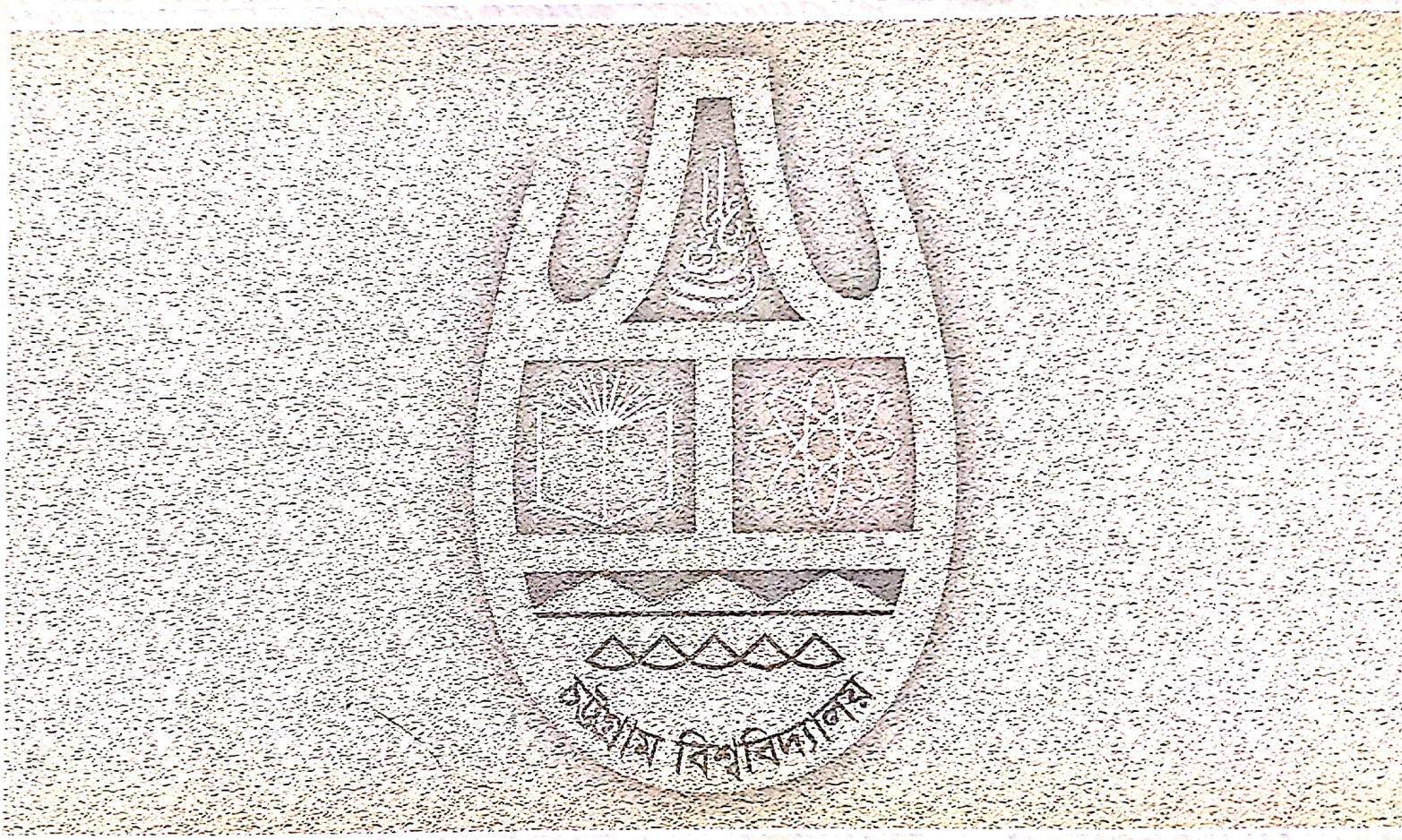
Special Issue, 2020, ISSN 2230 - 4843

THE CHITTAGONG UNIVERSITY JOURNAL OF BUSINESS ADMINISTRATION



Faculty of Business Administration
University of Chittagong
Chattogram - 4331, Bangladesh
Website: https://www.cu.ac.bd/cujba/

Determining the Impact of Corporate Characteristics on Sustainability Reporting by the Listed Companies in Bangladesh

Dr. Shakhawat Hossain Sarkar *

Abstract

Purpose: *The research aims to identify the relationship between corporate characteristics and sustainability reporting in Bangladeshi listed companies. In addition, the study also tries to notice the level of sustainability reporting practices in the corporate sector.*

Design/methodology/approach: *The author used content analysis of the annual report of 175 companies listed in DSE for 2018, applying word count procedure and ordinary least square regression analysis.*

Findings: *The findings demonstrate that sustainability reporting in Bangladeshi listed companies is still an uneven and large dispersion volume. Company size, financial performance and preparation of separate sustainability report positively influence sustainability reporting. On the other hand, the companies' nature, leverage, and dividend distribution are not significantly affecting sustainability reporting.*

Research limitations/implications: *The use of content analysis method for measurement of sustainability reporting considering quantity find data for only one year from the company's published annual report. To gain better quality, further research can implement the content analysis method considering quantitative and qualitative data from the annual report and other publications.*

Practical implications: *The study result highlights the need to implement sustainability reporting and identifies the corporate characteristics that influence sustainability reporting. Furthermore, it contributes to the sustainability reporting literature and messages to the policy planners and practising authorities.*

Originality/value: *This paper describes sustainability reporting in the corporate sector of Bangladesh and shows the relationship between corporate characteristics and sustainability reporting.*

Key Words: Sustainability reporting; corporate characteristics; listed companies; DSE; Bangladesh.

The Chittagong University
Journal of Business Administration
Special Issue, 2020, pp. 69 - 96

ISSN : 2230 - 4843

* *Professor, Department of Accounting and Information Systems, Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh-2224, Bangladesh .*

Introduction

Social consciousness and the global environment change significantly and give challenges to organisations that pay attention to more than just financial performance to facilitate their business (Khan, 2018). Rapid industrialisation, urbanisation, depletion of natural resources, climate change and poverty are global sustainability issues (Costa & Menichini, 2013, cited in Chang, Amran, Iranmanesh, & Foroughi, 2019). Therefore, the industries must reconsider their strategies and operations so that their existence would not injure society and the environment (Molla, Ibrahim, & Ishak, 2019). Sustainability is the state of the global system, which includes environmental, social and economic subsystems, where the present needs are met without compromising the ability of future generations to meet their own needs (Khan, 2015).

The international economic state is working with inflation, augmented raw materials and labour prices, which deteriorates the financial structure and raises political variability (Liu & Zhuang, 2013, cited in Jaimes-Valdez & Jacobo-Hernandez, 2016). Financial statements are not enough to fulfill the more extensive demand of various stakeholders because the stakeholders are more aware of non-financial issues and reporting requirements increased due to the faster flow of information (Alam, Ahmed, & Hasan, 2018).
Financial reporting is often misused for the company's advantage, and people do not know the window dressing due to not reporting the financial positions based on the company's actual conditions that impact the wrong decision-making (Saputra, Djajadikerta, & Majidah, 2017). Sustainability has recognised its potential to stand in the balanced development of three dimensions: economic, social and environmental (Jaimes-Valdez & Jacobo-Hernandez, 2016). The concept of sustainability is that business activities think about the stakeholders in the company and the impact of stakeholders outside the company (Kurniawan, 2018). This idea of sustainability, having three dimensions, stems from the triple bottom line concept coined by John Elkington in 1994 (Bhatia & Tuli, 2017a), where given the balanced emphasis on the economic, social and environmental needs (Molla et al., 2019). Corporate sustainability is a comprehensive approach comprising three significant components: economy, society, and environment (Laskar & Maji, 2016).

Sustainability information is provided within sustainability reports, CSR reports, and integrated reports (Esch, Schnellbacher & Wald, 2019).

Sustainability reporting (SR) has become a more relevant topic in business and academia since the end of the 1990s (Hahn & Kuhnen, 2013) as an element of strategic management used to imitate and communicate stakeholder discourse (Fernandez-Feijoo, Romero, & Ruiz-Blanco, 2014). The corporations are under burden from stakeholders to take responsibility and minimise the adverse effect of their activities on the natural and social environments (Costa & Menichini, 2013, cited in Chang et al., 2019). Corporate sustainability has grown due to economic growth, environmental regulation-stewardship, and a push for social justice and equity (Christofi et al., 2012). In addition, sustainability disclosure enhances earnings informativeness, communicating relevant information to capital market participants (Swarnapali, 2019).

In general, corporate sustainability is a business process that creates long-term consumer and employee value by forming a green strategy aimed toward the natural environment and considers every dimension of a business's social, cultural and economic environment (Nur, Akther, & Rahman, 2016). SR is increasingly recognised as an essential factor contributing to corporate sustainability (Lozano & Huisingh, 2011, cited in Hahn & Kuhnen, 2013). Attempts to implement sustainable development without transparency face severe risks; however, transparent organisations in their economic, environmental, and social activities can empower stakeholders, promote effective relations with other markets, and improve investment decisions (Wang, 2017). Disclosure of business activities related to the environment and society becomes vital for the community due to mistakes in judgment and decision making when business activities are conducted ignoring society (Saputra et al., 2017). The incorrect decision influences numerous aspects such as the economy, environment, and society (Saputra et al., 2017). UN Agenda 2030 and the Directive n.2014/95/E.U. have encouraged a visible advancement in sustainability disclosure, especially for more prominent companies or groups (Taliento, Favino, & Netti, 2019). There are different historys of sustainability and CSR's evolution but are forceful to a common goal and vision of harmonising economic responsibilities with social and environmental ones (Bhatia & Tuli, 2017a). Bangladesh has suffered from severe ecological

contamination because, in recent times, Dhaka ranked one of the highest polluted cities in the world (Sarkar, Ahmed, & Islam, 2020).

The study attempts to determine whether there is any relationship between the corporate characteristics and level of sustainability reporting of DSE listed companies in Bangladesh considering the abovementioned ground. The study would enrich the existing knowledge on sustainability, identify its essentials, and report the same in a developing economy's corporate sector. It will provide a valuable guideline to the policymakers and practising authorities to implement the sustainability practices as resources are limited so that the earth will become comfortable for the future generation.

2. Review of Literature

The following literature on the relevant field at home and abroad was reviewed in the section to find the research gap and formulate research hypotheses.

2.1. Size of the Company

Several studies have found a significant positive association between the size of the company and the extent of corporate sustainability reporting in the corporate annual report in both developed and developing countries (Branco, Delgado, Gomes, & Eugenio, 2014). Some of the studies found a significant positive relationship between the size of the company and the extent of sustainability reporting (Bhatia & Tuli, 2017a; Buallay & Al-Ajmi, 2019; Mudiyanselage, 2018); between company size and CSR disclosure (Giannarakis, 2014; Habbash, 2016; Majeed, Aziz, & Saleem, 2015). Some studies recognise that there is a relationship between company size and sustainability/CSR disclosure (Argento, Grossi, Persson, & Vingren, 2019; Dienes, Sassen, & Fischer, 2016; Dissanayake, Tilt, & Qian, 2019; Orazalin & Mahmood, 2019; Rao & Tilt, 2016; Sarkar, 2021; Shamil, Shaikh, Ho, & Krishnan, 2014). Frias-Aceituno, Rodriguez-Ariza, and Garcia-Sanchez (2013) found that the size of a company is the essential factor in the integrated dissemination of information. Dilling (2010) found that there is no statistically significant relationship between firm size and sustainability reporting.

From this perspective, a larger company may hypothesise to disclose a higher volume of sustainability information than a small company for various reasons.

Several measures of size are available (e.g., number of employees, total asset value, sales volume, capital employed). In the study, assets value has been used as the measure of company size. The following specific hypothesis has been developed regarding the size of the companies:

H1: There is a significant positive association between company size and the extent of sustainability reporting.

2.2. Company Nature

Some studies recognise a relationship between company nature and sustainability/C.S.R. disclosure (Bhatia & Tuli, 2017a; Rao & Tilt, 2016; Sarkar, 2021). However, Shamil et al. (2014) and Habbash (2016) found no relationship between industry type and sustainability/C.S.R. disclosure.
Based on this background, company nature expected significant positive influences on sustainability reporting, and the second research hypothesis was formulated regarding company nature.

H2: There is a substantial positive association between company nature and the extent of sustainability reporting.

2.3. Leverage

Shamil et al. (2014) identified a significant positive relationship between sustainability disclosure and leverage, whereas some studies identified a significant negative association between sustainability/CSR disclosure and leverage (Branco et al., 2014; Bhatia & Tuli, 2017a; Giannarakis, 2014; Habbash, 2016). Mudiyanselage (2018) found an insignificant relationship between leverage and CSR. Sarkar (2021) found that sustainability reporting is significantly related to the leverage of the company.

Several studies have found either positive, negative or no relationship between leverage and sustainability disclosure, but a negative correlation showed in more researchers than other types of relationship. So, the study expects a negative correlation, and the third hypothesis has developed regarding the leverage of the company:

H3: There is a meaningful negative relationship between leverage and the extent of sustainability reporting.

2.4. Financial performance

Some studies show a significant positive relationship between sustainability/CSR disclosure and the company's profitability (Argento et al., 2019; Branco et al., 2014; Dilling, 2010; Giannarakis, 2014). Laskar (2018) found a significant positive association between sustainability reporting and a firm's performance. Similarly, Tarmuji, Maelah, and Tarmuji (2016) found the influence of environmental, social and governance (ESG) practices on economic performance. Orazalin and Mahmood (2019) found that firm profitability substantially influence the extent, nature and quality of sustainability reporting practices. On the other hand, some revisions recognise no statistically significant relationship between profitability and sustainability/CSR disclosure (Dienes et al., 2016; Habbash, 2016; Rao & Tilt, 2016). Atan, Razali, Said, and Zainun (2016) found no association between ESG disclosure level and financial performance. Bhatia and Tuli (2017a) found a significant negative relationship between sustainability reporting and profit. Sarkar (2021) identified that sustainability reporting is significantly related to company profitability.

The empirical result concludes a contradictory conclusion, a significant positive or negative or no meaningful relationship between financial performance and the extent of sustainability reporting. It should mention here that the maximum number of studies showed a positive correlation between the variables. Therefore, the study expects a positive relationship, and the fourth hypothesis has developed regarding the company's financial performance.

H4: There is a substantial positive association between the company's financial performance and the extent of sustainability reporting.

2.5. Sustainability Reporting

No study under the review process showed the relationship between preparing and presenting a separate sustainability report in the annual report and the extent of sustainability disclosure/ reporting. However, the study wants to explore the relationship. From this point of view, the study expects that the companies

disclose more magnificent information of the company that prepare separate sustainability report than companies that do not do it and the fifth research hypothesis proposed as follows:

H5: There is a meaningful positive relationship between preparing a separate company's sustainability report and the extent of sustainability reporting.

2.6. Dividend Distribution

No study under the review process showed the relationship between the company's dividend distribution and the extent of sustainability disclosure. However, different studies showed the relationship between sustainability disclosure and profitability or the company's financial performance, as shown above. Therefore, the researcher wants to discover the relationship between the company's dividend distribution and the extent of sustainability reporting. Thus, the sixth research hypothesis proposed regarding the dividend distribution is as follows:

H6: There is a substantial positive relationship between the company's dividend distribution and the extent of sustainability reporting.

Six corporate attributes considered in the study as explanatory variables have assessed previous studies undertaken by other researchers. The explanatory variables include the size of the company (proxied by total assets); company nature (proxied by either the company is manufacturing or non-manufacturing); leverage (proxied by debt-equity ratio); financial performance (proxied by net profit after tax); preparation of separate sustainability report (proxied by dummy variable either prepared separate sustainability report or not); and dividend distribution (proxied by dummy variable either the company declared dividend or not). The above paragraphs provide a rationale for taking into consideration the corporate trait chosen as explanatory variables.

The independent variables, their description and labels, expected signs and relationships are presented in Table-1.

Table -1: Independent variables

Variable Labels	Variables	Description	Hypotheses	Expected Sign
SIZE	Company Size	SIZE has a significant positive connection with the levels of sustainability reporting.	H1	+
NAT.	Nature of company	NAT has a significant positive relationship with sustainability reporting.	H2	+
LEV	Leverage	LEV has a significant negative relationship with the levels of sustainability reporting.	H3	-
FP.	Financial performance	FP has a significant positive relationship with the levels of sustainability reporting.	H4	+
SSR.	Separate sustainability report	SSR has a significant positive relationship with the levels of sustainability reporting.	H5	+
DD.	Declaration of dividend	DD has a significant positive relationship with the levels of sustainability reporting.	H6	+

3. Methodology

The research is based on secondary data sources collected through content analysis of the number of words of the annual report of the DSE listed companies in Bangladesh.

3.1 Population and Sample

There were 316 companies listed in 2018 with Dhaka Stock Exchange (DSE), Bangladesh. Based on Krejcie and Morgan table (1970 cited in KENPRO) to determine the finite population's sample size, the study selected 175 (175 samples for population size 320) from 18 categories considering categories based on DSE classification.

Table-2: Population and Sample

Categories	Population	Sample	Per cent
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
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 own calculation.

3.2 Measurement Procedure

Earlier researchers used different measurement procedures to assess the level of sustainability reporting practices. Akter, Akter, and Akhter (2018); Molla et al. (2019) used content analysis to collect SR data from the one-year annual report and websites. Bhatia and Tuli, (2017); Bhatia and Tuli (2017a); Boiral (2013); Ong and Djajadikerta (2020) used content analysis. Dissanayake et al. (2019) used word count content analysis. Ferri (2017) used content analysis of a seven-point Likert scale. Haladu and Salim (2017); Hossain (2017) used content analysis applying disclosure checklist a score of 1 awarded if an item reported; otherwise, a score of 0 was assigned by browsing the sample companies' websites whereas Sarkar (2021) used the same procedure to collect data from annual reports.

Aktas Kayalidere, and Karğin (2013); Bhatia and Tuli (2018); Ching, Gerab, and Toste (2013); Ching, Gerab, and Toste (2017) used a content analysis method on the indicators of GRI; Alam et al. (2018) measured the level of SR 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) used content analysis based on GRI 3 and 3.1 frameworks to measure the disclosure score of corporate sustainability performance (CSP). Akater and Dey (2017) used content analysis techniques to analyse sustainability disclosures in the annual report and website based on GRI G4 guidelines. Laskar (2018) used content analysis (binary −0 and 1) to calculate the disclosure score of sustainability performance based on the GRI format.

Argento et al. (2019) used content analysis to develop a sustainability disclosure index. Atan et al. (2016) used content analysis of the annual report and stand-alone report to establish a modified index.

Content analysis is a widely used social science research tool for extracting information in a numeric form from the published report (Laskar & Maji, 2016).

Szekely and Brocke (2017) used semi-automated text-mining techniques to measure sustainability disclosure, whereas Nur et al. (2016) used the UN Global Compact framework for sustainability reporting. Ismail and Latiff (2019) used

Thomson Reuters ESG Scores of publicly listed companies, sourced from Thomson Reuters Eikon™ Datastream.

The study used content analysis of the annual report 2018 to measure the number of words regarding sustainability reporting because the annual report is a legal requirement for listed companies that are regularly produced (Tilt, 2001, cited in Akbas, 2014).

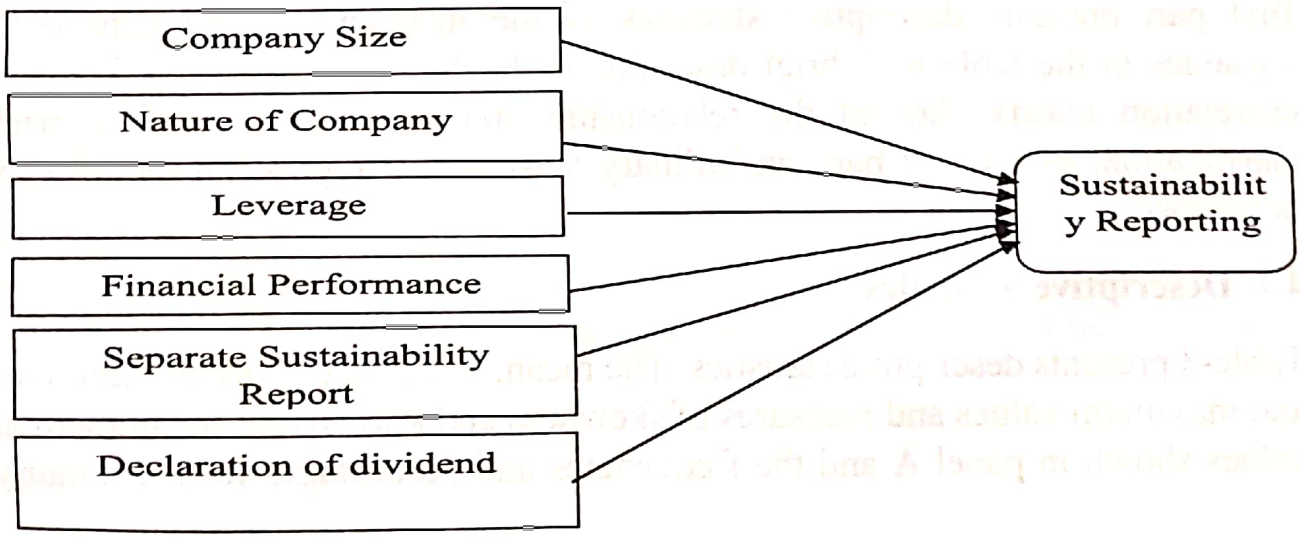
3.3. Data Analysis Techniques

The research used descriptive statistics to measure the level of sustainability reporting in the corporate sector in Bangladesh. The ordinary least square (OLS) regression model investigates the relationships between corporate characteristics and sustainability reporting practices. It should be mentioned here that log words, log assets, and log net profit after tax are used to make the data set normal in the regression analysis.

3.4. Independent and Dependent Variables

The sustainability reporting score (SRS) has been calculated as the dependent variable for each company studied, and the number of words on sustainability issues is considered SRS. In addition, independent variables are taken through the review of the literature. The association of independent with dependent variables showed in the figure-1.

Figure-1: Independent and Dependent Variable



Source: Self Constructed.

3.5. Multiple Regression Models

Multiple linear regression models were developed for the study problem as follows-

$SRS_i = \alpha + \beta_1 SIZE_i + \beta_2 NAT_i + \beta_3 LEV_i + \beta_4 FP_i + \beta_5 SSR_i + \beta_6 DD_i + \varepsilon_i$

Where,

SRS= the extent of sustainability reporting of the company i in 2018 (total log number of words related to the sustainability issues in the annual report of the company)

α= intercept

SIZE: the size of the company i (total log assets at the end of the year 2018)

NAT: nature of the company i (either the company is manufacturing or non-manufacturing)

LEV: leverage ratio of the company i (ratio of the total debt to equity at the end of the year 2018)

FP: financial performance i (log net profit after tax in the year 2018)

SSR: preparation of separate sustainability report of the company i (dummy variable) in 2018

DD: declaration of dividend of the company i (dummy variable) in 2018

ε= the error term

4. Results and Discussion

The section result of the study presented and discussed dividing three parts. The first part presents descriptive statistics of the independent and dependent variables in the table with brief descriptions. In the second part, the Pearson correlation matrix showed the relationship among variables with a brief clarification. In the last part, an ordinary least square regression model was developed.

4.1. Descriptive Statistics

Table-3 presents descriptive statistics. The mean, standard deviation, minimum and maximum values and measures of skewness and kurtosis for the numerical values shown in panel A and the frequencies and percentages for the dummy

variables, preparation of separate sustainability report and declaration of dividend presented in panel B, company nature and company category are shown in panel C, and number of words disclosed in a frequency table is shown in panel D.

The mean value of the study's dependent variable, the sustainability reporting score (SRS), is 1505.86 with a significant deviation (SD 2023.29, minima 52 and maxima 11937). The result indicates a wide range in the volume of sustainability disclosures of sample companies in their annual reports. Regarding the independent variables, table-3 shows that the mean value of size, measured by total assets at the end of the year 2018, is 54451.78 million Taka, implying that the sample consists of relatively larger companies. Furthermore, companies in the sample have average leverage (debt to equity ratio) of 1.94 and average profit 492.66 Million Taka. Panel B shows that most (82.3 per cent) of the sample companies do not publish a separate sustainability report, and most (89.1 per cent) of the companies distribute dividends. Panel C evidence that the sample includes more manufacturing (56 per cent) companies than non-manufacturing (44 per cent) companies. Mean disclosure of non-manufacturing companies (2316.23) is greater than manufacturing companies (869.14). Bank disclosed highest (mean 3842.65) volume of words followed by financial institutions (mean 3629.23) whereas IT sector disclosed lowest (mean 197.33) volume of words on sustainability reporting. Most of the companies (80 per cent) disclosed 0 – 2000 words in the annual reports of that companies. About one-tenth (9.70 per cent) companies disclosed 2000 – 4000 words, only 3 (1.70 per cent) companies disclosed 10000 – 12000 words under the study.

Table-3: Descriptive Statistics

Panel A – Dependent and Independent Variables

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Skew.	Kurt.
SRS (Number of Words)	175	1505.86	2023.29	52	11937	2.82	9.19
SIZE (Total Assets in Million Taka)	175	54451.78	119462.55	70.62	997429.6	3.98	22.95

LEV (Debt-equity ratio)	175	1.94	3.68	-2.04	23.95	2.86	9.67
FP (Net profit after tax in Million Taka)	173	492.66	1300.36	-6071.0	10562.86	3.21	27.22

Panel B – Dummy Variables

	Preparation of separate sustainability report		**Declaration of dividend**	
	Frequency	Per cent	Frequency	Per cent
Yes	31	17.7	156	89.1
No	144	82.3	19	10.9
Total	**175**	**100**	**175**	**100**

Panel C – Categorical Variables (Company Nature)

Company Nature	Total number of words disclosed	Average number of words disclosed	Number of Companies	Per cent of Companies	Ranking (based on average)
Manufacturing	85,176	869.14	98	56	2
Non-manufacturing	178350	2316.23	77	44	1
Total	**263526**	**1505.86**	**175**	**100.0**	

Source: Analysis of data.

Company Category

Company Category	Total number of words disclosed	Average number of words disclosed	Ranking (based on average)
Bank	88,381	3842.65	1
Financial Institutions	47,180	3629.23	2
Insurance	6,778	451.87	15
Pharmaceuticals and Chemicals	8,065	537.67	12

Jute	1,147	573.50	11
Textile	37,901	1263.37	7
Cement	10,197	2039.4	4
Services and Real Estate	702	234	17
Foods & Allied	4,632	514.67	13
Tannery Industries	6,197	1549.26	6
Engineering	9,370	493.16	14
Ceramic Sector	3,479	869.75	8
Fuel and Power	28,867	2061.93	3
Telecommunication	3,721	1860.5	5
IT Sector	592	197.33	18
Paper and Printing	1,490	745.00	9
Travel & Leisure	1,869	623.00	10
Miscellaneous	2,958	328.67	16
Total	**263526**	**1505.86**	

Source: Analysis of data.

Panel D – Number of Words Disclosed

Number of words disclosed	Number of Companies	% of disclosing companies to total number of companies	Summary Statistics
0 – 2000	140	80	
2000 – 4000	17	9.7	
4000 – 6000	10	5.7	Maximum: 11937
6000 – 8000	5	2.9	Minimum: 52
8000 – 10 000	0	0	Average: 1505.86
10000 – 12000	3	1.7	S. D. =2023.29
Total	**175**	**100**	

Source: Analysis of data.

4.2. Correlation Matrix

Table-4 presents the Pearson correlations matrix between the dependent and independent variables. The correlations analysis result indicates that the highest correlation coefficient between independent variables is 0.521 for company size (log assets) and leverage (debt-equity ratio). Farrar and Glauber (1967) suggest that the correlation between independent variables should not consider harmful until the correlation coefficients reach 0.8 or 0.9 (Akbas, 2014). Based on the suggestion, there is no unacceptable level of multicollinearity between the independent variables.

Table-4: Pearson Correlation Matrix

Variables	SRS	SIZE	NAT	LEV	FP	SSR	DD
SRS	1						
SIZE	.621*	1					
NAT	.306	.484	1				
LEV	.318	.521**	.391	1			
FP	.400*	.417	.145	.017	1		
SSR	.532*	.503	.375	.311	.247	1	
DD	.112	.159	.164	.075	.233	.150	1

*Correlation is significant at the 0.05 level (2-tailed)
** highest correlation coefficient between independent variables
Source: Analysis of data.

The correlation analysis indicates that the extent of sustainability reporting is, as expected, positively correlated to company size, financial performance, and preparation of separate sustainability reports at the 5 per cent significance level. However, the other three independent variables, company nature, leverage and dividend distribution, have no statistically significant correlation to the extent of sustainability disclosure, contrary to the expectations.

4.3 Regression Results

In table-5 the estimated value for company size is 0.229 and its t-value is 4.923 with p-value .000, the estimated value for company category is -.030 and its t-value is -.467 with p-value .641, the estimated value for leverage is .003 and its t-value is .354 with p-value .724, the estimated value for profitability is .089

and its t-value is 2.558 with p-value .011, the estimated value for separate sustainability report is .363 and its t-value is 4.398 with p-value .000, the estimated value for declaration of dividend is -.055 and its t-value is -.570 with p-value .569. Statistical results indicate that the company size, preparation of separate sustainability reports, and financial performance have a significant positive relationship with sustainability reporting at a 5 per cent level of significance. However, the company's nature, dividend distribution and leverage have no statistically significant relationship with sustainability reporting. The variance inflation factor (VIF) values for all six independent variables are less than three, indicating a lack of multicollinearity in the data. Result of the correlation matrix testimony that there is no variable with a higher correlation in the data set. The Durban Watson test statistics value is 1.045, in the normal range of 1.0 to 2.5. Field (2009) suggests that values under one or more than 3 are a definite cause for concern. So, the result indicates that there is no autocorrelation. Histogram (Figure-2) indicates that the data set is normally distributed. The R^2 value for this model is 0.473, and the AdjR^2 value is 0.454, which implies that the predictor variables can explain about 47.3 per cent of total variation by R^2 and about 45.4 per cent of total variation by AdjR^2.

Table-5: Result of OLS regression analysis testing the relationship between the extent of sustainability reporting and company characteristics

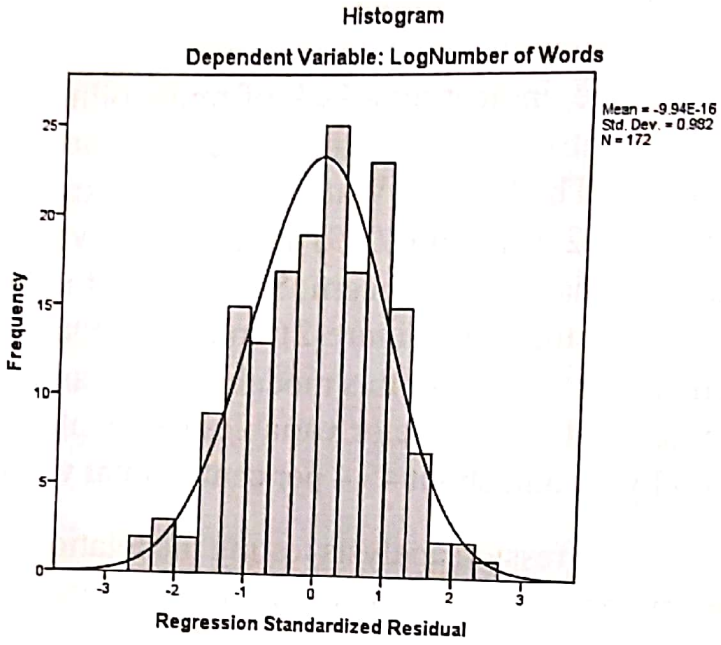
Model	Regression Coefficients B	t	P-value	Collinearity Statistics	
				Tolerance	VIF
Intercept	1.844	10.829	.000		
Company Size (log assets)	.229	4.923	.000	.459	2.179
Company Nature	-.030	-.467	.641	.711	1.407
Leverage	.003	.354	.724	.658	1.520
Profitability (log net profit after tax)	.089	2.558	.011	.739	1.354
Separate Sustainability Report	.363	4.398	.000	.718	1.393
Dividend Declared	-.055	-.570	.569	.925	1.081
R-Squire	.473				

Adjusted R-Squire	.454
Durbin-Watson	1.045
F-statistic	24.678
p-value of F-statistic	.000

a. Dependent Variable: log number of words

Source: Regression coefficient of data.

Figure-2: Histogram.



Source: Analysis of data.

5. Conclusion

The study investigated the relationship between sustainability reporting and corporate characteristics using secondary data sources collected through content analysis of the annual report 2018 of 175 companies listed in DSE, Bangladesh. The number of words used as a measure of the extent of sustainability reporting. Six corporate characteristics are considered as independent variables based on the previous literature. Descriptive statistics and inferential statistics were used to analyse the data through SPSS (Statistical Packages for Social Science) version 20.

Panel A in table-3 indicates that the mean disclosure of sustainability information is 1505.86 with a high deviation (standard deviation 2023.29 and

range 11885). The mean size in terms of assets value of the selected companies is 54451.78 million Taka, leverage ratio 1.94 and financial performance in terms of profit after tax 492.66 million Taka.

Panel B in table-3 also testimony that only about 17.7 per cent of companies prepared separate sustainability reports, and 89.1 per cent of companies are declared dividends.

Panel C in table-3 suggests that the data set includes more manufacturing companies (56 per cent) than non-manufacturing (44 per cent).

The correlation matrix indicates no unacceptable level of multicollinearity in the independent variables because the highest correlation coefficient between independent variables is 0.521 between company size and leverage ratio.

Table- 6: Summary of Results

Independent Variables	Results	Policy Implications
Company Size	Significantly positively related	The government should offer tax rebates for a specific period to the small companies that will disclose a desired level of sustainability information in the annual report.
Nature of Company	No significant relationship	Some sustainability information should make mandatory for manufacturing concerns like banking and financial institutions.
Leverage	No significant relationship	Need further study.
Financial Performance	Significantly positively related	Should offer reduced tax rates for the companies that will disclose minimum prescribed sustainability information in the annual report.

Separate Sustainability Report	Significantly positively related	Government and regulatory authorities should impose mandatory separate sustainability reports for loan facilities.
Declaration of Dividend	No significant relationship	Need further study.

Source: Table-5

The regression result indicates that three out of six hypotheses are supported. The empirical result means that company size has a significant positive relationship with the extent of sustainability reporting, as expected (hypothesis 1), which suggests that large companies disclose a higher volume of sustainability information than small ones. The result is consistent with the previous research result of Bhatia and Tuli, 2017a; Buallay and Al-Ajmi, 2019; Giannarakis, 2014; Habbash, 2016; Majeed et al., 2015; Mudiyanselage, 2018. Government should offer tax rebates for a specific period to comparatively small-sized companies that will disclose a minimum quantity of sustainability information in the annual report as prescribed by the regulatory authority vis-à-vis the government. Similarly, the company's financial performance (hypothesis 4) provides supportive evidence that there is a significant positive relationship between the financial performance of the company and the extent of sustainability reporting. The result indicates that more profitable companies disclose a high volume of sustainability information. The study result is consistent with the previous work of Argento et al., 2019; Branco et al., 2014; Dilling, 2010; Giannarakis, 2014. Laskar (2018); Orazalin and Mahmood (2019); Tarmuji et al. (2016) found that firm profitability substantially influences the extent, nature and quality of sustainability-reporting practices. Therefore, the government should offer lower tax rates to the companies for a specified period that will disclose a level of sustainability information in their annual report. The result offers supportive evidence for hypothesis 5 that there is a significant positive relationship between preparing a separate sustainability report of the company and the extent of sustainability reporting. The result indicates that companies disclose a high volume of information that prepare separate sustainability reports in the company's annual report. There is no study

under the review regarding the variable. A separate sustainability report should be mandatory in the annual report as a basic requirement for applying for a loan.

The result of the OLS regression analysis does not provide statistical support for the remaining three hypotheses, relating to variables company nature (hypothesis 2), leverage (hypothesis 3) and distribution of dividend (hypothesis 6). The coefficient for company nature is negative, whereas leverage and dividend distribution are positive but not statistically significant. The result shows no statistically significant relationship between the nature of the company and the extent of sustainability reporting, contrary to the expectation. The work is consistent only with Shamil et al. (2014); Habbash (2016) found no relationship between industry type and sustainability/C.S.R. disclosure. Though there is no statistically significant relationship between the variables, descriptive statistics show that non-manufacturing companies disclosed more than manufacturing companies. Non-manufacturing companies include banks and financial institutions with compliance guidelines like green banking as mandatory. So, manufacturing companies should have some compulsory compliance guidelines like waste management, work environment, etc. The result shows no statistically significant relationship between the leverage of the company and the extent of sustainability reporting, contrary to the expectation. The work is consistent only with Mudiyanselage (2018) finding an insignificant relationship between leverage and CSR. Similarly, the coefficient for the dividend distribution (hypothesis 6) is also positive but not statistically significant. The company nature also showed a statistically insignificant relationship with sustainability reporting. The result is consistent with the work of Habbash (2016); Shamil et al. (2014), who found no association between industry type and sustainability/C.S.R. disclosure.

Mentionable limitations of the study are that the study covers only one year, only considered annual reports of companies as the source of data on sustainability reporting, only regarded quantitative data without considering the quality of exposure. Future research would overcome the limitations using longitudinal data. In addition, the quality of reporting with the volume of the disclosure includes data from both an annual report and other publications.

Funding: The article is a part of a research project finance by Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh, Bangladesh.

Acknowledgement: The paper was presented in the Virtual National Conference on 'The Fourth Industrial Revolution: Reshaping Business for Sustainable Development in Bangladesh' Organised by the Bureau of Business Research, Faculty of Business Administration, University of Chittagong, Bangladesh, September 17-18, 2021.

References

Akbas, H. E. (2014). Company characteristics and environmental disclosure: An empirical investigation on companies listed on Borsa Istanbul 100 index. *The Journal of Accounting and Finance, 62*, 145-163.

Akhter, S., & Dey, P. K. (2017). Sustainability reporting practices: Evidence from Bangladesh. *International Journal of Accounting and Financial Reporting*, 7(2), 61-78. DOI:10.5296/ijafr.v7i2.11659

Aktas, R., Kayalidere, K., & Karğin, M. (2013). Corporate sustainability reporting and analysis of sustainability reports in Turkey. *International Journal of Economics and Finance*, *5*(3), 113-125. DOI:10.5539/ijef.v5n3p113

Akter, F., Akter, A., & Akhter, H. (2018). Sustainability reporting practices: A study of selected banking companies of Bangladesh. *European Journal of Business and Management*, *10*(17), 21-29.

Alam, S., Ahmed, T., & Hasan, M. M. (2018). Sustainability reporting practices by non-bank financial institutions of Bangladesh. *The Cost and Management*, *46*(2), 31-36.

Argento, D., Grossi, G., Persson, K., & Vingren, T. (2019). Sustainability disclosures of hybrid organisations: Swedish state-owned enterprises. *Meditari Accountancy Research*, *27*(4), 505-533. https://doi.org/10.1108/MEDAR-07-2018-0362

Atan, R., Razali, F. A., Said, J., & Zainun, S. (2016). Environmental, social and governance (ESG) disclosure and its effect on firm's performance: A

comparative study. *International Journal of Economics and Management*, *10* (S2), 355 – 375.

Bhatia, A., & Tuli, S. (2017). Sustainability reporting practices in US and UK: An empirical comparison. *International Journal of Law and Management*, *60*(4), 1034-1056. DOI 10.1108/IJLMA-04-2017-0102

Bhatia, A., & Tuli, S. (2017a). Corporate attributes affecting sustainability reporting: An Indian perspective. *International Journal of Law and Management*, *59*(3), 322-340. DOI 10.1108/IJLMA-11-2015-0057

Bhatia, A., & Tuli, S. (2018). Sustainability reporting: An empirical evaluation of emerging and developed economies. *Journal of Global Responsibility*, *9*(2), 207-234. https://doi.org/10.1108/JGR-01-2018-0003

Boiral, O. (2013). Sustainability reports as simulacra? A counter-account of A and A+ GRI reports. *Accounting, Auditing & Accountability Journal*, *26*(7), 1036-1071. DOI 10.1108/AAAJ-04-2012-00998

Branco, M.C., Delgado, C., Gomes, S. F., & Euge´nio, T. C. P. (2014). Factors influencing the assurance of sustainability reports in the context of the economic crisis in Portugal. *Managerial Auditing Journal*, *29*(3), 237-252. DOI 10.1108/MAJ-07-2013-0905

Buallay, A., & Al-Ajmi, J. (2019). The role of audit committee attributes in corporate sustainability reporting: Evidence from banks in the Gulf Cooperation Council. *Journal of Applied Accounting Research*, *21*(2), 249-264. https://doi.org/10.1108/JAAR-06-2018-0085

Chang, W. F., Amran, A., Iranmanesh, M., & Foroughi, B. (2019). Drivers of sustainability reporting quality: Financial institution perspective. *International Journal of Ethics and Systems*, *35*(4), 632-650. DOI 10.1108/IJOES-01-2019-0006

Ching, H. Y., Gerab, F., & Toste, T. H. (2013). Analysis of sustainability reports and quality of information disclosed of top Brazilian companies.

International Business Research, *6*(10), 62-77. DOI:10.5539/ibr.v6n10p62

Ching, H. Y., Gerab, F., & Toste, T. H. (2017). The quality of sustainability reports and corporate financial performance: Evidence from Brazilian listed companies. *SAGE Open*, *7*(2), 1 –9. ttps://doi.org/10.1177/2158244017712027

Christofi, A., Christofi, P., & Sisaye, S. (2012). Corporate sustainability: Historical development and reporting practices. *Management Research Review*, *35*(2), 157-172. DOI 10.1108/01409171211195170

Dienes, D., Sassen, R., & Fischer, J. (2016). What are the drivers of sustainability reporting? A systematic review. *Sustainability Accounting, Management and Policy Journal*, *7*(2), 154-189. https://doi.org/10.1108/SAMPJ-08-2014-0050

Dilling, P. F. A. (2010). Sustainability reporting in a global context: What are the characteristics of corporations that provide high quality sustainability reports – An empirical analysis. *International Business & Economics Research*, *9*(1), 19-30.

Dissanayake, D., Tilt, C., & Qian, W. (2019). Factors influencing sustainability reporting by Sri Lankan companies. *Pacific Accounting Review*, *31*(1), 67-92. DOI 10.1108/PAR-10-2017-0085

Esch, M., Schnellbacher, B., & Wald, A. (2019). Does integrated reporting information influence internal decision making? An experimental study of investment behavior. *Business Strategy and the Environment, 28*(4), 599-610. DOI 10.1002/bse_2267

Fernandez-Feijoo, B., Romero, S., & Ruiz-Blanco, S. (2014). Women on boards: Do they affect sustainability reporting? *Corporate Social Responsibility and Environmental Management*, *21*(6), 351–364. http://doi.org/10.1002/csr.1329

Ferri, L. M. (2017). The influence of the institutional context on sustainability reporting. A cross-national analysis. *Social Responsibility Journal*, *13*(1), 24-47. DOI 10.1108/SRJ-11-2015-0172

Field, A. (2009). *Discovering Statistics Using SPSS* 3rd Edition, Sage Publications Ltd., London.

Frias-Aceituno, J. V., Rodriguez-Ariza, L., & Garcia-Sanchez, I. (2013). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management*, *20*(4), 219–233. http://doi.org/10.1002/csr.1294

Giannarakis, G. (2014). Corporate governance and financial characteristic effects on the extent of corporate social responsibility disclosure. *Social Responsibility Journal*, *10*(4), 569-590. http://dx.doi.org/10.1108/SRJ-02-2013-0008

Habbash, M. (2016). Corporate governance and corporate social responsibility disclosure: Evidence from Saudi Arabia. *Social Responsibility Journal*, *12*(4), 740–754. http://doi.org/10.1108/SRJ-07-2015-0088

Hahn, R., & Kuhnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*(2013), 5-21. http://dx.doi.org/10.1016/j.jclepro.2013.07.005

Haladu, A., & Salim, B. B. (2017). Sustainability reporting by firms in the Nigerian economy: Social versus environmental disclosure. *Journal of Accounting and Finance in Emerging Economies*, *3*(2), 87-112. DOI:https://doi.org/10.26710/jafee.v3i2.96

Hossain, M. M. (2017). Sustainability report of financial services industry in SAARC countries: Special reference to Bangladesh. *Independent Business Review*, *10*(1 & 2), 124-159.

Ismail, A. M., & Latiff, I. H. M. (2019). Board diversity and corporate sustainability practices: Evidence on environmental, social and

governance (ESG) reporting. *International Journal of Financial Research, 10*(3), 31-50. DOI:10.5430/ijfr.v10n3p31

Jaimes-Valdez, M. A., & Jacobo-Hernandez, C. A. (2016). Sustainability and corporate governance: Theoretical development and perspectives. *Journal of Management and Sustainability, 6*(3), 44-56. DOI:10.5539/jms.v6n3p44

KENPRO. *Sample Size Determination Using Krejcie and Morgan Table*. http://www.kenpro.org/sample-size-determination-using-krejcie-and-morgan-table/

Khan, M. T. A. (2015). Sustainability reporting under global reporting initiative. *The Cost and Management, 43*(5), 4-17.

Khan, M. T. A. (2018). Sustainability reporting in financial institutions in line with GRI: Bangladesh perspective and international experience. *The Cost and Management, 46*(2), 6-13.

Kurniawan, P. S. (2018). An implementation model of sustainability reporting in village-owned enterprise and small and medium enterprise. *Indonesian Journal of Sustainability Accounting and Management, 2*(2), 90–106. DOI: 10.28992/ijsam.v2i2.49

Laskar, N., & Maji, S. G. (2016). Corporate sustainability reporting practices in India: Myth or reality? *Social Responsibility Journal, 12*(4), 625-641. DOI 10.1108/SRJ-05-2015-0065

Laskar, N., & Maji, S. G. (2018). Disclosure of corporate sustainability performance and firm performance in Asia. *Asian Review of Accounting, 26*(4), 414-443. https://doi.org/10.1108/ARA-02-2017-0029

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

Majeed, S., Aziz, T., & Saleem, S. (2015). The effect of corporate governance elements on corporate social responsibility (CSR) disclosure: An empirical evidence from listed companies at KSE. Pakistan. *International Journal of Financial Studies*, *3*, 530-556. doi:10.3390/ijfs3040530

Molla, M. S., Ibrahim, Y., & Ishak, Z. (2019). Corporate sustainability practices: A review on the measurements, relevant problems and a proposition. *Global Journal of Management and Business Research: Accounting and Auditing*, *19*(1)1, 1-8.

Mudiyanselage, N. C. S. R. (2018). Board involvement in corporate sustainability reporting: Evidence from Sri Lanka. *Corporate Governance, 18*(6), 1042-1056. DOI10.1108/CG-10-2017-0252

Nur, T., Akther, T., & Rahman, F. (2016). Rationality and status of corporate sustainability reporting through compliance with the UN global compact -Bangladesh steps towards the achievement of SDGs. *The Bangladesh Accountant, 2016*(4), 50-60.

Ong, T., & Djajadikerta, H. G. (2020). Corporate governance and sustainability reporting in the Australian resources industry: An empirical analysis. *Social Responsibility Journal, 16*(1), 1-14. DOI10.1108/SRJ-06-2018-0135

Orazalin, N., & Mahmood, M. (2019). Determinants of GRI-based sustainability reporting: Evidence from an emerging economy. *Journal of Accounting in Emerging Economies, 10*(1), 140-164. https://doi.org/10.1108/JAEE-12-2018-0137

Rao, K., & Tilt, C. (2016). Board diversity and CSR reporting: An Australian study. *Meditary Accounting Research, 24*(2), 182-210. https://doi.org/10.1108/MEDAR-08-2015-0052

Saputra, B. W., Djajadikerta, H., & Majidah (2017). Individual characters for sustainability reporting. *International Journal of Applied Business and Economic Research, 15*(19), 181-193.

Sarkar, S. H. (2021). Compliance of GRI G4 and pattern of sustainability disclosure in the corporate sector of Bangladesh. *BUFT Journal of Business & Economics (BJBE), 2*, 62-80.

Sarkar, S. H., Ahmed, R., & Islam, M. N. (2020). Level and pattern of environmental disclosure in the corporate sector of Bangladesh. *Emperor International Journal of Finance and Management Research, 6*(4), 21-41.

Shamil, M. M., Shaikh, J. M., Ho, P-L., & Krishnan, A. (2014). The influence of board characteristics on sustainability reporting: empirical evidence from Sri Lankan firms. *Asian Review of Accounting, 22*(2), 78-97. DOI 10.1108/ARA-09-2013-0060

Swarnapali, R. M. N. C. (2019). Sustainability disclosure and earnings informativeness: Evidence from Sri Lanka. *Asian Journal of Accounting Research, 5*(1), 33-46. DOI 10.1108/AJAR-05-2019-0033

Szekely, N., & Brocke, J. (2017). What can we learn from corporate sustainability reporting? Deriving propositions for research and practice from over 9,500 corporate sustainability reports published between 1999 and 2015 using topic modelling technique. *PLOS ONE, 12*(4), 1-27. https://doi.org/10.1371/journal.pone.0174807

Taliento, M., Favino, C., & Netti, A. (2019). Impact of environmental, social, and governance information on economic performance: Evidence of a corporate 'sustainability advantage' from Europe. *Sustainability, 11*(1738), 1-26. doi:10.3390/su11061738

Tarmuji, I. Maelah, R., & Tarmuji, N. H. (2016). The impact of environmental, social and governance practices (ESG) on economic performance: Evidence from ESG score. *International Journal of Trade, Economics and Finance, 7*(3), 67-74. DOI: 10.18178/ijtef.2016.7.3.501

Wang, M-C. (2017). The relationship between firm characteristics and the disclosure of sustainability reporting. *Sustainability, 9* (624), 1-14. DOI:10.3390/su9040624