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DISCLOSURE OF ENVIRONMENTAL PRACTICES AND FIRM PERFORMANCE: A STUDY ON FOOD, BEVERAGE AND TOBACCO COMPANIES LISTED IN SRI LANKA

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Abstract

Disclosure of environmental practices is getting prominence in this era of emerging world to both accounting academics and to the accountancy profession. It helps the organizations to get financial returns as a result of involving in these environmental related activities. Therefore, this study intends to examine the impact of Environmental Performance Disclosure (EPD) on Firm Performance (FP) of Food, Beverage and Tobacco Companies Listed in Sri Lanka. Return on Assets (ROA), Return on Equity (ROE), Return on Capital Employed (ROCE) and Tobin's Q (TOQ) are used as dependent variables to measure the FP whilst Environmental Performance Disclosure Index (EPD) is used as independent variable to measure the level of Global Reporting Initiative (GRI) based EPD. This study considers the companies listed on Colombo Stock Exchange (CSE) for the period from 2016 to 2019 and uses secondary data gathered from the annual reports of these companies. The data is analysed by means of descriptive statistics, correlation analysis and regression analysis using the software E Views 8. The results of the Pooled OLS model regression analysis show that EPD has a significant negative impact on ROA, ROE and ROCE while it has insignificant impact on TOQ. 23.4% of observed variability in the ROA is explained by the variance in EPD. 23.2% of observed variability in the ROE is explained by the variance in EPD while 14.2% of variability in ROCE is explained by the variance in EPD. Similarly, based on the correlation analysis, the results show that EPD has significant negative relationship with ROA, ROE and ROCE at 5% significance level as the p values (0.0029, 0.0031 and 0.0191) are lower than the significance level 0.05 (p values<0.05) and an insignificant relationship with TOQ. The correlation coefficient values indicate that there is a moderate negative relationship exists between EPD and those variables ROA, ROE and ROCE as the r values are -0.509, -0.507 and -0.412 respectively. The findings of this study have an important consequence to the management of the companies and other stakeholders. Future researches can be extended by choosing more time periods and other industry groups' companies.

Keywords: *Environmental Performance Disclosure, Firm Performance, Global Reporting Initiative*

Introduction

Society including the stakeholders of the organizations nowadays expect the business entities to be transparent in all the activities those organizations involve while carrying out their day to day activities. This transparency ensures the long term survival of the business entities as the success of the organizations mainly depends on the society and the environment in which an organization operates. As a result of this, most of the organizations, especially, the companies disclose almost all the information in their annual reports, magazines, and websites or in some other media to transmit the information about their activities to the society.

Among all those disclosures, environmental disclosures are also one of the most expected disclosures by the interested parties outside the organizations. Environmental disclosures mean

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communicating the about the impact of the organization's actions on the environment to the stakeholders (Chaklader & Gulati, 2015). The interest of the investors and other users of annual reports on environment has increased hugely. That is the reason, an increasing number of companies include environmental disclosures in their annual reports.

However, there is an ambiguous exists among the management of the companies about the impact of this environmental disclosure practices on firm performance. Management should know about how to manage the costs to these practices if the environmental related activities negatively affect firm performance. Further, they should identify which activities affect the performance positively. Firm performance can be measured using the financial ratios derived from the financial information in the annual reports.

In addition, an expectation gap exists between the information needs of the stakeholders related to environmental related activities of the organizations and the disclosed information in the annual reports of the companies in the context of Sri Lanka (Sooriyaarachchi, 2018). Environmental performances are disclosed by most of the organizations in the annual reports using Sustainability Reporting framework issued by Global Reporting Initiative as it is a common reporting framework exists all over the world. This is to have transparency in how they deal with environmental activities as those activities affect their stakeholders. However, there are criticisms that organizations in Sri Lanka do not release Sustainability Reports using GRI index except mentioning some information on the annual reports and website (Senaratne & Liyanagedara, 2009).

Therefore, this study intends to analyse the impact of disclosure of environmental practices on firm performance of food, beverage and tobacco companies listed in Sri Lanka. The findings of the study will contribute to the environmental planning and management of these companies. This will finally lead to the environmental protection and balance and allows growth.

Research Questions

The researcher has developed the following research questions for this study:

RQ_1: Does Disclosure of Environmental Practices impact on Firm Performance of Food, Beverage and Tobacco Companies Listed in Sri Lanka?

RQ_2: Is there any relationship between Disclosure of Environmental Practices and Firm Performance of Food, Beverage and Tobacco Companies Listed in Sri Lanka?

Objectives of the Study

The researcher developed the following objectives for this study.

- To examine the impact of Disclosure of Environmental Practices on Firm Performance of Food, Beverage and Tobacco Companies Listed in Sri Lanka.
- To identify the relationship between Disclosure of Environmental Practices and Firm Performance of Food, Beverage and Tobacco Companies Listed in Sri Lanka.

Literature Review

Theoretical Review:

Stakeholder theory

Stakeholders mean the individuals, groups or organizations which are likely to influence or be influenced by the operations and decisions of an organization. The stakeholders expect companies to disclose not only the financial information but also information relating to their activities performed towards the society and environment (Carrots & Sticks, 2013). The managerial branch of the stakeholder theory accepts that companies use corporate disclosure to respond to the informational needs of powerful stakeholder groups. In this way, the stakeholder theory explains that the environmental disclosures fulfil the expectations and information needs of the stakeholders in relation to the environmental performances followed by the companies.

Agency theory

The agency theory was developed from the principal-agent relationship which lies between the shareholders who are the owners of the companies and managers. Information asymmetry and conflict of interest exist between managers of the companies who are the inside people and the shareholders and other stakeholders who are the outside people. Disclosing the environmental performances

provides a proper evaluation of the company to the investors and finance providers and it helps the firm to attract new investors and supports to receive financing at a lower cost (Jizi, Salama, Dixon, & Stratling, 2014). According to this theory, environmental disclosures have an impact on firm performance.

Empirical Review:

Environmental Disclosure

In this contemporary world, the environmental issues are very high and disclosing those environmental related facts has become quite important. Environmental disclosure means a set of information which is affiliated with the companies' past, present and future movements in environmental management and performance (Berthelot, Cormier, & Magnan, 2003).

FirmPperformance

Firm performance means the achievement or outcome of a particular task of the organization. This is the results obtained by the management, economics and marketing in providing competitiveness, efficiency and effectiveness to the company (Taouab & Issor, 2019). Normally financial and market based ratios are used to measure the firm performance of companies.

Environmental Disclosure and Firm Performance

Olawale (2010) examined the environmental sustainability practices of small and medium enterprises in South Africa, indicated that there is a positive relationship between Corporate Social Responsibility and profitability. To examine the impact of sustainability innovations on firm performance in Japanese automotive and electronic companies, a study was conducted by Cortez and Cudia (2011) and they concluded that there is a significant and positive impact of environmental performances on sales and assets for both the sectors but failed to identify any significant impact on profitability of electronics companies.

A study based on Japanese manufacturing firms conducted by Hidemichi, Kazuyuki, Shinji and Shunsuke (2012) concluded that toxic chemical management is very important for companies to improve firm performance. They found out that environmental performances increase ROA through both Return on Sales and capital improvement. Further, Bayoud, Kavanagh and Slaughter (2012) found out a positive impact of environment and community disclosures on ROA and Return on Investment in the study conducted in Libya.

Makori and Jagongo (2013) analysed whether there is any significant association between environmental accounting and profitability of selected firms listed in India and revealed that there is a significant negative relationship between Environmental Accounting and Return on Capital Employed and Earnings per Share and a significant positive relationship between Environmental Accounting and Net Profit Margin and Dividend per Share.

Duke II and Kankpang (2013) emphasized the effect of corporate social responsibility activities on the firm performance of companies operating in some of the industries which have the greatest impact on the environment in Nigeria. They ascertained that waste management, pollution abatement are both significantly and positively related with firm performance. Similarly, a significant positive impact of Sustainability disclosures on ROA, ROE and Tobin's Q has been identified by Ghosh (2013) when analysing sustainability disclosures including environmental disclosures and firm performance conducted in the Indian context.

Ong, Teh and Ang (2014) examined the impact of Environmental improvements on the firm performance of leading companies listed in Bursa Malaysia and found that when environmental performance is individually regressed with firm performance, most of the aspects have effects on both ROA and ROE. Some have positive correlation, some are found to be negative predictor for ROA and ROE and some have no significant relationship.

Methodology

The companies listed on Colombo Stock Exchange (CSE) is categorized into 20 GICS industry groups. This study considers the companies which come under Food, Beverage and Tobacco industry group. However, the study covers the sample of only eight (08) companies for the period from 2016 to 2019. Those companies has been selected based on a criteria, that is, the companies which are

publishing GRI Sustainability Reports in their annual reports has been selected for the purpose of this study. From the total of 47 Food, Beverage and Tobacco companies, eight (08) companies are publishing GRI Sustainability Reports in their annual reports and those companies have been selected for this study.

This study uses content analysis based on GRI framework to collect the required data about the environmental performance disclosure and formulate the EPD Index. The environmental performance disclosure index is calculated based on the number of indicators that are disclosed (occurrence). Binary coding system is used for this purpose. If any company disclosed about any indicator, that is the occurrence of the indicator and the researcher assigned '1'. If a company did not disclose about any indicator, the researcher assigned '0'.

All the data for the study are collected from the reliable sources which are the annual reports of companies published on CSE website. There are two types of statistics used to analyse the data, descriptive statistics and inferential statistics. Under the inferential statistics, correlation analysis and regression analysis are used to find out the results. E Views 8 was used to analyse and evaluate the data in this study.

Conceptual Model

Figure 1 establishes the conceptual model developed by the researcher in this regard. It illustrates the concepts and variables identified in the research problem.

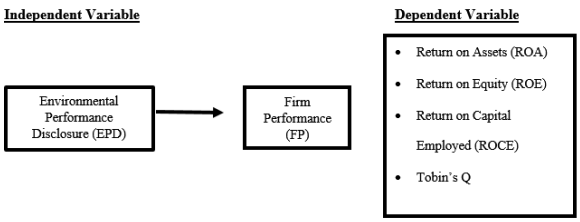

Figure 1: Conceptual model

Source: Author Constructed

Operationalization

Table 1: Operationalization of variables

Key Concept	Variables	Indicators	Measurement
Environmental Performance Disclosure (Independent Variable)	Environmental Performance Disclosure	It indicates what environmental performances were followed (30 Key Performance Indicators).	Environmental Performance Disclosure Index (Total occurrence Score divided by Total level of environmental disclosure*100)
Firm Performance (Dependent Variable)	Return on Assets (ROA)	It indicates the profitability of a firm in relation to its total assets.	$\frac{\text{Net Income}}{\text{Total Assets}} * 100$
	Return on Equity (ROE)	It indicates the return of a firm in relation to its shareholders' equity.	$\frac{\text{Net Profit after interest, tax and Preference dividend}}{\text{Sharholders'Equity}} * 100$
	Return on Capital Employed (ROCE)	It indicates how well a company is generating profits from its capital.	$\frac{\text{Operating Profit}}{\text{Capital Employed}} * 100$
	Tobin's Q (TOQ)	It indicates the ratio between firm's assets' market value and book value.	$\frac{\text{Market value of equity} + \text{Book value of debt}}{\text{Book value of assets}}$

Source: Author Constructed

Hypotheses

H_1: There is a significant impact of EPD on FP.

H_{1a}: There is a significant impact of EPD on ROA.

H_{1b}: There is a significant impact of EPD on ROE.

H_{1c}: There is a significant impact of EPD on ROCE.

H_{1d}: There is a significant impact of EPD on TOQ.

H_2: There is a significant relationship between EPD and FP.

H_{2a}: There is a significant relationship between EPD and ROA.

H_{2b}: There is a significant relationship between EPD and ROE.

H_{2c}: There is a significant relationship between EPD and ROCE.

H_{2d}: There is a significant relationship between EPD and TOQ.

Research Model

$ROA = \beta_0 + \beta_1 EPD + e$ (1)

$ROE = \beta_0 + \beta_1 EPD + e$ (2)

$ROCE = \beta_0 + \beta_1 EPD + e$ (3)

$TOQ = \beta_0 + \beta_1 EPD + e$ (4)

Where,

ROA = Return on Assets

ROE = Return on Equity

ROCE = Return on Capital Employed

TOQ = Tobin's Q

EPD =Environmental Performance Disclosure Index

β_0 = Constant

β_1 =Coefficient of Environmental Performance Disclosure Index

e = Error Term

Results and Discussions

Descriptive Statistics

Table 2 illustrates the descriptive statistics for the independent variable, EPD and the FP measuring variables, ROA, ROE, ROCE and TOQ. The average value of ROA, ROE, ROCE and TOQ of the companies under study is 7.20%, 10.35%, 11.44% and 1.10 respectively. ROA varies among the companies from -10.64% to 17.35%. ROE varies from -50.92% to 30.42%. ROCE varies from the minimum value of -10.51% to the maximum value of 31.02%. TOQ varies from 0.24 to 5.20. The standard deviation of ROA, ROE, ROCE and TOQ is 6.65%, 14.76%, 9.58% and 1.26 respectively. It means that there is a high possibility of variance in the data set from the mean value for ROE. Averagely, 48.44% of environmental performance disclosures were reported by the companies under study. It means, out of the total 30 KPI, companies reported about 15 performance indicators averagely. The maximum value of EPD is 96.67% and the minimum is 6.67%. The standard deviation of EPD is 28.84%, which indicates that there is a high possibility of variation in the data set from the mean value.

Table 2: Descriptive statistics for EPD, ROA, ROE, ROCE and TOQ

Variable	EPD	ROA	ROE	ROCE	TOQ
Mean	48.43750	7.204606	10.35195	11.43839	1.102382
Maximum	96.66667	17.35404	30.42405	31.01814	5.200752
Minimum	6.666667	-10.64176	-50.91833	-10.50832	0.242328
Std.Dev	28.83626	6.654009	14.76077	9.579298	1.260076

Source: Results from the data analysis

Correlation Analysis

Correlation analysis is used to examine the relationship between independent variables and dependent variables of the study. The correlation analysis of all variables included in the study is shown in Table 3. The probability values indicate that there is statistically a significant relationship exists between EPD and the dependent variables ROA, ROE and ROCE as the p values (0.0029, 0.0031 and 0.0191) are lower than the significance level 0.05 (p values<0.05). The correlation coefficient values indicate that there is a

moderate negative relationship exists between EPD and those variables ROA, ROE and ROCE as the r values are -0.509, -0.507 and -0.412 respectively. Further, the p value shows that there is statistically an insignificant association exists between EPD and TOQ as p=0.1808 (p value>0.05). Therefore, if the environmental performance disclosures increase, the ROA, ROE and ROCE will be reduced as there is a negative relationship. Hence, the companies would not prefer to involve in environmental related activities.

Table 3: Correlation analysis of variables

	EPD	ROA	ROE	ROCE	TOQ
EPD	1.000000 -----				
ROA	-0.509077 0.0029	1.000000 -----			
ROE	-0.507109 0.0031	0.897222 0.0000	1.000000 -----		
ROCE	-0.412043 0.0191	0.895532 0.0000	0.832174 0.0000	1.000000 -----	
TOQ	-0.242657 0.1808	0.514070 0.0026	0.313709 0.0804	0.538014 0.0015	1.000000 -----

Source: Results from the data analysis

Pooled OLS Regression Model Analysis

Impact of EPD on ROA

Table 4 displays that adjusted R-squared value of EPD is 0.234 which means that 23.4% of observed variability in the ROA is explained by the variance in EPD. It means that 23.4% of influence is created by EPD whereas remaining 76.6% (approximately) of impact is made by the factors which are not depicted in the model recommendation. Based on the results of the coefficient estimation for EPD, there is a significant impact of EPD on ROA exists as the p value which is 0.0029 is lower than the significance level of 5%. The coefficient value of EPD which is -0.117470 indicates that it negatively impacts on ROA.

Table 4: Model summary of EPD on ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.89457	2.035734	6.334114	0.0000
EPD	-0.117470	0.036262	-3.239528	0.0029
Dependent Variable ROA Adjusted R-squared 0.234465 Observations 32				

Source: Results from the data analysis

Impact of EPD on ROE

Table 5 illustrates that adjusted R-squared value of EPD is 0.232 which means that 23.2% of observed variability in the ROE is explained by the variance in EPD. It means that 23.2% of influence is created by EPD whereas remaining 76.8% (approximately) of impact is made by other factors. Coefficient estimation for EPD shows, there is a significant impact of EPD on ROE exists as the p value is 0.0031 (p value<0.05). The coefficient value of EPD which is -0.259580 indicates that it negatively impacts on ROE.

Table 5: Model summary of EPD on ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.92537	4.522014	5.069725	0.0000
EPD	-0.259580	0.080548	-3.222661	0.0031
Dependent Variable ROE Adjusted R-squared 0.232399 Observations 32				

Source: Results from the data analysis

Impact of EPD on ROCE

Table 6 shows that adjusted R-squared value of EPD is 0.142 which means that 14.2% of variability in ROCE is explained by the variance in EPD. It means that 14.2% of influence is created by EPD however remaining 85.8% (approximately) of variation is made by other factors. Coefficient estimation shows, there is a significant impact of EPD on ROCE exists as the p value is 0.0191 (p value<0.05). The coefficient value of EPD which is -0.136879 indicates that EPD negatively impacts ROCE.

Table 6: Model summary of EPD on ROCE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.06846	3.102457	5.823920	0.0000
EPD	-0.136879	0.055263	-2.476886	0.0191
Dependent Variable ROCE Adjusted R-squared 0.142105 Observations 32				

Source: Results from the data analysis

Impact of EPD on TOQ

Table 7 explores that adjusted R-squared value of EPD is 0.028 which means that 2.8% of variability in TOQ is explained by the variance in EPD. It means that 2.8% of influence is created by EPD however remaining 97.2% (approximately) of variation is made by other factors. Coefficient estimation shows, there is an insignificant impact of EPD on TOQ exists as the p value is 0.1808 (p value>0.05). The coefficient value of EPD which is -0.010604 indicates that EPD negatively impacts TOQ.

Table 7: Model summary of EPD on TOQ

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.615991	0.434504	3.719159	0.0008
EPD	-0.010604	0.007740	-1.370034	0.1808
Dependent Variable TOQ Adjusted R-squared 0.027512 Observations 32				

Source: Results from the data analysis

Research Model

With using the results above, research model can be demonstrated as follows.

ROA = 12.89457 -0.117470 EPD + e

ROE = 22.92537 -0.259580 EPD + e

ROCE = 18.06846 -0.136879 EPD + e

TOQ = 1.615991 -0.010604 EPD + e

Hypotheses Testing

Hypotheses	Supported / Not supported
H_1: There is a significant impact of EPD on FP.	Partially supported
H_{1a}: There is a significant impact of EPD on ROA.	Supported
H_{1b}: There is a significant impact of EPD on ROE.	Supported
H_{1c}: There is a significant impact of EPD on ROCE.	Supported
H_{1d}: There is a significant impact of EPD on TOQ.	Not supported
H_2: There is a significant relationship between EPD and FP.	Partially supported
H_{2a}: There is a significant relationship between EPD and ROA.	Supported
H_{2b}: There is a significant relationship between EPD and ROE.	Supported
H_{2c}: There is a significant relationship between EPD and ROCE.	Supported
H_{2d}: There is a significant relationship between EPD and TOQ.	Not supported

Conclusion

The findings of this study reveals that the environmental performance disclosure significantly and negatively impacts on ROA, ROE and ROCE of the Food, Beverage and Tobacco companies listed in Sri Lanka based on the results of regression analysis as the p values are 0.0029, 0.0031 and 0.0191 respectively. (p values<0.05). Correlation analysis also shows that the environmental performance disclosure has negative relationship with these variables as the p values are lower than the significance level 0.05. Therefore, it can be concluded that, if the environmental performance disclosure increases, firm performance will decrease and vice versa. This is in line with the findings of the researchers Ong et al. (2014).

Most of the previous studies show some contradictory results showing positive, negative or no significnat association between these variables. One of the reasons for the negative relationship identified in this study may be the limitation in the time period as it considers only four years. Another reason may be the industry group considered as it only considers Food, Beverage and Tobacco companies.

Further, according to Fernando (2018), environmental developments are in a disappointing level in Sri Lanka. His results revealed that many businesses in Sri Lanka have still not properly engaged in CSR practices in relation to environmental matters. He concluded that, CSR reporting is at a lower level and compliance with GRI guidelines is also at a lower level in Sri Lanka. It was also explored that, environmental-related practices conducted by Sri Lankan companies are at an unsatisfactory level and the companies focuses on involving in economic and social related activities. Companies engaged in CSR activities mostly to obtain attention from the society. However, most of them do not take the projects which involve huge amounts of money. They are fear about that the costs related to CSR projects may adversely impact their financial health. Getting approval from top management for an environmentally related activity is not an easy task in Sri Lankan context. Overall, Companies in Sri Lanka involve in the lowest cost environmental

activities and aim for the highest financial benefits. This may also be the reason for the negative relationship between environmental performance disclosure and firm performance.

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