Environmental Disclosure Practices and Firm Performance; Evidence from Sri Lanka

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Abstract

The main objective of this study was to identify the impact of environmental disclosure practices on firm performance which is an emerging issue around the globe. This research relies on secondary data which was collected from published annual reports of listed companies in the Colombo Stock Exchange (CSE). Data was collected from a sample of 50 companies listed under 5 sectors over consecutive four financial years from 2015 to 2018. The technique of content analysis was occupied when measuring the level of environmental disclosures. Environmental Disclosure Index (EDI) was prepared based on the Global Reporting Initiative (GRI) Standards 2019. This study employed a regression analysis for the data analysis. The findings of this study revealed that there is a significant positive relationship between environmental disclosures and firm financial performance. However, there is no significant relationship between environmental disclosures and firm market performance. The findings of this study will accommodate annual report preparers and regulators of highly environmentally sensitive industries in creating the grounds of environmental disclosures practice to achieve higher performance.

Keywords: Environmental Disclosure, Global Reporting Initiatives, Firm performance, Content Analysis

INTRODUCTION

During the last three decades, environmental information disclosure is an increasingly important concept in whole over the world. Traditional businesses give their main attention to financial performance. But the survival of the company not only depends on financial performance, but also non-financial performance should be taken into consideration (Elshabasy, 2017). In their ultimate goal to success, they try to give value to society (Hackston & Milne, 1996). Consequently, there is an increasing trend of disclose of corporate social responsibility activities and environmental information imprecation of business operations in their annual reports and other media. Innocent

et al. (2014) shows that as a result of the industrial revolution, rapidly advancing technological developments, unconscious consumption of natural resources may adversely affect on the environment during the past two decades. The development of several technological equipments, techniques, and methods may lead to polluting the environment. This may be caused by climate changes, natural disasters. However, some parties in the society are alert to these things, to react against these environmental problems. Thereby, companies should show their concern for the environment and give back some valuable contribution to the environment to show their support for protecting the environment. Then companies try to disclose their commitment towards the environment through annual reports and other media. Thus, environmental reporting has become important for organizations to effectively communicate their sustainability progress to stakeholders (Pahuja, 2009). Many companies in Sri Lanka also tend to comply with the Central Environmental Authority (CEA) and other environmental regulations (Sameera & Weerathunga, 2013). Ong et al. (2016) found that during the past few decades "green concept" has been emerged globally. Jariya (2015a) found that Sri Lankan companies also concern about themes of "green products". Rajapakse (2003) also explained that during the past three decades environmental disclosures have taken increasing attention in corporate reporting. Thomas (2013) identified that although companies are motivated to make more environmental disclosures, it is consuming more cost. Further, it is revealed that there are three kinds of costs associated with environmental disclosures i.e. cost of collecting and reporting information, cost of dealing with public reaction, and cost of unintended use of data. Thereby, this study has looked at where there is any financial benefit to companies in terms of the company's performance due to these increased environmental disclosures which have a cost to disclose.

LITERATURE REVIEW

In a recent study, Aureli et al. (2019) have described that the relationship between the firm's perception of sustainability reporting and the firm's financial performance has derived from different theories like legitimacy theory and stakeholder theory. According to Deegan (2014), the legitimacy theory says that organizations always seek to ensure that they are perceived as operating within the bounds and norms of their respective societies. And also their activities are perceived by outside parties as being 'legitimate'. Furthermore, Burlea & Popa, (2013) asserts that legitimacy theory offers a powerful mechanism for understanding voluntary environmental and social disclosures made by entities. Also, legitimacy is a generalized perception that the actions of the business are desirable and appropriate within a socially constructed system of values and beliefs of such business. Further Deegan (2014) stated that the stakeholder theory is also used to

explain corporate disclosures. It has both an ethical (moral) or normative branch (which is also considered as prescriptive) and a positive (managerial or as it is also sometimes called, instrumental) branch. The name 'Stakeholder Theory' itself can be a confusing term. Similarly, stakeholder theory is known as an umbrella term. Because, it represents the number of alternative theories that describe the relationship with stakeholders including considerations of the rights of stakeholders, the power of stakeholders, or the effective management of stakeholders. Moreover, Deegan (2014) identified that there are many similarities between Legitimacy Theory and Stakeholder Theory, and, as such, to treat them as two distinct theories would be incorrect.

Empirical Review

Several attempts have been made to examine environmental disclosures of different countries focusing on different sectors.

Chang (2015) and Hsu (2017) have examined the environmental disclosures of companies in developed countries. Chang (2015) argued that environmental disclosures and propensity disclosures are a very important concept for stakeholders to assess incentives on environmental management practices of Chinese industries. This study revealed that environmental performance has a significantly negative impact on Tobin's Q value and environmental propensity has a significantly positive effect on Tobin's Q value. Further, firm size, financial leverage, and return on assets have a significant positive impact on financial performance at the significance level of 1%. Hsu (2017) used the A-share steel industry listed companies in the Shanghai Stock Exchange to examine environmental information disclosure and firm performance. It revealed that there is a negative association between environmental financial disclosure and firm performance. However, there is no association between environmental non-financial disclosures and firm performance.

In the case of developing countries, Innocent et al. (2014) examined the extent, nature, and quality of corporate environmental reporting practices among listed manufacturing firms in the Nigerian stock exchange. The findings revealed that the environmental disclosure practices of firms in Nigeria are still ad hoc and contain little or no quantifiable data. Ng et al. (2019) revealed that quantity and quality of environmental reporting are still unfavorable in Malaysian companies and they are still lacking in providing environmental information needed by the public. Rahman et al. (2009) studied the environmental disclosures and financial performance of 250 listed companies in Bursa Malaysia, Singapore Stock Exchange, and Thailand Stock Exchange. It is identified that high-performance companies would tend to produce a detailed environmental report as compared to medium and low performing companies. This study has provided evidence that the performance

of the companies in Malaysia, Singapore, and Thailand has no relationship with the type of environmental disclosures. Ong et al. (2016) conducted a study selecting 100 public listed companies in the main board of Bursa Saham for the period of 2009-2013 with the objective of examining the relationship between environmental disclosure and financial performance of public listed companies in Malaysia. The content analysis approach has been used and ROA, ROE, and EPS were taken as the dependent variables. The findings of the study revealed that the environmental disclosure has a significant positive impact on EPS while all other variables have an insignificant relationship. Control variables (company size and industry) show a significant relationship with the dependent variables in all 3 models. In another study, Nor et al. (2016) studied the impact of the environmental disclosure on financial performance by selecting the top 100 public listed companies in terms of market capitalization in Bursa Saham Malaysia. It concluded that there is a significant relationship between environmental disclosure and profit margin. But findings for other variables ROA, ROE, and EPS show an insignificant relationship with environmental disclosures. Ng et al. (2019) examined annual reports of 78 Malaysian companies from the year 2010 to 2014 and found that there is no significant relationship between environmental reporting and firm financial performance which is measured by ROE and ROA. Further, it revealed that the existence of environmental reporting is higher in environmentally sensitive industries as compared to non-environmental sensitive industries.

Some studies examine the environmental disclosures and firm market performance. Deswanto and Siregar (2017) found that environmental disclosures do not affect the firm market value of Indonesian listed companies which are highly environmentally sensitive. Uwuigbe et al. (2018) identified that there is a significant negative relationship between sustainability reporting and market price per share. Hassan (2018) suggests that corporate management should educate financial analysts about their firm's environmental disclosures to improve their information set and enhance firm visibility and value. Utomo et al. (2020) studied environmental performance, environmental disclosures, and firm value of Indonesian listed companies using structural equation modeling and found that environmental performance has a positive effect on firm value. However, there is no significant relationship between environmental disclosures and firm value. All the studies concluded that there is no impact of environmental disclosures on firm marker performance.

However, very few studies have attempted to observe the impact of environmental disclosure practices on a firm's performance in Sri Lanka. Sameera & Weerathunga (2013) examined the environmental disclosure practices of the manufacturing industry by using evidence from listed

companies in Colombo Stock Exchange using a sample of 36 companies listed on Colombo Stock Exchange under the manufacturing sector. The results revealed that the level of environmental disclosures in Sri Lankan manufacturing companies is at a low level. Jariya (2015b) revealed that 50.63% of companies disclosed corporate environmental information on their 2012/13 annual reports. Jariya (2015a) studied environmental disclosures in annual reports of Sri Lankan companies. It revealed that 60.29% of companies in Sri Lanka made environmental disclosures. Aruppala & Perera (2013) examined the environmental reporting practice of listed companies in Sri Lanka by selecting 50 companies listed in CSE under three sectors for 2011/2012. The study also found that the majority of companies disclosed less information in their annual reports. Also, the average disclosure rate of selected companies was stated at 14.27%. De Silva (2018) concluded that there is no significant influence of sustainability reporting on the financial performance of Sri Lankan financial companies. Together with these findings, it is revealed that there is a lack of studies that examine the impact of environmental disclosures on firm performance in the Sri Lankan context. Thereby, this study aims to examine the environmental disclosures and firm performance of Sri Lankan companies which are highly environmentally sensitive.

METHODOLOGY

Sample Description and Data

Data was collected from annual reports of 50 companies that are listed on the Colombo Stock Exchange from the year 2015 to 2018. Companies were selected from 5 sectors named chemical and pharmaceutical, construction and engineering, power and energy, plantation, and manufacturing.

Variables and Measurement of Variables

The independent variable of this study was environmental disclosure practices. In order to calculate the environmental disclosure level, an Index has been developed based on the Global Reporting Initiative's (GRI) Standards 2019. The dependent variable of the study is firm performance. Firm performance mainly consists of financial and market performance. Financial performance was measured by using Return on Asset (ROA), Return on Equity (ROE), and Earnings per Share (EPS) while Market performance was measured by using Tobin's Q ratio and Share Price. The regression analysis was performed to examine the relationship. Firm size was the control variable of the study.

Table 01:- Operationalization of variables

Variable	Measurement	Reference
Environmental Disclosure Index	Total score received from the index	Ong et al. (2016) Utomo et al. (2020)
Return On Asset	Net Income / Total Asset	Jewell & Mankin, (2011)
Return On Equity	Net Income / Shareholders Equity	Berzkalne & Zelgalve, (2014)
Earnings Per share	Profit or loss attributable to equity holders / Weighted Average No of Ordinary Shares	Robbetze et al. (2017) & Seetharaman & Raj, (2011)
Tobin's Q ratio	Market Value of Firm / Book value of firm	Fu et al. (2016)
Share Price	Market value of a share	Awad et al. (2012)
Firm Size	Logarithm of total asset	Elshabasy (2017) and Niresh & Velnampy, (2014)

The models were as follows,

Financial performance = $\alpha + \beta_1 EDI + \beta_2 SIZE + \varepsilon$ (1)

Market Value = $\alpha + \beta_1 EDI + \beta_2 SIZE + \varepsilon$ (2)

Where,

EDI = Environmental Disclosure Index

β = Regression Correlation

SIZE   = firm size

ε = Error term

Hypotheses

Hypothesis 1: There is a significant relationship between environmental disclosure and firm's financial performance

 Hypothesis 2: There is a significant relationship between environmental disclosure and firm's market performance

DATA ANALYSIS

Descriptive Statistics

McMillan & Schumacher, (2010) defined descriptive statistics as a transformation of a set of numbers or observations that describe or summarize the data collected. In other words, descriptive statistics are sometimes referred to as summary statistics. Table 02 presents the mean, median, maximum, minimum, and standard deviation of variables of the study.

Table 02: Descriptive Statistics

	EDI	EPS	ROA	ROE	SHARE_P RICE	TOBIN_S_ Q
Mean	0.201	3.474	0.058	0.065	345.158	1.586
Median	0.130	1.931	0.053	0.091	37.250	1.015
Maximum	1.000	710.594	0.722	0.886	15999.0	14.266
Minimum	0.000	-852.815	-0.144	-0.560	1.000	0.075
Std. Dev.	0.221	86.352	0.107	0.186	1984.577	1.834

The environmental disclosure Index has a minimum of 0% and a maximum of 100%. The maximum value shows the highest value that the company disclosed environmental information. Some companies have satisfied all the criteria given in the guideline (GRI Index 2019) besides; some companies did not disclose any environmental information. The mean value of the disclosure index is 20% which indicates that the majority of the firms in the sample have disclosed less quantity of environmental information. The median provides the exact number that has been placed in the middle of the data set. According to table 02, the median of the EDI is 13 %. The standard deviation value is stated at 0.22. The dependent variable used in this study is the financial performance which is measured by using EPS, ROA, and ROE. Averagely, firms earn 3.47 per share. The lowest EPS recorded by sample companies is -852.81 and the highest value is 710.59. The average Return on Asset is 0.058 whereas the standard deviation of the variable is 0.106. The highest ROA between the companies is 0.722 whereas the minimum value is -0.144. The mean value of ROE is 0.065. The maximum value of ROE is 0.886 and the minimum value is -0.560. The market performance is measured by using share price and Tobin's Q ratio. The average share

price is 345.158. The lowest share price recorded among sample companies is 1.00 and the highest share price is 15, 999.00. The mean value of Tobin's Q ratio is 1.586. This variable also shows that the standard deviation of 1.833 the lowest Tobin's Q ratio is 0.075 and the highest is 14.266.

Correlation Analysis

According to Senthilnathan (2019), Pearson's Correlation analysis is used to evaluate the strength of the relationship between the dependent and independent variables. The correlation coefficient can range in value from -1 to +1. An absolute value of 1 indicates a perfect linear relationship while a correlation close to 0 indicates no linear relationship between the variables. The sign of the coefficient indicates the direction of the relationship. If both variables tend to increase or decrease together, the coefficient is positive and the line that signifies the correlation slopes upward. If one variable tends to rise as the other decreases, the coefficient is negative and the line that represents the correlation slopes downward.

Table 03: correlation analysis

	EDI	EPS	ROA	ROE	SHARE_PRICE	TOBIN_S_Q
EDI	1					
EPS	0.040	1				
ROA	0.281	0.192	1			
ROE	0.119	0.413	-0.066	1		
SHARE_PRICE	0.183	0.394	-0.058	0.896	1	
TOBIN_S_Q	-0.135	-0.384	-0.119	-0.110	-0.135	1

There is a weak positive relationship between EDI and EPS. There is a positive relationship between EDI and other indicators of financial performance which are ROA and ROE. Correlation coefficients are 0.281 and 0.119 respectively. There is a negative relationship between EDI and Tobin's Q ratio while the correlation between EDI and share price is positive. These results indicate that there is a positive relationship between EDI and financial performance. The relationship between EDI and market performance is inconclusive.

Regression Analysis

According to Uyanic & Guler (2013) regression analysis is a more powerful tool than correlation analysis. Because it does not only explain the trend and strength of a relationship but shows the casual effect of this relationship. The multiple regression equation is developed using the ordinary least squared method (OLS). Regression analysis generates an equation to describe the statistical relationship between one or more predictor variables and the response variable.

ROA

Table 04: Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.179	0.091	1.975	0.050
EDI	0.072	0.035	2.036	0.043
SIZE	-0.009	0.006	-1.467	0.144
R-squared	0.025	F-statistic		2.508
Adjusted R-squared	0.015	Prob.(F-statistic)		0.084

ROA = 0.179 + 0.072 EDI − 0.009 SIZE + ε

Table 04 shows that t-statistic of EDI is 2.036, which is greater than 2 and Probability is 0.043 which is less than 0.05. Results indicate that there is a significant positive relationship between environmental disclosures and ROA. When EDI increases, ROA also increases and wise versa. Furthermore, it shows that t-statistic of firm size is -1.467, which is less than 2 and probability is 0.14 which is greater than 0.05. That indicates an insignificant relationship between environment disclosure and firm size. And also the negative value of t-statistic shows that negative relationships; if Firm Size increases ROA will decreases and wise versa. Moreover, R square value is 2.5%, indicating that 2.5% of the change in ROA is described by the independent variables.

ROE

Table 05: Dependent Variable: ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.289	0.156	1.847	0.066

EDI	0.182	0.061	2.988	0.003
SIZE	-0.017	0.011	-1.643	0.102
R-squared	0.047	F-statistic		4.812
Adjusted R-squared	0.037	Prob.(F-statistic)		0.009

ROE = 0.289 + 0.182 EDI – 0.017 SIZE + ε

The T-statistic of EDI is 2.988, which is greater than 2, and the probability value is 0.003 which is less than 0.05. That indicates that there is a significant positive relationship between environment disclosures and ROE. When EDI increases, ROE also increases and wise versa. Furthermore, the t-statistic of firm size is -1.643 which is less than 2 and the probability value is 0.10 which is greater than 0.05. The results indicate that there is an insignificant negative relationship between environment disclosure and firm size. R square value is 4.7% and 4.7% of the change in ROE is described by independent variables.

EPS

Table 06: Dependent Variable: EPS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-195.047	72.91835	-2.674863	0.0081
EDI	-5.781	28.44591	-0.203220	0.8392
SIZE	13.249	4.914510	2.695792	0.0076
R-squared	0.037	F-statistic		3.801
Adjusted R-squared	0.027	Prob.(F-statistic)		0.024

EPS = -195.047 – 5.781 EDI + 13.249 SIZE + ε

There is an insignificant negative relationship between Environment disclosure and EPS. The analysis shows that the t-statistic value is -0.203, which is less than 2 and the probability value is 0.839 which is greater than 0.05 for the EPS. Furthermore, it shows that t-statistic of firm size is 2.696, which is greater than 2 and probability is 0.008 which is less than 0.05. Results indicate that there is a significant positive relationship between environment disclosure and firm size. R square value indicates that 3.7% of the change in EPS is described by independent variables.

Tobin's Q

Table 07: Dependent Variable: Tobin's Q

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.416850	1.519515	4.881064	0.0000
EDI	0.019908	0.592772	0.033585	0.9732
SIZE	-0.387155	0.102411	-3.780388	0.0002
R-squared	0.072695	F-statistic		7.721835
Adjusted R-squared	0.063281	Prob.(F-statistic)		0.000591

TOBIN_S_Q =7.417 + 0.020 EDI – 0.387 SIZE + ε

There is an insignificant positive relationship between environment disclosures and Tobin's Q ratio. The value of the t-statistic is 0.034, which is less than 2, and the probability is 0.973 which is greater than 0.05. Furthermore, the value of t-statistic of firm size is -3.780, which is greater than 2 and probability value is 0.0002 which is less than 0.05. That indicates that there is a significant negative relationship between environmental disclosures and firm size. R square value indicates that 7.27% of the change in the dependant variable is described by the independent variables.

Share Price

Table 08: Dependent Variable: Share Price

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2612.121	1686.048	1.549	0.123
EDI	-985.825	657.738	-1.499	0.136
SIZE	-137.236	113.635	-1.208	0.229
R-squared	0.025	F-statistic		2.565
Adjusted R-squared	0.015	Prob.(F-statistic)		0.079

SHARE_PRICE =2612.121+ 0.020 EDI – 0.387 SIZE + ε

There is an insignificant negative relationship between environmental disclosures and share price. Further, there is an insignificant negative relationship between firm size and environmental disclosures. R squared indicates that 2.5% of the change in share price is described by the independent variables.

CONCLUSION

The objective of this study was to determine the impact of environmental disclosure practices on firm's performance of the Sri Lankan listed companies. The empirical estimation is based on the regression analysis of the relationship between environmental disclosure practices and the firm's performance after controlling for the firm size. This study found that environmental disclosures have gradually increased year by year. Jariya, (2015a) also found that environmental disclosures have increased over the years both in the Sri Lankan context and international context. But still, the environmental disclosure in Sri Lanka is a very low level however it is in the growth stage. Sameera & Weerathunga (2013) and Aruppala & Perera (2013) also found that the levels of environmental disclosures by Sri Lankan manufacturing firms are at a very low level. The main finding of this study is that there is a significant positive relationship between environmental disclosures and firm financial performance which is measured using ROA and ROE. However, there is no significant relationship between environmental disclosures and EPS. Further results concluded that there is no impact of environmental disclosures on firm market performance. This result is in line with previous researchers (Utomo et al., 2020; Deswanto & Siregar, 2017). The results of this study suggest companies who are engaged in highly environmentally sensitive activities to follow GRI guidelines and report environmental information which leads to enhance the financial performance of the company.

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