Volume 10 Issue 2
December 2015

ISSN 1675-3194

ASIA-PACIFIC MANAGEMENT ACCOUNTING JOURNAL

APMAA

Asia-Pacific Management Accounting Association (APMAA)

ASIA-PACIFIC MANAGEMENT ACCOUNTING *JOURNAL*

APMAJ is indexed in Ebscohost, Cabell's Directory of Publishing Opportunities in Management (www.cabells.com), Ulrichs (www.ulrichsweb.com) and the Journal Ranked List of Australia Research Council with ERA (Excellence in Research for Australia) and Australian Business Deans Council (ABDC). It is also indexed by UDLedge Social Science & Humanities Citation Index (SS&HCI) and Focus (Journals and Conference Proceedings). Since September 2015 APMAJ is indexed by the Emerging Sources Citation Index (ESCI) of Thomson Reuters.

ASIA-PACIFIC MANAGEMENT ACCOUNTING *JOURNAL*

Volume 10 Issue 2
December 2015

CONTENTS

ISO 14001 CERTIFICATION AND FINANCIAL PERFORMANCE OF COMPANIES

Tze San, Ong[1]
Boon Heng, Teh[2]
Han Hwa, Goh[2]
Siew Bee, Thai[2]
[1]Faculty of Economics and Management
Universiti Putra Malaysia, Malaysia
[2]Faculty of Management
Multimedia University, Malaysia

ABSTRACT

This study aims to investigate the relationship between ISO 14001 certification and financial performance and to ascertain whether the ISO 14001 accreditation has improved the financial performance of a sample of Malaysian publicly listed companies. ISO 14001, which is the most recognized framework for establishing environmental management, helps companies to account for the influence of their activities on the environment and to demonstrate sound environmental management. The linear regression analysis shows that firms with above-average performance have a greater tendency to pursue ISO 14001 accreditation. A significant relationship is also established between ISO 14001 certification and financial performance in the context of an emerging economy. The adoption of ISO 14001 benefits companies by enhancing their reputation and brand awareness on the one hand and increasing their sales and investor confidence on the other.

Keywords: environmental management accounting, financial performance, ISO 14001 certification, Malaysia

INTRODUCTION

The global profile of environmental issues has increased significantly over the past two decades partly because of major incidents, such as the Bhopal chemical leak in 1984 and the Exxon Valdez oil spill in 1989 (Shane, 2010).

These environmental disasters have led to many arguments stating that companies must move their businesses toward a more sustainable direction.

After sustainability and green environmental issues have entered the accounting practice in the past few decades, "Environmental Management Accounting" or EMA (also known as green accounting) has emerged as a new trend of accounting. EMA refers to the provision and analysis of both financial and non-financial information to support internal environmental management processes (Shane, 2004). However, the terminology associated with EMA still lacks consensus (Burritt, 2001). Although many studies have investigated EMA as a new accounting practice (Burritt and Saka, 2001; Bennett and James, 1998A; Envirowise, 2003; UNDSD, 2003), the benefits of EMA on the financial performance of companies remain questionable.

Introduced in September 1996, ISO 14001 is an international standard for EMA that addresses diverse aspects of environmental management and helps companies identify, control, and improve their environmental performance. ISO 14001 has been adopted as a national standard by more than 100 countries around the world. Although a certification of conformity to the standard is not required by this standard, at least 154,572 certificates have been issued in 148 countries and economies by 2007. These figures show the increased commitment and awareness of global corporations and countries toward better environmental management.

As a rapidly developing Asian country, Malaysia faces many tensions and doubts in environmental and corporate sustainability issues (Sumiani, Haslinda, and Lehman, 2007). The rapid modernization and urbanization in Malaysia have also increased the concerns on environmental issues. Moreover, the large-scale deforestation, mining, land development, construction, and other industrial developments over the past years have significantly increased such concerns. The compliance of factories and organizations with the environmental protection law has always been questioned by Malaysians and NGOs, such as the case of Lynas. Previous research shows that companies in environmentally sensitive industries tend to disclose their environmental information through corporate annual reports (Raar, 2002). Sumiani, Haslinda, and Lehman (2007) found that the engagement of Malaysian companies in strategic environmental movements had substantially improved. However, the culture of reporting environmental

considerations in Malaysia is still in its infancy in terms of its contents and descriptive analysis compared with that in developed countries. In addition, recent statistics show that only 1,934 companies in Malaysia have adopted and registered for ISO 14001 certification (Low et al., 2015).

Given that ISO 14001 is the most popular environmental management system, this study fills the research gap by investigating the effect of this standard on the corporate performance of Malaysian companies. The findings will help Malaysian publicly listed companies decide on whether to adopt ISO 14001. Given the positive relationship between ISO 14001 adoption and financial performance, the listed companies in Malaysia will be motivated to adopt such a standard. The findings may also guide Malaysian policy makers in mandating the necessary regulations for improving the environmental considerations of companies.

The rest of this paper reviews the previous literature on the relationship between EMA/ISO 14001 and firm performance and subsequently proposes several hypotheses. Section 3 develops a framework according to the defined hypotheses and discusses the data collection procedures and methodology. Section 4 presents the analysis results, and Section 5 discusses the findings. Section 6 presents the conclusion, limitations, and future research opportunities.

RELATED RESEARCH AND HYPOTHESIS

Environmental commitment has attracted much attention in the current competitive scenarios. However, the effects of environmental practices on the financial performance of companies remain unclear. Some researchers, such as Stanwick and Stanwick (1998), argue that environmental activities do not contribute to financial performance, whereas King and Lenox (2001) find that the implementation of environmental practices positively improves financial performance. Given that energy efficiency and costs are highly related to operating costs, the financial performance of corporations is directly affected by their environmental pursuits (Cusack, 2008). However, McWilliams and Siegel (2001) identified a neutral relationship between social and financial performance. Therefore, despite more than three decades of theoretical and empirical research, the nature of the relationship between

environmental and financial performance remains inconclusive (Konar and Cohen, 2001, Wagner, 2001).

EMA is defined as the process of identifying, collecting, estimating, analyzing, internally reporting, and using cost information on materials, energy, and environmental costs within the decision process to generate convenient decisions that contribute to environmental protection (Vasile and Man, 2012).

According to the Malaysian Ministry of the Environment, EMA aims to achieve sustainable development, maintain a favorable relationship within the community, and pursue effective and efficient environmental conservation activities. The number of companies in Malaysia that engage in a rudimentary form of social and environmental reporting has increased over the years (Environmental Resources Management Malaysia, 2002; ACCA, 2004).

However, the considerations on environmental issues must be defined and mandated by a globally recognized organization. The International Organization for Standardization (ISO) is the largest developer of voluntary international standards that give state-of-the-art specifications for products, services, and favorable practices and help industries become more efficient and effective. The ISO 14001 family addresses various aspects of environmental management and provides practical tools for companies and organizations that intend to identify and control their environmental influence and constantly improve their environmental performance. ISO 14001:2004 and ISO 14004:2004 focus on environmental management systems.

The adoption of EMA signifies corporate sustainability practices. Statistically speaking, about 220,000 companies in the world have incorporated ISO 14001 guidelines in their practices as a sign of environmental management system adoption (ISO, 2013). Many researchers, such as Balzarova and Castka (2008), Melnyk, Sroufe, and Calantone (2003), and Zutshi and Sohal (2004), regard ISO 14001 certification as a useful tool for an organization to implement an environmental strategy. In addition, many studies, such as Poksinska, Eklund, and Da Hlgaard (2003), Zutshi and Sohal (2004), and Gavronski, Ferrer, and Paiva (2008), have solely analyzed ISO 14001

accreditation as an evidence of observing EMA practices. However, these studies were conducted over a small scale or were rated according to the personal judgment of managers about performance improvement. Given that these managers place much effort on the implementation of environmental management systems within their organizations, their judgements are not free from personal bias. Wayhan and Balderson (2007), Nowrocka and Parker (2009), and Heras–Saizarbitoria, Molina–Azorin, and Dick (2011) all identified such biases in the EMA reports of managers. As an important variable of EMA, ISO 14001 has been used by many researchers (Canon and Garces, 2006; Link and Naveh, 2006; Paulraj and Jong, 2011).

The relationship between the corporate social responsibility, especially in the environmental aspect, and financial performance of firms has been widely debated (Margolis et al., 1997; McWilliams and Siegel, 2000; Walsh, Weber, and Margolis, 2003; Margolis and Walsh, 2003; Orlitzky, Schmidt, and Rynes, 2003; Barnett and Salomon, 2006; Brammer and Millington, 2008; Hull and Rothenberg, 2008; Peloza, 2009; Godfrey, Merrill, and Hansen, 2009). For instance, Heras–Saizarbitoria, Molina–Azorin, and Dick (2011) contended that firms should trade-off between their environmental responsibility and financial performance. The failure to meet the expectations of stakeholders ultimately leads to a lower shareholder confidence, which in turn results in a high-risk premium. Therefore, companies inevitably incur higher costs of capital and lose profit opportunities.

However, other studies have contended that improvements in environmental management will lead to a reduction in profitability. Studies that have proposed a negative relationship between environmental and financial performance argue that when firms attempt to enhance their environmental performance, their resources and management efforts are drawn away from their core business areas, thus resulting in lower profits. Therefore, managers cannot accomplish both of their environmental and core business activities simultaneously (Klassen and McLaughlin, 1996; Hull and Rothenberg, 2008). Generally, a favorable environmental performance is achieved at the expense of a favorable financial performance because both these elements utilize the resources of companies in ways that confer significant managerial benefits instead of devoting such resources to alternative investment projects.

Other studies, such as Ann, Zailani, and Wahid (2006), Cañón and Garcés (2006), Gavronski et al. (2008), Link and Naveh (2006), Padma et al. (2008), Wahba (2008), and Tan (2005), have contended that ISO 14001 contributes to the financial performance improvement of companies. Specifically, Gavronski, Ferrer, and Paiva (2008) identified four benefits of ISO 14001 for companies. First, ISO 14001 improves productivity by reducing resource usage, optimizing process flows, reducing production costs, and motivating employees. Second, ISO 14001 benefits financial performance by providing opportunities to obtain investment funds from governmental organizations, access special credit with reduced interest rates, and reduce insurance premiums. Third, ISO 14001 benefits the market by providing competitive advantages and promoting favorable relationships with customers, both of which can create favorable market conditions for companies and subsequently enhance their financial and non-financial performance. Fourth, ISO 14001 improves the image of companies to the society, reduces their environmental liability, and strengthens their cooperation with environmental authorities. Based on the above discussion, we propose the following hypotheses:

H1 : The adoption of ISO 14001 has a significant positive relationship with the return on asset (ROA) of companies.

H2 : The adoption of ISO 14001 has a significant positive relationship with the return on equity (ROE) of companies.

CONCEPTUAL FRAMEWORK

Figure 1 illustrates the conceptual framework, in which ISO 14001 accreditation is the proxy for EMA, and ROA and ROE are the financial performance variables of the firm.

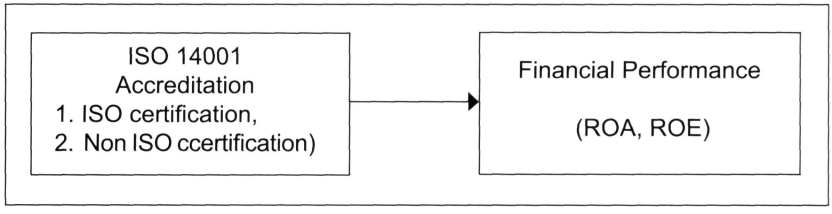

Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

This study tests the relationship between financial performance and ISO accreditation. Previous research, such as Gourlay and Pentecost (2002) and Hudson and Orviska (2013), has argued that company ownership has a vital role in ISO 14001 accreditation. Therefore, ownership status is used as a controlled variable in this study. According to Nishitani (2009) and Welch, Mazur, and Bretschneider (2000), firm size is a noteworthy variable that researchers may consider, as larger firms are highly pressured by their stakeholders to pursue environmental awareness issues. Therefore, firm size is also included as a controlled variable.

FINDINGS

Descriptive Analysis

A total of 68 companies were selected and the company data were obtained from the website of Bursa Malaysia, the listing board of the country.

Table 1: Company Profile

Size of Company	No.	Percentage (%)
Large	25	36.8
Medium	14	20.6
Small	29	42.6
TOTAL	**68**	**100**
Ownership of Company	**No.**	**Percentage (%)**
Locally Owned	50	73.53
Joint Venture	8	11.76
Foreign Owned	10	14.71
TOTAL	**68**	**100**

Table 2: ISO Certified and Non-Certified Companies Based on Company Profile

Size of the Company	ISO Certified Firms		Non-Certified Firms	
Large	17	56.7%	8	21.0%
Medium	8	26.7%	6	15.8%
Small	5	16.6%	24	63.2%
TOTAL	**30 (44.12%)**	**100%**	**38 (55.88%)**	**100%**
Locally Owned	19	63%	31	81.6%
Joint Venture	3	10%	5	13.2%
Foreign Owned	8	27%	2	5.3%
TOTAL	**30**	**100%**	**38**	**100%**

Table 1 shows the characteristics of the surveyed companies. Most companies are small (42.6%), followed by large- (36.8%) and medium-sized companies (20.6%). In terms of ownership type, more than 81% of the companies are locally owned, 13.2% are joint ventures, and only 5.3% are foreign owned. Table 2 shows that out of these companies, more than 55% are not ISO 14001 accredited, and 44% are ISO 14001 accredited.

The majority of the ISO 14001 accredited companies are large (56.7%) and locally owned (63%), while the majority of the non-ISO accredited companies are small (63.2%) and locally owned (81.6%). Therefore, large-sized companies with more resources tend to apply for ISO 14001 accreditation. Malaysian companies are also advanced in environmental management implementation through the ISO 14001 accreditation. The high environmental awareness of Malaysian companies serves as a favorable sign of environmental management activities in Malaysia. Table 3 shows the descriptive statistics for all variables.

Table 3: Descriptive Statistics for the Independent and Dependent Variables

Variables	Minimum	Maximum	Mean	Median	Mode	Standard Deviation
ROA	–17.77	29.00	5.826	4.950	–0.165	7.720
ROE	–25.42	37.27	8.930	8.365	–0.168	11.559
ISO 14001	0.000	1.000	0.206	0.000	0.000	0.406
Size	1.000	3.000	1.7726	1.000	1.000	0.8915
Ownership	1.000	3.000	1.470	1.000	1.000	0.752

Normality Test

Table 4 shows that both the Shapiro–Wilk's significance numbers for ROA and ROE are greater than 0.05 (0.093 for ROA and 0.083 for ROE), thus indicating the normal distribution of data.

Table 4: Normality Test on ROA and ROE

	Kolmogorov–Smirnov[a]			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA	0.097	68	0.187	0.969	68	0.093**
ROE	0.110	68	0.041	0.969	68	0.083**

Lilliefors significance correction.
** $p < 0.05$ indicates that the data are normally distributed.

Correlation Analysis

The Pearson Correlation analysis results in Table 5 show no cross correlation problem among the variables.

Table 5: Pearson Correlation Analysis Results

Variable	ROA	ROE	ISO14001	Size	Ownership
ROA	1	0.716**	–0.052	–0.083	–0.074
ROE		1	–0.217**	–0.100	–0.082
ISO14001			1	–0.115	0.153
Size				1	0.186*
Ownership					1

**Correlation is significant at the 0.01 level (two-tailed).
*Correlation is significant at the 0.05 level (two- tailed).

Linear Regression Test

The linear regression test assesses the associations between the dependent and the independent variables. This test was employed in this study to test both hypotheses about the relationship between the dependent (ROA and ROE) and the independent variables (ISO, Ownership, and Firm Size).

Table 6: Model Summary of Linear Regression Test on ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.359[a]	0.129	0.088	7.37142

a. Dependent variable: ROA.
** A positive sign indicate that the relationship is positive.
*** $p < 0.05$ indicates that the data are significant

Table 6 shows that the adjusted R square is 0.088, which indicates that 8.8% of the variance in the dependent variable (ROA) is explained by the independent variables, including firm size, ownership, and ISO accreditation.

Table 7: Coefficients Table on ROA

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	–0.631	2.799	–0.226	0.822
	ISO	3.971	1.825	–2.175**	0.033***
	Ownership	1.261	1.310	0.963	0.339
	Size	2.427	1.595	1.521	0.133

Dependent variable: ROA.
** A positive sign indicates that the relationship is positive.
*** $p < 0.05$ indicates that the data are significant.

Table 7 shows that the t-value of ISO is 2.175, which means that a 1% change in ISO leads to a 217.5% change in ROA. Therefore, ISO adoption has a relatively significant influence on financial performance in terms of ROA. Moreover, 217.5% is a positive figure, which indicates that the ISO 14001 adoption positively influences financial performance.

Table 8: Model Summary of the Linear Regression Test on ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.384[a]	0.148	0.108	10.91833

a. Predictors: (Constant), size, ownership, ISO.

The adjusted R-square for ROE is 0.108, which indicates that 10.8% of the variance in the independent variable (ROE) is explained by the dependent variables, including firm size, ownership, and ISO accreditation.

Table 9: Coefficients Table on ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	–1.136	4.146		–0.274	0.785
	ISO	5.880	2.704	0.254	2.175**	0.033***
	Ownership	1.007	1.940	0.060	0.519	0.606
	Size	4.980	2.363	0.245	2.108	0.039

Dependent variable: ROE.
** A positive sign indicates that the relationship is positive.
*** $p < 0.05$ indicates that the data are significant.

Table 9 shows that the t-value of ISO is 2.175, which indicates that a 1% change in ISO leads to a 217.5% change in ROE. Furthermore, 217.5% is a positive figure, which indicates the positive influence of ISO on ROE.

In sum, the linear regression model supports both hypotheses. ISO 14001 accreditation has a significant relationship with the financial performance of companies, specifically with ROA and ROE. Both of these relationships are in a positive direction, which indicates that a higher degree of ISO 14001 adoption leads to the higher financial performance (ROA and ROE) of companies.

Analysis of Variance (ANOVA)

ANOVA was used to test the significant relationships among ROA, ROE, and ISO 14001 accreditation (Tables 10(a) and (b)).

Table 10(a): ANOVA Table on ROA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	515.962	3	171.987	3.165	0.030[b]
	Residual	3477.620	64	54.338		
	Total	3993.582	67			

a. Dependent variable: ROA.
b. Predictors: (Constant), size, ownership, ISO.

Table 10(b): ANOVA Table on ROE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1322.376	3	440.792	3.698	0.016[b]
	Residual	7629.431	64	119.210		
	Total	8951.807	67			

a. Dependent variable: ROE.
b. Predictors: (Constant), size, ownership, ISO.

Both tables show that the ANOVA values for ROA and ROE are 0.030 and 0.016, respectively, which are both significant. Any significant value below 0.05 indicates a significant relationship among the study variables. Consequently, both hypotheses are supported.

H1 : *ISO 14001 adoption has a significant positive relationship with the ROE of companies.*

H1 is supported because the ANOVA significance value in Table 10 (a) is 0.03, which is lower than 0.05.

H2 : *ISO 14001 adoption has a significant positive relationship with the ROE of companies.*

H2 is supported because the ANOVA significance value in Table 10 (b) is 0.016, which is lower than 0.05.

FINDINGS AND DISCUSSIONS

The rationale behind these findings is that ISO 14001 strengthens a few aspects of companies that may directly or/and indirectly affect their financial performance. For instance, the increasing environmental awareness of the public has brought their attention toward the corporate social responsibility of companies. Therefore, some consumers will prefer to transact with green or environmentally aware companies.

Many investors believe that companies that pay attention to the environment are more sustainable. Therefore, investors will choose to invest in highly green companies in the long run. An indication of a green company is its adoption of ISO 14001. Aside from serving as a mere standard, ISO 14001 also contributes to the success of companies by helping them establish a system that can protect the environment and reduce their costs in the long run. For example, a highly systematic method for waste disposal not only preserves the earth but also reduces the cost of raw materials through recycling.

In sum, ISO 14001 adoption benefits companies by helping them create a favorable public image, build their reputation, and establish a better system that can reduce their costs and outperform those ISO-uncertified companies. Therefore ISO-certified companies have a better financial performance. Therefore, in accordance with the findings of Margolis and Walsh (2003), McWilliams and Siegel (2000), Walsh, Weber, and Margolis (2003), Peloza (2009), Godfrey, Merrill, and Hansen (2009), and Hull and Rothenberg (2008), both of our hypotheses are supported.

Nevertheless, some points remain debatable. For instance, the ISO 14001 adoption process is costly and time consuming. Therefore, the majority of companies who apply for ISO 14001 are well-established and well-performing ones with a steady growth condition. Similarly, ISO 14001 helps companies perform better financially, and thus a favorable financial performance can motivate companies to adopt this standard.

CONCLUSION

The awareness about environmental management issues has increased over the past decade. Investors and other stakeholders are more confident about the planning processes of businesses with environmental considerations. Therefore, this study investigates how ISO 14001 certification, as an index of EMA evidence, influences the financial performance of publicly listed companies in Malaysia. The sample includes 68 publicly listed companies. Firm size (i.e., large, medium, and small) and ownership status (i.e., locally owned, joint venture, and foreign owned) are used as controlled variables.

The financial performance of Malaysian publicly listed companies has been improved in terms of ROA and ROE after their ISO 14001 adoption. These results are consistent with some studies on the positive effect of adopting environmental issues on the financial performance of firms (i.e., Barnett and Salomon, 2006; Brammer and Millington, 2008; Hull and Rothenberg, 2008; Peloza, 2009; Godfrey, Merrill, and Hansen, 2009). This significant relationship for Malaysia, as a developing country, indicates that Malaysian investors prefer to invest in companies with better environmental management. In addition, EMA adoption benefits companies by reducing their costs, improving their performance, and increasing their brand awareness and publicity. Therefore, companies in Malaysia are encouraged to adopt EMA standards, such as ISO 14001, if they want to have better ROA and ROE. Bursa Malaysia standard setters are advised to provide additional mandating rules for publicly listed companies to adopt EMA practices, so that the advantages of the adoption are not enjoyed by companies exclusively but also by the whole country.

Similar to others, this study has inherent limitations. First, given the limited resources, the sample was limited to listed companies although some private

limited companies (Sdn. Bhd.) could also adopt ISO 14001. Moreover, the data were collected from only 100 companies, and only 68 companies were included in the sample because of time constraints.

Second, this study employed secondary data, thus prohibiting the inclusion of some significant qualitative criteria. For instance, qualitative factors, such as industry culture, organizational culture, awareness of managers, and rules and regulations of the government, must be considered in the adoption of ISO 14001.

Third, this study used ISO 14001 as an indicator of environmental performance even though other alternative indicators for environmental performance could be used, such as efforts in developing an eco-friendly system. Moreover, some highly environmental companies chose not to apply for ISO 14001 accreditation. Given that this study was performed in the Malaysian context, the findings might not be applicable to other countries or regions.

In accordance with these limitations, future studies should include both listed and non-listed companies in their sample and focus on the effect of ISO 14001 adoption on specific industries. They must also adopt a highly qualitative data collection procedure, such as distributing questionnaires to managers of corporate social departments. With respect to data analysis, future studies must use structural equation modeling to achieve more detailed results. Given that every country has unique environmental policies and regulations, future studies should be performed in different countries and regions.

REFERENCES

ACCA (2004). *Report summary: The state of corporate environmental and social reporting in Malaysia.* Kuala Lumpur: ACCA Malaysia Sdn. Bhd.

Ann, G., Zailani, S., & Wahid, N. (2006). A study on the impact of environmental management system (EMS) certification towards firms' performance in Malaysia. *Management of Environmental Quality, 17*, 73-93.

Bansal, P. & Bogner, W.C. (2002). Deciding on ISO 14001: Economics, Institutions, and Context. *Long Range Planning, 35,* 269-290.

Burritt, L., Hahn, T. & Schaltegger, S. (2001). Current Developments in Environmental Management Accounting - Towards a Comprehensive Framework for Environmental Management Accounting (EMA) (Universitaet Lueneburg, 2001).

Burritt, R.L. & Saka, C. (2006). Environmental management accounting applications and eco efficiency: case studies from Japan. *Journal of Cleaner Production, 14(*14*),* 1262-1275.

Cañón, J., & Garcés, C. (2006). Repercusión económica de la certificación medioambiental ISO 14001. *Cuadernos de Gestión, 6*, 45-62.

Cohen, M., Fenn, S., & Naimon, J. (1995). Environmental and Financial Performance: Are They Related? Working Paper. Vanderbilt University, Nashville.

Deegan, C. & B. Gordon, 1996(3), A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research, 26,* 187-199.

Edwards, D. (1998). The Link between Company Environmental and Financial Performance. Earthscan Publications, London.

Environmental Accounting Guidelines (2002). Ministry of the Environment.

Environmental Resources Management Malaysia (2002). *The State of Corporate Environmental Reporting in Malaysia.* London: Certified Accountants Educational Trust.

Frost, G. R. & Wilmshurst, T. D. (2000). The adoption of environment-related management accounting: an analysis of corporate environmental sensitivity. *Accounting Forum 24*(4), 344-365.

Gavronski, I., Ferrer, G., & Paiva, E. L. (2008). ISO 14001 certification in Brazil: motivations and benefits. *Journal of Cleaner Production, 16*(1), 87-94.

Godfrey, P.C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal, 30*(4), 425-445.

González-Benito, J., & González-Benito, O. (2005). Environmental proactivity and business performance: An empirical analysis. *Omega 33,* 1-15.

Harte, G., Lewis, L., & Owen, D. (1991). Ethical investment and the corporate reporting function. *Critical Perspectives on Accounting, 2*(3), 227-254.

Heras-Saizarbitoria, I., & Molina-Azorin, J. F., & Dick, G. P. M. (2011). ISO 14001 certification and financial performance: selection- effect versus treatment effect. *Journal of Cleaner Production, 19,* 1-12.

Hewitt, G. (2012). Is corporate Asia ready for the green economy? ACCA (Association of Chartered Certified Accountants).

Horvathova, E. (2010). Does environmental performance affect financial performance? A meta-analysis. *Ecological Economics, 70,* 52-59.

International Federation of Accountants (IFAC). Management Accounting Concepts. New York: IFAC; 1998.

International Organisation for Standardisation (ISO). (2013). ISO 14000 – Environmental management. Retrieved from http://www.iso.org/iso/home/standards/management-standards/iso14000.htm.

Jasch, C. (2006). Environmental management accounting (EMA) as the next step in the evolution of management accounting. *Journal of Cleaner Production, 14,* 1190-1193.

Jasch, C. & Gyallay-Pap, R. (1998). Environmental statements and environmental performance indicators in Austria and Germany. *IOW Vienna, Informationsdienst 4.*

Johnson, S. (2004). Environmental Management Accounting. Retrieved from http://test.accaglobal.com/en/student/qualification-resources/students-acca/accaexams/ acca-exams10/exams-p54/environmenta-management.html.

Jones, M.J. (2011). The nature, use and impression management of graphs in social and environmental accounting. *Accounting Forum, 35,* 75-89.

King, A. A., & Lenox, M. J. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology 5*(1), 105–116.

Kuasirikun, N. (2005). Attitudes to the development and implementation of social and environmental accounting in Thailand. *Critical Perspectives on Accounting, 16,* 1035-1057.

Link, S., & Naveh, E. (2006). Standardization and discretion: does the environmental standard ISO 14001 lead to performance benefits? *IEEE Transactions on Engineering Management, 53*, 508-19.

Lo, C. K. Y., Yeung, A. C. L. & Cheng, T.C.E. (2012). The impact of environmental management systems on financial performance in fashion and textiles industries. *Int. J. Production Economics, 135,* 561-567.

Malaysian Certified. (2012). EMS Certification. Retrieved from http://www.malaysian-certified.my/EMSCert.aspx?company=&scope=&standard=1101&cyear=&status=REG&country=001&state=&licenceno=

McPeak, C., Dai, Q. D. (2011). Environmental issues as a part of sustainability and how they impact financial performance. *Journal of Global Business Issues 5*(2), 49-53.

Melnyk, S. A., Sroufe, R. P. & Calantone, R. (2003). Assessing the impact of environmental management systems on corporate and environmental performance. *Journal of Operations Management*, *21*, 329-351.

Mohammad, N. (2012). Need to implement the environmental accounting education for sustainable development: an overview. *World Academy of Science, Engineering and Technology, 63,* 900-907.

Nishitani, K. (2009). An empirical study of the initial adoption of ISO 14001 in Japanese manufacturing firms. *Ecological Economics*, *68*(3), 669-679.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403-441.

Padma, P., Ganesh, L., & Rajendran, C. (2008). A study on the ISO 14000 certification and organizational performance of Indian manufacturing firms. *Benchmarking: An International Journal, 15*, 73-100.

Paulraj, A. & Jong, P. D. (2011). The effect of ISO 14001 certification announcements on stock performance. *International Journal of Operations & Production Management 31*(7), 765-788.

Poksinska, P., Eklund, J., & Dahlgaard, J. (2003). Implementing ISO 14000 in Sweden: Motives, benefits and comparisons with ISO 9000, *International Journal of Quality & Reliability Management*, *20*(5), 585-606.

Raar, J. (2002). Environmental initiatives: towards triple-bottom line reporting. *Corporate Communications: An International Journal, 7*(3), 169 – 183.

Salama, A. (2005). A note on the impact of environmental performance on financial performance. *Structural Change and Economics Dynamics, 16,* 413-421.

Staniskis, J. K. & Stasiskiene, Z. (2006). Environmental management accounting in Lithuania: exploratory study of current practices, opportunities and strategic intents. *Journal of Cleaner Production 14,* 1252-1261.

Stasiskiene, Z. (2001). Environmental accounting in Lithuanian industry: analysis of necessity, possibilities and perspectives. *Environmental Research, Engineering and Management 2*(16), 56-64.

Stanwick, P.A., & Stanwick, S. D. (1998). The relationship between corporate social performance and size, financial and environmental performance. *Journal of Business Ethics 17*(2), 195–204.

Sumiani, Y., Haslinda, Y., & Lehman, G. (2007). Environmental reporting in a developing country: a case study on status and implementation in Malaysia. *Journal of Cleaner Production, 15,* 895-901.

Tan, L. (2005). Implementing ISO 14001: is it beneficial for firms in newly industrialized Malaysia? *Journal of Cleaner Production, 13*, 397-404.

United Nations. (2003). The roads from Johannesburg: what was achieved and the way forward. *New York: United Nations*; p. 10.

Vasile, E. & Man, M. (2012). Current dimension of environmental management accounting. *Social and Behavioral Sciences, 62,* 566-570.

Wagner, M., (2005). How to reconcile environmental and economic performance to improve corporate sustainability: corporate environmental strategies in the European paper industry. *Journal of Environmental Management, 76,* 105-118.

Wahba, H. (2008). Does the market value corporate environmental responsibility? An empirical examination. *Corporate Social Responsibility and Environmental Management, 15*, 89-99.

Walsh, J. P., Weber, K., & Margolis, J. D. (2003). Social issues and management: Our lost cause found. *Journal of Management, 29*, 859–881.

Welch, E., Mazur, A., & Bretschneider, S., (2000). Voluntary behavior by electric utilities: levels of adoption and contribution of the climate challenge program to the reduction of carbon dioxide. *Journal of Policy Analysis and Management*, *19*(3), 407–425

Zobel, T. (2013). ISO 14001 certification in manufacturing firms: a tool for those in need or an indication of greenness. *Journal of Cleaner Production, 43,* 37-44.

Zulkifli, N., Telford, B. & Marriott, N. (2009). Social and environmental accounting in Malaysia: Practitioners' Views. *Accounting in Emerging Economics, 9,* 145-167.