

THE IMPACT OF ENVIRONMENTAL MANAGEMENT ACCOUNTING AND
CORPORATE SOCIAL RESPONSIBILITY ON FIRM PERFORMANCE

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A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Management)

Faculty of Management
Universiti Teknologi Malaysia

AUGUST 2014

DEDICATIONS

This work is dedicated to my parents Kobra and Bijan who have supported me throughout this process. Without your prayers, love and patience I would never complete this work. Dad and Mom, you are my rock, thank you for holding me up when I was always falling down. Alireza, Parisa and Parvaneh, my dear sibling, I felt encouraged by your supports during the most challenging time of my life. I love you dearly and am proud to have such a nice family.

ACKNOWLEDGEMENT

I would like to thank above all else, Allah Almighty, for blessing me and truly giving me the faith, courage, inspiration, and steadfastness to continue on this journey in my life. I realised that He is always with me. I would like to thank my supervisor, Assoc. Prof. Dr. Saudah Sofian who has continuously mentored me throughout my entire Ph.D. program and has shared her experiences, wisdom, and knowledge as an academicians as well as scholar. She shaped my doctoral experience and provided me with the necessary skills to be successful in my academic career. Without her unwavering help and guidance, this journey would not have been possible.

ABSTRACT

The lack of ability of conventional management accounting systems to provide full environmental/social cost information as well as low level of managers' understanding of the concepts of Corporate Social Responsibility (CSR) and Environmental Management Accounting (EMA) have caused decisions and firm performance appraisal to be based on missing, inaccurate or misinterpreted information. This study aims to (1) answer whether more complete environmental/social cost information through employing EMA and CSR could bring higher level of performance for firms, and (2) determine the barriers which hinder firms from implementing EMA and CSR. Quantitative method was employed in this study. Data were collected by using questionnaires distributed to 452 (58 responded) Bursa Malaysia listed companies in industrial and consumer product sectors and then the data were analyzed using the Structural Equation Modelling (SEM) technique and Partial Least Squares (PLS) method. The findings show that the level of EMA is relatively higher than CSR among participated firms, while the level of CSR is at the average level. The results of path analysis show that CSR has positive effects on both financial and non-financial performance, while EMA has only positive and significant effects on process innovation as one of the non-financial performance dimensions. In addition, the managers have determined that rigidity of legislation and bureaucratic complexity, and reduced employee participation in decision-making are the most important external and internal barriers respectively in implementing EMA and CSR as two environmental management practices.

ABSTRAK

Kelemahan dalam sistem perakaunan pengurusan konvensional untuk menyediakan maklumat lengkap kos persekitaran / sosial dan tahap kefahaman pengurus yang rendah tentang konsep Tanggungjawab Sosial Korporat (CSR) dan Pengurusan Perakaunan Alam Sekitar (EMA) akan menyebabkan keputusan dan penilaian prestasi oleh firma berasaskan maklumat yang hilang, tidak tepat atau tersalah tafsir. Kajian ini bertujuan untuk (1) menjawab sama ada maklumat kos persekitaran/ sosial yang lebih lengkap dengan menggunakan EMA dan CSR boleh meningkatkan tahap prestasi firma dan (2) mengenal pasti kekangan yang menghalang firma daripada melaksanakan EMA dan CSR. Kaedah kuantitatif digunakan dalam kajian ini. Data dikumpul melalui borang soal selidik yang dihantar kepada 452 buah syarikat (dijawab oleh 58 buah syarikat) yang disenaraikan di Bursa Malaysia dalam sektor industri dan produk pengguna. Data tersebut dianalisis menggunakan teknik Model Persamaan Struktur (SEM) dan Kaedah Gandaan Terkecil (PLS). Hasil kajian mendapati bahawa tahap EMA secara relatifnya adalah lebih tinggi berbanding dengan CSR dalam kalangan firma yang mengambil bahagian, manakala tahap CSR pula berada pada tahap sederhana. Hasil analisis laluan menunjukkan bahawa CSR mempunyai kesan positif kepada kedua-dua prestasi kewangan dan bukan kewangan, sementara EMA hanya mempunyai kesan positif dan signifikan terhadap proses inovasi sebagai salah satu dimensi prestasi bukan kewangan. Tambahan pula, para pengurus memutuskan bahawa peraturan yang terlalu rigid dan kompleksiti birokrasi serta penyertaan bilangan pekerja yang berkurangan dalam membuat keputusan menjadi halangan luaran dan dalaman yang paling penting dalam pelaksanaan EMA dan CSR, sebagai dua amalan persekitaran pengurusan.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xiii
	LIST OF ABBREVIATIONS	xiv
	LIST OF APPENDICES	xv
1	INTRODUCTION	1
	1.1 Background of the Study	1
	1.1.1 Why Malaysia?	4
	1.2 Statement of the Problem	5
	1.2.1 Environmental Management Accounting and Firm Performance	7
	1.2.2 Corporate Social Responsibility and Firm Performance	9
	1.2.3 Barriers to the Adoption of Environmental Practices	11
	1.3 Purpose of the Study	13
	1.4 Objectives of the Research	13
	1.5 Research Questions	14
	1.6 Significance of the Study	14
	1.7 Scope of the Study	16
	1.8 Definition of Key Terms	16
	1.9 Structure of the Thesis	18

2	LITERATURE REVIEW	19
	2.1 Introduction	19
	2.2 Introduction of EMA	20
	2.3 Conventional Management Accounting	22
	2.4 Environmental Costs	24
	2.5 Environmental Management Accounting (EMA)	28
	2.6 Environmental Management Accounting and Firm Performance	29
	2.6.1 EMA and Efficiency	31
	2.6.2 EMA and Differentiation and Innovation	34
	2.6.3 EMA, Customer Satisfaction and Corporate Reputation	36
	2.6.4 EMA and Competitive Advantage	39
	2.7 Introduction of CSR	41
	2.8 Corporate Social Responsibility	42
	2.9 CSR and Firm Performance	44
	2.9.1 Positive Relationship between CSR and Firm Performance	44
	2.9.2 Lack of Positive Association between CSR and Firm Performance	48
	2.9.3 Mixed Findings of the Association between CSR and Firm Performance	50
	2.10 CSR in Malaysia	51
	2.11 Barriers to the Adoption of Environmental Management Strategies/ Practices	54
	2.12 Summary	60
3	THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY	62
	3.1 Introduction	62
	3.2 Related Theories	62
	3.2.1 Deep Ecology Theory	63
	3.2.2 Stakeholder Theory	64
	3.2.4 Resource Based View Theory	64
	3.2.3 Social Issue Life Cycle Theory	65
	3.3 Theoretical Framework and Hypotheses Development	66
	3.3.1 Framework I (EMA and Firm Performance)	66
	3.3.2 Framework II (CSR and Firm Performance)	69
	3.4 Summary of the First Part (Research Framework)	71
	3.5 Introduction to research Methodology	73

3.6	Research Process	73
3.7	Research Philosophy	75
3.8	Data Collection	77
3.9	Questionnaire Design	79
3.9.1	Variable Measurement	79
3.9.1.1	EMA Measurement (Independent Variable)	80
3.9.1.2	CSR Measurement (Independent Variable)	81
3.9.1.3	Non-financial Firm Performance Measurement (Dependent Variable)	82
i	Innovation	82
ii	Customer Satisfaction	83
iii	Corporate Reputation	84
iv	Competitive Advantage	85
3.9.1.4	Financial Performance Measurement (Dependent Variable)	86
3.9.1.5	Barriers in Implementing Environmental Management Practices Measurement	88
3.9.1.6	Control Variable	88
3.9.2	Testing Control Variable	89
3.10	Structural Equation Modelling (SEM)	90
3.10.1	Content Validity	91
3.11	Pilot Test	91
3.11.1	Quality Assessment of Measurement Model	92
3.11.1.1	Convergent Validity	92
3.11.1.2	Discriminant Validity	95
3.11.1.3	Reliability	98
3.12	Hypotheses Testing Using PLS	98
3.12.1	Path Coefficients	99
3.12.2	R ² Value	99
3.12.3	Bootstrap Re-Sampling Method	99
3.13	Summary of Methodology	99
4	DATA ANALYSIS	101
4.1	Introduction	101
4.2	Screening the Data	102
4.2.1	Missing Data	102
4.2.2	Normality	103

4.3	Demographic Profile	104
4.4	Descriptive Statistic of Variables	104
4.5	Pre-Analysis on Possible Biases	105
4.6	Analysis Technique	109
4.6.1	Testing Measurement Model	109
4.6.1.1	Convergent Validity	110
	i Factor Loading	110
	ii Average Variance Extracted (AVE)	112
4.6.1.2	Discriminant Validity	112
	i Square Root of AVE	112
	ii Cross Loading	113
4.6.1.3	Construct Reliability	116
4.6.2	Testing the Structural Model	116
4.6.2.1	Results of the Hypotheses (Main Effects Analysis)	117
4.6.2.2	Research Objectives 7 and 8 (Identifying the Most Important Barriers)	120
4.6.3	The Effect of Control Variable (Firm Size)	121
4.7	Summary	125
5	DISCUSSION AND CONCLUSION	126
5.1	Introduction	126
5.2	Discussion on the Research Findings	126
5.2.1	The Level of EMA and CSR in Malaysian Companies	127
5.2.2	Influence of EMA on Firm Performance	131
5.2.3	Influence of CSR on Firm Performance	132
5.2.4	Important Barriers and Implementing EMA and CSR	136
5.2.5	Differences in the Effects of EMA and CSR on Firm Performance Based on Firm Size (Control Variable)	138
5.3	Theories of Study	139
5.4	Contributions of Study	141
5.5	Conclusion	142
5.6	Research Limitations	144
5.7	Recommendation for Future Research	145
	REFERENCES	147
	Appendix A	176

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Classifications by Different Authors	57
2.2	key Challenges Associated to Internal and External Barriers to Implementing EMPs)	59
3.1	Summary of Hypotheses Development Related to EMA and Firm Performance	72
3.2	Summary of Hypotheses Development Related to CSR and Firm Performance	72
3.3	Number of Companies in the Main Board of Bursa Malaysia for 2013	
3.4	Different Sections of Questionnaire	77
3.5	Non-financial Variables and Their Related Number of Questionnaires	82
3.6	Applied Instruments of Study	87
3.7	Categories of Total Assets (control variable) and Respondents' Rate	89
3.8	Comments for Content Validity	91
3.9	Convergent Validity Measurements (Pilot Test)	93
3.10	Loadings and Cross Loadings Results of the Pilot Test	96
3.11	Correlation between Constructs Results of the Pilot Test	97
3.12	Composite Reliability and Cronbach's alpha Values Results of the Pilot Test	98
4.1	Normality t-Test (Skewness and Kurtosis)	103
4.2	Respondents' Demographic Information of the Sample Based on Total Asset of their Companies	104
4.3	Descriptive Statistic of Main Variables and T-Test	105
4.4	Chi-Square Comparison of Early and Late Cases (Ordinal variable)	106
4.5	Independent Samples Test of All Items	106
4.6	Psychometric Characteristics of the Research Constructs	110
4.7	AVE of the Constructs	112
4.8	Correlations Between the Main Constructs	113
4.9	Factor Structure Matrix of Loadings and Cross-Loadings	113

4.10	Composite Reliability and Cronbach Alpha	116
4.11	Supported/Rejected Hypotheses, Path Coefficients and T-Statistics	118
4.12	Supported/Rejected Hypotheses, Path Coefficients and T-Statistics (United Dimensions of Non-Financial Performance)	119
4.13	List of Internal Barriers and their Ranks	120
4.14	List of External Barriers and their Ranks	121
4.15	Descriptive Statistics of Total Assets	121
4.16	Levene's test for Variance Homogeneity	124
4.17	Result of ANOVA Analysis for Total Assets (Equal-Variance Variable)	124
4.18	Result of Brown Forsythe's F Ratio Test for non- Equal-Variance Variable	125
5.1	Descriptive Statistics of Total Assets	127

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
2.1	Barriers Classification of Post and Altman (1994)	55
3.1	First Part of the Main Research Framework (EMA and Firm Performance)	69
3.2	Second Part of the Main Research Framework (CSR and Firm Performance)	71
3.3	The Research Model	72
3.4	Research Process	74
3.5	Knowledge Claims, Strategies of Inquiry, and Methods Leading to Approaches and the Design Progress	76
3.6	Flowchart of Research for this Study	100
4.1	The Research Model (Separated Non-Financial Dimensions of Performance)	101
4.2	The Research Model (United Non-Financial Dimensions of Performance)	102
4.3	Result of PLS Analyzing for Main Structural Model (Path Coefficient and R2)	117
4.4	Path Coefficients and R2 (United Dimensions of Non-Financial Performance)	119

LIST OF ABBREVIATIONS

EMA	-	Environmental Management Accounting
CSR	-	Corporate Social Responsibility
EM	-	Environmental Management
MA	-	Management Accounting

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Research Questionnaire	176

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Environmental costs and social costs as two integral parts of related information in a more complete evaluation of firm performance have received considerable attention from both the business community and academic researchers (Csutora and Palma, 2009; Zulkifli *et al.*, 2009; de Gorter and Just, 2010; Petcharat and Mula, 2010). It could be claimed that in order to equip firms to have an accurate appraisal of financial performance, financial systems should provide full environmental costs and revenue information (Gadenne and Zaman, 2002; Petcharat and Mula, 2010). However, the main part of environmental costs has always been remained “hidden” from managers’ eyes (Jasch, 2003; Gale, 2006). This may be explained by the fact that the conventional management accounting systems with many weaknesses in identifying environmental costs are still being applied by firms. The main limitations of conventional management accounting systems are lack of a proper communication between monetary and non-monetary units inside the firm, and aggregation of environmental and non-environmental costs in overhead accounts. It means under conventional management accounting system, environmental managers rarely has access to cost accounting documents and management accountants also are not well linked to technical sectors to have enough information about physical data (Burritt, 2005). On other hand, sharing all environmental costs which is gathered in one overhead account under conventional management accounting leads product pricing to be based on unreal information. In fact, conventional management accounting systems with their limitations and

deficiencies have made it difficult for firms to effectively identify, collect and evaluate environmental cost data (Watchaneeporn, 2010). Subsequently, these limitations can lead decisions and firm performance appraisal to be based on missing, inaccurate or misinterpreted information (Jasch, 2003).

Environmental Management Accounting (EMA) as a new tool in management accounting tries to overcome the limitations of conventional management accounting systems through identifying, collecting, analyzing, and controlling environmental costs and consequently improving the quality of management decision making (Gadenne and Zaman, 2002; Petcharat and Mula, 2010). Different authors have different definition and perception of EMA (Burritt *et al.*, 2009) but the most cited one has been presented by the United Nation's Division for Sustainable Development (UN DSD). According to the UN DSD (2001) there are two types of information which are considered under EMA: physical and monetary information. Physical information includes data on the use, flows and final destiny of energy, water, materials and wastes; and monetary information includes environment-related costs, earnings and savings. Burritt, *et al* (2002) also divide EMA information to Monetary EMA (MEMA) and Physical EMA (PEMA). MEMA, as part of environmentally differentiated conventional accounting, incorporates monetary impacts of the corporation on the natural environment. PEMA focuses on the physical impacts of the corporation, expressed in terms of physical units, such as kilograms. Accordingly, EMA is broadly defined as "identification, collection, analysis and use of two types of environmental information (monetary and physical) for better internal decision making".

In addition to environmental costs which are identified by EMA, firm's activities impose some other costs to the society such as air and water pollution. These external costs are usually referred to as "social costs" for which the firm is not directly held accountable (Hohmeyer, 1988). Unfortunately, social costs have been disregarded in calculating the total firm's costs by majority of firms. This is because most organizations would restrict their focus to "private costs" being those costs for which the entity is held accountable and which would affect the firm's financial performance visibly (Deegan, 2003). Therefore, it could be concluded that

the firm performance evaluation without considering external and intangible costs (social costs) does not give a real picture of the performance of firm. Hence, some practices or tools in firms are needed to identify and analyze social costs to provide more comprehensive cost information.

Corporate Social Responsibility (CSR) strategy facilitates companies' recording and measuring social costs through disclosing environmental/social information. It helps firms to improve their internal decision making and legitimize their activities in the society (Richmond et al., 2003; Cullen and Whelan, 2006). Today gaining legitimizing in order to enhance firm image is the main goal of firms in being social responsible (Yusoff *et al.*, 2006); while they are unaware of this fact that reflection of social costs in accounting system could have a critical effect on decision making outputs. Followed by disregarding the accounting perspective to CSR, CSR in this study has double perspectives. Ethical and moral perspective in order to increase social legitimacy the society, and monetary perspective to identify social costs to provide full cost information for having a real firm performance evaluation.

Despite giving definitions of EMA and CSR, and expression of their positive effect on better decision making and the firm performance evaluation, some researchers reported that environmental management activities, coupled with EMA and CSR have impacts on firm performance (e.g. Sulaiman and Mokhtar, 2009; Ferreira *et al.*, 2010; Hansen and Mowen, 2005; Bartolomeo *et al.*, 2000; Ditz *et al.*, 1995; Csutora and Palma, 2009; Burritt *et al.*, 2011; Wolters and Jasch, 2004; Becchetti *et al.*, 2008; Lawrence and Weber, 2008; Chu and Yang, 2009; Heal, 2009; Lin *et al.*, 2009; Poddi and Vergalli, 2009; Samy *et al.*, 2010; Michelon *et al.*, 2013). However, there is no noticeable similarity in the researchers' findings on this subject and still this influence is questionable that whether environmental management practices actually improve performance of firm (Claver *et al.*, 2007; Hertin *et al.*, 2008; Yang *et al.*, 2011).

In addition, the majority of scholars only focused on financial aspects of performance in the link between environmental management practices and firm performance; and just a few studies in this field considered firm performance as

financial and non-financial concepts jointly (King and Lenox, 2002; Link and Naveh, 2006; Mishra and Suar, 2010).

From another point of view, it is noteworthy that most studies on environmental management practices have been carried out in developed countries based on European and US data (see Hilson, 2012). However, far little attention has been paid to such studies in developing countries (E. Ite, 2004; Jamali and Mirshak, 2007; Sumiani *et al.*, 2007; Sulaiman and Mokhtar, 2009; Abu Bakar and Ameer, 2011; Hilson, 2012).

Accordingly, this study aimed to fulfil the existing gaps in EMA and CSR studies through: 1) examining the effect of EMA on both firm's financial and non-financial performance, and 2) examining the effect of CSR on both firm's financial and non-financial performance, as well as to investigate the level of EMA and CSR conducted by the industrial and consumer product companies in Malaysia.

Notwithstanding communal pressure and organization's interest in executing environmental accounting practices, companies usually encounter difficulties or barriers which make the completion and expansion of environmental management practices/strategies unfeasible (Ashford, 1993; Dieleman and de Hoo, 1993; Murillo-Luna *et al.*, 2007). Identifying the barriers in implementation of environmental management practices looks like a better avenues for organizations to be more strategic in implementing environmental practices and enhance their performance (Setthasakko, 2010). Relying on the evidence herein and inadequate research on identifying these barriers (Setthasakko, 2009; Massoud *et al.*, 2010; Setthasakko, 2010; Murillo-Luna *et al.*, 2011), this research tried to recognize which among the internal and external barriers perceived by managers can be considered as the most relevant in preventing companies from implementing environmental practices/ strategies.

1.1.1 Why Malaysia?

At the outset and from a strategic standpoint, Malaysia is the only developing country with an explicit timeline to achieve developed nation status by

the year 2020 (Vision 2020) (Elijido-Ten, 2007). The launch of Vision 2020 coincided with the inception of the National Development Policy in 1991. Since then, Malaysia has not been immune to environmental disasters such as the 1993 Highland Towers erosion, the 1997 haze crisis when the Air Pollution index exceeded the 500 mark and more recently, the 2004 Tsunami that hit Penang along with eight other Asian countries killing more than 200,000 people (Elijido-Ten, 2007). Although these disasters have been caused both by man and mother-nature, these experiences inevitably put environmental considerations as top priority, creating the need to strategically preserve and maintain the environment if Vision 2020 is to be achieved. In addition, existence of Environmental Quality Act of 1974, as one of Malaysia's laws assessing the environmental impact of a firm's activities, also creates incentives for firms to implement environmental management strategies and practices such as CSR and EMA (Sulaiman and Mokhtar, 2009).

On the economic front, Malaysia offers an interesting setting since it is one of the fastest growing economies in Southeast Asia since the 1960's (Abu Bakar and Ameer, 2011; Buniamin, 2010). Compared to neighbouring countries like Indonesia, Thailand and the Philippines, Malaysia has recovered much quicker from the 1997 Asian financial crisis. Along with rapid economic development, Malaysia has also experienced intensified environmental impacts such as deforestation, erosion, loss of biodiversity, air and water pollution largely brought about by corporate activities such as logging, large scale land development, open burning, mining, power stations and dam constructions (Teoh and Thong, 1984; Malcolm *et al.*, 2007; Sumiani *et al.*, 2007). Hence, from an economic and strategic standpoint, the Malaysian context offered a fertile ground for an investigation on EMA and CSR.

1.2 Statement of the Problem

Current times don't allow for companies to simply be in business for the sake of making a profit anymore. While consumers may rely on corporations for goods and services, the level of competition allows customers to make decisions

based on several factors, including how much good a corporation is also doing outside of the workplace. Many individuals today are basing their corporate loyalties on how companies are positively impacting their community. A corporation's public image is at the mercy of its social responsibility programs and how aware consumers are of them. According to a study by Michelonet *et al.*(2013), 90% of consumers would refrain from doing business with a corporation if there existed no CSR plan.

In addition, Lombart and Louis (2012) and Gallarza, *et al.*(2011)claimed that customer loyalty is a consequence of customer satisfaction. This claim was supported by authors who contend that increased customer satisfaction leads to increased customer loyalty which in turn helps firms to obtain higher levels of financial performance (Fornell, 1992; Rust and Zahorik, 1993; Cronin *et al.*, 2000). Therefore, being socially and environmental responsible is critical to a firm's survival in terms of both financial and non-financial performance.

On other hand, since the company's success in raising performance is based on correct strategic decisions, and completed monetary and non-monetary information is the basis for right decisions,incomplete cost information in firm would drop the quality of decision-making on one hand, and real firm performance evaluation on the other hand(Gadenne and Zaman, 2002). Therefore, having a correct and comprehensive information of firm costs has a crucial effect on evaluating and improving firm performance (Petcharat and Mula, 2010). Unfortunately, calculating environmental and social costs has not assumed important by many firms. Consequently, they are not identified, tracked, and finally considered in decision making and firm performance evaluation process (Jasch, 2003).

EMA and CSR as two environmental strategic practice/ strategy are trying to keep a firm more socially responsible through identifying and reducing environmental and social costs and improving corporate image and productivity (replacement of materials that result in hazardous waste and offering more environmental friendly products) (Pava and Krausz, 1996; Jasch, 2003). Improving productivity leads to greater company profit margins and an improved image of the

firm. Therefore, it could be claimed that firms with being environmental and socially responsible has better non-financial and financial performance.

As conclusion, three main gaps including “important role of complete cost information in decision making as well as evaluating real performance of firm, and lack of managers’ attention to provide such information in firms” led this study to consider EMA and CSR as two environmental management practices in identifying environmental and social costs by firms. Therefore, this study aimed to determine the involvement level of Malaysian firms in EMA and CSR as well as examine their effects on firm performance to reveal whether firms with high level of EMA and CSR achieve higher level of performance than others with lower level of EMA and CSR.

Sometimes, despite firms’ willingness of being proactive in environmental management practices, some serious internal and external barriers hinder them to implement these kinds of practices. Little has been known about the root causes of barriers to the development of environmental management strategies (Post and Altman, 1994; Hillary, 2004; Murillo-Luna et al., 2011). This study, therefore, attempted to identify the most important internal and external barriers that hinder Malaysian firms to adopt environmental practices/strategies including EMA and CSR.

The following sections discuss the issues in the influence of EMA, CSR on firm performance; and the barriers in adoption of environmental management practices/strategies.

1.2.1 Environmental Management Accounting and Firm Performance

Environmental management has become an issue of great concern for industries. Therefore, many of studies attempted to focus on environmental management practices and changes in firm performance. However, literature shows that very few empirical studies focused particularly on accounting aspects of environmental management practices such as EMA (IFAC, 2005; Ferreira *et al.*, 2010). Therefore, because of mentioned critical role that complete environmental

costs information has on decision making process and outcomes (Gadenne and Zaman, 2002; Burritt *et al.*, 2011) this study focused particularly on EMA as a common practice between environmental management and management accounting and attempted to give experimental evidence of the extent of firms' involvement in EMA through measuring the level of EMA implementation in Malaysian companies.

From another point of view, most studies on environmental management practices have been carried out in developed countries, and far little attention has been paid to such studies in developing countries (E. Ite, 2004; Jamali and Mirshak, 2007; Sumiani *et al.*, 2007; Sulaiman and Mokhtar, 2009; Abu Bakar and Ameer, 2011; Hilson, 2012) especially in Malaysia where green sustainability is one of her 2020 development vision and the emphasize of Environmental Quality Act of 1974 is on the assessment of the environmental impact of firms' activities(Sulaiman and Mokhtar, 2009). Therefore, based on Oeyonoet *al.*(2011) claimthat exposing environmental responsibility programs is advantageous for organizations in developing countries; Malaysia was selected as the best option for this study.

In terms of investigating the influence of environmental management practices including EMA on firm performance, positive effect has prevailed in most of studies in this field (Margolis and Walsh, 2003; IFAC, 2005; Vogel, 2005b; Vogel, 2005a). However, still negative or no influence could be found among the previous findings (Walley and Whitehead, 1994; Cordeiro and Sarkis, 1997; Montabon *et al.*, 2000; Watson *et al.*, 2004; Bergstrom *et al.*, 2005; Wagner, 2005; Link and Naveh, 2006; Frondel *et al.*, 2008; Iraldo *et al.*, 2009; Krasnikov *et al.*, 2010). Such inconclusiveness, created a proper ground for further investigation in environmental management field especially regarding the role of EMA on changes in firm performance. In addition, doing such this study has been also suggested by some scholars (Klassen and McLaughlin, 1996; Gibson and Martin, 2004; IFAC, 2005; Sulaiman and Mokhtar, 2009; Petcharat and Mula, 2010; Spence *et al.*, 2010; Jalaludin *et al.*, 2011).

Relying on these recommendations and given the scarcity of this kind of study in Malaysia as a developing country (Sulaiman and Mokhtar, 2009), in addition to measure the level of EMA, this study attempted to fill up this gap by examining the effect of EMA on firm performance in Malaysian firms. In addition,

the majority of scholars have focused only on financial aspects of performance in the link between environmental management practices and firm performance; and just a few studies in this field considered firm performance as financial and non-financial concepts jointly (King and Lenox, 2002; Link and Naveh, 2006; Mishra and Suar, 2010). It is worth noting that no single study exists which particularly covers EMA and its effect on both firm financial and non-financial performance. (Klassen and McLaughlin, 1996; Gibson and Martin, 2004; IFAC, 2005; Petcharat and Mula, 2010; Spence *et al.*, 2010).

Accordingly, in addition to filling up the mentioned gaps, this study aimed to give a comprehensive picture of firm performance through considering both financial and non-financial performance in examining the effects of EMA on firm performance. It is also worth noting that non-financial performance in this study was divided into five indicators, including product innovation, process innovation, customer satisfaction, reputation, and competitive advantage.

The ability of organizational systems in providing full costs and revenue information is one of the most important requirements to equip firms to have an accurate appraisal of performance (Gadenne and Zaman, 2002; Petcharat and Mula, 2010). However, EMA is notable alone to collect all the related environmental/social costs. Because in addition to internal environmental costs that are identified by EMA, firms also have some social costs that is related to the effects that firms' activities have on the society. In order to have complete cost information, the related social costs as well as environmental costs should be identified and tracked. Therefore, besides EMA, firms need another practice/strategy to optimize their environmental cost accounting system through identifying social costs (e.g. cost of pollution).

1.2.2 Corporate Social Responsibility and Firm Performance

In addition to environmental costs, firm's activities impose some other costs to the society that is called social costs (Oeyono et al., 2011). The possibility of measuring social costs by social cost accounting instruments provides businesses

with data for CSR to enhance their external communications with consumers and provide data of important concern to stakeholders (Gadenne and Zaman, 2002; Richmond et al., 2003; Cullen and Whelan, 2006). Currently, the attention of corporate social awareness frameworks has shifted away from a moral orientation to a performance orientation. Additionally, the degree of evaluation has moved away from a macro-social level to an organizational level (Vogel, 2005a).

CSR however, provide a vehicle for businesses to converse and gain support from the stakeholders through the recognition and presentation of social costs. Some scholars (Browning and Frank, 1997; Sen and Bhattacharya, 2001) identified improved organization's financial performance as a reward of being proactive in environmental/social issues.

As a result, the recognition of the effects of CSR on firm performance garnered much interest among authors. While, a positive association between these elements has been dominated in many articles, universally (Margolis and Walsh, 2003; Orlitzky et al., 2003), findings are rather inconclusive (Margolis and Walsh, 2003; Vogel, 2005a; Mishra and Suar, 2010). Therefore, inconclusiveness of the findings provides avenues for future scrutiny (Mishra and Suar, 2010).

Moreover, scholars such as E. Ite (2004),Jamali and Mirshak (2007), Sumiani et al. (2007), Abu Bakar and Ameer (2011), andHilson (2012) claimed that little attention has been paid to CSR studies in developing countries. Therefore, exposing social responsibility programs is advantageous for organizations in developing countries (Oeyono et al., 2011). Malaysia seemed to be a proper option for this study.

Literature shows that disclosing theoretical environmental information in a separate section in annual reports is the main firms' activities in social responsibilities area (Buniaminet al., 2011). However, most firms are not aware that this information should be reflected intheaccounting system as well (Gadenne and Zaman 2002).Accordingly, an accounting approach to CSR has been disregarded by scholars. Since it was found that it is important for firms to have comprehensive cost accounting information in order to improve decision making and performance appraisal, this study took an accounting as well as a social and ethical approach to CSR to evaluate how identifying social costs effect firm performance.

Moreover, according to some authors' claim (Klassen and McLaughlin, 1996; Sharma and Vredenburg, 1998; Cater and Cater, 2009; Mishra and Suar, 2010) majority of studies in the link between CSR and firm performance have focused only on financial aspects of performance. Since there is no strict dividing line between a firm's financial and non-financial dimensions of performance while measuring and improving overall firm performance, both financial and non-financial aspects have been taken into account in measuring overall performance in this study.

Existence of the gaps in the previous studies motivated this study to try to fill them through examining the effect of CSR on both firms' financial and non-financial performance as well as estimating the level of CSR in Malaysian firms. It is worth noting that since Malaysia has an explicit timeline to achieve developed nation status by the year 2020 and has rightly placed environmental issues a priority in the development of the country, reported findings from show EMA and SCR implementation among Malaysian firms are at low levels. Therefore, this study attempted to address the issue "whether firms with CSR application achieve higher level of financial and non-financial performance?"

Addressing the environmental issues in firms through evaluating the level of companies' involvement and examining the effect of environmental practices on firm performance did not seem complete without identifying the critical factors that hinder firms to implement or improve these practices/strategies. Therefore, identifying the most important barriers in adopting EMA and CSR as two sub categories of environmental management practices/strategies was considered as the last issue in this study which is explained in the following section.

1.2.3 Barriers to the Adoption of Environmental Practices

Due to several demands from stakeholders, firms should take up community responsibility and enhance their performance by reducing their environmental expenditure and negative effects on the natural environment (Walker et al., 2008). Companies may also derive varying competitive benefits by adopting more

proactive or advanced green operations (Hart, 1995; Shrivastava, 1995; Rojsek, 2001). Stakeholders' demand on environmental friendly products and pushing organizations toward adaptation of environmental protection activities from one hand; and competitive benefits that involvements in environmental management strategies/practices may bring for companies from other hand, caused businesses to show interest in the adoption of different green strategies/practices. However, there is still a lack of environmental proactivity among firms. The reasons for poor environmental proactivity are multifaceted.

Researchers such as Ashford (1993), Dieleman and de Hoo (1993), Murillo-Luna et al. (2007), and Setthasakko (2010) have posited that organizations usually encounter challenges that hinder and in some situations even make it impossible to adopt or improve the environmental management practices/strategies. The recognition of hindrances to environmental implementation was generally considered in publications of the 1990s from a theoretical standpoint, case studies or reports (Ashford, 1993; Dieleman and de Hoo, 1993; Post and Altman, 1994; Shrivastava and Hart, 1994).

There has been an increasing need to critically investigate the degree to which such barriers hinder advancement of environmental tactics (Van Hemel and Cramer, 2002; Moors et al., 2005; Murillo-Luna et al., 2007; Chan, 2008; Dahlmann et al., 2008; Massoud et al., 2010; Setthasakko, 2010; Zhu and Geng, 2010). This study added to the understanding of different barriers to the implementation of proactive environmental tactics by dividing them into external barriers and internal barriers and publishing pragmatic confirmation from Malaysian industrial organizations. Indeed, external hindrances such as inadequate industry regulation cannot be directly monitored by the company, while internal barriers are company-specific variables that affect environmental fortification and can be restricted by transferring the required materials, organizational strategies and financial capabilities.

Therefore, in order to complete the study, the aim of the study at this stage is addressing the most important internal and external barriers, preventing businesses from advancing toward proactive environmental behaviors which are perceived by managers.

1.3 Purpose of the Study

The purpose of the study is to find out the precise effect of EMA and CSR on both firm's financial and non-financial performance. In addition, this study is going to increase Malaysian managers' knowledge about their current status in implementing EMA and CSR and also about the most important internal and external barriers that prevent them to employ and develop EMA and CSR.. The purpose of the study is elaborated to objectives and questions as follow.

1.4 Objectives of the Study

Developed from the problem statement and purpose of the study outlined in the previous sections, the research objectives of this study are as follow:

1. To examine the level of EMA in Malaysian companies.
2. To examine the level of CSR in Malaysian companies.
3. To determine whether EMA influences firm's non-financial performance positively and significantly.
4. To determine whether EMA influences firm's financial performance positively and significantly.
5. To determine whether CSR influences firm's non-financial performance positively and significantly.
6. To determine whether CSR influences firm's financial performance positively and significantly.
7. To identify the most important internal barriers those prevent firms from implementing EMA and CSR.
8. To identify the most important external barriers those prevent firms from implementing EMA and CSR.
9. To examine the effect of EMA and CSR on firm performance with firm size as the controlling variable.

1.5 Research Questions

To achieve the objectives of the study, the following questions need to be answered:

1. What is the level of EMA in Malaysian companies?
2. What is the level of CSR in Malaysian companies?
3. Does EMA influence firm's non-financial performance positively and significantly?
4. Does EMA influence firm's financial performance positively and significantly?
5. Does CSR influence firm's non-financial performance positively and significantly?
6. Does CSR influence firm's financial performance positively and significantly?
7. What are the most important internal barriers that prevent firms from implementing EMA and CSR?
8. What are the most important external barriers that prevent firms from implementing EMA and CSR?
9. Is there any difference in the effect of EMA and CSR on firm performance based on the firm size as controlling variable?

1.6 Significance of the Study

Therefore, this study has determined the involvement level of firms in EMA and CSR, as well as to develop a framework to explain the effects of CSR and EMA as two common management accounting and environmental management practices on firm performance. It also provides new findings to identify the barriers to EMA and CSR implementation in Malaysian industrial and consumer products sectors. These sectors were chosen because they have the most influence on the environment and society health (Burritt *et al.*, 2011; Molina-Azorín *et al.*, 2009; Schaltegger *et al.*, 2009; de Beer and friend, 2006). This study, however, has made several noteworthy contributions.

The findings adds to a growing body of literature through providing a deeper theoretical understanding on EMA, CSR, and the barriers in their implementation perceived by managers within the context of industrial and consumer products sectors.

The theoretical and empirical findings of this study contribute to existing knowledge of CSR by providing a new understanding of CSR. This is because this study has an accounting approach to CSR in addition to an ethical and moral approach that have been taken to previous studies regarding social issues of firms' activities.

The study has gone some way towards enhancing Malaysian managers' knowledge of their current level of identifying and analysing the environmental and social costs in their production process. This study can provide a base for decision makers in firms to undertake the necessary support for future firm's activities to involve more environmental/social issues in their strategies and decisions. While there are guides for firms to help firms to be social and environmental responsible, the findings of this study will enable the administrators to make decisions on the availability of different types of environmental practices/strategies through giving empirical and real evidences on EMA and CSR.

At the national level, the findings of this study enable the Malaysian Government to be aware of the current state of firms' involvement in EMA and CSR. In addition, the findings indicate the level of implementation of EMA and CSR by Malaysian firms. It also helps decision makers in national level to modify or establish new environmental regulations to facilitate the process of achieving the country's environmental management goals. In addition they can encourage companies and management accountants to incorporate environmental issues in their decision making process and strategic management. The ACCAMESRA and the Malaysian Institute of Accountants are good examples of creating awareness on environmental issues amongst companies in Malaysia(Sulaiman and Mokhtar, 2009).

This study provides a comprehensive picture of firm performance in the links with EMA and CSR through dividing performance to financial and non-financial and considering both in study as firm performance. This study further

identifies the critical internal and external barriers that hinder firms to implement and improve environmental management practices/strategies. The results help firms to make specific strategic plans to overcome identified barriers.

Taken together, the findings increase managers' understanding of the EMA and CSR and potential positive or negative effects that they may have on performance.

1.7 Scope of the Study

This study was an exploratory research that encompassed EMA, CSR and firm performance. This study focused on public listed companies (only industrial products sector with 295 firms and consumer product sector with 157 firms) of Bursa Malaysia using quantitative approach. The data needed for this study were gathered from financial managers, senior accountants, or management accountants during seven month from February to August of 2013. They were chosen as respondents because they are directly involved in the organizational management and process and have first-hand knowledge of organizational performance improvement.

1.8 Definition of Key Terms

Environmental Management Accounting_ EMA is defined as a management accounting tool which identifies, collects, records, and analyzes all related environmental cost information in order to have better internal decision making and subsequently, better evaluation of firm performance (UNSD, 2001).

Corporate Social Responsibilities_ In addition to a strategy that attempts to achieve legitimizing for firm in the society, CSR in this study is defined as a tool that tries to identify and reflect social costs in the firm's cost accounting system to have more real evaluating of firm performance.

Efficiency _ In this study, efficiency is defined on different levels as the sum total of actions that are aimed at maximizing profits while minimizing losses and expenditure (Brady *et al.*, 1999). This usually involves the reduction of expenditure and costs while increasing performance. Profitability aspect of efficiency is considered as financial performance in this study.

Green innovation _ Green innovation is new products and processes that provide customer and business value but significantly decreased environmental impacts (Chen *et al.*, 2006).

Customer satisfaction _ It is a term frequently used in marketing. It is a measure of how products and services supplied by a company meet or surpass customer expectation (Rust and Zahorik, 1993).

Reputation _ It is the recognition that the stakeholders of a company give to its corporate performance, taking into account the level of fulfillment of their commitments with customers, shareholders and the whole community (Bromley, 1993).

Competitive advantage _ It can be define as a superiority gained by an organization when it can provide the same value as its competitors but at a lower price, or can charge higher prices by providing greater value through differentiation. Competitive advantage results from matching core competencies to the opportunities (Barney, 1991).

Internal Barriers _ Internal environmental hindrances are company-specific variables that affect environmental fortification but can be restricted by transferring the required materials.

External Barriers _ External environmental hindrances highlight environmental variables or areas that cannot be directly monitored by a company and affect the adoption of environmental approach.

1.9 Structure of the Thesis

This thesis comprises of five chapters, each devoted to a major aspect of the study, designed to 1: investigate the level of EMA and CSR in Malaysian companies; 2: examine the effects of EMA and CSR on their performance; and 3: identify the most effective barriers in implementing environmental management practice/strategies in companies.

The first three chapters provide the theoretical and practical foundations of the thesis. Chapter 1 frames the study, defines its parameters, proposes research questions, points out the relevance of the research to management scholars, to academic entrepreneurs and their advisors, to entrepreneurs as well as the anticipated contributions to the existing body of knowledge.

Chapter 2 summarizes the relevant literature. It is divided into three main parts. The first part is related to EMA literature, the second chapter is related to CSR literature, and the last part of the chapter discusses the barriers in implementing environmental management practice/strategies.

Chapter 3 is related to the theoretical frameworks and describes the methodology employed, with particular attention paid to the development of the questionnaire, as well as data collection and preliminary analysis.

The last two chapters report the results of the empirical field study undertaken to test the conceptual models. The analysis results are described in Chapter 4, while Chapter 5 offers a discussion of the findings as well as observation about limitations of the current study, and suggestions for future research.

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