainable Human Resource Development	3	1.71
Shareholders and Investors Information	2	1.14
Environment, Health, and Safety	3	1.71
Human Capital	2	1.14
Company Information	1	0.57
Triple Bottom Line Report	1	0.57
Statement from Managing Director	7	4.00
Declaration of CEO and CFO	1	0.57
Economic Impact Report	1	0.57
Others	8	4.57

Source: Author's Analysis of Primary Data.

4.1.3 Frequency Distribution of SDI

Table 5 indicates that SDI of 25.7 percent (45 companies) companies under the study is 3 to 6, which is the highest group of sustainability disclosure. The result indicates that the number of companies decreases with the increases of SDI. The trend suggests that the majority of the companies under the study reluctant regarding sustainability disclosure. Akhter and Dey (2017) found that a maximum of 84 percent of the sample companies in Bangladesh disclosed less than ten indicators in their annual reports.

Table 5. Frequency Distribution of SDI

SDI	Frequency	Percent	Cumulative Percent
≤3	18	10.3	10.3
3 – 6	45	25.7	36.0
6 – 9	26	14.9	50.9
9 – 12	17	9.7	60.6
12 - 15	10	5.7	66.3
15 - 18	11	6.3	72.6
18 - 21	18	10.3	82.9
21 - 24	11	6.3	89.1
24 - 27	4	2.3	91.4
27 - 30	3	1.7	93.1
30 - 33	4	2.3	95.4
33 - 36	3	1.7	97.1
36 - 39	1	.6	97.7
39 - 42	3	1.7	99.4
42 ≥	1	.6	100.0
Total	175	100.0	

Source: Author's Analysis of Primary Data.

4.2 Relationship between Sustainability Disclosure and Company Characteristics

The relationship between sustainability disclosure and company characteristics was analyzed using both descriptive and inferential statistics in the sub-section.

4.2.1 SDI and Company Category

Mean SDI (table-6) is 12.19 with a high SD (9.61) where cement companies disclosed the highest sustainability information (mean SDI 26.09 and SD 5.70) followed by the banks (24.24), financial institutions (19.40), telecommunication (17.94), fuel and power (14.98), textile (14.35) whereas IT sector disclosed the lowest volume of sustainability information (mean SDI 3.26 and SD 1.09).

Table 6. SDI based on Company Category

Categories	Mean SDI	SD	Sample Size
Bank	24.24	9.55	23
Financial Institutions	19.40	8.65	13
Insurance	6.01	3.81	15
Pharmaceuticals and Chemicals	5.80	2.21	15
Jute	5.98	2.31	2
Textile	14.35	8.83	30
Cement	26.09	5.70	5
Services and Real Estate	3.62	1.26	3
Foods and Allied	5.68	5.56	9
Tannery Industry	13.05	6.15	4
Engineering	5.95	3.41	19
Ceramic	5.43	3.07	4
Fuel and Power	14.98	5.33	14
Telecommunication	17.94	6.92	2
IT Sector	3.26	1.09	3
Paper and Printing	7.07	2.31	2
Travel and Leisure	7.97	8.23	3
Miscellaneous	3.38	1.67	9
Total	12.19	9.61	175

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of descriptive analysis in table 6.

H_0 : There is no significant relationship between the company category and sustainability disclosure.

H_1 : There is a significant relationship between the company category and sustainability disclosure.

Statistical results (ANOVA in table 7) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between company category and sustainability disclosure. The study result has consistency with Bhatia and Tuli (2017a) found a positive relationship between company nature and sustainability disclosure whereas Rao and Tilt (2016) found that industry type has some influence on CSR disclosure.

Table 7. ANOVA of Company Category and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9131.033	17	537.120	12.165	.000
Within Groups	6931.875	157	44.152		
Total	16062.908	174			

Source: Author’s Analysis of Primary Data.

4.2.2 SDI and Company Nature

Mean SDI (table-8) is 12.19 with a high SD (9.61) where non-manufacturing companies disclose more (mean SDI 15.51 and SD 10.36) sustainability information than manufacturing companies (mean SDI 9.57 and SD 8.12).

Table 8. SDI based on Company Nature

Categories	Mean	SD	Sample Size
Manufacturing	9.57	8.12	98
Non-manufacturing	15.51	10.36	77
Total	12.19	9.61	175

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of table-8.

H_0 : There is no significant relationship between company nature and sustainability disclosure.

H_1 : There is a significant relationship between company nature and sustainability disclosure.

Statistical results (ANOVA in table-9) indicate that the null hypothesis was rejected at 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between company nature and sustainability disclosure. Bhatia and Tuli (2017a) found a positive relationship between company nature and sustainability disclosure which consistent with the study result.

Table 9. ANOVA of Company Nature and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1522.375	1	1522.375	18.113	.000
Within Groups	14540.533	173	84.049		
Total	38839.495	174			

Source: Author's Analysis of Primary Data.

4.2.3 SDI and Industry Membership

Table-10 indicates that more sustainability information (mean SDI 24.90 and SD 9.69) disclosed by the companies that have no option to take industry membership than the companies that have membership (mean 16.18 and SD 8.22) and have no membership (mean 8.70 and SD 7.31).

Table 10. SDI Based on Industry Membership

Status of Industry Membership	Mean	SD	Sample Size
Yes	21.15	17.151	34
No	9.72	13.843	119
Not Applicable	24.90	9.69	22
Total	10.51	14.335	175

Source: Author's Analysis of Primary Data.

The following hypothesis was developed to test the result of table-10.

H_0 : There is no significant relationship between industry membership of the company and sustainability disclosure.

H_1 : There is a significant relationship between industry membership of the company and sustainability disclosure.

Statistical results (ANOVA in table-11) indicate that the null hypothesis was rejected at 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between the industry members of the company and SDI. The result has consistency with the work of Branco et al. (2014) found industrial affiliation influences sustainability disclosure.

Table 11. ANOVA of Industry Membership and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5548.111	2	2774.055	45.378	.000
Within Groups	10514.797	172	61.133		
Total	38839.495	174			

Source: Author's Analysis of Primary Data.

4.2.4 SDI and ISO Certification

Table-12 indicates that ISO-certified companies disclose more (mean SDI 14.51 and SD 10.80) sustainability information than ISO uncertified companies (mean SDI 10.58 and SD 8.43).

Table 12. SDI Based on ISO Certification

Categories	Mean	SD	Sample Size
ISO Certified	14.51	10.80	71
ISO Uncertified	10.58	8.43	103
Total	12.19	9.64	174

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of table-12.

H_0 : There is no significant relationship between the ISO certification of the company and sustainability disclosure.

H_1 : There is a significant relationship between the ISO certification of the company and sustainability disclosure.

Statistical results (ANOVA in table-13) indicate that the null hypothesis was rejected at 5 percent level of significance (P-value is .008). So, it can conclude that there is a significant relationship between the ISO certification of the company and sustainability disclosure. Yusoff, Othman, and Yatim (2013) found a significant correlation between ISO 14001 certification and environmental exposure in Australian and Malaysian companies. Ezhilarasi and Kabra (2017) found that the company’s environmental certifications are positively associated with environmental disclosure. But there is no support of literature under the study which showed the relationship between ISO certification and sustainability disclosure.

Table 13. ANOVA of ISO Certification and SDI

Particulars	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	648.68	1	648.68	7.24	.008
Within Groups	15414.18	172	89.62		
Total	16062.86	173			

Source: Author’s Analysis of Primary Data.

4.2.5 SDI and Multi-nationality of Company

Table-14 testimony that the multi-national companies disclose more (mean SDI 18.80 and SD 11.92) sustainability information than non-multinational companies (mean SDI 10.82 and SD 8.48).

Table 14. SDI Based on Multi-nationality of Company

Multi-national	Mean	SD	Sample Size
Yes	18.80	11.92	30
No	10.82	8.48	145
Total	12.19	9.61	175

Source: Author’s Analysis of Primary Data.

The following hypothesis develops to test the result of table-14.

H_0 : There is no significant relationship between the multi-nationality of the company and sustainability disclosure.

H_1 : There is a significant relationship between the multi-nationality of the company and sustainability disclosure.

Statistical results (ANOVA in table-15) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between the multi-nationality of the company and sustainability disclosure—the similar relationship of sustainability disclosure with multi-nationality found in different early researchers. Bhatia and Tuli (2017a) found a positive relationship with the multi-nationality of the company; Wang (2017) explores a positive relationship with the percentage of holdings foreign shareholders; and Anazonwu, Egbunike, and Gunardi (2018) found a significant favorable influence of the nationality of the board member.

Table 15. ANOVA of Multi-nationality of Company and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1586.13	1	1586.13	18.955	.000
Within Groups	14476.77	173	83.68		
Total	16062.91	174			

Source: Author's Analysis of Primary Data.

4.2.6 SDI and Age of Company

Table-16 indicates that more aged (in groups) of companies disclose higher sustainability information than younger companies except for 31-40 years and 61 and older age group companies.

Table 16. SDI Based on Age (in Groups) of the Companies

Age groups	Mean	SD	Sample Size
1 - 10	5.26	2.79	6
11 - 20	11.10	9.49	56
21 - 30	15.91	11.12	53
31 - 40	9.99	7.98	36
41 - 50	12.19	8.04	14
51 - 60	11.96	6.49	6
61 - 70	8.70	3.08	2
71 and Older	8.15	6.92	2
Total	10.51	14.335	175

Source: Author's Analysis of Primary Data.

The following hypothesis develops to test the result of table-16.

H_0 : There is no significant relationship between company age (in the groups) and sustainability disclosure.

H_1 : There is a significant relationship between company age (in the groups) and sustainability disclosure.

Statistical results (ANOVA in table-17) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .042). So, it can conclude that there is a significant relationship between company age in the group and sustainability disclosure. Bhatia and Tuli (2017a); Buallay and Al-Ajmi (2019) found a significant positive association, whereas Mudiyan selage (2018) disclosed a significant negative relationship between the age of the company and sustainability disclosure.

Table 17. ANOVA of Company Age (in a group) and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1320.81	7	138.69	2.137	.042
Within Groups	14742.10	167	88.28		
Total	16062.91	174			

Source: Author's Analysis of Primary Data.

4.2.7 SDI and Size of Company

Several studies have found a significant association between the size of the company and the extent of corporate disclosure in the annual report in both developed and developing countries. There are several measures of size available (e.g., total assets value, sales volume, capital employed, and the number of employees). In the study, total assets, sales volume, and capital employed have been used as the measures of company size.

4.2.7.1 SDI and Total Revenue

Table-18 testimony that more revenue earner companies disclose the high volume of sustainability information than less revenue earner companies except for the 40001-45000 range of revenue earner companies.

Table 18. SDI based on total Revenue (in Groups) of the Companies

Revenue (in groups)	Mean	SD	Frequency
≤5000	9.02	6.89	121
5001 - 10000	17.44	11.95	21
10001 - 15000	20.34	6.39	14
15001 - 20000	26.09	12.92	4
20001 - 25000	18.48	12.93	9
25001 - 30000	25.00	-	1
30001 - 35000	34.78	-	1
35001 - 40000	-	-	0
40001 -45000	4.35	-	1
45001 ≥	18.48	14.62	3
Total	12.19	9.61	175

Source: Author’s Analysis of Primary Data.

The following hypothesis develops to test the result of table-18.

H_0 : There is no significant relationship between the total revenue of the company and sustainability disclosure.

H_1 : There is a significant relationship between the total revenue of the company and sustainability disclosure.

Statistical results (ANOVA in table-19) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between the total revenue of the company and sustainability disclosure. Bhuiyan, Hossain, and Akther (2017); Suttipun and Stanton (2012) found a positive relationship between total revenue and sustainability disclosure.

Table 19. ANOVA of the total Revenue of the Company and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4709.80	8	588.73	8.608	.000
Within Groups	11353.11	166	68.39		
Total	16062.91	174			

Source: Author’s Analysis of Primary Data.

4.2.7.2 SDI and Capital Employed

Table-20 testimony that large size companies disclose a high volume of sustainability information than small companies in terms of capital.

Table 20. SDI based on Capital Employed

Capital Employed	Mean	SD	Frequency
≤ 50000	10.61	8.31	149
50001 - 100000	26.90	16.01	4
100001 - 150000	16.67	4.53	3
150001 - 200000	22.10	19.02	3
200001 - 250000	10.87	-	1
250001 - 300000	23.92	1.53	2
300001 - 350000			
350001 - 400000	21.19	7.13	4
400001 - 450000	25.00	3.07	2
450001 - 500000	36.96		1
500001 - 550000			
550001 - 600000	23.55	15.76	3
600001 - 650000	14.13		1
650001 - 700000	10.87		1
Total	12.25	9.60	174

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of table-20.

H_0 : There is no significant relationship between capital employed and sustainability disclosure.

H_1 : There is a significant relationship between capital employed and sustainability disclosure.

Statistical results (ANOVA in table-21) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between company size in terms of capital employed and sustainability disclosure.

Table 21. ANOVA of Capital Employed and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3525.39	11	320.49	4.182	.000
Within Groups	12413.69	162	76.63		
Total	15939.08	172			

Source: Author's Analysis of Primary Data.

4.2.7.3 SDI and Total Assets

Table-22 testimony that large-size companies in terms of assets disclose a higher volume of sustainability information than small companies in terms of total assets.

Table 22. SDI based on Total Assets

Total Assets	Mean	SD	Frequency
≤ 5000	6.08	4.34	77
5001 – 10000	12.45	9.12	22
10001 – 15000	16.67	9.34	12
15001 – 20000	16.67	9.96	9
20001 – 25000	14.49	8.49	6
25001 – 30000	10.87	9.96	3
30001 – 35000	14.13	4.73	3
35001 – 40000	10.87		1
40001 ≥	20.65	10.09	42
Total	12.25	9.61	175

Source: Author's Analysis of Primary Data.

The following hypothesis was developed to test the result of table-22.

H_0 : There is no significant relationship between total assets and sustainability disclosure.

H_1 : There is a significant relationship between total assets and sustainability disclosure.

Statistical results (ANOVA in table-23) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between company size in terms of total assets and sustainability disclosure.

Table 23. ANOVA of total Assets and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6351.19	8	793.90	13.57	.000
Within Groups	9711.72	166	58.50		
Total	16062.91	174			

Source: Author's Analysis of Primary Data.

4.2.8 SDI and Profitability

Table-24 testimony that more profitable companies disclose a higher volume of sustainability information than low profitable companies in terms of profit after tax except one.

Table 24. SDI based on the Profitability of the Companies

Profit After Tax	Mean	SD	Frequency
≤ 20	8.86	7.44	27
21 – 40	9.29	6.98	11
41 – 60	6.92	5.65	11
61 – 80	9.35	7.18	10
81 ≥	14.21	10.40	111
Total	12.28	9.70	170

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of table-24.

H_0 : There is no significant relationship between the profitability of the company and sustainability disclosure.

H_1 : There is a significant relationship between the profitability of the company and sustainability disclosure.

Statistical results (ANOVA in table-25) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .010). So, it can conclude that there is a significant relationship between the profitability of the company and sustainability disclosure. Branco et al. (2014); Dilling (2010) found a significant positive relationship between profitability and sustainability disclosure; Giannarakis (2014) found a positive relationship between profitability and CSR disclosure; Argento et al. (2019); Mudiyansele (2018) found a positive correlation of profitability with sustainability disclosure whereas Bhatia and Tuli (2017a) found the significant negative relationship of profitability with sustainability disclosure.

Table 25. ANOVA of profitability of the company and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1230.070	4	307.518	3.461	.010
Within Groups	14658.569	165	88.840		
Total	15888.639	169			

Source: Author’s Analysis of Primary Data.

4.2.9 SDI and Leverage

Table-26 testimony that more levered companies disclose a higher volume of sustainability information than less levered companies in terms of debt-equity ratio.

Table 26. SDI based on Leverage (Debt-equity Ratio)

Debt-equity Ratio	Mean	SD	Frequency
≤ 0	11.41	6.92	2
0 – 2	10.50	8.63	135
2 – 4	10.76	9.13	10
4 – 6	24.18	11.97	8
6 – 8	19.02	7.76	4
8 – 10	19.26	10.35	7
10 – 12	14.86	9.05	3
12 – 14	26.09	11.35	3
14 - 16	21.74	12.30	2
16 - 18	-		
18 - 20	-		
20 – 22	-		
22 ≥	14.13		1
Total	12.19	9.61	175

Source: Author’s Analysis of Primary Data.

The following hypothesis was developed to test the result of table-26.

H_0 : There is no significant relationship between leverage and sustainability disclosure.

H_1 : There is a significant relationship between leverage and sustainability disclosure.

Statistical results (ANOVA in table-27) indicate that the null hypothesis was rejected at a 5 percent level of significance (P-value is .000). So, it can conclude that there is a significant relationship between the leverage of the company and sustainability disclosure. Shamil, Shaikh, Ho, and Krishnan (2014) found a significant positive relationship of sustainability disclosure with leverage whereas Branco et al. (2014); Bhatia & Tuli (2017a); Giannarakis (2014); Habbash (2016) identify a significant negative association of sustainability/ CSR disclosure with leverage.

Table 27. ANOVA of Leverage of Company and SDI

Categories	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2881.28	9	320.142	4.007	.000
Within Groups	13181.63	165	79.889		
Total	16062.91	174			

Source: Author's Analysis of Primary Data.

5. Findings and Conclusion

Sustainability is a matter of concern in the globe due to rapidly increasing global warming, ecological imbalances, and social discrepancies, broken-down of human rights, and so on. It should give equal importance to future generations at the time of use of natural resources for the present age. Bangladesh has suffered from acute environmental pollution because in recent times Dhaka, the capital city of Bangladesh, ranked one of the top polluted cities in the world. Among others, industrialization and expansion of business activities without consideration of the future generation is one of the significant causes of environmental pollution, social imbalances, and the breakdown of human rights. However, industrialization and the expansion of business activities are the preconditions for the economic development of a country vis-à-vis development of the standard of living. So concentration should be given on the growth of business activities and industrialization for the economic and social development with taking care of the future generation, its ecological conditions, social balances, and maintenance of human and labor rights.

The study attempts to find out the compliance of GRI G4 and pattern of sustainability disclosure in the corporate sector of Bangladesh using secondary sources of data collected through content analysis of annual reports of 175 companies for the year 2018 listed in the DSE. The SDI is used as a measure of sustainability disclosure based on GRI G4 guidelines. Univariate results indicate that the level of sustainability disclosure is inferior in Bangladesh as the mean disclosure is 12.19 with a high level of deviation (SD 9.61). The mean economic disclosure index is about four times greater than social disclosure and nearly five times higher than environmental disclosure under the study. Only about 17.71 percent of the companies prepared a separate sustainability report. Leading part of the companies to disclose sustainability information in the director's commentary, financial statements, notes to the financial statements, management discussion and analysis, the message from the chairman, board of director's report, corporate social responsibility report, and so on. It should mention here that a large number of companies disclosed their sustainability information in more than one place of the annual report. SDI of about half of the companies (50.9 percent) is less than equal 9 and SDI of only 0.60 percent of the company greater than equal 42 in the annual report. SDI of cement companies is highest, followed by banks, financial institutions, telecommunication, fuel and power, and textile companies respectively, whereas the IT sector discloses the lowest sustainability information based on GRI G4 guidelines. Non-manufacturing companies disclose a higher volume of sustainability information compared to the manufacturing industry. ISO-certified companies, multi-national companies, more aged companies, large size companies, more profitable, and more levered companies disclosed more sustainability information in the annual report compared to others. Company characteristics such as company category, company nature, industry membership, ISO certification, multi-nationality, age groups, size, profitability, and leverage of the company have a significant relationship with sustainability disclosure. The study only considered a one-year annual report to analyzed quantitative disclosure, ignoring the quality of disclosure. Future researchers may conduct research based on quality with quantity of exposure using more than one year of data from both annual reports and other internet reports of the company.

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