INTERNATIONAL DIFFERENCES ON CORPORATE ENVIRONMENTAL DISCLOSURE PRACTICES: A COMPARISON BETWEEN MALAYSIA AND AUSTRALIA

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ABSTRACT

With the growing pressure to consider environmental impact on business operations, accounting and disclosure of environmental matters have been rapidly emerging as an important dimension of corporate voluntary practices. The paper examines the differences of environmental disclosure practices between Malaysian and Australian public listed companies. This paper explores the international differences on environmental disclosure practices between Malaysia and Australia with regards to:

1. the state-of-the-art and
2. the factors influencing the environmental disclosure decisions of public listed companies.

Empirical evidence is gathered through a content analysis of year 2002 and 2003 corporate annual reports of the top 50 Malaysian and Australian public listed companies. The findings indicated that Australian companies disclosed more and extensive environmental information compared to Malaysian companies. The factors that have some level of impact on environmental disclosure practices among Australian companies are financial performance and ISO 14001 certification, while ISO certification was found to be the sole factor for Malaysian environmental disclosure practice.

Keyword: Environmental disclosure; content analysis; annual report; Malaysia; Australia

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1. INTRODUCTION

The role of businesses in society is a complex and critical issue. Businesses' role is critical given their operations and associated powers depend on society's assent to their activities. Issues of accountability and environmental reporting of this paper contributes to the wider literature on corporate governance, accountability, transparency and responsibility in that it provides a way to think about the role of environmental accounting in developing economics. Or, if the concept of a developing economy is too nebulous, a comparison between Australia and Malaysia gives us some idea about the role of voluntary reporting in these two economics - given that both countries are committed to privatization and deregulation settings.

The critical role of accounting becomes complex when corporations are the means to inform stakeholders on corporate social and environmental objectives. Accounting and reporting system is also challenged by various regulatory environment and globalization perspectives under multiplicity of social, political and cultural surroundings. Accordingly, corporations need to strive to aim for both economic and societal goals and this paper contributes to that literature by providing voluntary initiative scenario of nations under-studied compared to western developed territories (for example, Gray et al., 1995a; b; Brammer and Pavelin, 2004).

Corporate social responsibility has grown to include environmental matters over the years as environmental issues such as environmental pollution and environmental litigations have become more prominent economic, social and political problems throughout the world. These have put force for corporations to engage into environmental responsibility including environmental accounting and reporting matters. As argued by Margolis and Walsh (2003):

> From society's perspective, creating wealth and contributing to material well-being are essential corporate goals. But restoring and equipping human beings, as well as protecting and repairing the natural environment, are also essential objectives. Companies may be well designed to advance the first set of objectives, yet they operate in a world plagued by a host of recalcitrant problems that hamper the second set.
>
> (p. 281)

Based on the pressures for voluntary environmental engagement, this study is interested to explore the state-of-the-art of environmental disclosure practices between Malaysian and Australian companies. The findings will evidenced the voluntary behavior on environmental accountability between two countries carrying different values of social, economical and political stands. In addition, this study also examines the possible factors that may have some level of impact on environmental disclosures. Results may identify the similarities and/or differences of factors between Malaysian and Australian business environment, hence may observe any similar pattern on voluntary environmental disclosure practices with other regions such as the UK, US and others.

While questions on environmental matters have received considerable attention in the wider international community, little research has been conducted in the Asia-Pacific region specifically inter-country examination between the two nations under study. Being new to environmental disclosures, justifies Malaysia's advantage for the investigation on how environmental reporting practice should be developed, while as for Australia, this study may contribute for its better

voluntary settings. Therefore, an accountability framework under the notion of firm-stakeholders' relationship has been applied in the study framework. Role of accounting and environmental communication in businesses were also taken into account which provide an insight into the difference of environmental disclosure practices in the two countries under examination.

This paper begins with the theoretical framework of the study followed by the regulatory framework of the two countries studied. Then, this paper discusses some prior empirical reviews of Malaysian and Australian environmental disclosure practices. This paper initially explores the state-of-the-art of corporate voluntary environmental disclosures. Following this, this study investigates the potential factors that may influence the level of environmental disclosures. A two-country study will provide better and more comprehensive understanding on corporate engagement towards preserving and sustaining the environment. It will also offer the scenario of environmental initiatives in accounting and reporting for two countries in Asia-Pacific region.

2. THEORETICAL ARGUMENTS FOR DISCLOSING ENVIRONMENTAL INFORMATION

2.1 Accountability and Accounting

Accountability is concerned with the right to receive information and the duty to supply it (Gray, 1992) which describes "*an obligatory relationship…in which one party is to give an account of its actions to other parties*" (Williams; 1987, p. 170). The notion of accountability has been used as an emancipatory concept to explore the social relationship (Gray, 1983; Gray et al., 1987; 1988; 1991) between business players and their stakeholders, emphasizing on external effects (Crowther, 2002) with two related reasons; (1) developing closer relationship and (2) increasing transparency (Gray, 1992). This intention may be achieved by accounting acting as a means to discharge accountability between corporations and other parties (Roberts and Scapens, 1985; Williams, 1987; Gray et al., 1988; Gray, 1992; Lehman, 1995; Gray et al., 1996).

Environmental issues in businesses thus could be brought to attention by the issues being accounted and disclosed by corporations. Environmental reporting acts as the vehicle in providing environmental data for the benefits of those related to the business in the sense of satisfying the accountability relationships and corporate consciousness besides indicating its role as a moral discourse (Williams, 1987; Lehman, 1995; Sherer, 2002) towards environmental issues. Hence, this study explores the role of accounting in the notion of accountability towards capturing the importance of environmental issues amongst corporations in two economics in the Southern Hemisphere.

Based on this foundation, this study offers some preliminary observations concerning the role of accounting and whether it is a useful mechanism to base such reforms on the enhancement of environmental and sustainability significance in corporate life.

2.2 Stakeholder Theory

The stakeholder approach has been applied and relied in many management and accounting literatures including Ullman (1985), Roberts (1992) and Gray et al. (1997). Stakeholder theory asserts that:

> …the corporations continued existence requires the support of the stakeholders and their approval must be sought and the activities of the corporation adjusted to gain that approval. The more powerful the stakeholders, the more company

> must adapt. Social disclosure is thus seen as part of the dialogue between the company and its stakeholders.
>
> (Gray et al., 1995a, p. 53)

Gray et al. (1987) viewed stakeholders have the right to specific information for certain decision and they should be provided relevant information including environmental information. Stakeholders have the ability to control or affect the resources of corporations. This elucidates their power through their level of control they have over the resources. However, the stakeholder-corporation power relationship is not generic across corporations (Deegan, 2000). He also argued that power may take the form of command over limited resources such as finances and labour, access to influential media, ability to legislate against corporations or ability to influence corporations' consumption of goods and services. Thus, the more critical the stakeholders' control is, the more likely companies will satisfy stakeholders' demand (Ullman, 1985).

As discussed by Gray et al. (1997), stakeholder theory is generally concerned with how an organization manages its stakeholders. On one hand, Jawahar and McLauglin (2001) argued that organizations are likely to use different strategies to deal with different stakeholders and these strategies may change overtime. On the other hand, certain stakeholder group can be more effective than others in demanding social responsibility disclosure (Neu et al., 1998), thus makes corporation concentrates on the group's information needs and demands. These stands may inherit Ullman (1985) argument that it depends on corporate strategic approach, which is defined as '*the mode of response of an organization's key decision makers towards social demand*s' (p. 552). The corporate strategic approach may either be an active or a passive posture. An active posture seek to influence stakeholders, while passive posture is when there is no business initiatives on either continuous monitoring activities on stakeholders or stakeholders' optimal strategy (Ullman, 1985).

Applying stakeholder theory in this study will support in understanding the voluntary environmental engagement in Malaysian and Australian environment. It will also add to the literature on international diversity of environmental accounting and reporting practices under the wide firm-stakeholders relationship.

2.3 Environmental Sensitivity

This study is interested to seek the influence of corporate environmental sensitivity on the level of extensiveness of environmental information reported. As previous literature indicated that the nature of company's operation may be a potential factor to affect voluntary environmental disclosure practices. The higher the environmental sensitivity of an industry, the more likely its stakeholders is concerned about environmental information, thus the more significant the environmental reporting decision. Dierkes and Preston (1977) argued that companies which are directly operating and have high impact on the environment, such as extractive industries are more likely to disclose environmental information than other industries. Besides, industry types could influence political visibility and assign pressures to companies to report in order to evade pressures and criticism from certain social and environmental groups (Patten, 1991).

Types of industries have been found to have strong relationship with decisions to disclose environmental information. Halme and Huse (1997) found that industry is the most influencing factor for a group of Scandinavian countries; Finland, Norway, Spain and Sweden. Other studies that discovered relationship between environmental disclosures and types of industries include Patten (1991), Gamble and Hsu (1995), Deegan and Gordon, (1996), Frost and Wilmshusrt, (2000), Kolk et al., (2001) and Banerjee (2002). However, Cowen et al., (1987) and Alnajjar (2000) revealed no significant relationship between the variables mentioned.

Following previous research, this study has divided Malaysian and Australian industry sectors into two distinct categories, namely; environmental sensitive industry and non-environmental sensitive industry. Study results illuminate the existence and patterns of relationships between type of environmental sensitivity and level of environmental disclosures. Questions on whether Malaysia and Australia has similar or different patterns will be uncovered.

2.4 Financial Performance

Prior empirical research has resulted to a mixed direction of relationship between companies' financial performance and their environmental disclosure decisions. In some studies, there were no significant difference between the two variables (Jaggi and Freedman, 1982; Cormier and Magnan, 2001), whilst Richardson and Welker (2001) found negative association between disclosure and the cost of equity capital. Freedman and Jaggi (1988) and Murray et al. (2002) discovered weak financial performance companies have legitimately disclosed more extensive pollution disclosures while Teoh et al. (1998) and Alnajjar (2000) found positive relationships between financial performance and voluntary environmental disclosures. The better the financial stands of a company, the more environmental information are disclosed, as Cogmier and Magnan (1999) found that disclosures extensiveness is associated with various financial and economic performance indicators including information costs, return on assets and debt ratio.

There were arguments saying that mixed results yielded on the relationship between environmental disclosures and financial performance may be due to the different measures applied (for example, Ullman, 1985). Both accounting and market based measures have their own strengths and weaknesses, with McGuire et al. (1988) argued that financial performance measures are better predictors for corporate social responsibility, which include environmental disclosures. Return on asset (ROA hereafter) and return on equity (ROE hereafter) are important as they relate to the "*owners' investment in the company and/or total investment of the company*" (Jaggi and Freedman, 1992, p.706). Nevertheless, with multiple measures used in previous studies, this study decided to select a number of measures that includes earnings before interest and tax (EBIT hereafter), earnings per share (EPS hereafter), ROA, ROE, and net profit margin. These measures are applied as proxies for companies' financial performance.

2.5 Environmental Certification

The voluntary criteria of ISO 14001: *Environmental Management Standards* (EMS) represents an international consensus on what constitutes best practice about environmental management systems. ISO 14001 assists organizations to improve their performance and make a positive impact on business results. ISO 14001 accredited companies are obliged to develop their mission, targets, policies and procedures that continuously monitor the effects of their operations against the natural environment. According to Sunderland (1997), the standards provide a voluntary mechanism for environmental performance and companies are able to demonstrate their commitment to environmental protection without stress from stringent regulation.

A survey by Corbett et al. (2003) on 15 economies discovered that among the main motivations for seeking ISO 14001 certification are 'environmental improvements' and 'corporate image', followed by 'improved procedures', 'better relations with authorities' and 'better relations with communities'. In addition, the standards will also increase open trade opportunities and market strengths (result of the United Nations Industrial Development Organization, quoted in Husseini, 2001). Generally, the ISO 14000 standard series contribute environmental and economic benefits that eventually lead to sustainable development and achieving the target of the triple bottom line.

It is an imperative factor to be analyzed specifically for Malaysia, being a developing economics that rely much on global markets. Examining the influence of ISO 14001 on Malaysian and Australian environmental disclosures may describe the key role of accounting towards environmental issues in these two regions. This study categorizes Malaysian and Australian public companies into ISO 14001 accredited companies (ISO companies hereafter) and non-accredited ISO 14001 companies (non-ISO companies hereafter). The study analysis will explore whether ISO 14000 certification is a better signal for accounting system to encounter environmental matters or not.

3. THE REGULATORY FRAMEWORK FOR ENVIRONMENTAL DISCLOSURES

3.1 Environmental Regulation in Malaysia

Currently, environmental reporting is a total voluntary exercise in Malaysia. However, the Malaysian Accounting Standard Board (MASB) has incorporated standards that *explicitly* encourage greater disclosure of environment-related information. Para 10 of Financial Reporting Standard (FRS) 101: *Presentation of Financial Statements* (formerly known as MASB 1) stated that:

> Many enterprises present, outside the financial statements, additional statements such as environmental reports and value added statements, particularly in industries where environmental factors are significant and where employees are considered to be an important user group. Enterprises are encouraged to present such additional statements if management believes they will assist users in making economic decisions.

FRS 137 (formerly known as MASB 20): *Provisions, Contingent Liabilities and Contingent Assets* in para 20 recognized environmental obligations such as penalties or clean-up costs for environmental damage and decommissioning costs of an oil installation as potential business provisions. Furthermore, the appendix section provides examples of circumstance, among others like contamination land, offshore oilfield (the decommissioning costs) and legal requirement to fit smoke filters.

Malaysian government has also passed a number of laws regarding the preservation of environment including Environmental Quality Act, 1974, Occupational Safety and Health Act, 1994 and other environmental regulations and guidelines for planners and projects that consist issues on pollution control and environment impact assessment. In addition, the fundamental need for sound environmental management in planning and implementation of development programs as contained in Malaysian Five Year Development Plans provide guiding principles for the National Environmental Policy objectives. For instance, the Eighth Malaysian plan discussed the developments and the prospects for environment and management of natural resources from year 2001 to 2005. It also highlighted the roles of local authorities in running out the environmental issues and even encouraged small medium enterprises to take into account matters such as computation of environmental costs, environmental audit, environmental reports, life-cycle analysis and ISO 14 001.

3.1.1 *Local Initiatives*

ACCA (2002) highlighted that among the driving forces for environmental reporting in Malaysia are the introduction of the Malaysia Code on Corporate Governance listing requirements, the National Annual Corporate Award (NACRA) and ACCA Award named as Malaysian Environmental Reporting Award (MERA), recently in year 2004 changed to Malaysian Environmental and Social Reporting Award (MESRA). These evidenced local encouragement and motivations for Malaysian companies to report environmental information. Further local

initiative is the joint effort work between ACCA Malaysia and the Department of Environment Malaysia (DoE) on the production of environmental reporting guidelines for Malaysian companies in year 2003. These local initiatives not only speak for a major development in environmental reporting, but offers important mechanisms through which monitor progress and raise standards. Thus, clearly describe how vital is environmental reporting practice to business corporations and the benefits it may offer. Besides being proactive on the matter, in longer terms does not only make companies more competitive but developing a better social and environmental relationship.

3.2 Environmental Regulation in Australia

Australia is seen to have a mix voluntary-regulatory framework on environmental disclosures. Local standard-setters have not issued any specific standards or guidelines on environmental accounting and disclosure. However, the issue of liability recognition is dealt with in the Statement of Accounting Concepts (SAC) 4: *Definition and Recognition of Elements of Financial Statements* and the issue of the disclosure of relevant and reliable information is dealt with in SAC 3: *Qualitative Characteristics of Financial Information*. In addition, the notable Section 299(1)(f) of Corporations Act 2001 requires that a directors' report for a financial year must:

> if the entity's operations are subject to any particular and significant environmental regulation under a law of the commonwealth or of a state or territory – give details of the entity's performance in relation to environmental regulation.

Notwithstanding of the long debate and criticisms received, S. 299(1)(f) maintains its survival, thus, Australian companies are required to report environmental information annually. In general, Australia has an extensive suite of environmental legislation that can affect corporations by way of restricting or regulating their business practices that may have impacts on the environment by creating assessment, compliance and reporting measures. Among them are Environmental Protection and Biodiversity Conservation Act 1999, Renewable Energy (Electricity) Act 2000, Australian Forestry Standard 2002 and numerous State government's enactments and enforcement strategies.

Besides the requirements to disclose environmental compliance and performance, Australia also has Financial Services Reform Act 2001 that focus on disclosures by fund managers and financial product providers about the role of labor standards and environmental, social and ethical considerations in the selection, retention or realization of investments. This regulation aims to increase greater awareness and demand for financial products. Addendum to that, Australian industrials companies are required to report their emissions and inventories levels on specific substances and fuels to National Pollutant Inventory agency in their respective state or territory. The National Pollution Inventory provides a database of emissions to the environment and it co-ordinates Australian wide by Australian Government Department of Environment and Heritage.

3.2.1 Local Initiatives

ACCA Australia and New Zealand has launched an award for sustainability reporting in year 2004 which aims to recognize organizations that report and disclose environmental, social or full sustainability information. This initiative subsequently raises awareness in corporate transparency issues and increase accountability towards stakeholders on the matters. Individual Australian bodies such as the Australian Conservation Foundation (ACF) and Australian Consumer Association (ACA) have also initiated corporate ratings on corporate social and environmental performance. In addition, RepuTex, a fully independent private company established in 2000 carries out research and rating services in the area of corporate social responsibility which includes environmental dimension. Thus, these environmental efforts depict

local insinuation on encouraging corporations to conduct their businesses in a socially and environmentally responsible manner that are critical to their long term sustainable position. In addition, put some pressure for corporations to account their environmental activities.

4. STATE-OF-THE-ART OF ENVIRONMENTAL DISCLOSURE PRACTICES IN MALAYSIA AND AUSTRALIA

4.1 Malaysian Scenario

Studies on Malaysian environmental disclosure practices are currently at the early years of research compared to the matured explorations in develop countries, especially the UK and the US. In mid 1980s, Teoh and Thong (1984) surveyed chief executive officers in companies operating in Malaysia, analyzing their views on corporate social responsibility and reporting practices. It was found that Malaysian companies were in favor with profit motives operation rather than the social issues. Nevertheless, human resource information was highly ranked (similar to Guthrie and Parker, 1990) among the social issues, but it was very much driven by the fact that developing loyal and dedicated employees will demonstrate high level of productivity in future.

Malaysian environmental information disclosed was very general, qualitative in nature and the type of disclosures varied widely (Nik Ahmad and Sulaiman, 2002; Yusoff, et al., 2002). ACCA (2002) national survey on the Malaysian main board listed companies confirmed low response and discovered only 40 (7.7%) companies have voluntarily disclosed environmental information. This finding is way to low compared to global response; 81% of the UK FTSE100, 44% of the S&P US Top 50, 74% of the Euro Top 50 ex-UK and 45% of the Global Fortune 250 issues environmental reports (Rachel Jackson, ACCA quoted in The Edge, 2004). The scenario clarifies the local infancy level in Malaysia, however, the rate is increasing from 7.7% to 10% of Malaysian main board listed companies reporting environmental information publicly in year 2003 (ACCA, 2004).

4.2 Australian Scenario

A number of studies have documented Australian corporate voluntary environmental disclosure practices, including Guthrie and Parker (1990), Deegan and Rankin (1996), Tilt (1997) and O'Donovan (2002). Australian environmental practices are found to be rather low, but with an increasing trend in the earlier period from 1967-1977 (Trotman, 1979) and from year 1980 to 1991 (Deegan and Gordon, 1996). Comparing Australian voluntary practices with the US and the UK, Guthrie and Parker (1990) found that Australian corporate social disclosures (including environmental disclosures) were relatively lower; 56% compared to 85% and 98% respectively. Despite low engagement, a cross-country study by Williams (1999) evidenced Australian companies to be high environmental reporters among seven countries in Asia-Pacific region studied.

With regards to the nature of environmental disclosures, they are found to be largely qualitative type of information (Deegan and Gordon, 1996; Gamble et al., 1996) and Australian entities were discovered to engage in the voluntary practices as a result to fulfill legitimation motives (Deegan, 2000; O'Donovan, 2002; Deegan, 2002) and for better corporate image (Deegan and Rankin, 1996).

5. METHODOLOGY

This study is interested to understand and examine the extent of companies' accounting and reporting engagement in tackling environmental issues in two different countries. The selection of countries in this study is particularly important given the evidences by Williams (1999) that Malaysia is at its infancy level of voluntary environmental disclosures while Australia being in the leading group on the issue among the seven Asia-Pacific countries studied. Compared to developed nations such as the UK and the US, Australia is in the mid-development phase of environmental reporting practices (Guthrie and Parker, 1990; KPMG, 1999; 2002). Hence, this study will witness whether Malaysian voluntary behavioral pattern is in accordance with Australia or are there any significant different on the corporate environmental engagement. This paper offers an interpretation of international differences on environmental disclosure practices between Malaysia and Australia with regards to (1) the state-of-the-art and (2) the factors influencing the environmental disclosure decisions of public listed companies.

5.1 Study Samples

A non-probability sampling method known as purposive or judgmental sampling is applied, in which the top 50 companies listed on both Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange) and Australian Stock Exchange as at financial year end 31 December 2003 are selected as the basis of study samples. The list for selected Malaysian companies was gathered from Malaysian Investors Digest dated January 2004, while data for Australian companies (under S&P/ASX 100 index and market capitalization) was obtained from Huntley's Shareholder's handbook 2004. Listed companies are selected as samples of this study due to their duties to provide reports publicly while at the same time follow local listing requirements.

The total of 100 companies covering both countries is chosen based on a size ranking of market capitalization (similar to Guthrie and Parker, 1990). The criteria was chosen due to previous discovery that large companies tend to disclose more environmental information publicly (for example Cowen et al., 1987; Gray et. al, 1995a; Deegan and Gordon, 1996; Bewley and Li, 2000). Larger companies tend to have more shareholders who might be concern and demand on social and environmental programmes. Besides, larger companies are more likely to have responded to environmental agenda than small or medium-sized companies (for example, Belkaoui and Karpik, 1989; Gray and Collison, 1991; Gray, 1993). Examining the state-of-the art of environmental accounting and reporting practices in Malaysia and Australia describe the extensiveness of environmental disclosures to the public, thus deepen the understanding on companies' seriousness in corporate sustainability involvements. A study on two different countries will not only provide knowledge on voluntary practices of different regimes, but also provides knowledge on international and local comparisons between different time horizons.

5.2 Research Technique

Content analysis is carried out in this study on 2002 and 2003 corporate annual reports of study samples to measure environmental information disclosed. Content analysis has become a dominant technique to study environmental disclosures in corporate annual reports and it assists the understanding on the meanings, motivations and corporate intentions (Gray et al., 1995b). Furthermore, the non-reactive measure has been widely employed in corporate social responsibility research (for example, Wiseman, 1982; Zeghal and Ahmed, 1990; Roberts, 1992; Deegan and Gordon, 1996 Hackson and Milne, 1996; Cormier et al., 2004).

The use of corporate annual reports as the main data source was elicited by the following justifications:

- Annual Report is the most significant source of environmental information due to its statutory compliance, regular production (Wiseman, 1982; Tilt, 1994; Deegan and Rankin,

1997) and wide availability (Hughes et. al., 2001). Besides, the increasing trend of environmental reporting in Annual Report and specific section in Annual report explain companies' motivations in communicating environmental importance to a wider group of stakeholders (Crowther, 2002).

- Annual Reports are the most accessible source of information for listed companies, in hard copies and electronically. Furthermore, it is the major means of communicating environmental information in Malaysia (ACCA, 2003) and Australia (Deegan and Rankin, 1997).
- Users who are interested in both financial and non-financial information rely on the information reported in corporate annual report. The confidence level on the report is high as the information is being audited continuously.

The content analysis technique hence offers some idea about the state of the publicly available information besides indicating a pointer towards managerial motivations in accounting and reporting for environmental matters. Content analysis will reveal how far are the differences of environmental disclosure practices as well as studying some idea about the state of privatization and deregulation environment in accounting in both countries under study.

5.3 Measurement and Coding

With the notion of communication, this study will apply the 'meaning orientated' or thematic analysis, which focuses on the underlying environmental themes disclosed in the reports. This type of content analysis offers better understanding on the environmental information studied, describing the intention of information preparers in the communication and dissemination of environmental importance. Coding scheme by Wiseman (1982) has been modified through preliminary examinations that seek new and up-to-date environmental themes. The process has helped the construction of final environmental disclosure themes from the 18-items by Wiseman (1982) to a 24-item of disclosure index developed for this study (refer to Appendix I for the descriptions of environmental item information). In developing an improved index, preliminary content analyses were conducted on corporate annual reports of the top 10 of Australian public companies and 12 selected Malaysian public listed environmental reporting companies as at 31 December 2003. The list of the companies selected for the preliminary task is as in Appendix II.

This study also applies Wiseman's (1982) rating scale[1] on the extensiveness of environmental disclosures. Cogmier and Magnan (1999) highlighted the advantages of Wiseman's rating scheme:

1. it allows information of various types to be integrated into single comparable figure;
2. comprehensive, as it relies on a reading and coding of corporate reports; and
3. it allows for researchers' judgment to be impounded in rating the 'value' of disclosures.

The application of the rating scale by a large number of previous studies (for example, Fekrat et al., 1996; Cormier and Magnan, 1999; Alnajjar, 2000; Bewley and Li, 2000; Patten, 2002) described that disclosure index is a common measure of disclosure levels. Besides, the utilization of a disclosure index is considered the most useful measurement technique because (1) it is based on the 'breadth' (number of different topics) and 'depth' (specificity of information provided) and (2) it may avoid elements of subjectivity (Bewley and Li, 2000).

[1] This study is more interested in scales rather than other units of measurement such as words, sentences or number of pages as they implicitly apply latent coding system that focuses on the underlying, implicit meaning in the content of the text analyzed. The coding system used identifies a more accurate frequency, directions, intensity and space of environmental information disclosed.

For measurement purposes, a disclosure is defined as 'any passage of written or any form of an environmental issue'[2]. Therefore, environmental disclosures were rated based on the presence or absence and the degree of specificity of each environmental item. Levels of extensiveness are measured and grouped according to the nature of environmental information disclosed; (1) general information, (2) qualitative information, (3) quantitative information and (4) a combination of qualitative and quantitative information. 'General information' may consists of 'a short' statement of either company's intention, general statements of 'the company will, the company does' nature, or any general statement of a sentence of length. The second category; 'qualitative information' covers any declarative / narrative environmental information other than financial information in nature. However, this category may also contain 'a long' description on the environmental performance of the companies - 'long' being more than one sentence. It may also cover pictorial information such as graphs and photos depicting specific environmental message or event. Category three – 'quantitative information' relates to disclosure of actual financial numbers or any quantifiable environmental information and the fourth category – 'combination of qualitative and quantitative information' represents any environmental information that falls in both categories (2) and (3).

In order to eliminate or at least to reduce the degree of subjectivity that would be involved, an inter-rater coder method is applied where the respective reports were reviewed by both researchers. The scores were compared and if there are any inconsistencies, the score is analyzed and re-considered until a consensus score was reached.

5.4 Variable Definition and Hypotheses

The dependent variable, total environmental scores represents the scores on the disclosures' extensiveness of the 24 environmental items identified in the disclosure index (refer to Table VII). The independent variables used in the empirical tests represent the environmental sensitivity, ISO 14001 certification or the financial performance of a business corporation. Based on these predetermined factors that may influence environmental disclosures discussed earlier, the following hypotheses are proposed:

H_1: Environmental sensitive companies tend to disclose more environmental information.
H_2: Companies with high financial performance tend to disclose more environmental information.
H_3: ISO 14000 accredited companies tend to disclose more environmental information.

Take in Table I

Table I presents descriptive statistics for the variables used in this study and it represent the data for year 2003. Part A in Table I shows that there are significant variations in corporate environmental disclosures and the selected independent variables, both in Malaysia and Australia. The total environmental disclosure scores has a mean of 5.20 (0; 27) for Malaysia and 12.64 (0, 39) for Australia. Variations are also evident on the independent variables of the studying both countries except for ROA and ROE where the mean values are quite similar for both countries (Malaysia – 6.5; 16.2; Australia – 6.3; 16.9).

[2] There is no uniformity in the definition of 'disclosure' in the literature – from the U.S.A. (Gamble et al, 1993, p.38) to Australia (Guthrie and Matthews, 1985, p.252) in the absence of mandated items for disclosure there is evidence of subjective evidence choice.

5.5 Empirical Model

This study is also interested to explore the factors that may contribute to the behaviour of environmental disclosures among public listed companies. The empirical tests in this study use measures of environmental sensitivity, financial performance and ISO certification to predict cross-sectional variations in corporate environmental disclosure practices. A multiple regression analysis was used in understanding the possible pulling factors leading toward environmental disclosures practices amongst companies in Malaysia and Australia. Based on a model, a regression was run for the year 2003. The data were analyzed using SPSS software package with proxies for financial performances are ratio variables and environmental sensitivity and ISO certification are nominal variables. The empirical form of the model is:

$$\textbf{EnvScore} = b_0 + b_1\,(\textbf{EBIT}) + b_2\,(\textbf{EPS}) + b_3\,(\textbf{ROA}) + b_4\,(\textbf{ROE}) + b_5\,(\textbf{Netmargin}) + b_6\,(\textbf{Sector}) + b_7\,(\textbf{ISO})$$

Where:

b_0	= intercept terms
$b_1, b_2, \ldots b_7$	= change in environmental disclosures associated with unit change in respective variables
EnvScore	= total environmental scores of all environmental information
EBIT	= earnings before interest and tax
EPS	= earnings per share
ROA	= return on assets (net income / total assets)
ROE	= return on equity (net income / owners' equity)
Netmargin	= net profit margin (net income / net sales)
Sector	= dummy variables for type of industry sector; (0 = non-environmental sensitive and 1 = environmental sensitive)
ISO	= dummy variables for ISO 14001 certification; (0 = non ISO company and 1 = ISO company)

Assumptions for multiple regressions were tested in ensuring the validity of analyses results and some of the assumptions were violated. Hence, transformations of the variables were done which involves logarithms, square root and inverse method. The best method of transformation was selected for each variable and resulted with the empirical testable models below:

(1) Malaysian model

$$\textbf{EnvScore}_{\textbf{log}} = b_0 + b_1\,(\textbf{EBIT}_{\textbf{sqrt}}) + b_2\,(\textbf{EPS}_{\textbf{sqrt}}) + b_3\,(\textbf{ROA}_{\textbf{log}}) + b_4\,(\textbf{ROE}_{\textbf{log}}) + b_5\,(\textbf{Netmargin}_{\textbf{log}}) + b_6\,(\textbf{Sector}) + b_7\,(\textbf{ISO})$$

(2) Australian model

$$\textbf{EnvScore} = b_0 + b_1\,(\textbf{EBIT}_{\textbf{log}}) + b_2\,(\textbf{EPS}_{\textbf{log}}) + b_3\,(\textbf{ROA}) + b_4\,(\textbf{ROE}_{\textbf{log}}) + b_5\,(\textbf{Netmargin}_{\textbf{log}}) + b_6\,(\textbf{Sector}) + b_7\,(\textbf{ISO})$$

Take in Table II

Correlation coefficients for all the variables are presented in Table II. The table results indicate the presence of multicollinearity in both Malaysian and Australian independent variables. There are nine pairwise with significant correlations of Malaysian variables, and they can adversely affect the interpretation of regression coefficients. In reducing misleading interpretation, for Malaysian study, a remedy was chosen by deleting all the respective variables except for ISO certification. While, Australian data (refer to Table II, part two) indicate four pairwise with significant correlations of the independent variables. Hence, only ROA, Netmargin, Sector and ISO were maintained for further tests. In relation to all bivariate correlations between EnvScore and the independent variables, a number of insignificant relationships were identified. For

Malaysian data, only ISO was found to be the explanatory factor while Sector and ISO were the factors related with the total environmental disclosure scores.

6. ANALYSES AND FINDINGS

6.1 Descriptive Statistics

Slight improvements are observed on environmental disclosure practices for both countries; (1) Malaysia - (34 : 70% to 37 : 75%) and (2) Australia - (45 : 96% to 50 : 100%). Table III presented the number of companies disclosing some form of environmental information in the corporate annual reports. Both Malaysian and Australian top 50 listed companies had quite a similar proportion of environmental and non-environmental sensitive companies; year 2002 - 3.8:6.2 and 3.4:6.6 and year 2003 – 4.6:5.4 and 3.4:6.6 respectively and generally, it seems that environmental sensitive companies tend to make more environmental disclosures compared to non-sensitive companies. However, in year 2003, all Australian companies made some form of environmental disclosures and it is seems due to the compliance to S.299 (1)(f).

Table IV reported that out of the 50 companies studied in the two countries, the number of companies accredited with ISO 14001 certification were quite similar. It was evident that for both years of study, all ISO companies made some sort of environmental disclosures.

Take in Table III
Take in Table IV

6.1.1 Location of Environmental Disclosures

This study found that environmental information tends to be disclosed in numerous sections of corporate annual reports of both countries [similar to Guthrie and Parker's (1990) finding]. The dimension of reporting location has been unclear and under-theorized in literature, and location data has very little value in environmental accounting studies (Gray et al., 1995b). Nevertheless, an examination on the locations for environmental disclosures in annual report may offer some knowledge to literature. Table V provides the number of disclosing companies according to the various locations / sections in the Annual Report. It must be noted that the locations act exclusively. Results showed that none of Malaysian companies disclose any form of environmental matters in the financial accounts and notes to the accounts' sections compared to 6 disclosures made by Australian companies (included in the multiple sections). This trend may suggest that Malaysia is still lacking in valuing and accounting environmental issues. Are Malaysian businesses not ready to quantify environmental matters? Or do companies fail to see any significance in highlighting quantifiable environmental costs?

Take in Table V

48 out of 50 Australian companies reported their extent of environmental compliance in the directors report section in the year 2003. This behavior is in accordance with the requirement under Section 299(1)(f) of Corporations Act 2001 where Australian listed companies need to report their extent of environmental compliance towards relevant regulations. Directors' report and a separate section for environmental disclosures tend to be the favorable locations for Australian environmental disclosures while, review of operations and separate section for Malaysian disclosures. Nevertheless, further studies could be conducted in exploring the significance of sections in annual reports and relate them to the importance with environmental information.

6.1.2 Types of Environmental News

Type of news reported is also an interesting dimension to be observed. Readers of annual report would want to know about companies' operations and whether there is any environmental harmful activity going on while on the other side, companies believe that reporting positive news would "*legitimize the existence of their operations*" (Deegan and Rankin, 1999, p.59). However, disclosing negative news would also establish companies' credibility (KPMG, 1993).

Positive news represents any environmental information reported with positive 'tone', describing 'good' news that includes what and how companies are doing environmentally. Negative news, on the other hand, is any environmental information that describes 'bad' news – which may include news about companies failing to preserve the environment or violating certain environmental laws and regulation.

At this initial stage, the news type of environmental information is tested against industry categories amongst environmental reporters. Chi-square tests indicated no significant different in Malaysian study, while Australian study showed significant result in the type of news amongst the industries (x^2: 2002 = 0.794, 0.002; 2003 = 0.0934, 0.002 respectively). More Australian environmental sensitive companies tend to report both positive and negative environmental news than just positive news (refer to Table VI). This finding contrast with Deegan and Gordon (1996) that discovered firms tend to disclose positive news and repress negative news. It describes a change of paradigm among Australian companies in both years where more than half of environmental sensitive companies disclose both positive and negative environmental information. Meanwhile, Malaysian companies were found to favor in disclosing positive / 'good' environmental news to public. Does this result indicate that reporting environmental information is in lieu of maintaining corporate image? Further research could be carried out to explore the motivations behind such behaviour.

Take in Table VI

6.1.3 Nature and Types of Environmental Disclosures

Studying the level of extensiveness of environmental information reported in corporate annual reports, Table VII provides the mean score of each of the 24-environmental item together with the ranking of disclosures. Generally, Malaysian companies voluntarily disclosed 'general' and 'qualitative' type of environmental information and this result confirmed findings by Nik Ahmad and Sulaiman (2002). Meanwhile, Australian companies are seen to have a more extensive type of environmental disclosures, i.e. from 'general' to 'quantitative' type of environmental information. The ranking of mean scores on types of environmental information studied differs in both countries except for the disclosure on environmental stakeholder engagement activities. In addition, in both years of study, zero disclosures were done on potential litigation.

Based on the mean scores, in year 2002, information on financing for environmental equipment, previous litigation and environmental data tend to be the most extensive environmental disclosure for Malaysian practices while land rehabilitation or remediation was the most extensive disclosures for Australian practices - (mean scores of 4.00). In year 2003, Malaysia evident a similar trend where environmental data has the highest mean score (mean score of 2.17) while past and present environmental litigation was the information with the highest rank for Australia (mean score of 3.75), thus, shows a declining extensiveness trend on environmental disclosure practices.

Generally, in both years, high level of extensiveness was discovered for financial factors and litigation disclosures on environmental information - qualitative to combination type of disclosures. While majority of environmental disclosures were at the low end of extensiveness – between general and qualitative disclosures.

Take in Table VII

Table VII also demonstrated that in year 2002, the least disclosed environmental information by Malaysian companies was environmental audit and environmental stakeholder engagement activities (mean score of 1.00 – short statement). Apparently, environmental stakeholder engagement activities was also the least Malaysian disclosed environmental information in year 2003 (mean score of 1.00), while environmental awareness and education programmes was the environmental information with the least score for Australian companies (mean score of 1.33 – general or short statement). With the infancy stage of Malaysian environmental disclosure practices, it is understood that Malaysian corporations have not yet moved forward in developing and improving the wider corporation-stakeholder relationships (in this case, stakeholder engagement activities) as the western nations have done (for example, Unerman and Bernett, 2004). In the case of Australian finding, it is interesting to note that very few corporations have conducted environmental educational programmes. This raise an issue of whether Australian companies only engage on environmental activities directly related to their production and minimal initiative done to enhance environmental awareness; either internal or external (public) engagement?

6.2 Multivariate Analysis – Estimation of the Environmental Disclosure Model

As discussed in the methodology section, with evidences providing indication on unacceptable level of multicollinearity present in the data (as in Table II), this study searched for a reliable model, hence the best regression model. In doing so, the stepwise method was selected.

Take in Table VIII
Take in Table IX

The results of the analyses are presented in Table VIII and Table IX, with Table VIII showing Malaysian results and Table IX showing Australia results. ISO is found to be the sole significant predictor of environmental disclosures among Malaysian companies. Its R^2 value of 0.136 suggests that the model explain a certain amount of variation in the environmental disclosures. Nevertheless, the significant level is rather low - (t-ratio = 5.331, p-value = 0.027 < 0.05). In other words, the coefficient of determination value of 0.136 indicates that only 13.6 percent of the variation in environmental disclosure is due to the ISO variable (refer to Table VIII). Based on the results, the model estimated for Malaysian data is:

$$\text{EnviScore} = 0.613 + 0.286\text{ISO}$$

Comparatively, Australian analyses identified ISO and ROA as the possible predictors for environmental disclosures. Model 1 reveals that ISO represents 32.4 percent of the variation in the amount of environmental disclosures (t-ratio = 22.943, p-value = 0.000 < 0.05), while Model 2 sees the combination effect of both ISO and ROA representing 40 percent of prediction rate on disclosure behaviour (t-ratio = 15.643, p-value = 0.000 < 0.05) (refer to Table IX). Taking into account on the findings, the model estimated for Australian data is:

$$\text{EnviScore} = 5.907 + 13.366\text{ISO} + 0.641\text{ROA}$$

Results from both Malaysian and Australian analyses indicate that there are other factors that contribute to the environmental disclosure practices.

6.2.1 Tests of Hypotheses

H_1: Environmental sensitive companies tend to disclose more environmental information.

H_2: Companies with high financial performance tend to disclose more environmental information.

H_3: ISO 14000 accredited companies tend to disclose more environmental information.

Hypothesis 1 and 2 are rejected while hypothesis 3 is accepted for Malaysia companies. Overall, the environmental disclosure analysis suggests that Malaysian companies accredited with ISO 14001 certification tend to disclose more environmental information publicly. Within the sample companies studied, it describes that there exists an inconsistency with other previous studies. Deegan and Gordon (1996) found environmental sensitive companies report more extensive environmental information than the non-environmental sensitive companies. Other companies that discover similar results are Gamble and Hsu (1995), Halme and Huse (1997) and Frost and Wilmshusrt (2000).

In the case of Australian analysis, hypothesis 1 is rejected while hypothesis 2 and 3 are accepted. Generally, the analysis carried out illustrates that among Australian companies, high financial performance and ISO 14001 certification are among the significant determinants of environmental disclosures. The causal relationship between financial performance and environmental disclosures found in this study is similar to Teoh et al. (1998) and Alnajjar (2000). However, with hypothesis 1 being rejected, this study highlights the contrast result with previous Australian findings, such as in Kelly (1981) and Deegan and Gordon (1996). Maybe, over time, the nature of business operations no longer plays a significant role in influencing environmental disclosure practices.

With ISO factor found to be a significant predictor for environmental disclosures both in Malaysia and Australia, it gives a picture that companies see the potential role of ISO certification as a strategic posture for them to excel in the business market. It may also explain that the globalization era has set some guidelines for companies to be in the world business league. It could be speculated that environmental disclosure practices may reflect responsiveness to global market demands.

7. CONCLUSIONS

Generally, more Australian companies disclose environmental information in corporate annual reports than Malaysian companies. However, this is due to some mandatory environmental reporting requirements, especially information on environmental regulations which is in line with the s. 299(1)(f). In terms of the types of environmental news, more Australian companies tend to report both positive and negative news compared to majority of Malaysian companies reporting only good news. At this point, further investigation is required to unveil the reasons for different reporting behavior. Australia is also seen to disclose high level of extensiveness of environmental information (general to quantitative information) compared to Malaysian companies where majority only produce minimum disclosures (i.e. general and qualitative in nature). In this case, the Malaysian finding in this study is similar to previous discovery on Malaysian low reporting practices (ACCA, 2002).

The results of the empirical tests are of interest for several reasons. This study discovered potential factors that may have some force on motivating environmental disclosure practices. ISO 14001 certification was found to have high influence on both Malaysian and Australian companies to act on voluntary environmental disclosure initiatives. ISO 14001 certification was the only possible influencing factor for Malaysian companies to engage themselves into the environmental disclosure practices. ISO 14001 certification provides confidence to external parties, providing evidence that corporations have control over significant aspects of their operations and activities and are committed to comply with all relevant environmental legislation and regulations and that they are continuously improving their environmental performance. High voluntary environmental disclosures among ISO companies may also result from global economic pressures on the countries' business market. Specifically, Malaysia being one of Asian most progressing developing countries has to struggle in the highly demanded international market condition. Malaysian companies may receive pressures from various parties including competitors and suppliers for ethical consciousness with regards to accounting for the environment before being able to penetrate wider market. Thus, the tension from the economic incentives has put force for corporations to engage into the voluntary initiative.

With the three main potential determinants on environmental disclosures identified in this study, ISO and financial performance have showed some significant results. These to some extent create an impression that currently in Malaysia and Australia, environmental disclosures are influenced by market factors. In this case, the application of stakeholder study does not seem to be an appropriate foundation to understanding environmental disclosure behaviour. However, the sample size of the study may contribute to such findings. Therefore, this study may be extended to include a wider number of public listed companies. It is interesting to study in future research whether this scenario will prolong or things will change and the sense of environmental belonging will increase among companies; being the corporate citizens of a nation.

Surprisingly, the study failed to identify any correlation between environmental sensitivity and environmental disclosures. Does this indicate that currently Malaysian and Australian companies categorized under high environmental profile have low awareness and interest about their operational impact to their environment surroundings? Further exploration on the matter should contribute to deeper understanding on corporate motivations towards environmental disclosure practices. Detail study on motivations may contribute to the body of knowledge on specific and local factors that influence such business strategic management practices.

In relation to the association between environmental disclosures and corporate financial performance, there was no significant difference between financial performance and environmental disclosures among Malaysian companies, but Australian companies. It highlights the continuing inconsistent findings on the matter as presented by previous studies (for instance, Freedman and Jaggi, 1988; Cormier and Magnan, 2001; Murray et. al., 2002).

This study concludes that based on the samples studied, Australia has better (and higher) environmental disclosure practices compared to Malaysia. Malaysia is seen to position itself at the starting line of the voluntary path, however, as ACCA (2004) argued that over years, Malaysia is showing some initiatives on more environmental disclosures make known to the public. Study findings also conclude that ISO 14001 certification has become a new element in voluntary environmental accounting dimension in the two Asia-Pacific realms. Future exploration can be done to other nations in this part of the world to confirm the significance of ISO 14001 on environmental issues in accounting. Then, comparisons can be made whether western developed countries are under similar pressure.

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9. TABLES

Table I: Descriptive Statistics on Study Variables

Part A: MALAYSIA

Variables	Variable Name	Minimum	Maximum	Mean	Std. deviation
Total environmental scores	EnviScores	0	27	5.20	5.983
Earnings before interest and tax	EBIT	79	2619	672	590
Earnings per share	EPS	0.30	265.5	46.4	45.42
Return on Asset	ROA	0.20	43.3	6.5	7.03
Return on equity	ROE	0.20	124.2	16.2	18.35
Net profit margin	Netmargin	0.01	1.75	0.3	0.27

Part B: AUSTRALIA

Variables	Variable Name	Minimum	Maximum	Mean	Std. deviation
Total environmental scores	EnviScores	0	39	12.64	9.111
Earnings before interest and tax	EBIT	89	9170	1459	2069
Earnings per share	EPS	7.6	400.0	71.9	84.73
Return on Asset	ROA	1.1	19.3	6.3	3.94
Return on equity	ROE	2.4	64.9	16.9	12.17
Netmargin	Netmargin	1.6	164.0	17.1	25.0

Table II: Pearson Correlation Coefficients among Variables

Part A: MALAYSIA

	EnviScore	EBIT	EPS	ROA	ROE	Netmargin	Sector	ISO
EBIT	.129 (.227)	1.000						
EPS	-.059 (.365)	.460(**) (.001)	1.000					
ROA	-.121 (242)	.107 (.461)	.587(**) (.000)	1.000				
ROE	-.150 (.191	.371(**) (.008)	.639(**) (.000)	.662(**) (.000)	1.000			
Netmargin	.065 (.354)	.304(*) (.032)	.198 (.169)	.298(*) (.035)	.533(**) (.000)	1.000		
Sector	.058 (.368)	-.320(*) (.023)	-.234 (.102)	.032 (.823)	-.239 (.094)	.109 (.449)	1.000	
ISO	.368 (.014)*	.206 (.152)	.227 (.113)	.204 (.156)	.155 (.282)	.244 (.087)	.194 (.178)	1.000

Part B: AUSTRALIA

	EnviScore	EBIT	EPS	ROA	ROE	Netmargin	Sector	ISO
EBIT	-.075 (.302)	1.000						
EPS	-.234 (.051)	.454(**) (.001)	1.000					
ROA	.226 (.058)	-.014 (.921)	-.191 (.183)	1.000				
ROE	.032 (.413)	.438(**) (.001)	.371(**) (.008)	.382(**) (.006)	1.000			
Netmargin	-.162 (.131)	.154 (.285)	.070 (.628)	.134 (.354)	.239 (.095)	1.000		
Sector	.394 (.002)*	-.177 (.218)	-.051 (.723)	.271 (.057)	-.001 (.995)	-.126 (.382)	1.000	
ISO	.569 (.000)*	.187 (.193)	.000 (.998)	-.087 (.549)	.012 (.934)	-.072 (.621)	.169 (.241)	1.000

Note: the top number represents the degree of correlation and the bottom number represents the level of significance

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Table III: Number of Companies Disclosing Environmental Information According to Industry Type

Industry	2002				2003			
	Malaysia		Australia		Malaysia		Australia	
	Disclose							
	Yes	No	Yes	No	Yes	No	Yes	No
Environmentally sensitive	13	0	15	0	17	2	17	-
Non-environmentally sensitive	21	15	30	2	20	11	33	-
Total	34	15	45	2	37	13	50	-
Total Companies	**49**		**47**		**50**		**50**	

Table IV: Number of Companies Disclosing Environmental Information According to ISO 14000 Certification

ISO 14001	2002				2003			
	Malaysia		Australia		Malaysia		Australia	
	Disclose							
	Yes	No	Yes	No	Yes	No	Yes	No
ISO accredited	9	0	9	0	13	0	10	-
Non-ISO accredited	25	15	36	2	24	13	40	-
Total	34	15	45	2	37	13	50	-
Total Companies	49		47		50		50	

Table V: Number of Companies Reporting Environmental Information According to Location Type

Section	2002		2003	
	Malaysia	Australia	Malaysia	Australia
Chairman's Statement	2 (5.9%)	-	-	-
Directors Report	3 (8.8%)	10 (22.2%)	3 (8.1%)	6 (12%)
Corporate Governance	-	-	-	1 (2%)
Review of Operations	7 (20.6%)	1 (2.2%)	6 (16.2%)	-
Financial Accounts	-	-	-	-
Notes to the Accounts	-	-	-	-
Separate Section	9 (26.5%)	2 (4.4%)	4 (10.8%)	6 (12%)
Other Section	2 (4%)	-	5 (13.5%)	-
Multiple Sections	11 (32.4%)	32 (71.1%)	19 (51.4%)	37 (74%)

Table VI: Type of Industry and Environmental News Disclosed

Industry	2002				2003			
	Malaysia		Australia		Malaysia		Australia	
	+ve (%)	Com.(%)	+ve (%)	Com.(%)	+ve (%)	Com.(%)	+ve (%)	Com.(%)
Environmental-sensitive	13 (38.2)	0	7 (14.9)	8 (17)	16 (43.2)	1 (2.7)	8 (16)	9 (18)
Non-environmental sensitive	20 (58.8)	1 (2.9)	26 (55.3)	4 (33.3)	20 (54.1)	0 (0)	30 (60)	3 (6)
Total	33	1	33	12	36	1	38	12
Chi-Square	*Value: .068 Sig.: 0794*		*Value: 12.982 Sig.: .002*		*Value: 1.209 Sig.: .0934*		*Value: 9.546 Sig.: .002*	

Table VII: Nature and Type of Environmental Disclosures

Environmental Items	Ranking Based on Mean Scores			
	Year 2002		Year 2003	
	Malaysia	Australia	Malaysia	Australia
	Score (Rank)	Score (Rank)	Score (Rank)	Score (Rank)
Past and current environmental expenditures	3.00 (2)	2.50 (5)		3.25 (2)
Future estimates of environmental expenditures		3.33 (2)		3.25 (2)
Financing for environmental equipment	4.00 (1)			2.67 (4)
Environmental cost accounting				2.00 (8)
Past and present litigation	4.00 (1)	2.56 (4)		3.75 (1)
Potential litigation				
Environmental data	4.00 (1)	2.69 (3)	2.17 (1)	2.44 (5)
Control, installations, facilities or processes described	2.09 (3)	2.06 (6)	1.82 (3)	2.21 (7)
Land rehabilitation and remediation	1.67 (11)	4.00 (1)	2.00 (2)	2.00 (8)
Conservation of natural resources	1.92 (5)	1.91 (9)	2.00 (2)	1.81 (9)
Departments or offices for pollution control	1.71 (10)	1.71 (10)	1.63 (8)	1.76 (11)
Discussion of regulations and requirements	1.38 (14)	1.71 (10)	1.46 (11)	1.69 (13)
Environmental policies or company concern	1.79 (8)	1.68 (11)	1.68 (6)	1.53 (18)
Environmental goals and targets	1.80 (7)	1.44 (14)	1.40 (13)	1.67 (14)
Awards for environmental protection	1.67 (11)	1.56 (12)	1.44 (12)	1.63 (16)
Environmental audit	1.00 (16)	1.16 (17)	1.33 (14)	1.36 (20)
Environmental Management System	1.29 (15)	1.68 (11)	1.21 (15)	1.50 (19)
Environmental end products/services	2.00 (4)	1.56 (12)	1.60 (9)	1.73 (12)
Sustainable development reporting	1.75 (9)	1.33 (15)	1.67 (7)	1.79 (10)
Environmental memberships/relationships	2.00 (4)	1.48 (13)	1.80 (4)	1.64 (15)
Environmental stakeholder engagement	1.00 (16)	1.00 (18)	1.00 (16)	1.60 (17)
Environmental activities	1.63 (13)	1.92 (8)	2.00 (2)	2.35 (6)
Environmental research and development	1.83 (6)	2.00 (7)	1.75 (5)	2.00 (8)
Environmental awareness and education programmes	1.64 (12)	1.20 (16)	1.50 (10)	1.33 (21)

Note: Mean scores are calculated based on environmental reporters only!

Scores - 1: general disclosures 3: quantitative disclosures

2: qualitative disclosures 4: combination of qualitative and quantitative disclosures

Table VIII: Regression Analysis on Malaysian Companies

	D.f.	Sum of squares	Mean square	t-ratio	p-value
Regression	1	0.679	0.679	5.331	0.027
Residual	34	4.332	0.127		

Variable	B	Beta	t-ratio	p-value
Constant	0.613		8.233	
ISO	0.286	0.368	2.309	0.027

Multiple R = 0.268
R_2 = 0.136
Adjusted R = 0.110
Standard error = 3.91671

Table IX: Regression Analysis on Australian Companies

	D.f.	Sum of squares	Mean square	t-ratio	p-value
Regression					
Model 1	1	1315.845	1315.845	22.953	0.000
Model 2	2	1625.556	812.778	15.643	0.000
Residual					
Model 1	48	2751.675	57.327		
Model 2	47	2441.964	51.957		

Variable	B	Beta	t-ratio	p-value
Constant				
Model 1	10.075		8.416	
Model 2	5.907		2.878	
Model 1				
ISO	12.825	0.569	4.791	0.000
Model 2				
ISO	13.366	0.593	5.225	0.000
ROA	0.641	0.277	2.442	0.018

Note: Model 1: Dependent variable = Total environmental scores
Independent variable = ISO
Model 2: Dependent variable = Total environmental scores
Independent variables = ISO and ROA

Model 1:
Multiple R = 0.569
R_2 = 0.324
Adjusted R = 0.309
Standard error = 7.571

Model 2:
Multiple R = 0.632
R_2 = 0.400
Adjusted R = 0.374
Standard error = 7.208

APPENDIX I: Description of Environmental Information

Environmental Items	Explanation of Coverage
Past and current environmental expenditures / operating costs	Any historical, and / or current and / or future estimation or budgeted environmental expenditure, spending, operational costs, foreseeable liabilities.
Future estimates of environmental expenditures / operating costs	
Financing for environmental equipment	Any environmental information on equipments acquired for environmental improvement purposes of operations including financial applications for that matter.
Environmental cost accounting	Any cost accounting on environmental management operations, financial operations etc.
Past and present litigation	Any information such as court cases, compounds, fines regarding misconduct of operations that describe violation of environment or violation of various environmental acts and / or laws.
Potential litigation	
Environmental data	Any information or explanation on matters such as air, noise, water discharges, solid waste disposals as the result of corporate operations. It may include damages caused or initiatives taken in preserving the environment.
Control, installations, facilities or processes described	Any environmental information including environmental actions taken either in input or process stages. For example, environmental control measures, installation of environmental control systems, acquisition of special plant or equipment.
Land rehabilitation and remediation	Any information on land care and improvements done for the purpose of sustaining the environment and nature.
Conservation of natural resources	Any information on environmental initiatives such as minimizing wastage, controlling operational wastes, the usage of environmental-friendly raw materials in productions and others.
Departments or offices for pollution control	Any information on the setting-up of special environmental departments, environmental teams or committees and even officers responsible for monitoring and controlling the operations to avoid damages or violation of rules of nature destruction.
Discussion of regulations and requirements	Any information on the stewardships, benchmarking and compliance of various environmental acts, regulations, guidelines (for example, Global Reporting Initiatives, ACCA-Malaysian environmental guidelines), corporate plans and policies.
Environmental policies or company concern	Any information on company's do's and concerns on the importance of preserving the working / operational environment and external environment. It may also include corporate environmental policy established.
Environmental goals and targets	Any information on company's environmental objectives, aims and goals on future environmental undertakings or improvements.
Awards for environmental protection	Any information on company's achievements or accomplishment in obtaining any environmental recognition or awards such as environmental reporting awards or other green award at corporate, national or international level.
Environmental audit	Any information on security, control and monitoring periodical measures on environmental management operations by appointed internal or external team. Information may include audit work carried on specific company's site, branches and others.
Environmental Management System	Any information on company's environmental management system that may cover environmental risk management, establishment of key performance environmental indicators, product life-cycle approach, eco-labelling systems, applications of ISO 14001 and environmental impact assessment.

Environmental end products / services	Any information on company's end products or services that embrace environmental values.
Sustainable development reporting	Any information on company's involvement on the importance of sustainable development in management and operations. It may also include company's believe on the importance of environmental and sustainability issues.
Environmental memberships / relationships	Any information on company's initiatives and engagement in building networks on environmental issues. Information should include memberships or relationships with 'green' groups including government bodies, NGOs and other corporate bodies.
Environmental stakeholder engagement	Any information on co-operations between the company and its internal and external stakeholder groups and community outreach programmes related to business environmental management operations. Information should also include the type of programmes and activities conducted.
Environmental programmes	Any information on corporate programmes and activities conducted in promoting environmental awareness to corporate employees or the society. Information can also include specific activities such as recycling day, environmental sponsorships, donations and other 'green' activities.
Environmental research and development	Any information on corporate involvement in any environmental R&D programmes which may include research on the management and improvements of company's product, by-product, production wastes etc.
Environmental awareness and education programmes	Any information on company's environmental programmes such as seminars, workshops or training with aim to educate and create employees' awareness on the importance of sustaining the environment.

APPENDIX II: List of Companies in Preliminary Task

No.	MALAYSIA	No.	AUSTRALIA
1	Tractors Malaysia Holdings Bhd	1	National Australia Bank Limited
2	Tenaga Nasional Bhd	2	BHP Biliton Limited
3	Golden Hope Plantation Bhd	3	Commonwealth Bank of Australia
4	Guiness Anchor Bhd	4	ANZ Bamking Group Ltd.
5	Negara properties (M) Bhd	5	Telstra Corporation Limited
6	Matsushita Electric Co (Msia) Bhd	6	Westpac Banking Corporation
7	Fraser & Neave Holdings Bhd	7	News Corporation
8	Petronas Gas Bhd	8	Rio Tinto Limited
9	Malaysian International Shipping Corporation	9	Woolworths Limited
10	IOI Corporation Bhd	10	Wesfarmers Limited
11	Road Builder (M) Holdings Bhd		
12	Perusahaan Otomobil Nasional Bhd		