



FINANCIAL FACTORS AND CORPORATE SOCIAL AND ENVIRONMENTAL RESPONSIBILITY REPORTING: DOES INDUSTRY SECTOR MODERATE?

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ABSTRACT

In Bangladesh, companies are under criticisms for manipulation of their business activities. Some large organizations collapsed recently due to several corporate misconducts and this has raised serious questions about the effectiveness of different monitoring policies presumed to protect stakeholders' interests and control organizational unscrupulous behavior. As a result, the practice of CSER disclosure is of great importance and value to the users of CSER reporting as their decisions are based on them. Thus, this research study has started off with the aim of investigating the financial factors affecting CSER reporting with moderating effect of industry sector. The data have been collected from secondary data source: annual report, sustainability report and company's website. The sample of this study consists of 207 observations from 69 companies for three years from 2012 to 2014. Panel data analysis has been used and fixed effects has been performed using STATA version 13 to observe the association between the variables. The study has found no convincing evidence to support the effect of profitability and leverage on CSER reporting. In addition, by using hierarchical regression, this study also estimates the moderation effect of

industry sector. The study has revealed that industry sector is able to moderate the relationship between leverage and CSER reporting while no moderation effect on the relationship between profitability and CSER reporting. The study has not shown the extent to which companies have adopted the best practice on CSER reporting along with trends of the firms' reporting practices. This paper has provided insight into the moderating effect of industry sector which has been ignored in previous studies. This paper demonstrates that the regulators do not succeed in its attempts to monitor the application of CSER practices leaving plenty of room for companies to behave opportunistically. Empirically, this study creates a new path in CSER research by answering the call for moderating effect of industry sector. Theoretically, this study has contributed to the CSER literature by applying institutional theory that explained how industry sector can play moderating role in CSER reporting.

Keywords- Corporate Social and Environmental Responsibility (CSER), Profitability, Leverage, Sustainability, Industry Sector.

1. Introduction

It is apparent that present trends of production and consumption, reinforced by globalization have led to disappointment in environmental management (Ahmed, Cary, & Le, 2021). Moreover, the exploitation of natural resources have put the world on an unsustainable trajectory that threaten human welfare. Consequently, never before, has the shape of the future depended so much on what we; business, government and citizens do today (US Business Council for Sustainable Development, 2015).

Moreover, in developing countries, there are always shortage of government capacity to deal with common social and environmental challenges. Thus, developing countries demand more attention to sustainable issues, both in environmental and social dimensions (Laurent, 2014; United Nations, 2013; Pearce, Barbier, & Markandya, 2013). Acknowledging the fact, several organizations (such as World Bank, USAID) consider Corporate Social and Environmental Responsibility (CSER) as a potential long-term solution to the current social and environmental challenges and thus to solve the development challenges (Gruber & Schlegelmilch, 2015).

On the other hand, organizational legitimacy become subject to much deliberation due to several cases of corporate misconduct, significant discrepancies between CSER rhetoric and practices and manipulation of business practices to meet social expectations existing in society (Iatridis, 2011) which raised up the issue of illegitimacy thus, legitimacy gap. Adams (2011) states "The term 'legitimacy gap' is a term that has been used to describe a situation where there appears to be a lack of correspondence between how society believes an organization should act and how it is perceived that the organization has acted, if an actual or potential disparity exists between organizational and social values, then organizational legitimacy will be jeopardized giving rise to a legitimacy gap;" thus create several social and environmental issues (Allen, 2015). In these

situations organizations can embrace a number of CSER disclosure strategies for continued existence (Allen, 2015; Chung, 2010).

Thus, socially and ethically accountable corporate functions have attained importance at practical and educational levels, and the debate has exceeded whether companies have a duty to emphasis on their non-financial accountability for what favorable way they can be done (Carroll, 2015). Thus, the current escalation of CSER related work in management literature leaves no doubt about the significance and rightness of the subject (Carroll, 2015; Baron, 2014).

Therefore, CSER reporting is the focus of this research study and can be defined as providing corporate disclosure of non-financial information as well as traditional accounting information, even when this is not a compulsory requirement (Baron, 2014). These non-financial disclosures usually cover information on employees, products and contribution to society, the organization's efforts to avoid ecological pollution, and all other societal and environmental relations and activities.

2. Literature review

Socially and ethically accountable corporate functions have attained importance at practical and educational levels, and the debate has exceeded whether companies have a duty to emphasis on their non-financial accountability for what favorable way they can be done (Carroll, 2015). Thus, the current escalation of CSER related work in literature leaves no doubt about the significance and rightness of the subject (Carroll, 2015; Baron, 2014).

Based on above statement, Eteokleous, Katsikeas, & Leonidou (2016) mentioned that most common studies have been done from the period 1993 to 2013 in CSER literatures are international marketing strategy, stakeholder management, philanthropy and cause-related marketing. On the other hand, the least studied being those focusing on organizational and managerial considerations, consumer boycotts and factors affecting CSER adoption and reporting.

Another review by Willi (2014), has provided literature review from 2002-2014 (June). The review revealed that there are lack of CSER studies in developing countries compare to developing countries. In addition, there is also methodological differences-most of the studies are qualitative (77%) in nature such as case studies (32%), interviews (32%) and codes of best practices analysis, index analysis and website reporting analysis are less common (13%) which may point out difficulty in conducting empirical research and need to “explore new ground”. In addition, CSER is still in its infancy so that there are plenty of opportunities for future research studying CSER reporting (Hahn & Kühnen, 2013).

In line with that, Goyal, Rahman, and Kazmi (2013) conducted a literature review from January 1992 to March 2011. They exposed that different research gaps are dominated for future research due to contradictory research findings based on different cultural and economic contexts.

Moreover, most of the studies used primary data without considering other medium of corporate communication such as press release, advertisements and announcement of CSER activities, annual, interim and quarterly reports, booklets of CSER activities and most importantly sustainability report (Das, Dixon, & Michael, 2015; Muttakin & Subramaniam, 2015; Sufian & Zahan, 2013). Furthermore, they mentioned that there is a need to concentrate on different industry setup (both manufacturing and service) as only 10.89% studies focus on service industry.

Since research on CSER is continuously growing due to social and environmental concern, therefore this study will contribute towards filling the existing gaps in the literature, by scrutinizing the existing nature of CSER practices and the drivers underlying CSER reporting in a developing country context. In addition, CSER undoubtedly has possibility to bring sustainability for society and business organization in uncountable ways, acknowledging the fact Wahba and Elsayed (2015) asked for future research to examine the moderating effect of industry sector. By dint of including industry as moderating variables, this study will be one of the distinctive studies to assess the relationship between the financial factors affecting CSER reporting in a multi-industry level with different time setting.

Moreover, through covering several years and examining financial factors of large number of sample firms, studying companies from different industries over that period, this study hopes to provide more explanations and a clearer view about the disclosure practice employed by companies in Bangladesh as this is an interesting area to unravel (Sufian & Zahan, 2013). Additionally, the inclusion of companies' website and sustainability report with annual reports-secondary data collection based on objective broad-spectrum communication parameters will add strength to the experimental model. Hence this proposed study is much warranted.

Additionally, the choice of Bangladesh is motivated by a number of considerations. Such as governments in developing countries are often lack of capacity to successfully control social and environmental issues (Frynas, 2012; Börzel & Risse, 2010), while governments in some other developing countries such as China, India and Indonesia have started to introduce mandatory legal provisions in order to regulate CSER (Kumar, 2014; Marquis & Qian, 2013). However, in Bangladesh there is limited provision (such as Green Banking Policy) for companies to disclose CSER-related activities. Therefore, in Bangladesh, CSER is still voluntary. Given there are limited regulatory guidelines for CSER from government and professional bodies, this institutional inconsistencies make Bangladesh exclusive from other developing countries. The comparatively new, in terms of CSER, institutional setting of Bangladesh demands strong ground for responding to such calls.

3. Conceptual Framework and Hypotheses Development

3.1 Profitability and CSER Reporting

Firms which practice CSER can be expected to be greatly profitable as these firms have the crucial success factors. However, the link of profitability with voluntary social and environmental disclosure is still unclear and it has been viewed from different theoretical perspectives. Moreover, CSER disclosure depends on firms' profitability remains a controversial issue. Signaling theory suggests that firm characteristics such as profitability could be related to the level of voluntary disclosures (Kaur & Lodhia, 2014; Ho & Taylor, 2013; Choi, Lee, & Psaros, 2013). Higher profitability may motivate management to disclose more information to signal the overall position of the company.

Ehsan and Kaleem (2012) disclosed a significant link between profitability and the levels of CSER disclosure. They argued that profitable organization disclosed social information to portray their role in social welfare and legalize their existence. Wu and Shen (2013) found the positive relation between profitability and corporate reporting. Liu and Anbumozhi (2009) study showed that profitability within China influenced reporting. Habisch, Patelli, Pedrini, and Schwartz (2011) stated that 'U.S. firms undertake CSER initiatives in order to achieve their strategic goals. Tagesson, Blank, Broberg, & Collin (2009) exposed that profitability (measured as ROE and ROA) escalates the intensity of online social disclosure. Besides, Broberg, Tagesson, and Collin (2010) found a positive relationship between profitability and CSER disclosure.

On the other hand, various study findings suggested negative relationship or very low level of significance between profitability and CSER disclosures (Schröder, 2021; Gietl, Goettsche, Habisch, Roloff, & Schauer, 2012; Zhongfu, Jianhui, & Pinglin, 2011; Reverte, 2009). Reverte (2009) argued that profitability did not seem to clarify variances in CSER disclosure practices among Spanish listed organizations. The study asserted that firms facing a slowdown in revenue tend to increase their disclosure. Some other studies from Italy, Spain, Portugal, and Taiwan did not find any remarkable relationship between profitability and CSER disclosure (Chiu & Wang, 2015; Fifka, 2013).

Only 50% of the studies done in Middle East and Southern Europe confirmed positive correlation between profitability and CSER disclosure whereas this scenario is different in Australia and South-East Asia. Even though some of these regions are close to each other, however due to their different business system, Fifka (2013) were unable to give proper explanations of not finding any impact of profitability on reporting there. These counterintuitive findings suggest a need for further study to gain a better understanding of the conditions where CSER disclosures are linked with profitability (Kansal, Joshi, & Batra, 2014; De Villiers & Marques, 2013).

H1: Profitability has significant positive impact on CSER reporting.

3.2 Leverage and CSER reporting

Though leverage is one of the most significant variables, most affecting a company's decision to make voluntary disclosure in relation to CSER concerns (Gallego-Álvarez & Quina-Custodio, 2016), nonetheless the relationship between CSER disclosure and leverage is not as extensively explored by researchers as compare to profitability (Kansal et al., 2014). Besides, CSER disclosure depends on firms' leverage remains a controversial issue.

From a perspective of agency theory, it can be argued that firms which have higher debt in their capital structure are prone to higher agency cost that means higher monitoring costs would be incurred by firms that are highly leveraged (Samaha & Dahawy, 2010). Additionally, agency theory advocates that the agency costs associated with the conflict of interest between creditors and shareholders increases with the level of debt. By increasing the amount of information disclosed, corporations can reduce agency costs and possible conflicts of interest between owners and creditors. Moreover, when a company increases its debt compared to its shareholders' equity, it should increase its information reporting (including those aspects related to social and environmental issues) with the aim of addressing its financial wealth (Ortas, Gallego-Alvarez, & Álvarez Etxeberria, 2015).

Previous study showed that organizations with high leverage tend to disclose more CSER information than organizations with low leverage (Broberg et al., 2010). From the same perspective, Clarkson, Li, Richardson, and Vasvari (2008) argued that "debt holders exercise pressure on firms to disclose environmental related matters to assess potential future liabilities" (p. 321). Similarly, some other studies confirmed positive significant relationship between leverage and CSER disclosure (Gallego-Álvarez & Quina-Custodio, 2016; Rahman, Zain, & Al-Haj, 2011; Broberg et al., 2010; Khlif & Souissi, 2010).

Nonetheless, again Gallego-Álvarez and Quina-Custodio (2016) exposed significant negative relation with leverage in one of their models of CSER reporting which is similar with the study of Sukcharoensin (2012). Also, Andrikopoulos and Kriklani (2013) confirmed negative relationship between leverage and CSER disclosure. Likewise, the assumption of higher leverage organizations tend to disclose less information is confirmed from the study of Uwuigbe and Egbide (2012) that organizations with high liability and higher risk of bankruptcy would be unwilling to pay additional expenses on CSER disclosures. In addition, some studies done in Saudi Arabia by Al-Janadi, Rahman, and Omar (2013) and Macarulla and Talalweh (2012) found significant negative relationship between leverage and CSER disclosure.

On the other hand, Riantani and Nurzamzam (2015) determined that leverage did not have any significant effect on social and environmental reporting. Similarly, no significant relationship is detected between leverage and corporate environment disclosures (Idowu Adeniyi & Adebayo, 2018; Eleftheriadis & Anagnostopoulou, 2015) which is also consistent with the results of various

recent studies (Farooq, Ullah, & Kimani, 2015; Khasharmeh & Desoky, 2013; Naser & Hassan, 2013).

Likewise, prior studies are inconclusive due to disagreement about the indication of the relationship between leverage and CSER disclosure (Fifka, 2013; Roitto, 2013). Therefore, it is worth to examine the relationship between leverage and CSER reporting.

H2: Leverage has significant negative impact on CSER reporting.

3.3 Moderating Effect of Industry Sector

What makes some firms from different industries more likely to adopt CSER practices than other firms? Institutional theory assumes that largely instrumental motives may drive the adoption of CSER practices, in an effort to reduce reputational risk and improve financial performance. However, other motives may be more normative (moral) in nature. Here, companies may develop CSER as a response to wider social and institutional pressures (Kunapatarawong & Martínez-Ros, 2013).

Thus, industry represents an essential periphery of institutional grounds (DiMaggio & Powell, 2012). Usually organizations act differently across industry sectors based on the riskiness of each sector perceived by the society such as companies from more environmentally sensitive industries like oil and gas, chemicals companies and so on are highly observed by NGOs and consumers in terms of environmental concerns hence to create more pressure on these companies to practice CSER thus reporting (Spence, 2011).

Furthermore, some organizations may implement CSER in order to reduce their reputational risk side by side to increase financial performance, yet others may adopt CSER purely for normative (moral) purpose or as a response to extensive pressures from society and institutions (Kunapatarawong & Martínez-Ros, 2013).

In addition, different industries have different stakeholders, therefore at the time of studying CSER scholars must consider industry categories (Dabic, Colovic, Lamotte, Painter-Morland, & Brozovic, 2016) which will eventually help the policy makers to make policy based on industry type. In addition, some companies are more socially responsible than others, this could be due to their different business system in that particular industry. Moreover, some companies practice and report CSER in a different way due to greater regulatory pressure from national and international stakeholders (Chen, Feldmann, & Tang, 2015).

Besides, institutional investors may tend to apply CSER initiatives as an instrument to gain legitimacy for sustainable business or to protect their investment based on standards of that particular industry (García-Meca & Pucheta-Martínez, 2018). In view of that, future studies must investigate that how CSER practice and reporting varies with the effect of industry sector along with the corporate characteristics. In line with this, the effect of industry heterogeneity

demonstrates that studying the moderating effect of industry sector on CSER is a promising area for future research (Wahba & Elsayed, 2015). Additionally, there is a suggestion that research investigating the CSER disclosure should distinct corporations by industry type due to divergence in environmental and social concerns, stakeholder commitment and involvement (Hagberg, Johansson, & Karlsson, 2015).

Acknowledging the facts that, industry sector can be used as a moderating variable to overcome the challenges of understanding cross-industry variances in CSER (Chang, Kuo, & Chen, 2013). Thus, in which social and environmental activities to invest and how much to invest depends on industry type and their external pressure or their diverse institutional needs and company's decision to disclose their CSER information should be in view of that. Therefore, studying CSER disclosure of different industries should be of interesting area for future research since industry sector has a significant impact on CSER (Chen et al., 2015).

In line with this, the effect of industry sector on CSER strategies has not been comprehensively studied; henceforth, clarifying the variances in CSER practices and disclosure according to industry sector is a key theoretical and empirical issue in the field of CSER (Moura-Leite, Padgett, & Galan, 2012). Thus, the prior research gives enough guidance to involve industry as moderating variable in determining the CSER disclosure. Equally, learning the institutional environments remains an immature area of CSER study (Jackson & Apostolakou, 2010). This study seeks to fill up that gaps by investigating institutional pressures at industrial level.

H3: The effect of profitability on CSER reporting will be moderated by industry sector.

H4: The effect of leverage on CSER reporting will be moderated by industry sector.

4. Research Design:

A quantitative method is considered suitable with content analysis for purpose of the study. In addition, the collection of data is the other component of research design to be taken into account. This research has been carried out with the data collected from the annual reports, sustainability reports and website of the DSE (Dhaka Stock Exchange) listed companies in Bangladesh.

4.1 Selection of Sample:

The sample of this study consists of 207 observations from 69 companies for three years from 2018 to 2020. Moreover, the DSE listed companies in Bangladesh are under consideration as these companies have great impact on the CSER activities. Such practices from non-listed companies existing in Bangladesh may be considered in future research. Thus, the total numbers of 69 companies from 13 industry sector have been selected based on some criteria in order to make valuable and reliable contribution to the study.

4.2 Variables Measurement

4.2.1 Measurement of Independent Variables

Table 1: Measurement of Independent Variables

Independent Variables	Measurement
Profitability	Return on equity (ROE) defined as net income before tax to the total shareholders' equity. Either accounting based (ROA) - or market based (ROE) measures can be used to measure profitability. ROE are less subject to bias by managerial manipulation compare to ROA. Besides, calculation of ROE does not depend on past performance (Aliabadi, Dorestani, & Balsara, 2013). Moreover, as the study is considering both financial and non-financial institutions therefore using market based measure is justifiable as financial and non- financial institutions have different accounting system (Reverte, 2009). As ROA is subject to higher management manipulation compare to ROE, therefore this study has used ROE instead of ROA for measuring profitability.
Leverage	Leverage is measured as total debt/ shareholders' equity (D/E)

4.2.2 Measurement of Moderating Variables

Table 2: Measurement of Moderating Variables

Moderating Variables	Measurement
Industry Sector	“More Environmentally Sensitive” industries are considered those with more environmental risk of being criticized in CSER matters because of their activities involving higher risk of environmental impact. More environmentally sensitive industries are chemicals sector, oil and gas, mining, paper and pulp sector, steel and other metals sector, forestry, water and electricity and so on. This study considered companies from more environmentally sensitive sector as 1 and companies from less sensitive sector as 0.

4.2.3 Measurement of Dependent Variable

The CSER disclosure index represents the dependent variable in this study. This study has considered the guiding principle of “Environmental Risk Management (ERM) Guidelines for Banks and Financial Institutions in Bangladesh”, “Policy Guidelines for Green Banking” and “Policy Support to CSR in the context of Tax Exemption for the Banking Sector” (Bangladesh Bank, 2014) for the construction of CSER disclosure index. To assess the extent of CSER disclosure, a checklist containing 41 items have been assembled. A list of overall disclosure information can be obtained from Appendix- A. The following formula is used to measure the CSER disclosure score for a company:

$$CSERDj \text{ index} = \frac{\sum_{i=1}^{n_j} X_{ij}}{n_j} \quad (1)$$

Where,

CSERDj index is Corporate Social and Environmental Responsibility Disclosure Index for j^{th} firm,

n_j is the number of items expected for j^{th} firm, where $n \leq 41$,

X_{ij} is 1, if i^{th} items are disclosed for firm j , 0 otherwise, so that $0 \leq CSERDj \leq 1$.

5. Technique of Data Analysis

Panel data analysis has been used and fixed effects has been performed by using STATA to observe the association between the variables. The correlation statistical analysis and hierarchical regression analysis have been performed to determine the significant relationship among the independent and dependent variables. In order to measure the moderation effect, moderated hierarchical regression analysis has also been executed.

6. Empirical Model

Model #1: The following model has been specified to investigate the effect of independent variables on CSER reporting.

$$CSER_Index_{it} = \alpha + \beta_1 PROF_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (2)$$

Where, CSER_Index = Corporate Social and Environmental Responsibility Index; PROF = Profitability; LEV = Leverage; α = Constant (intercept); β = regression coefficient (increase or decrease in value); ε = the difference between the predicted and observed value of the CSER for participant company (the error term).

Model #2: To investigate the moderating effect of industry sector the following model has been specified.

$$CSER_Index_{it} = \alpha + \beta_1 PROF_{it} + \beta_2 LEV_{it} + \beta_3 INT_{it} + \beta_4 PROF * INT_{it} + \beta_5 LEV * INT_{it} + \varepsilon_{it} \quad (3)$$

Where, CSER_Index = Corporate Social and Environmental Responsibility Index; PROF = Profitability; LEV = Leverage; INT = Industry Sector; α = Constant (intercept); β = regression coefficient (increase or decrease in value); ε = the difference between the predicted and observed value of the CSER for participant company (the error term).

7. Results

7.1 Descriptive Statistics

The descriptive result has revealed that, companies have disclosed on an average of 47.37% information that means 19 items out of 41 items are disclosed by companies with a standard deviation of 0.2039 i.e. 8.36 items which indicate companies within different industries are not consistent in terms of disclosing information related to CSER. Maximum disclosures of items are 35 items and minimum disclosures of items are 4. It is an indication that none of the organizations have disclosed all the CSER information.

Table 3: Descriptive Statistics of Continuous Variables

Variables	Observation	Mean	Std. Dev.	Min	Max
CSER Index	207	.4736656	.2039249	.097561	.8536585
PRO (ROE)	207	.1361847	.1030534	-.065	.63
LEV (D/E)	207	4.828418	6.24072	-2.75	46.2
PRO (ROE) = Profitability (Return on Equity), LEV (D/E) = Leverage (Debt to Equity Ratio)					

There is a high variability in profitability (ROE) as the total profitability score varies from -0.065 to 0.63 with standard deviation of 0.103 and mean score of 0.1361. The average ROE is 13.62%, however the difference between the highest and lowest (-6.5% versus 63%) is 69.5%, which point out that the difference of financial performance among organizations is high. Moreover, profitability contains negative numbers (-.065) due to the fact that numerous companies ended the financial year with a loss.

The leverage (D/E) mean value is 4.828 with standard deviation of 6.240. High debt to equity ratio usually specifies that companies have been violent in financing its growth with debt. As a result, companies pay additional interest due to unstable incomes and eventually it may increase the chances of bankruptcy. Usually a debt to equity ratio greater than 2.0 points a risky scenario for investor; yet this benchmark may vary by industry.

Moreover, leverage includes negative numbers (-2.75). Negative leverage arises from purchasing a project with debt and if that debt has higher interest rate than return. Besides, interest rates can rise rapidly if a company uses adjustable rates to invest in property. Furthermore, negative leverage can also a consequence of negative stockholders' equity due to previous net losses.

Table 4: Descriptive Statistics of Categorical Variable

Variable		Code	Freq.	Percent	Cum.
INT	Less environmentally sensitive industry	0	107	51.69	51.69
	More environmentally sensitive industry	1	100	48.31	100.00
	Total		207	100.00	
INT = Industry Sector					

Regarding industry sector, the study has found that 51.69% i.e., around 36 companies are from “more environmentally sensitive” industries because of their activities involving higher risk of environmental effect while around 33 companies (48.31%) are from “less sensitive” industries.

7.2 Panel Data Analysis

Panel data approach consists of three-estimate models i.e. pooled OLS, fixed effect model and random effect model. Additionally, the three estimates have been compared to find the best model using three specification test such as F-test, the LM test and Hausman test.

7.2.1 Lagrange Multiplier Test (Examining Random Effects: Pooled or REM)

The Lagrange Multiplier (LM) test reveals the random effects of the model. Table 5 shows that p value in the results of the LM test is 0.0000 which is lower than 0.05. Thus, the result of the LM test fails to accept the null hypothesis, which means that the use of random effects is suitable for this study.

Table 5: LM test of the study

Model 1	Model 2
$\text{Chibar}^2 (01) = 144.40$	$\text{Chibar}^2 (01) = 141.80$
$\text{Prob} > \text{chibar}^2 = 0.0000$	$\text{Prob} > \text{chibar}^2 = 0.0000$

7.2.2 Hausman Test (Examining Fixed Effects: REM or FEM)

Hausman test from table 6 suggests that fixed effect model is more suitable for model 1 and model 2 because probability value is equal to 0.0000, which is highly significant at 5% level. Thus, the null hypothesis is rejected, and the fixed effect model should be accepted.

Table 6: Hausman test of the study

Model 1	Model 2
$\text{Chi}^2 (9) = 53.33$	$\text{Chi}^2 (19) = 44.55$
$\text{Prob} > \text{chi}^2 = 0.0000$	$\text{Prob} > \text{chi}^2 = 0.0000$

Since this study already has revealed from the LM and Hausman test that fixed effect method is appropriate for model 1 and model 2, therefore F-test is not applicable for this study.

7.3 Assumptions Testing

The majority of statistical tests depend on assumptions of the variables applied in the research analysis. There are principal assumptions, which justify the use of regression for prediction linearity of the relationship between dependent and independent variables i.e. normally distributed error, free from multicollinearity, independence of errors (no serial correlation), and homoscedasticity of errors. If the assumptions of OLS regression are not fulfilled, an inaccuracy of the estimation process in the interpretation of the results may occur.

Gujarati (2004) mentioned in his book of Basic Econometrics that “if the sample size is reasonably large, we may be able to relax the normality assumption” (Gujarati, 2004, p. 110). Moreover, if the sample size is too large, then it will cause rejection of the normality assumption (Setyorini, 2015). Thus, this study assumes that all the study data are normally distributed.

The Variance Inflation Factor (VIF) is used to test if there is multicollinearity in the regression model with main effects. VIF test was carried out to determine whether there exist high collinearity between the independent variables or not.

Table 7: Variance Inflation Factor (VIF) for Model 1 and Model 2

Variable	Model 1		Model 2	
	VIF	1/VIF	VIF	1/VIF
PRO (ROE)	1.00	0.996981	2.22	0.449883
LEV (D/E)	1.00	0.996981	3.37	0.296580
INT			2.24	0.447060
PRO (ROE)INT			2.06	0.484711
LEV (D/E)INT			2.45	0.408958
Mean VIF	1.00		2.47	

In a circumstance whereby the VIF is more than 10, it means that the variables are highly interrelated which indicates a multicollinearity problem (Greene, 2008). VIF statistics appear to indicate that there is no multicollinearity problem in model 1 and model 2 because VIF for every independent variable is less than the threshold value of 10; likewise the mean VIF value is reported as 1.00 for model 1 and 2.47 for model 2 which is far less than 10.

In addition, the acceptable values of collinearity are considered from the tolerance value of more than 0.10 (Hair, Black, Babin, Anderson, & Tatham, 2010 cited in Utaberta, Handryant, Syazwan, & Nik, 2014). As shown in Table 7, there is no evidence of the problem of multicollinearity in the multiple regressions for the model 1 and model 2 since the tolerance value is also more than 0.10. Therefore, the study concludes that there is no issue of multicollinearity among the independent variables.

In testing the multicollinearity among variables, this study also employs Pearson’s correlation statistics. Pearson’s correlation statistics analysis involves the examination of the correlation matrix of the independent variables, where a correlation that exceeds 0.9 and above indicates serious problem of multicollinearity (Pallant, 2013; Hair, et al., 2010). Tables 8, and 9 show the Pearson correlation for model 1, and model 2 respectively. The tables show that correlations are reasonably low (less than 0.9) among all variables which indicate that there is no multicollinearity problem in the model 1, and model 2.

Table 8: Pearson Correlation Coefficients of the Variables (Model 1)

	CSER_Index	ROE	D/E
CSER_Index	1.000		
ROE	0.3362	1.000	
D/E	0.4523	-0.0549	1.000

Table 9: Pearson Correlation Coefficients of the Variables (Model 2)

	CSER_Index	ROE	D/E	INT	ROEINT	D/EINT
CSER_Index	1.000					
ROE	0.3362	1.000				
D/E	0.4523	-0.0549	1.000			
INT	-0.3895	0.2665	-0.5248	1.000		
ROEINT	0.3015	0.6759	-0.0862	0.0183	1.000	
D/EINT	-0.1910	-0.1025	-0.6291	-0.0428	0.0966	1.000

Table 10: Modified Wald Test for GroupWise Heteroskedasticity

Model 1	Model 2
$\text{Chi}^2 (69) = 2.9\text{e}^{+13}$	$\text{Chi}^2 (69) = 1.0\text{e}^{+13}$
$\text{Prob}>\text{chi}^2 = 0.0000$	$\text{Prob}>\text{chi}^2 = 0.0000$

The null is homoscedasticity (or constant variance). The results ($P < 0.05$) indicate that the study must reject the null hypothesis of homoscedasticity. From the table 10, it can be seen that the study rejects the null and conclude that there is heteroscedasticity problem for all two models since all two cases p-value is less than 5%.

According to Wooldridge's test null hypothesis is no serial correlation vs. the alternative of the serial correlation (Drukker, 2003). To check serial correlation in panel data models, Wooldridge test is used with main effects and interaction effects (Wooldridge, 2010).

Table 11: Wooldridge Test for Autocorrelation

Model 1	Model 2
F (1, 68) = 59.226	F (1, 68) = 59.844
Prob>F = 0.0000	Prob>F= 0.0000

Since the p- value is statistically significant at 5% level ($P < 0.05$), so the study can reject the null hypothesis. Therefore, there is first-order autocorrelation in all two models.

7.4 Hypotheses Testing

7.4.1 Regression Analysis of Model 1

Table 12 summarizes the results of regression. The overall R^2 is 0.2527 i.e. 25.27% indicates the extent to which the variation in dependent variable is explained by the variation in independent variables.

Table 12: Regression Analysis of Model 1 (FEM)

CSER_Index	Predicted Sign	Coef.	t	P> t
ROE	+	.004955	0.26	0.794
LEV (D/E)	-	.000527	1.09	0.281
Number of observations = 207 Number of groups = 69 F (2,68) = 0.78 Prob>F = 0.4637 R-squared: Within = 0.0006 Between = 0.2893 Overall = 0.2527				

Significant at $p < 0.1^*$; Significant at $p < 0.05^{**}$; Significant at $p < 0.01^{***}$

Insignificant coefficient ($p > 0.10$) indicates that ROE does not give an improvement to CSER reporting. This confirms to reject the hypothesis (H1). Thus, this study has revealed that profitability does not significantly influence CSER disclosure. This finding supports a number of past studies (Dissanayake, Tilt, & Xydias-Lobo, 2016; Sommer, Klink, Senkl, & Hartmann, 2015;

Burgwal & Vieira, 2014). Arguably, the results of this study imply that financial performance is not a key factor that determines corporate social and environmental responsibility activities.

Table 12 demonstrates a positive association with coefficients of .000527 ($p > 0.10$). An increase in D/E is followed by an increase in CSER reporting by the value of .000527. Nevertheless, insignificant coefficient ($p > 0.10$) indicates that leverage does not give an improvement to CSER reporting. This means that the hypothesis (H2) is not supported. The insignificant relationship between leverage and corporate social and environmental responsibility disclosure is consistent with prior studies. Chiu and Wang (2015) find no association between leverage and corporate social responsibility reporting for the 246 listed companies in Thailand. The result is also consistent with Dyduch and Krasodomska (2017), and Wuttichindanon (2017). This finding suggests that the level of CSER reporting may not be related to the leverage of companies. Perhaps, the insignificant relationship indicates leverage is not sufficient to compel companies to disclose CSER information.

7.4.2 Regression Analysis of Model 2

Table 13: Hierarchical Regression Analysis of Model 2 (FEM)

CSER_Index	Coef.	t	P> t
ROE	-.018636	-1.96	0.054
LEV (D/E)	-.0272014	-4.28	0.000
INT	.183964	3.40	0.001
ROEINT	.0713367	0.48	0.632
LEV (D/E)INT	-.057842	-4.12	0.000***
Number of observations = 207 Number of groups = 69 F (5, 68) = 19.80 Prob>F = 0.0000 R-squared: Within = 0.0378 Between = 0.1630 Overall = 0.1547			

Significant at $p < 0.1^*$; Significant at $p < 0.05^{**}$; Significant at $p < 0.01^{***}$

Table 13 demonstrates a positive association with coefficients of .0713367 though; the coefficient is insignificant ($p > 0.10$). This means that the hypothesis (H3) is not supported.

The second model is applied in attempt to explore if the hypothesized role of the profitability and leverage on CSER reporting will be moderated by industry sector. The model as whole is acceptable and fit (significant *F-Statistic*). However, in term of determining the moderating effect,

the f^2 was calculated. However, f^2 was 0.177, which indicates that when dealing with interaction variables as independent variables in the regression, the effect size of these variables is extremely medium. Thus, it is acceptable to indicate the existence of the moderation effect on the model as all. As well as, beta coefficient for the interaction variables was optimal under the fixed effect regression which provides an indication for the interaction effect.

In model (2) the results showed that the profitability; industrial firms ROEINT is insignificant. Therefore, the results of coefficient and p-value showed that the relationship between profitability and SCSE is not affected in case of firms listed in the industrial sector than other. Thus, industrial firms in such of these cases under this study circumstances and sample does not have a moderating effect on that relation.

On the second moderating effect hypothesized, the value 1 has been given for firms listed in the industrial sector (i.e., chemicals sector, oil and gas, mining, paper and pulp sector, steel and other metals sector, forestry, water and electricity and so on) and value 0 for firms that listed in the other sectors. The outcomes of the regression indicated by the interaction of financial leverage (LEV) with industrial sector variable (INT) that this interaction variable has effect on the relationship between financial leverage and corporate social CSER. The results showed that the coefficient of $LEV*INT$ is negatively and statistically significant at level 5%. Given that the INT is equal to 1 for more environmentally sensitive industrial firms and 0 for other firms, the coefficient of CSER represents the linear relationship between utilizing of CSER and financial leverage for all firms. For industrial firms, the relationship represented by the sum of the coefficients on the $LEV*INT$ and CSER. For other firms', the relationship represented by the coefficient on CSER. Therefore, the results of coefficient and p-value in model (2) indicate that the relationship between financial leverage and CSER is more negatively in case of firms listed in the industrial sector than other sector. However, Firms with high financial leverage in the industrial sector have a low level of CSER comparing with the firms in the service while firms in the service sector have high CSER when the financial leverage is high (see figure 1).

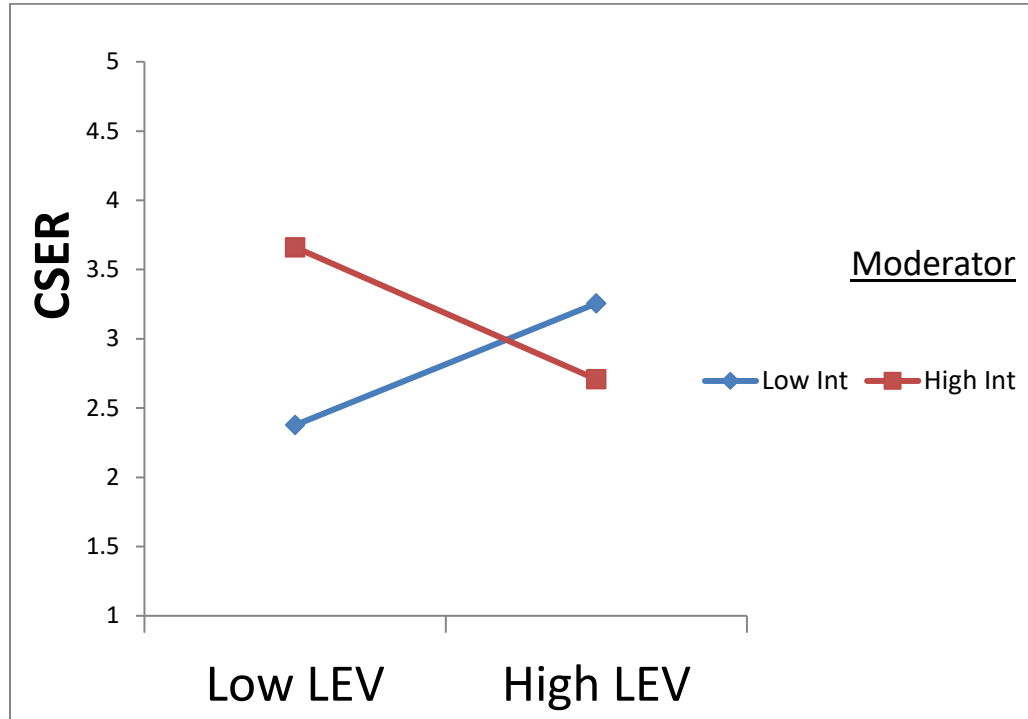


Figure 1: Moderating Effect of Industry Sector

Moreover, the regression analysis shows a significant negative association ($p < 0.01$) with a coefficient of $-.057842$. This means that for each unit decrease of interaction effect, there is an increase in CSER disclosure by the value similar to the coefficient. This result indicates that moderating effect of industry significantly contributes to the CSER reporting.

Thus the results justify the acceptance of the hypothesis (H4). Possible explanation for this moderating role of industry sector could be that companies from different industries need different amounts of capital to operate. Besides, companies from different industries use their capital in different way, a relatively high debt to equity ratio may be common in one industry while a relatively low debt to equity ratio may be common in another. For example, in Bangladesh less environmentally sensitive industries such as banks and financial institutions likely to have a debt to equity ratio above 2 whereas companies from more environmentally sensitive industries like pharmaceuticals and chemicals often have a debt to equity ratio less than 1.

In addition, according to Hagberg et al. (2015) incorporating CSER in a company's operation is largely depend on industry environment as well as depending on the characteristic of the individual firm (high or low leverage) can choose to invest heavily on one area of CSER like only on employee issues or environmental aspects, or alternatively aim to integrate a wider range of CSER aspects.

8. Implications of the Study

From theoretical point of view of institutional theory which suggests that coercive isomorphism stems from pressures on the organization by other organizations on which the former depends (Powell & DiMaggio, 2012). In the case of coercive isomorphism, external pressures stem from the institutional environment that sets and enforces the rules. For example-Bangladesh Bank (Central Bank of Bangladesh) introduced a policy for bank to take part in CSER activities. Apart from this policy, National Board of Revenue (NBR) also issued a Statutory Regulatory Order (SRO) where stated that companies will get tax exemption at a rate of 10% on CSER expenditure (Bangladesh Bank, 2014). A company's tax liability is determined by its income (profitability), however, the policy for promoting CSER seems to be ineffective in Bangladesh. This has been validated by the study finding that profitability has no impact on CSER disclosure and thus, policy makers have not succeeded in their strategy to stimulate CSER.

Moreover, Commercial Banks are required to ensure necessary measures to protect environmental pollution while financing a new project or providing working capital to the existing enterprises. Banks have been advised to facilitate their clients with utmost care in opening Letter of Credit (L/C) for installation of Effluent Treatment Plant (ETP), Solar Energy, Hybrid Hoffman Kiln (HHK), and Bio-gas plant in the industrial units under refinance programme of Bangladesh Bank. Furthermore, banks must incorporate Environmental and Climate Change Risk as part of the existing credit risk methodology prescribed to assess a prospective debtor. This includes integrating environmental risks in the checklists, audit guidelines and reporting formats.

Subsequently there is insignificant relationship between leverage and CSER disclosure, thus the finding confirms that, with reference to the execution of CSER practices, the policymaker is unsuccessful to promote CSER in corporate operations. This research demonstrates that the regulators do not succeed in its attempts to monitor the application of CSER practices leaving plenty of room for companies to behave opportunistically.

Likewise, it is a recognized fact that existing research falls short of providing satisfactory direction to the practice of CSER as it suffers from the use of context specific factors like country variation in legal frameworks, variation in implementation and enforcement, and variation in application (Muller & Kolk, 2015). Thus this study has provided some insight into important moderating factor- industry sector which should not be ignored when seeking to understand the actions of managers in responding to social and environmental issues. Where there is significant environmental risk associated with investment, a clearer understanding of industrial distinctions becomes increasingly relevant. Such an understanding has further implications for expectations regarding the best way to motivate social and environmental development toward investment in CSER issues.

9. Conclusion

Understanding of CSER in Bangladesh still shows discrepancy. Though a number of corporations have built CSER into their strategies, many still regard CSER merely as a charitable activity. As companies tend to report CSER only for public relation and not for accountability purpose, therefore the role of a regulator is to establish infrastructures that support accountability CSER. Eventually, CSER can be a supportive evidence for firms to achieve legitimacy thus gains confidence to face the global business challenges.

10. Recommendations

This study provides relevant evidence to enrich CSER discussions and recommends several required policies to make it a reality for all.

- A company's income tax depends on its profitability. Recognizing this fact, government can encourage companies to embrace CSER in their operations by introducing an effective tax policies such as taxes on environmental pollution activities like consumption of fossil fuels, conversely exempt from tax for expenditure on social and environmental development.
- Despite the fact that leverage has insignificant effect on CSER reporting however, the result is significant when industry sector plays moderating role, hence code of practice need to make sure that companies evade unnecessary risk taking by avoiding excessive leverage. Rigorous corporate governance, high disclosure, accountability standards, and risk management culture should be adopted. Lending criteria should receive greater uniformity with controlling and strict monitoring attention. External credit ratings may also be used with due diligence by regulators and administrators in valuation of the riskiness of company's activities.
- Practicing CSER depends on the industry to which a company belongs as well as depends on the explicit regulations from their competitive environment; therefore establishing policy should be directed based on certain dimensions of CSER.

11. Limitations, and Future Research

The study has not shown the extent to which companies have adopted the best practice on CSER reporting along with trends of the firms' reporting practices. What companies disclose in one year may have an effect on what is disclosed in the following years. For example, the profitability in year "n" will obviously have an effect on following year "n+1". It is expected that the firms in 2020 will have a higher mean value for CSER reporting as a consequences of best practices of CSER in 2018 and 2019. Higher mean values for variables indicate higher performance of the companies.

In addition, as the sample of companies includes only public-listed companies from Dhaka Stock Exchange (DSE), the results of this study cannot be assumed to non- public companies. While the results may offer a valuable guide for social and environmental practices of public-listed

companies, their generalization to other business entities that are not subject to similar reporting requirements.

References

- Adams, M. K. R. (2011), “Corporate social responsibility: stakeholder determination and reporting”, doctoral dissertation, RMIT University, Australia.
- Ahmed, Z., Cary, M., & Le, H. P. (2021). Accounting asymmetries in the long-run nexus between globalization and environmental sustainability in the United States: an aggregated and disaggregated investigation. *Environmental Impact Assessment Review*, 86, 106511.
- Aliabadi, S., Dorestani, A. and Balsara, N. (2013), “The Most Value Relevant Accounting Performance Measure by Industry”, *Journal of Accounting and Finance*, Vol. 13 No. 1, pp. 22.
- Al-Janadi, Y., Rahman, R. A. and Omar, N. H. (2013), “Corporate governance mechanisms and voluntary disclosure in Saudi Arabia”, *Corporate Governance*, Vol. 4 No. 4, pp. 25-35.
- Allen, M. (2015), *Strategic communication for sustainable organizations: Theory and Practice*, Springer, Switzerland.
- Andrikopoulos, A. and Kriklani, N. (2013), “Environmental disclosure and financial characteristics of the firm: the case of Denmark”, *Corporate Social Responsibility and Environmental Management*, Vol. 20 No. 1, pp. 55-64.
- Bangladesh Bank. (2014), “Policy Support to CSR in the context of Tax Exemption for the Banking Sector”, available at: <https://www.bb.org.bd/governor/speech/apr272014gse512.pdf> (accessed 5 September 2016).
- Baron, R. (2014), “The evolution of corporate reporting for integrated performance. Background paper for the 30th round table on sustainable development 25 June 2014 OECD Headquarters, Paris”, available at: https://www.oecd.org/sd_roundtable/papersandpublications/The%20Evolution%20of%20Corporate%20Reporting%20for%20Integrated%20Performance.pdf (accessed 9 March 2021)
- Börzel, T. A. and Risse, T. (2010), “Governance without a state: Can it work?” *Regulation & Governance*, Vol. 4 No. 2, pp. 113-134.
- Broberg, P., Tagesson, T. and Collin, S. O. (2010), “What explains variation in voluntary disclosure? A study of the annual reports of corporations listed on the Stockholm Stock Exchange”, *Journal of Management & Governance*, Vol. 14 No. 4, pp. 351-377.

- Burgwal, D. V. D. and Vieira, R. J. O. (2014), "Environmental disclosure determinants in Dutch listed companies", *Revista Contabilidade & Finanças*, Vol. 25 No. 64, pp. 60-78.
- Carroll, A. B. (2015), "Corporate social responsibility: The centerpiece of competing and complementary frameworks", *Organizational Dynamics*, Vol. 44 No. 2, pp. 87-96.
- Chang, D. S., Kuo, L. C. R. and Chen, Y. T. (2013), "Industrial changes in corporate sustainability performance—An empirical overview using data envelopment analysis", *Journal of Cleaner production*, Vol. 56, pp. 147-155.
- Chen, L., Feldmann, A. and Tang, O. (2015), "The relationship between disclosures of corporate social performance and financial performance: Evidences from GRI reports in manufacturing industry", *International Journal of Production Economics*, Vol. 170, pp.445-456.
- Chiu, T. K., & Wang, Y. H. (2015). Determinants of social disclosure quality in Taiwan: An application of stakeholder theory. *Journal of business ethics*, 129(2), 379-398.
- Choi, B. B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*.
- Chung, J. Y. (2010), "Examining organizational legitimacy: An empirical analysis of organizational legitimacy, issue legitimacy, legitimacy gaps, and factors affecting the legitimacy regarding the issue of direct-to-consumer advertising in the pharmaceutical industry", doctoral dissertation, The University of Alabama Tuscaloosa, USA.
- Clarkson, P. M., Li, Y., Richardson, G. D. and Vasvari, F. P. (2008), "Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis", *Accounting, organizations and society*, Vol. 33 No. 4, pp. 303-327.
- Dabic, M., Colovic, A., Lamotte, O., Painter-Morland, M., & Brozovic, S. (2016). Industry-specific CSR: Analysis of 20 years of research. *European Business Review*.
- Das, S., Dixon, R. and Michael, A. (2015), "Corporate social responsibility reporting: A longitudinal study of listed banking companies in Bangladesh", *World Review of Business Research*, Vol. 5 No. 1, pp. 130-154.
- De Villiers, C. J. and Marques, A. C. (2013), "CSR Disclosures: Predispositions and Consequences", available at SSRN 2195511.

- DiMaggio, P. J. and Powell, W. W. (2012), "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields [1983]", *Contemporary sociological theory*, 175.
- Dissanayake, D., Tilt, C. and Xydias-Lobo, M. (2016), "Sustainability reporting by publicly listed companies in Sri Lanka", *Journal of Cleaner Production*, Vol. 129, pp. 169-182.
- Drukker, D. M. (2003), "Testing for serial correlation in linear panel-data models", *Stata Journal*, Vol. 3 No. 2, pp. 168-177.
- Dyduch, J., & Krasodomska, J. (2017). Determinants of corporate social responsibility disclosure: An empirical study of Polish listed companies. *Sustainability*, 9(11), 1934.
- Ehsan, S. and Kaleem, A. (2012), "An empirical investigation of the relationship between corporate social responsibility and financial performance (Evidence from manufacturing sector of Pakistan)", *Journal of Basic and Applied Scientific Research*, Vol. 2 No. 3, pp. 2909-2922.
- Eleftheriadis, I. M. and Anagnostopoulou, E. G. (2015), "Relationship between corporate climate change disclosures and firm factors", *Business Strategy and the Environment*, Vol. 24 No. 8, pp. 780-789.
- Eteokleous, P. P., Katsikeas, C. S. and Leonidou, L. C. (2016), "Review of research on CSR in international marketing: 1993–2013", *In let's get engaged! Crossing the threshold of Marketing's Engagement Era* (pp. 683-684). Springer International Publishing.
- Farooq, S. U., Ullah, S. and Kimani, D. (2015), "The relationship between corporate governance and corporate social responsibility (CSR) disclosure: Evidence from the USA", *Abasyn University Journal of Social Sciences*, Vol. 8 No. 2.
- Fifka, M. S. (2013), "Corporate responsibility reporting and its determinants in comparative perspective: A review of the empirical literature and a meta-analysis", *Business Strategy and The Environment*, Vol. 22 No. 1, pp. 1-35.
- Frynas, J. G. (2012), "Corporate social responsibility or government regulation? Evidence on oil spill prevention", *Ecology and Society*, Vol. 17 No. 4.
- Gallego-Álvarez, I. and Quina-Custodio, I. A. (2016), "Disclosure of corporate social responsibility information and explanatory factors", *Online Information Review*, Vol. 40 No.2, pp. 218-238.

- García-Meca, E., & Pucheta-Martínez, M. C. (2018). How institutional investors on boards impact on stakeholder engagement and corporate social responsibility reporting. *Corporate Social Responsibility and Environmental Management*, 25(3), 237-249.
- Gietl, S., Goettsche, M., Habisch, A., Roloff, M. and Schauer, M. (2012), “Does CSR reporting destroy firm value? Empirical Evidence on GRI-aligned European Firms”, 1 December 2012.
- Goyal, P., Rahman, Z. and Kazmi, A. A. (2013), “Corporate sustainability performance and firm performance research: Literature review and future research agenda”, *Management Decision*, Vol. 51 No. 2, pp. 361-379.
- Greene, W. H. (2008), “The econometric approach to efficiency analysis”, *The measurement of productive efficiency and productivity growth*, Vol. 1 No. 1, pp. 92-250.
- Gruber, V. and Schlegelmilch, B. B. (2015), “MNEs’ regional headquarters and their CSR agenda in the African context”, *International Marketing Review*, Vol. 32 No. 5, pp. 576-602.
- Gujarati, D. (2004), *Basic Econometrics Fourth (4th) Edition*, McGraw Hill Inc, New York.
- Habisch, A., Patelli, L., Pedrini, M. and Schwartz, C. (2011), “Different talks with different folks: a comparative survey of stakeholder dialog in Germany, Italy, and the US”, *Journal of business ethics*, Vol. 100 No. 3, pp. 381-404.
- Hagberg, C., Johansson, S. and Karlsson, A. (2015), “The relationship between CSR and financial performance: A quantitative study examining Swedish publicly traded companies”, dissertation, Linnaeus University, Sweden, 27 May.
- Hahn, R. and Kühnen, M. (2013), “Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research”, *Journal of Cleaner Production*, Vol. 59, pp. 5-21.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. and Tatham, R. L. (2010), *Multivariate data analysis*, 7th edition, Upper Saddle River, NJ: Pearson Prentice Hall.
- Ho, P. L., & Taylor, G. (2013). Corporate governance and different types of voluntary disclosure: Evidence from Malaysian listed firms. *Pacific Accounting Review*.
- Iatridis, K. (2011), “The influence of corporate social responsibility on business practice: The case of international certifiable management standards”, doctoral dissertation, University of Central Lancashire, UK.

- Idowu Adeniyi, S., & Adebayo, H. O. (2018). Effect of financial leverage on voluntary corporate social disclosure among listed firms on Nigerian stock exchange: a study of selected manufacturing firms. *Academic Journal of Economic Studies*, 4(3), 18-24.
- Jackson, G. and Apostolakou, A. (2010), “Corporate social responsibility in Western Europe: An institutional mirror or substitute?” *Journal of Business Ethics*, Vol. 94 No. 3, pp. 371-394.
- Kansal, M., Joshi, M. and Batra, G. S. (2014), “Determinants of corporate social responsibility disclosures: Evidence from India”, *Advances in Accounting*, Vol. 30 No. 1, pp. 217-229.
- Kaur, A., & Lodhia, S. K. (2014). The state of disclosures on stakeholder engagement in sustainability reporting in Australian local councils. *Pacific Accounting Review*.
- Khasharmeh, H. A. and Desoky, A. M. (2013), “On-line corporate social responsibility disclosures: The case of the Gulf cooperation council (GCC) countries”, *Global Review of Accounting and Finance*, Vol. 4 No. 2, pp. 39-64.
- Khlif, H. and Souissi, M. (2010), “The determinants of corporate disclosure: A meta-analysis”, *International Journal of Accounting & Information Management*, Vol.18 No.3, pp. 198-219.
- Kumar, N. (2014), “A study of CSR rules under Companies Act, 2013”, *Asian Journal of Multidisciplinary Studies*, Vol.2 No.5.
- Kunapatarawong, R. and Martinez-Ros, E. (2013), “Influences of institutional pressures on corporate social responsibility attitude and corporate social responsibility outcomes”, Working Paper, Universidad Carlos III de Madrid, Spain, January.
- Laurent, E. (2014), “Inequality as pollution, pollution as inequality: The social-ecological nexus. Institute for research in the social sciences, the Stanford center on poverty and inequality”, available at: http://inequality.stanford.edu/_media/working_papers/laurent_inequality-pollution.pdf (accessed 18 February 2021).
- Liu, X. and Anbumozhi, V. (2009), “Determinant factors of corporate environmental information disclosure: An empirical study of Chinese listed companies”, *Journal of Cleaner Production*, Vol. 17 No. 6, pp. 593-600.
- Macarulla, F. L. and Talalweh, M. A. (2012), “Voluntary corporate social responsibility disclosure: A case study of Saudi Arabia”, *Jordan Journal of Business Administration*, Vol. 8 No. 4.

- Marquis, C. and Qian, C. (2013), "Corporate social responsibility reporting in China: Symbol or substance?" *Organization Science*, Vol. 25 No. 1, pp. 127-148.
- Moura-Leite, R. C., Padgett, R. C. and Galan, J. I. (2012), "Is social responsibility driven by industry or firm-specific factors?" *Management decision*, Vol. 50 No. 7, pp. 1200-1221.
- Muller, A. and Kolk, A. (2010), "Extrinsic and intrinsic drivers of corporate social performance: Evidence from foreign and domestic firms in Mexico", *Journal of Management Studies*, Vol. 47 No.1, pp. 1-26.
- Muttakin, M. B. and Subramaniam, N. (2015), "Firm ownership and board characteristics: do they matter for corporate social responsibility disclosure of Indian companies?" *Sustainability Accounting, Management and Policy Journal*, Vol. 6 No. 2, pp. 138-165.
- Naser, K. and Hassan, Y. (2013), "Determinants of corporate social responsibility reporting: Evidence from an emerging economy", *Journal of Contemporary Issues in Business Research*, Vol. 2 No. 3, pp. 56-74.
- Ortas, E., Gallego-Alvarez, I., & Álvarez Etxeberria, I. (2015). Financial factors influencing the quality of corporate social responsibility and environmental management disclosure: A quantile regression approach. *Corporate Social Responsibility and Environmental Management*, 22(6), 362-380.
- Pallant, J. (2013), *SPSS survival manual*, McGraw-Hill Education (UK).
- Pearce, D., Barbier, E. and Markandya, A. (2013), *Sustainable development: Economics and environment in the Third World*. Routledge.
- Powell, W. W. and DiMaggio, P. J. (Eds.). (2012), *The new institutionalism in organizational analysis*, University of Chicago Press.
- Rahman, N.H.W.A., Zain, M.M. and Al-Haj, N.H.Y.Y. (2011), "CSR disclosures and its determinants: evidence from Malaysian government link companies", *Social Responsibility Journal*, Vol. 7 No. 2, pp. 181-201.
- Reverte, C. (2009), "Determinants of corporate social responsibility disclosure ratings by Spanish listed firms", *Journal of Business Ethics*, Vol. 88 No. 2, pp. 351-366.
- Riantani, S., & Nurzamzam, H. (2015). Analysis of company size, financial leverage, and profitability and it's effect to CSR disclosure. *JDM (Jurnal Dinamika Manajemen)*, 6(2).

- Roitto, A. (2013), "Factors effecting corporate social responsibility disclosure ratings: An empirical study of Finnish listed companies", doctoral dissertation, Tese de Mestrado, Oulu Business School, Oulu, Finlandia.
- Samaha, K., & Dahawy, K. (2010). Factors influencing corporate disclosure transparency in the active share trading firms: An explanatory study. In *Research in Accounting in Emerging Economies*. Emerald Group Publishing Limited.
- Schröder, P. (2021). Corporate social responsibility (CSR) website disclosures: empirical evidence from the German banking industry. *International Journal of Bank Marketing*.
- Setyorini, C. T. (2015), "Determinants of corporate social and environmental reporting in Indonesia: An analysis from economic, social and political perspectives", doctoral dissertation, Universiti Utara Malaysia, Malaysia.
- Sommer, F., Klink, J., Senkl, D. and Hartmann, M. (2015), "Determinants of web-based CSR disclosure in the food industry", *International Journal on Food System Dynamics*, Vol.6 No.1, pp.24-31.
- Spence, D. B. (2011), "Corporate social responsibility in the oil and gas industry: The importance of reputational risk", *Chi.-Kent L. Rev.*, Vol. 86, pp. 59.
- Sufian, M. A. and Zahan, M. (2013), "Ownership structure and corporate social responsibility disclosure in Bangladesh", *International Journal of Economics and Financial Issues*, Vol. 3 No. 4, pp. 901-909.
- Sukcharoensin, S. (2012), "The determinants of voluntary CSR disclosure of Thai listed firms", *International Proceedings of Economics Development and Research*, Vol. 46 No.12, pp. 61-65.
- Tagesson, T., Blank, V., Broberg, P. and Collin, S. O. (2009), "What explains the extent and content of social and environmental disclosures on corporate websites: A study of social and environmental reporting in Swedish listed corporations?" *Corporate Social Responsibility and Environmental Management*, Vol.16 No. 6, pp. 352-364.
- United Nations. (2013), "Sustainable development challenges. World economic and social survey 2013, Department of Economic and Social Affairs, United Nations", available at: <https://sustainabledevelopment.un.org/content/documents/2843WESS2013.pdf> (accessed 21 March 2021)

- United States Business Council for Sustainable Development. (2015), available at: <http://usbcsd.org/about/history/> (accessed 24 March 2021)
- Utaberta, N., Handryant, A. N., Syazwan, N. and Nik, N. S. (2014), “Recent Trends in Social and Behavior Sciences”, *Proceedings of the 2nd International Congress on Interdisciplinary Behavior and Social Sciences 2013, ICIBSoS 2013*. In Taylor and Francis-Balkema.
- Uwuigbe, U. and Egbide, B. C. (2012), “Corporate social responsibility disclosures in Nigeria: A study of listed financial and non-financial firms”, *Journal of Management and Sustainability*, Vol.2 No.1, pp.160.
- Wahba, H. and Elsayed, K. (2015), “The mediating effect of financial performance on the relationship between social responsibility and ownership structure”, *Future Business Journal*, Vol. 1 No. 1, pp. 1-12.
- Willi, A. (2014), “Corporate social responsibility in developing countries: An Institutional Analysis”, Doctoral dissertation, University of Bath.
- Wooldridge, J. M. (2010), *Econometric analysis of cross section and panel data*, MIT press.
- Wu, M. W. and Shen, C. H. (2013), “Corporate social responsibility in the banking industry: Motives and financial performance”, *Journal of Banking & Finance*, Vol. 37 No. 9, pp. 3529-3547.
- Wuttichindanon, S. (2017). Corporate social responsibility disclosure—choices of report and its determinants: Empirical evidence from firms listed on the Stock Exchange of Thailand. *Kasetsart Journal of Social Sciences*, 38(2), 156-162.
- Zhongfu, Y., Jianhui, J. and Pinglin, H. (2011), “The study on the correlation between environmental information disclosure and economic performance-with empirical data from the manufacturing industries at Shanghai Stock Exchange in China”, *Energy Procedia*, Vol. 5, pp. 1218-1224.

Appendix- A

CSER Disclosure Index

1. Pollution control
2. Tree Plantation
3. Conservation of natural resources

4. Energy Conservation
5. Use of energy efficiency products
6. Water management information
7. Solid waste disposal information
8. Recycling of waste products
9. Finance for /Installation of Bio-gas Processing Plants/HHK or Zigzag technology/ Solar panel
10. Finance for/ Installation of Effluent Treatment Plants (ETPs)/ waste water treatment/ green project
11. Employment of minorities
12. Equality to all races, gender and religions/ equal opportunities
13. Socially responsible practices abroad/ towards foreign organization
14. Employee health and safety
15. Employee training and education
16. Employee benefits/welfare/recreation
17. Award program for employee / reward and recognition for performance
18. Charity program
19. Scholarship program
20. Supporting national pride
21. Public health related activities
22. Education facilities for general people or underprivileged children
23. Support to organization working with autistic or physically challenged children/underprivileged children
24. Sponsor for sports, arts and cultural or other program
25. Donation program for disaster people/ natural calamities/ adverse weather
26. City beautification activities
27. Transferring technology and information related to social and environmental awareness
28. Disclosure of product safety
29. Disclosure of product quality
30. Product development or research & development
31. Information about establishment and management of old persons' homes
32. Information pertaining to accommodation/ other related activities for the slum dwellers or other related activities in rural areas
33. Disclosure relating to women's rights/ women empowerment and anti-dowry practices
34. Information about the act of honorable living of the freedom fighters
35. Grants/donation to public or private schools or universities
36. Actions against child labor
37. Activities for poverty reduction
38. Focus on customer service and satisfaction
39. Award / rating received
40. Environmental policy
41. Employee and management relation