

VOLUNTARY ENVIRONMENTAL DISCLOSURES OF MALAYSIAN LISTED COMPANIES: AN APPLICATION OF STAKEHOLDER THEORY

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ABSTRACT

This study examines the motives behind the voluntary provision of annual report environmental disclosures (AREDS) by Malaysian listed companies using stakeholder theory. The investigation is conducted in two phases employing both quantitative and qualitative methods of analysis. Using regression analysis, Phase 1 results suggest that proxies for strategic posture are significantly related with the quality and quantity of disclosures. It is also found that the shareholder and creditor power (two stakeholder power proxies) and the average return on assets (economic performance proxy) are not significantly associated with AREDS. These results provide an impetus to ask further questions which are answered in Phase 2 through the use of qualitative interviews. Phase 2 uncovers the motivations behind the provision of AREDS which are related to the central premise of stakeholder theory.

Keywords: voluntary environmental disclosures, stakeholder theory, developing country, Malaysia, qualitative and quantitative methods.

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1. INTRODUCTION

Research into the motivations behind voluntary social and environmental disclosures has gained popularity in the accounting literature since the 1980s (Guthrie and Parker, 1989; Roberts, 1992; Patten, 1992, 2002; Freedman and Stagliano, 1995; Deegan and Gordon, 1996; Deegan and Rankin, 1997; Buhr, 2002). Gray and Bebbington (2001) and Buhr (2007) summarize the most commonly cited reasons for reporting such as to gain competitive advantage, to improve corporate image, to report company performance, to discharge a moral/ethical duty, to deter mandatory standards and/or to become a party to standard setting and for political benefits, among others. Whilst these reasons appeal to our intuition, they are best understood with the aid of some theoretical framework.

This study examines voluntary annual report environmental disclosures (AREDS) of Malaysian publicly listed companies using a stakeholder model. The main objectives in this paper are to gain insights into the motivations for providing AREDS and to ascertain whether stakeholder theory can, in fact, add to our understanding of this phenomenon from a developing country perspective.

The basic proposition of stakeholder theory is that the firm's success is dependent upon the successful management of all the relationships a firm has with its stakeholders. Stakeholder theory offers a useful framework given the increasing stakeholder involvement in the reporting process. Ernst and Young's (2002) study of 147 of the Global 1000 companies shows that majority of the key drivers for the management's increased focus in corporate social responsibility (CSR) are stakeholder-related:

Surveyed companies identify five key drivers as influencing the increasing business focus on CSR ... These five drivers are: greater stakeholder awareness of corporate ethical, social and environmental behaviour; direct stakeholder pressures; investor pressures; peer pressures and an increased sense of social responsibility ... (Ernst and Young, 2002, p. 6)

Likewise KPMG's 2005 survey of the world's largest 250 companies reveals that, apart from the Global Reporting Initiative (GRI) guideline, stakeholder consultation is commonly used as the basis for CSR report content. Similar concerns are echoed by one of UK's biggest accounting bodies:

"... stakeholder engagement as an overall activity and more specifically as part of the reporting process is becoming increasingly high on the agenda in both the public and private sectors" (ACCA 2005 in Unerman, 2007, p. 86)

Hence, as stakeholder involvement becomes increasingly important in the reporting process globally, it is highly insightful to know if a stakeholder framework that has been extensively used in Western societies could be useful in our understanding of the determinants and motivations behind voluntary environmental disclosures in a developing economy such as Malaysia. The motivation for using the Malaysian context is driven by its inherent background in terms of its strategic vision, economic development and regulatory/non-transparent setting.

Firstly, from a strategic standpoint, Malaysia is the only developing country with an explicit timeline to achieve the developed nation status by the year 2020 (*Vision 2020*). The launch of *Vision 2020* coincides the inception of the National Development Policy in 1991. Since then, Malaysia has not been immune to environmental disasters such as the 1993 Highland Towers erosion, the 1997 haze crisis (when the Air Pollution Index exceeded the 500 mark) and more recently, the 2004 tsunami that hit Penang along with 8 other Asian countries killing more than 200,000 people. Although these disasters have been caused both by man and mother-nature, these experiences inevitably put environmental considerations as a top priority creating the need to strategically preserve and maintain the environment if Vision 2020 is to be achieved. This may create incentives for firms to provide environmental reports.

Secondly, on the economic front, Malaysia offers an interesting setting since it is one of the fastest growing economies in Southeast Asia since the 1960's¹. Compared to its neighbouring countries like Indonesia, Thailand and the Philippines, Malaysia has recovered

much quicker from the 1997 Asian financial crisis. Along with rapid economic development, however, Malaysia has been experiencing intensified environmental impacts such as deforestation, erosion, loss of biodiversity, air and water pollution largely brought about by corporate activities such as logging, large scale land development, open burning, mining, power stations and dam constructions (Teoh & Thong, 1984; Smith, Yahya & Amiruddin, 2007; Sumiani, Haslinda & Lehman, 2007). Hence, from an economic and strategic standpoint, the Malaysian context offers a fertile ground for an investigation on the voluntary nature of corporate environmental reporting.

Finally, on the regulatory/transparency aspect, Malaysia offers a non-transparent setting for environmental reporting regime. Unlike other countries where specific information on corporate environmental performance is publicly available (e.g. the Toxic Release Inventory in the USA or its equivalent in Australia, the National Pollutant Inventory), the Malaysian public has no access to this type of information unless voluntarily provided by the firms. Thus, it appeals to intuition that the firms' provision of environmental disclosures may be driven by their deliberate choice to manage their relevant stakeholders particularly if there is an increasing demand for this type of information. Therefore, the Malaysian setting offers a rich data source on how companies could use voluntary environmental disclosures to manage their stakeholders. The findings from this investigation could provide relevant insights to the report providers, the report users and the regulators.

This study is conducted in two phases and employs mixed methods in the analysis. Phase 1 is quantitative while Phase 2 is qualitative. In undertaking the first phase, Ullmann's (1985) three dimensional stakeholder model - *stakeholder power*, *strategic posture* and *economic performance* - provides the foundation for the hypotheses developed and tested. To test whether significant relationships exist between the dependent variables – quality and quantity of AREDs – and the independent variables chosen, multiple ordinary least squares regression is used. Phase 1 results suggest that both the alternative proxies for strategic

posture are significant and positively related with the quality and quantity of disclosures. The findings also suggest that the shareholder and creditor power (two stakeholder power proxies) and the average return on assets (economic performance proxy) are not significantly associated with AREDs. The results provide an impetus to ask further questions which are answered in Phase 2 through the use of qualitative interviews.

The main contributions of this research are twofold: (1) it adds to the literature on studies conducted from the context of developing countries like Malaysia; and (2) it provides an example of how an investigation applying stakeholder theory can be enhanced by a combination of quantitative and qualitative methods.

The rest of the paper is organized as follows. The next two sections provide a review of relevant literature on Malaysian corporate social and environmental reporting and a brief discussion of stakeholder theory literature leading to hypotheses development. An explanation of the research method is outlined next followed by the discussion of the main findings in the two phases of this study. Finally, the summary and conclusion is provided.

2. MALAYSIAN REGULATORY BACKGROUND AND LITERATURE REVIEW

The Malaysian government's Eighth Five-year Plan (2001-2005) highlights the roles of local authorities in encouraging firms to consider such matters like environmental cost computation, ISO14001, environmental reports and environmental audits. Despite these initiatives, there is very limited requirement for Malaysian companies to provide environmental disclosures in their Annual Reports.

2.1 Malaysian Environmental Reporting Regulations

The main authority for the prevention and control of environmental pollution in Malaysia is the Department of Environment (DOE), a department under the umbrella of the Ministry of Science, Technology and Environment. DOE is empowered to develop standards and guidelines to ensure compliance and to enforce the Environmental Quality Act of 1974 (EQA). Section 37 of the EQA entitles the Director General of DOE to demand environmental

information from companies in the event of non-compliance with the EQA but such information is not disclosed to the public.

Sub-regulation 22 of the Occupational Safety and Health Act of 1996 (OSHA) requires manufacturers to make public disclosures on the incidence of any major accident hazards and their impact on the population and environment. Section 169 subsection 7 of the Companies Act of 1965 (CA) requires directors to include information on any item, transaction or event of a material and unusual nature that may have arisen during the course of the financial year. Although these legislations can be interpreted to include environmental information, disclosures are not often provided, particularly in the annual report, as phrases such as “major accident hazards” and “material and unusual nature” can be vaguely interpreted.

The only other source of environmental reporting guidelines is the Malaysian Accounting Standards Board (MASB). Financial Reporting Standard (FRS) 101 (formerly known as MASB 1) makes explicit reference to environmental reports encouraging companies “to present additional information if management believes they will assist users in making economic decisions”. FRS 137 (formerly MASB 20) sets out the disclosure requirements for the recognition of contingent liabilities and assets. Although FRS 137 does not provide specific details of the types of liability, it is foreseeable that environmental liabilities could potentially be included within a company’s financial statement.

It is clear from the above discussion that annual report environmental disclosure in Malaysia is largely optional. Despite the absence of mandatory requirement, the literature reveals that Malaysian corporate environmental reporting practice is on the increase.

2.2 Malaysian Corporate Environmental Reporting

Since the 1980s, Malaysia has attracted researchers examining corporate social responsibility practices (Teoh and Thong, 1984) and reporting attitudes (Andrew, Gul, Guthrie and Teoh, 1989). Similar conclusions are reached in these studies, i.e. that Malaysian

corporate social reporting practice is still at the early stage of development particularly in the environmental area. As a follow up on Teoh and Thong's investigation, Rashid and Ibrahim (2002) report that, although almost all the companies included in their study claimed that they are involved in socially responsible activities, only about half have disclosed their socially responsible practices.

Studies focusing on Malaysian environmental reporting have not appeared in the literature until the turn of the millennium. In a first-of-its-kind study commissioned by the Association of Chartered Certified Accountants (ACCA), the state of Malaysian corporate environmental reporting is examined by the Environmental Resources Management Malaysia (ERMM). An analysis of annual reports and stand-alone environmental reports by companies listed in the Kuala Lumpur Stock Exchange (KLSE) Main Board from 1999 to 2001 shows an increase in environmental reporting, albeit minimal. The study reveals that:

The number of reporting companies grew from 25 in 1999, to 35 in 2000, reaching 40 companies by 2001. This represented 5.3%, 7% and 7.7% of the KLSE main board listed companies in 1999, 2000 and 2001 respectively... Half the reporting companies were in the list of the top 100 companies in Malaysia... (ERMM, 2002, p. 8).

The ERMM report shows clearly that environmental reporting has not been widely practiced in Malaysia. The report also highlights that 50% of disclosers are in the top 100, i.e. large companies. Another descriptive study (Thompson and Zakaria, 2004) confirms that Malaysian environmental reporting is still at its infancy and that majority of environmental disclosers are large companies with seven of the top 10 companies (by market capitalization) providing mostly general policy statement with some unsubstantiated declarative statements.

While it appears that Malaysian environmental reporting practices show very little improvement, there is an increase in the number of studies examining the motivations behind Malaysian environmental disclosures using different theoretical perspectives and methodologies. Adopting the contracting and political cost perspective, Ahmad, Hassan and Mohammad (2003) examine the voluntary disclosure of environmental information in the annual reports of 299 KLSE-listed companies using logistic regressions. Their results suggest

lack of support for the general hypothesis that firms voluntarily disclose environmental information to mitigate contracting and political costs. They attribute this result to the “argument that the commonly held theoretical framework of principal-agent relationship may not hold in the Malaysian context” (p.85). Ahmad and Sulaiman (2004) employ legitimacy theory in their study of KLSE Main Board listed companies from the construction and industrial products sectors. They use content analysis of annual reports and mail survey questionnaires. The results provide limited support for legitimacy theory. They conclude that given the very low level of disclosure, there is no serious attempt on the part of the companies to use AREDs to appear legitimate to society. It is noted that both studies adopt quantitative methods of analysis and both use disclosing and non-disclosing companies in their sample. Although different theoretical frameworks are used in these two studies, both find limited support to the central theory adopted.

Three recently published Malaysian studies (Yusoff, Lehman and Nasir, 2006; Sumiani, Haslinda and Lehman, 2007; Smith, Yahya and Amiruddin, 2007) adopt no specific theoretical model. In examining the AREDs of top 50 companies listed in KLSE, Yusoff, et al (2006) use the qualitative method of content and discourse analysis. Consistent with the findings by KPMG (2005), their analysis shows that “majority of disclosures made were around the motive of stakeholders’ concern” (p. 140). Sumiani, et al (2007) also examine the disclosures made by top 50 Malaysian public companies to explore the reporting behaviour of ISO-certified companies. They find that out of 36 disclosing companies, 13 are ISO14001 certified and all the ISO-certified firms provide some form of environmental disclosure in their annual reports. Smith, et al (2007) concentrate on the disclosing companies identified by the ERMM (2002) study in an attempt to find whether relationships exist between AREDs and certain corporate characteristics. Of the explanatory factors examined, only financial performance is found to be significant. However, contrary to expectation, it is negatively associated with AREDs prompting their conclusion that “environmental reporting practices in

Malaysia appear to differ from those elsewhere, which may be partly attributable to the maturity of reporting process” (p. 195).

2.3 Malaysian Literature Review Highlights

The Malaysian studies reviewed highlight a number of important points. First, that environmental reporting in Malaysia, although increasing, is still very limited indicating a low level of maturity. Second, previous Malaysian quantitative studies (Ahmad, et al, 2003; Smith, et al, 2007) seem to suggest that some expectations from the variables directly derived from developed-country studies may not hold true in Malaysian context. Third, the theoretical frameworks used in various attempts to understand the motivations behind Malaysian corporate environmental reporting practices achieve limited support.

In consideration of the above points, this study improves on prior research by adopting stakeholder theory and using a combination of quantitative and qualitative methods. Without discounting the usefulness of quantitative analysis, but considering the low level of Malaysian AREDs, it is imperative that pure reliance on quantitative findings is insufficient, perhaps even misleading. Furthermore, given the conjecture that some expectations elsewhere may not apply in the Malaysian context, it is therefore necessary to conduct further probing based on the initial findings from the quantitative analysis. It is in the further probing stage that qualitative methods are more appropriate. Likewise, following up on Yusoff, et al’s (2006) finding that majority of AREDs are motivated by stakeholders’ concern, it is confirmed that stakeholder theory has much to offer in a study focused on the Malaysian context. The next section outlines the background to stakeholder theory and the model adopted in this study.

3. STAKEHOLDER THEORY: BACKGROUND AND MODEL

The term stakeholder is originally introduced by Stanford Research Institute (SRI) to refer to “those groups without whose support the organization would cease to exist” (Freeman 1983, 33). In developing stakeholder theory, Freeman (1983) introduces the stakeholder concept in two models: (1) a business planning and policy model; and (2) a corporate social

responsibility model of stakeholder management. In the first model, the focus is on developing and evaluating the approval of corporate strategic decisions by groups whose support is required for the firm's continued existence. The stakeholders identified in this model include the owners, customers, public groups and suppliers. Although these groups are not adversarial in nature, their possibly conflicting behavior is considered a constraint on the strategy developed by management to best match the firm's resources with the environment. In the second model, the corporate planning and analysis extends to include external influences which may be adversarial to the firm. These adversarial groups may include the regulatory bodies, environmentalist and/or special interest groups concerned with social issues. The second model enables managers to consider a strategic plan that is adaptable to changes in the social demands of non-traditional stakeholder groups.

Corporate environmental responsibility is one area in which much community awareness has developed given the increasing manifestations of the effects of global warming, deforestation, air, land and water pollution. As proposed by stakeholder theory, this increased level of environmental awareness creates the need for companies to include non-traditional stakeholders like the regulatory adversarial groups in their corporate plans to adapt to changing social demands. The literature hints that companies provide disclosures voluntarily for various reasons (Gray & Bebbington, 2001; Buhr, 2007), most of which could be related to satisfying various stakeholder groups including adversarial stakeholders. It is, therefore, not surprising to see a proliferation of studies in developed countries like the USA, Australia and elsewhere indicating a wide diversity on corporate social and environmental reporting practices (Guthrie & Parker 1990; Deegan & Rankin, 1996; Tilt & Symes 1999; Hughes, Anderson & Golden, 2001; Patten, 2002). Some provide inadequate environmental disclosures which showed no relationship with the firm's environmental performance (Wiseman, 1982; Fekrat, Inclan & Petroni, 1996) while others even showing a negative

association between environmental disclosures and environmental performance (Patten 1991, 1992, 2002; Hughes, Anderson & Golden 2001).

Ullmann (1985) argued that CSR models developed in prior studies are misspecified because the relationship between firm strategy and social responsibility decisions was not included in the empirical tests. Ullmann proposed that these data need to be analyzed from the context of theories, hence the title of his paper, “data in search of theory”.

3.1 Ullmann’s Three-Dimensional Stakeholder Model

Following the above contention, Ullmann promotes that firms use social disclosures as a means to manage their relationships with their stakeholders and the external environment. This is the basic tenet of stakeholder theory. He then develops a three-dimensional strategic framework consistent with the concept advanced in stakeholder theory by Freeman (1984).

Ullmann’s framework is useful to explain the correlations between social disclosures, social performance and economic performance. The first dimension, *stakeholder power*, explains that a firm will be responsive to the intensity of stakeholder demands. For example, when stakeholders control critical resources, the firm is likely to react in a way that satisfies their demands. The second dimension, *strategic posture*, describes the mode of response the firm is likely to take concerning social demands. Companies employing an active posture try to influence their firms’ status by continuously monitoring their position with stakeholders, for example, by initiating social responsibility programs as well as disclosing their commitment. The third dimension, *past and current economic performance*, determines the relative weight of a social demand and the attention it receives. This dimension is relevant because it is conceivable that firms suffering from poor profitability may place economic demands ahead of social demands.

3.2 Prior Studies Adopting Ullmann’s Model

Roberts (1992) tested Ullmann’s model to understand the determinants of corporate social responsibility (CSR) disclosure using a sample of 80 companies drawn from a

population of 130 major companies investigated in 1984, 1985 and 1986 by the Council of Economic Priorities (CEP) in the US. Roberts found that his “measures of stakeholder power, strategic posture and economic performance are significantly related to levels of corporate social disclosure” (Roberts, 1992 p. 595).

Although Ullmann’s model was initially used in CSR, at least two Australian studies used it in examining listed companies’ environmental disclosures (Chan & Kent, 2003) and environmental performance (Elijido-Ten, 2007). By analyzing the content of the 1995 annual reports, Chan and Kent regressed the quality and quantity of environmental disclosures against the variables chosen and found the two measures of strategic posture to be significant. Two measures of stakeholder power – shareholders and lobby groups – are also found to be significantly related to environmental disclosures. Their findings suggest that Australian firms’ strategy, i.e. strategic posture, is one of the main determinants of environmental disclosures. Elijido-Ten’s (2007) study, on the other hand, examine the extent to which such disclosures were related to corporate environmental performance by using an independent, third-party ranking system as a measure for the level of corporate environmental performance. Using ordinary least squares regression, she found environmental performance to be significantly associated with stakeholder power (shareholder and government power) and strategic posture but not with economic performance.

It is clear from prior studies reviewed in this section that: (1) Ullmann’s (1985) stakeholder model has so far only been adopted in developed economies (USA and Australia); and (2) that the analysis is limited to quantitative methods.

4. RESEARCH DESIGN AND HYPOTHESES DEVELOPMENT

To improve on prior research, this study is divided into Phase 1 and Phase 2 using both quantitative and qualitative methods of analysis, respectively. In the first phase, the application of stakeholder theory is operationalized using Ullmann’s (1985) three-dimensional

model. Phase 2 is designed to probe deeper into the issues highlighted from the quantitative analysis through the use of qualitative interviews.

4.1 Sample and Data Collection

In order to examine the motivations behind the voluntary provision of AREDs, it is important to focus on companies that provide environmental disclosures in their annual reports (ARs). All the 40 companies identified as disclosing entities in the ERMM Report (2002) are used as the sample in Phase 1 of this study. The Chief Executive Officers/Chief Financial Officers of these companies were contacted in early 2003 to request copies of ARs for the periods 2000 and 2001 and to solicit interests for a face-to-face interview. Hard copies of ARs not directly received from the companies contacted were downloaded from the KLSE website. The actual pooled data consists of 40 companies in the year 2000 but only 39 companies in 2001 (one company was delisted²).

There was considerable reluctance on the part of the targeted top executives to participate in face-to-face interviews. Only two top executives, representing four³ of the 40 disclosing companies, have conceded: one CEO from West Malaysia and one Managing Director from East Malaysia. Despite this limited number, it is necessary to take advantage of the opportunity to get first-hand information from these executives in support for the view that relying on even a single informant who is likely to be the most knowledgeable person would provide the most reliable source of information (Clulow, Gerstman & Barry, 2003; Day & Nedungadi, 1994). Hence, although it is a concern that top management interviews are limited in number, their extensive business knowledge is considered a vital source of relevant information as supported in the literature.

4.2 Phase 1: Hypotheses Development

In undertaking the quantitative phase of this study, hypotheses are developed drawn from the three-dimensional model introduced by Ullmann (1985).

4.2.1 Stakeholder Power

Ullmann (1985) proposed that a stakeholder's power in relation to the firm is a factor influencing disclosure. The model suggests that if the firm believes that its stakeholders are concerned with social and environmental issues, the firm will be more motivated to provide such disclosures. The hypothesis arising from this dimension states that:

Hypothesis 1: The power of the firm's stakeholders is associated with the quantity and quality of a firm's environmental disclosure.

From this hypothesis, it is necessary to identify the stakeholders. In line with the definition of stakeholders being "any group or individual who can affect or is affected by the accomplishment of that organization's goals" (Freeman 1984, p. 46), it follows that nearly everyone is considered a stakeholder of the firm. This broad definition does not provide useful means of analysis since it is not possible to examine all the stakeholders particularly in a single study. Given the limitation inherent in quantitative analysis, it is decided to limit the number of stakeholders to those who have the potential to exercise the strongest power on the firm. Consistent with Roberts (1992) and Elijido-Ten (2007), this study choose representative stakeholder groups namely: (1) the shareholders, being a substantial group of stakeholders which in most cases are the primary provider of capital; (2) the creditors, having the ability to provide economic power to the firm through debt provision; and (3) the government, having the ability to intervene via legislation and penalize companies damaging the environment. In line with the first dimension and consistent with Hypothesis 1, the following stakeholder-specific testable hypotheses are developed.

4.2.1.1 Shareholder Power (SP)

Prior studies (Christopher & Hassan, 1996; Craswell and Taylor, 1992; Frost, 1999) suggest that shareholder power (SP) may be measured by examining the degree of ownership concentration, e.g. the less the influence of the top 20 shareholders, the greater the likelihood that firms disclose more information given that ownership is more dispersed. It is also suggested (e.g. Mckinnon and Dalimunthe, 1993; Malone, Fries and Jones, 1993) that there is a positive relationship between the number of shareholders and disclosure practices in the

Annual Reports. These studies imply that wider ownership dispersion is associated with more and/or better disclosures. Hence, H1a states that:

H1a: Firms with high level of shareholder concentration are less likely to provide more and better quality environmental disclosures than firms with low level of shareholder concentration.

4.2.1.2 Creditor Power (CP)

The creditor power (CP) depends upon the degree to which the firm relies on debt financing (Roberts, 1992). Numerous studies suggest that the market considers the firm's environmental performance in its assessment of the firm's unbooked environmental liabilities which capital providers consider in their assessment of the firm's risk level (Barth & McNichols, 1994; Cormier & Magnan, 1997; Hughes, 2000; Clarkson, Li & Richardson, 2004). The implication is such that the more the firm relies on debt financing, the more likely it will provide more disclosures to be seen as a company with lower risk suggesting that:

H1b: Firms with high leverage (i.e. debt/equity ratio) are more likely to provide more and better quality environmental disclosures than less leveraged firms.

4.2.1.3 Government Power (GP)

The power of the government as a stakeholder is manifested in its enforcement mechanisms. Watts and Zimmerman (1978) argue that corporations use socially responsible activities to reduce the risk of governmental intrusions. Furthermore, the government can be viewed as a powerful stakeholder particularly in the Malaysian context which incorporates environmental considerations in their strategic vision. It is conceivable that companies belonging to environmentally sensitive industries (ESI) are likely to face more stringent government regulation as these firms are more likely to damage the environment through the use of hazardous substances and/or discharge hazardous wastes. Prior studies (Chan & Kent, 2003; Deegan & Gordon, 1996; Jaffar, Iskandar & Muhamad, 2002) provide evidence that ESI-firms provide more environmental disclosures possibly to deter government sanctions. The following hypothesis is therefore developed suggesting positive relationship:

H1c: Firms that belong to environmentally sensitive industries are more likely to provide more and/or better quality environmental disclosures than those in non-sensitive industries.

4.2.2 Strategic Posture

Strategic posture, the second dimension in Ullmann's model, pertains to the way an entity responds to social demands. A firm adopting a passive strategic posture makes no attempt to monitor and manage its relationship with its stakeholders. On the other hand, an active strategic posture implies continuous monitoring and management of the company's relationship with key stakeholders. Consequently, firms displaying active strategic posture are expected to disclose more environmental information, hence, H2 is developed.

Hypothesis 2: The strategic posture adopted by the firm is associated with the quantity and quality of environmental disclosures.

To generate testable hypotheses from this proposition, Chan and Kent (2003) use two proxies for strategic posture: (1) the recognition of social and environmental responsibility in the mission statement; and (2) the presence/absence of environmental committees. In relation to these proxies, it is argued that whilst some companies may incorporate environmental concern in their mission or vision statement, some may not do so. Some companies may disclose the existence of an environmental committee while others may not. Hence, it is decided that a better measure for environmental concern would be either the recognition of environmental responsibility in the mission/vision statement or the presence of an environmental committee or both.

Furthermore, the presence of environmental committee may not be sufficient to imply better strategic posture as some firms may outsource environmentally responsive activities (thus not having a committee of their own). A common certification process that recognizes environmental compliance is the ISO 14001: Environmental Management System. There is no mandatory requirement for firms to get ISO14001-certified but some companies choose to go through the rigorous certification process implying an active posture for environmental

compliance. In this regard, the two proxies for strategic posture chosen for this study are either: (1) the presence/absence of environmental committees and/or inclusion/exclusion of environmental concern in the corporate vision/mission statement; or (2) the presence/absence of ISO 14001 certification. Using these proxies, the following alternate hypotheses are stated:

4.2.2.1 Environmental Concern (EC)

H2a: Firms with environmental committees and/or environmental concern in their vision/mission statement are more likely to provide more and/or better quality environmental disclosures than those firms without such committees or concern.

4.2.2.2 ISO 14001 Certification (ISO)

H2b: Firms that are ISO 14001 certified are more likely to provide more and/or better quality environmental disclosures than firms that do not have such certification.

4.2.3 Economic Performance

The final dimension in Ullmann's model pertains to the economic performance of the firm. Although a market-based measure of economic performance can be used, the accounting-based measure is chosen as it has the advantage of being free from market perceptions on the future earnings ability of the firm (as opposed to past performance). A measure that has been commonly used in previous studies is the return on assets. Ullmann's third dimension is based on past and current economic performance of the firm, thus the Average Return on Assets (AROA) is used as a proxy. Given the substantial costs involved in becoming environmentally responsible, the economic performance of the firm is an important factor to consider in determining whether environmental issues will be on the priority list. Arguably, in periods of low economic performance, the firm's economic objectives will be given more attention than environmental concerns. Therefore, it is predicted that the economic performance of the firm is directly related to environmental disclosures. The third hypothesis is formed as follows:

Hypothesis 3: Firms with higher AROA are more likely to provide more and/or better quality environmental disclosure than firms with lower AROA.

Two ordinary least squares regressions are conducted: one for the dependent variable of quality (QLENDIS) and the other for quantity (QTENDIS) of AREDs. There are six independent variables - each corresponding to the hypotheses developed - namely: the shareholder power (SP); creditor power (CP); government power (GP) (measures of stakeholder power); environmental concern (EC) / ISO 14001 certification (ISO) (alternate measures of strategic posture); average return on assets (AROA) (a measure of economic performance); and two control variables – the log size of the firm in terms of average sales (LSIZ) and the firm’s age since incorporation (AGE).

Content analysis is used to analyze QLENDIS and QTENDIS. QLENDIS is evaluated by giving the greatest **score of 3** to *quantitative specific disclosures* related to each of the items in the Environmental Disclosure Index. A **score of 2** is assigned to *non-quantitative but specific information* and a **score of 1** is given to *general qualitative or vague comments* (in line with prior studies, eg Al-Tuwaijri et al 2004; Hughes et al 2001; Wiseman 1982). QTENDIS is measured using the number of sentences. In cases where tables or figures are provided, each figure and description is counted as one sentence.

4.3 Phase 2: Qualitative Interviewing Analytical Process

In the second phase, the aim is to seek answers and explanations to the questions raised from Phase 1 findings. This is done by conducting semi-structured qualitative interviews with top executives of the companies analyzed from Phase 1. *Qualitative interview* is used in this study to distinguish this method from the highly structured line of questioning normally used in survey research. According to Rubin and Rubin (2005 p. 4), “Qualitative interviews are conversations in which a researcher gently guides a conversational partner in an extended discussion... Unlike survey research...in qualitative interviews each conversation is unique.” Rubin and Rubin add further that qualitative interviewing is useful to understand experiences and to elicit reasons as to why particular actions are made. The exploratory nature

of this research necessitates a research method that can provide depth and detail which can only be achieved through actual conversations with the intended participants.

The analytical process for Phase 2 employs the techniques of question-by-question matrix and memoing⁴ complemented with thematic conceptual matrix/pattern matching⁵ to further enhance the analysis through a logical data reduction and display.

5. PHASE 1: RESULTS AND DISCUSSION

5.1 Quality and Quantity of Environmental Disclosures

Table 1 contains the summary of the category of related disclosures made in 2000 and 2001 tabulated by the number of companies disclosing in different parts of the Annual Report. The Chairman's Statement (CSTAT) is where a considerable number of companies provide AREDs. However, the most common place to find AREDs is in the Operations Review section and/or in Other sections (OR/O) like the vision/mission statement or in a separate section. Table 1 shows that majority of companies provide general disclosures (score of 1) with only 3 companies, providing quantitative information (score of 3). It is interesting to note that no one provided any information on *accrued liabilities/deferred tax provision relating to environmental expenditures, present litigation, potential litigation and estimated litigation cost / contingent liability* (categories 5, 7, 8 & 9).

TABLE 1 ABOUT HERE

The quantity of AREDs (see Table 2: Descriptive Statistics) range from 0 to 95 sentences with a mean (median) of 16.37 (9) sentences. The quality of AREDs, however, range from 0 to a maximum of 22 with a mean (median) of 6.58 (5). Overall, the quality of disclosure is low given that none of the companies provide disclosure on all 8 items in the Environmental Disclosure Index (EDI) in any part of the Annual Report. The maximum number a company could get for quality is 54 (or 57), i.e. 18 (or 19 including others) items multiplied by the maximum score of 3 if specific quantitative information is provided.

TABLE 2 ABOUT HERE

5.2 Descriptive Statistics

Descriptive statistics are shown in Table 2. Panel A shows the dependent variables and the independent continuous variables whilst Panel B has the indicator variables. Shareholder power (SP) has a minimum of 14.87%, maximum of almost 87% and a mean (median) of 58.88% (59.16%) indicating that majority of the firms in the sample have high ownership concentration. The creditor power (CP) has a wide range from a low of 2.47% to a high of 1031%. The median of 72.43% is probably a better representation rather than the mean of 127.83% which is too high because of an outlier, i.e. a company in the financial sector with more than 1000% debt to equity ratio. Despite this, it is clear that majority of the Malaysian disclosing companies are highly geared. The average return on assets (AROA) shows that half the companies in the sample have AROA of 5.72% and above with a mean return of 6.22%. The age of the firms (AGE) range from a minimum of 3 to a maximum of 51 years. Panel B shows that majority (about 80%) of the disclosing firms are in an environmentally sensitive industry ($GP = 1$), however, only about a third (34%) of these firms show environmental concern (EC) in their Vision/Mission Statement and/or have an environmental committee. The same percentage (34%) of firms have ISO 14001 certification. It is interesting to note, however, that not all ISO 14001 certified companies show environmental concern (EC).

5.3 Multivariate Results and Robustness Check

The results for the multivariate analysis are shown in Table 3. The first model with quality of environmental disclosures (QLENDIS) as the dependent variable explains about 24% of the variation in quality and is significant at $p < 0.0001$. The second model with quantity of environmental disclosures (QTENDIS) as the dependent variable explains about 19% and is significant at $p = 0.002$. Only hypotheses **H1c**, **H2a** and **H2b** are supported for both models. Both the **Government Power (GP - H1c)** and **Environmental Concern (EC - H2a)** are significant and positively associated with QLENDIS and QTENDIS at $p < .10$ and $p < .01$

respectively. *ISO 14001 (ISO - H2b)* is also significant and positively related with QLENDIS at $p < .05$ although the relationship is weaker at $p < .10$ for QTENDIS. This implies that EC is a better proxy for the firm's strategic posture. All the coefficients of the independent variables have the expected sign except for the economic performance measure, the average return on assets (AROA), which shows a negative sign (consistent with Smith et al, 2007) but is not significant. The result suggests that economic performance has no significant bearing on the level of AREDs provided. This finding is consistent with previous findings in other countries (Freedman and Jaggi, 2005; Hackston and Milne, 1996; Patten, 1991).

TABLE 3 ABOUT HERE

Roberts (1992, p. 599) suggests that a time lag between measures of the explanatory factors and disclosure is necessary mainly because of “the dynamic nature of strategic planning, the focus of stakeholder theory on meeting the long-term interests of stakeholders...[and] the fact that social disclosures relate primarily to past social responsibility activities.” Hence, to ensure the robustness of the results, multiple OLS regressions are recalculated using lagged values for the continuous variables. The OLS results using lagged values (not shown) are very similar to the original multivariate results.

5.4 Relevance of Phase 1 Findings

The findings from Phase 1 provide an impetus to ask further given that the results particularly in the *stakeholder power* dimension for shareholders and creditors showed insignificant relationships with both QLENDIS and QTENDIS. Hence, the usefulness of Phase 1 findings is not only based on the established significant relationships but also on the challenge to probe deeper into the possible explanations behind insignificant relationships. For example, some of the questions raised based on Phase 1 results include:

- *Does top management consider the stakeholders included in the model (i.e. the shareholders and creditors) in preparing the environmental disclosures in the Annual Report? From the management's point of view, are there other stakeholders interested in environmental matters and reporting?*

Although the results suggest that the two alternative proxies to strategic posture (EC and ISO) are both significantly related to environmental disclosures, it is clear from the results that ISO is weaker. Contrary to Sumiani, et al (2007), the result confirms that not all ISO 14001 certified companies provide environmental disclosures in their Annual Reports. This is despite the fact that ISO 14001 certification requires companies to make their environmental policy available to the public. Thus, further probing is needed to ascertain:

- ***Why don't all ISO-certified companies provide environmental policy disclosure in their Annual Reports? Is the Annual Report perceived by top management as an effective way of communicating their environmental concern/performance to their relevant stakeholders?***

Another curious finding from Phase 1 is the insignificant relationship between economic performance and environmental disclosures and the unexpected negative sign of its coefficient. It is therefore important to ask the top management the question:

- ***Whether they feel that providing environmental disclosures affect firm value/profitability?***

6. PHASE 2: RESULTS AND DISCUSSION

6.1 Stakeholder Power: AREDs and Stakeholder Demand

The respondents confirm that the most common reason for providing AREDs is the perceived general increase in environmental concern amongst the different stakeholders identified including the *customers* (particularly Western overseas customers), *media*, *non-government organizations (NGOs)* (mainly the environmentalists) and, to a small extent, *employees*. There is, however, no indication that this general increase is initiated or even shared by the *shareholders* and the *creditors* of the companies examined. Despite the shareholders' and creditors' apparent absence of interest on environmental matters, it is obvious that both groups of stakeholders are considered important when preparing AREDs particularly in the Malaysian setting. This is especially true for shareholders given that the second most common reason cited by the respondents relates to the issue of transparency:

*I think the firm belief [for providing AREDs] is the concept of transparency... Among the things that we adhere to is the concept of **people, planet and profit**. Of course, for **people, including our financiers** [shareholders and creditors], we have to explain to them what we are doing. (Int. 1)
We like to be **transparent to all our shareholders**... No point hiding something. We prefer that... they have better understanding so it's easier for us, the management. (Int. 2)*

The qualitative analysis offers some meaningful insights on the insignificant relationships between the **quality** and **quantity** of AREDs and the **shareholders** and **creditors** established in Phase 1. There is nothing in the interview transcripts that shows any indication on the management's perception that shareholders and creditors increase their concern for the environment. Therefore, it can only be inferred that although the shareholders and creditors are considered to be powerful stakeholders, it appears that they do not demand companies to provide AREDs. This explains the insignificant relationship established from the quantitative analysis.

Amongst the other reasons for providing AREDs offered by at least one of the respondents are: 1) demand from Western overseas customers; 2) enhanced employee confidence and commitment; 3) lower quality cost arising from enhanced customer confidence; 4) improvement of perceived risk level of the firm; and 5) calls to protect the environment both from the environmental groups and the media. The analysis confirms that the inclusion of other relevant stakeholders such as the *customers, employees, environmentalists* and the *media* could strengthen further analysis.

6.2 Strategic Posture: AREDs and ISO 14001 Certification

Although both measures of strategic posture show significant relationship with AREDs, ISO proves to be a weaker proxy for strategic posture. Thus further probing is needed to understand why Phase 1 findings show that not all ISO-certified companies provide an environmental policy in their Annual Report (AR) despite the fact that the certification process requires companies to make this information publicly available. This begs the question whether publicly listed companies find the AR as a useful way of communicating their environmental policies to their stakeholders and if they do, why don't all ISO-certified companies provide an environmental policy disclosure in their AR.

It is important to note that at the time the interviews are conducted, three of the four companies represented by the respondents in this phase are ISO-certified (represented by Int.1) while the fourth company is in the process of getting certified (represented by Int.2). Both respondents believe that the AR is an effective way of reaching stakeholders:

AR serves as general information because firstly, it is a requirement of the law. Second, it's a requirement to report to our shareholders...so rather than duplicating, we make sure that our AR encompass the other reporting that we want to do. [AR] is one effective way but we do have other means of reporting...since our stakeholders are also people who will introduce us to others, we might as well give them the information so as to enhance public relation... (Int. 1)

AR is one of the most common communication means... [It's] good for the management to tell the shareholders what we are doing... and where we are heading. That's why I think it's essential that these environmental issues should be reported in the AR... In our case, we communicate with the shareholders not only by AR which we only circulate once a year. (Int. 2)

Interviewee 2 goes on to clarify that because ARs are only circulated once a year, they intend to use other communication media once they get their ISO certification. Thus, while it is clear that the AR is considered a common communication medium that is also used as a public relation tool, both respondents suggest that there are other ways of reporting. Hence, this could be one possible reason why not all ISO-certified companies disclose their environmental policies in the AR. Both interviewees do not dismiss this as a possible explanation. Likewise, they believe that it will take time for Malaysian companies to embrace the practice of providing AREDs:

*I think it takes a bit of time for companies to be willing to report everything they do (Int. 1).
I think this is quite new in the corporate area so maybe it is overlooked (Int. 2).*

A major reason provided by both respondents is once again linked to industry sensitivity, that is, the extent to which the company's operation is involved with environmentally related activities.

*... among the reasons why some companies have not fully reported their environmental policy is because ...maybe this is a small part of their business... because we are in plantation industry so we feel that environmental matters are an integral part of environmental reporting... (Int. 1).
I believe for other companies, it is not considered a priority... but as you know that [our company] is in a resource-based industry...so we are very concerned about environmental issues ...if we don't, the government will make us... (Int. 2).*

These responses seem to suggest that whilst environmental policy reporting in the AR is a fairly new phenomenon in corporate Malaysia, the pressure inherent on those firms

involved in environmentally sensitive industries helps improve ARED proliferation. This reinforces further the quantitative findings from Phase 1, that is, the significant positive relationship between AREDs and GP.

6.3 Economic Performance: AREDs and Economic Value

The insignificant relationship between the economic performance (profitability measure) and AREDs including the unexpected negative sign of its coefficient is a curious finding from Phase 1. Hence it is important to obtain some insights from the top management of disclosing firms as to whether or not they believe that providing AREDs may affect firm value and profitability. Interviewee 1 believes that, in the short run, firm value may not necessarily be enhanced by ARED provision because there is still considerably low level of environmental awareness among the general public. There are, however, certain benefits emanating from voluntarily providing AREDs to boost the company's image as a caring firm:

Does [providing disclosures] mean the value of the firm will be enhanced? Yes and no but I think in the long-run, that is the plan... if you have been very transparent, then there will be less effort from other people to continue to look at your quality... that saves cost in terms of the products that we are giving, in terms of the networking with the people that we are dealing with. And also less hassle in terms of how we deal with the public... (Int. 1)

This explanation, although clearly stating the obvious, puts the emphasis on the long-term focus – one that does not necessarily guarantee that the provision of AREDs did or does translate to past or current profitability. Interviewee 2 agrees that ARED provision can not be directly associated with the profitability of the firm. When asked whether he believes that providing AREDs is good for profitability, he replies:

We can not interpret it directly like that... if we are seen to be environmentally conscious, then we will be more acceptable to more people... we will have a better position in the market. (Int. 2)

He further clarifies that although there may be times when sacrifices have to be made in the name of economic progress, it should not be done at the expense of destroying the environment if the firm's desire is to continue into the future.

... we are still a developing country... so if we want to progress, we have to sacrifice something. But we can not talk only about progress at the expense of destroying the whole environment... we also have to care for the environment because without it, we have no future. (Int. 2)

Thus, the recurring themes from Phase 2 suggest that although there may be less direct benefits arising from providing AREDs, the indirect benefits and overall benefits can be substantial and essential for the long-term existence of the firm. These findings offer valuable insights which partly explain why a significant relationship between the company's economic performance and AREDs is not established from Phase 1 findings. The respondents' reactions to suggestions of possible way forward are also sought and are now discussed next.

6.4 Possible Ways Forward

The respondents are asked whether they see the provision of third party assurance (e.g. environmental audits) as a possible way forward for AREDs. Reluctance on the grounds of extra cost is hinted by Interviewee 2 as he explains that "at the end of the day, we count dollars and cents". Interviewee 1 seems to support this voluntary company initiative as he emphasizes that the companies, themselves, must want to become part of a caring society and be willing to discuss the environmental concerns while considering the views of other parties. Both interviewees, however, believe that for Malaysian companies to actually show their concern for the environment, the demand must come from their powerful stakeholders. For example, despite the reluctance shown by Interviewee 2 in procuring costly environmental audits, his company shows no hesitation in engaging a London-based certification body to audit the system when environmentalists raise their concern to the firm's major customers.

...these greenies in UK (who influenced our overseas customers) are talking about illegal logging... So we volunteer to ask a third party called Tropical Timber Trust to come to us and audit our logs supply system... in the end, they found out that all our logs came from legal sources... (Int. 2)

Likewise, although Interviewee 1 argues that Malaysian companies must want to become part of the solution, he also concedes that it is the demand from customers which drive some companies to engage with an active strategic posture such as getting ISO 14001 certification as described in this quote:

Some of them [companies] would have done it [get ISO14001 certification] ONLY because they really wanted to have the customer.... if the major customer of one product requires ISO14001 certification, they'll just get certification for that product and say that they already comply... (Int. 1)

Hence, it is clear that, although it would be ideal for companies to take the initiative in promoting sustainability and environmentalism, the reality is that companies are only likely to take this matter seriously if there is a demand from their valued stakeholders, in this case, the customers. This is a confirmation that the basic premise of stakeholder theory is applicable and has much to offer in our understanding of the motives behind voluntary ARED practice in the developing economy of Malaysia.

7. SUMMARY AND CONCLUSION

In examining the motivations behind Malaysian companies' voluntary provision of Annual Report Environmental Disclosures (AREDS), this research contributes to the existing literature by extending the use of stakeholder theory to environmental reporting from the context of a developing country through the use of both quantitative and qualitative methods.

The adoption of stakeholder theory in this study is motivated by international and Malaysian studies highlighting the importance of stakeholder involvement in the reporting process. The developing country of Malaysia is chosen as the focus in this investigation because of its inherent background in terms of its strategic vision, economic development and non-transparent regulatory setting. Consistent with Malaysia's rapid economic development and its quest to achieve the developed nation status by 2020, the government has intensified the incorporation of environmental considerations in its current policy framework starting with the Eighth Plan (2001-2005) and through to the Ninth Plan (2006-2010) when the emphasis has shifted on preventive measures to mitigate negative environmental effects at source and to foster closer cooperation with stakeholders to address environmental concerns (EPU, 2006). Despite this government initiative, environmental reporting in Malaysia is still non-mandatory and corporate environmental performance data are largely kept confidential. This setting is most suitable for a study adopting stakeholder theory as it provides a rich source of information on how companies could use voluntary environmental disclosures to manage their relevant stakeholders. The insights gathered from this investigation may be

useful to the report providers, the report users and the regulators as it offers a case study of the interplay between company management and the various stakeholders.

This study is conducted in two phases which enable the use of mixed methods in the analysis. Using Ullmann's (1985) three-dimensional model of *stakeholder power*, *strategic posture* and *economic performance*, the first phase is operationalized through the use of multiple ordinary least regressions. While quantitative analysis is useful in establishing relationships through the use of 'hard data', it is important to acknowledge that the results are subject to several limitations such as the constraint on the choice of stakeholders and proxies used in addition to the constraint on the sample used.

The quantitative findings in Phase 1 confirm that the *strategic posture* adopted by the firm's top management is indeed a main determinant of the quality and quantity of Annual Report Environmental Disclosures (AREDs). Of the three stakeholders represented in the *stakeholder power*, only one is found to have significant relationship with both the quality and quantity of AREDs, that is, the government's power (GP) to sanction companies particularly in the environmentally-sensitive industry. The *economic performance* of the firm is not found to be significantly related to AREDs. Table 4, Panel A provides a summary of Phase 1 key findings.

TABLE 4 ABOUT HERE

At first glance, these results can be easily misinterpreted to suggest that the stakeholder model replicated from developed-country studies like the US (Roberts 1992) and Australia (Chan & Kent 2003; Elijido-Ten 2007) is not effective in the Malaysian setting. However, the insignificant relationships, for example, between the independent variables of shareholder power (SP) and creditor power (CP) (both measures of *stakeholder power*) against the AREDs, provide an impetus to ask further questions in order to gain insights on the perceived motivations behind environmental reporting. Therefore, the usefulness of the findings in Phase 1 is not only based on the established significant relationships but also on

the opportunity to probe deeper into the possible explanations behind the insignificant relationships discovered. Consequently, it is concluded that although it is useful to adopt a model used in developed countries, it is important to ensure that its interpretation considers the specific context of the country being examined. This is achieved through further probing in Phase 2.

Phase 2 uncovers the motivations behind the provision of AREDs which are related to the central premise of stakeholder theory. The main findings, summarized in Table 4 Panel B, provide explanations to the questions raised in Phase 1. For example, the reason why there is no significant relationship between shareholders/creditors and the quality and quantity of AREDs is because there is no evidence to prove that these stakeholders demand such disclosures. The analysis also confirms that while top management believes that AREDs can indirectly enhance firm value, its effect is not immediate given the perceived low level of environmental awareness among the Malaysian public. Other stakeholders identified as interested with environmental matters and reporting include Western overseas customers, employees, environmentalists and the media.

The conclusion drawn is that, the top managements' conviction to adopt and disclose environmentally-friendly practices is very much related to the demand from various stakeholders, not all of which are represented in the quantitative model used in Phase 1. Hence, a stakeholder model that accommodates the analysis of both quantitative and qualitative information is more effective in examining voluntary environmental disclosures.

Although a common constraint in in-depth qualitative studies is the issue of generalizability (given its limited number), it is important to reiterate that the results presented can only be generalized within similar contexts. Furthermore, understanding an abstract concept such as the managements' motivation to provide AREDs is best captured through an in-depth study only afforded by qualitative means.

REFERENCES:

- Ahmad, Z., Hassan, S., and Mohammad, J. (2003). Determinants of environmental reporting in Malaysia. *International Journal of Business Studies*, 11:1, 69-90.
- Ahmad, N. N., and Sulaiman, M. (2004). Environmental disclosures in Malaysian annual reports: A legitimacy theory perspective. *International Journal of Commerce and Management*, 14:1, 44-58.
- Andrew, B. H., Gul, F., Guthrie, J. E., and Teoh, H. Y. (1989). A note on corporate social disclosure practices in developing countries: The case of Malaysia and Singapore. *British Accounting Review*, 21:2, 371-376.
- Al-Tuwaijri, S.A., Christensen, T.E., and Hughes, K.E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, Organizations and Society*, 29:5-6, 447-471.
- Barth, M.E., and McNichols, M.F. (1994). Estimation and market valuation of environmental liabilities relating to superfund sites. *Journal of Accounting Research* (Supp), 177-209.
- Buhr, N. (2002). A structuration view on the initiation of environmental reports. *Critical Perspectives on Accounting*, 13, 17-38
- Buhr, N. (2007). Histories of and rationales for sustainability reporting. In: J. Unerman, J. Bebbington, and B. O'Dwyer (Eds.), *Sustainability Accounting and Accountability* (pp. 57-69). London: Routledge.
- Chan, C., and Kent, P. (2003). Application of stakeholder theory to the quantity and quality of Australian voluntary corporate environmental disclosures. *Paper presented to Accounting and Finance Association of Australia and New Zealand (AFAANZ)*, July, Brisbane.
- Christopher, T. & Hassan, S. (1996) "Determinants of voluntary cash flow reporting: Australian evidence", *Accounting Research Journal*, 19, 113-124.
- Clarkson, P., Li, Y., and Richardson, G. (2004). The market valuation of environmental capital expenditures by pulp and paper companies. *The Accounting Review*, 79:2, 329-353.
- Clulow, V., Gerstman, J., and Barry, C. (2003). The resource-based view and sustainable competitive advantage: The case of a financial services firm. *Journal of European Industrial Training*, 27:5, 220-232.
- Cormier, D., and Magnan, M. (1997). Investors' assessment of implicit environmental liabilities: An empirical investigation. *Journal of Accounting and Public Policy*, 16, 215-241.
- Craswell, A.T., and Taylor, S.L. (1992). Discretionary disclosure by oil and gas companies: An economic analysis. *Journal of Business Finance and Accounting*, 19, 296-308.
- Day, G. S., and Nedungadi, P. (1994). Managerial representations of competitive advantage. *Journal of Marketing*, 58: April, 31-44.
- Deegan, C., and Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, 26:3, 187-199.
- Deegan, C., and Rankin, M. (1996). Do Australian companies report environmental news objectively? An analysis of environmental disclosures by firms prosecuted successfully by the Environmental Protection Authority. *Accounting, Auditing and Accountability Journal*, 9:2, 50-67.
- Deegan, C., and Rankin, M. (1997). The materiality of environmental information to users of annual reports. *Accounting, Auditing and Accountability Journal*, 10:4, 562-583.
- Economic Planning Unit (EPU) (2006). *Ninth Malaysia Plan*, Prime Minister Dpt., Putrajaya.
- Elijido-Ten, E. O. (2007). Applying stakeholder theory to analyze corporate environmental performance: Evidence from Australian listed companies. *Asian Review of Accounting*, 15:2, 164-184.
- Environmental Resources Management Malaysia (ERMM) (2002). *The State Of Corporate Environmental Reporting In Malaysia*. The Association of Chartered Certified Accountants, Certified Accountants Educational Trust, London.
- Ernst and Young (2002). *Corporate Social Responsibility: A Survey of Global Companies*. Ernst & Young, Environmental and Sustainability Services Group, Australia.
- Fekrat, A.M., Inclan, C., and Petroni, D. (1996). Corporate environmental disclosures: Competitive disclosure hypothesis using 1991 annual report data. *The International Journal of Accounting*, 31:2, 175-195.
- Freedman, M., and Stagliano, A.J. (1995). Disclosure of environmental cleanup costs: The impact of Superfund Act. *Advances in Public Interest Accounting*, 6, 163-176.
- Freedman, M., and Jaggi, B. (1996). Association between environmental performance and environmental disclosures: An assessment. *Advances in Accounting*, 14, 161.
- Freedman, M., and Jaggi, B. (2005). Global warming, commitment to the Kyoto protocol, and accounting disclosures by the largest global public firms from polluting industries. *The International Journal of Accounting*, 40, 215-232.
- Freeman, R. (1983). Strategic management: A stakeholder approach, *Advances in Strategic Management*, 1, 31-60.
- Freeman, R. (1984). *Strategic Management: A Stakeholder Approach*, Marshall: Pitman.
- Frost, G. R. (1999). Environmental reporting: An analysis of company annual reports of the Australian extractive industries 1985-1994. *Unpublished Doctor of Philosophy Thesis*, University of New England, Armidale, NSW.
- Gray, R., and Bebbington, J. (2001). *Accounting for the Environment* (2nd edition), Sage Publications, London.

- Guthrie, J., and Parker, L (1989). Corporate social reporting: A rebuttal of legitimacy. *Accounting and Business Research*, 19:6, 343-352.
- Guthrie, J., and Parker, L. (1990). Corporate social disclosure practice: A comparative international analysis. *Advances in Public Interest Accounting*, 3, 159-175.
- Hackston, D., and Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing and Accountability Journal*, 9:1, 77-108.
- Hughes, K. E. (2000). The value relevance of nonfinancial measures of air pollution in the electric utility industry. *The Accounting Review*, (April): 209-228.
- Hughes, S.B., Anderson, A., and Golden, S. (2001). Corporate environmental disclosures: are they useful in determining environmental performance. *Journal of Accounting and Public Policy*, 3:20, 217-240.
- Jaffar, R., Iskandar, T.M. and Muhamad, J. (2002). An investigation of environmental disclosures in Malaysia. *Paper presented in the Accounting Association of Australia and New Zealand (AAANZ)*, Perth, Australia.
- KPMG (2005). *KPMG International Survey of Corporate Responsibility Reporting 2005*, KPMG International, USA.
- Malone, D., Fries, C., and Jones, T. (1993). An empirical investigation of the extent of corporate financial disclosure in the oil and gas industry. *Journal of Accounting, Auditing and Finance*, 8, 249-273.
- McKinnon, J.L., and Dalimunthe, L. (1993). Voluntary disclosure of segment information by Australian diversified companies. *Accounting and Finance*, 33:1, 33-50.
- Miles, M.B., and Huberman A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd edn) Thousand Oaks, California: Sage Publications.
- Patten, D.M. (1991). Exposure, legitimacy and social disclosure. *Journal of Accounting Public Policy*, 10:1, 297-308.
- Patten, D.M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. *Accounting, Organizations and Society*, 17:5, 471-475.
- Patten, D.M. (2002). The relation between environmental performance and environmental disclosure: A research note. *Accounting Organizations and Society*, 27, 763-773.
- Rashid, Z.A., and Ibrahim, S. (2002). Executive and management attitudes towards corporate social responsibility in Malaysia. *Corporate Governance*, 2:4, 10-16.
- Roberts, R.W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society*, 17:6, 595-612.
- Rockness, J. (1985). An assessment of the relationship between US corporate environmental performance and disclosure. *Journal of Business Finance and Accounting*, 12:3, 339-354.
- Rubin, H.J., and Rubin, I.S. (2005). *Qualitative Interviewing: The Art of Hearing Data* (2nd edn) Thousand Oaks, California: Sage Publications.
- Smith, M., Yahya, K., and Amiruddin, A.M. (2007). Environmental disclosure and performance reporting in Malaysia. *Asian Review of Accounting*, 15:2, 185-199.
- Sumiani, Y., Haslinda, Y., and Lehman, G. (2007). Environmental reporting in a developing country: A case study on status and implementation in Malaysia. *Journal of Cleaner Production*, 15:10, 895-901.
- Teoh, H. Y., and Thong, G. (1984). Another look at corporate social responsibility and reporting: an empirical study in a developing country. *Accounting, Organizations and Society*, 9:2, 189-206.
- Thompson, P., and Zakaria, Z. (2004). Corporate social responsibility reporting in Malaysia: Progress and prospects. *Journal of Corporate Citizenship*, 13, 125-136.
- Tilt, C.A., and Symes, C.F. (1999). Environmental disclosure by Australian mining companies: environmental conscience or commercial reality. *Accounting Forum*, 23:2, 137-154.
- Ullmann, A. (1985). Data in search of a theory: A critical examination of the relationship among social performance, social disclosure and economic performance. *Academy of Management Review*, 10:3, 540-577.
- Unerman, J. (2007). Stakeholder engagement and dialogue. In: J. Unerman, J. Bebbington, and B. O'Dwyer (Eds.), *Sustainability Accounting and Accountability* (pp. 86-103). London: Routledge.
- Watts, R., and Zimmerman, J. (1978). Towards a positive theory of the determination of accounting standards. *Accounting Review*, January, 112-134.
- Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, 7:1, 53-63.
- Yin, R.K. (1994). *Case Study Research Design and Methods*, (Applied Social Research Methods Series, Vol. 5), Sage Publications, Newbury Park, California.
- Yusoff, H., Lehman, G., and Nasir, N. M. (2006). Environmental engagements through the lens of disclosure practices: A Malaysian story. *Asian Review of Accounting*, 14:1/2, 122-148.

Table 1: Environmental Disclosure Ratings Summary According to Location of Disclosures in Annual Report for 2000-2001

Categories and Items of Information	NUMBER OF COMPANIES DISCLOSING WITH THE																	
	SCORE=3				SCORE=2				SCORE=1									
	FS/N		CSTAT		OR/O		FS/N		CSTAT		OR/O		FS/N		CSTAT		OR/O	
	'00	'01	'00	'01	'00	'01	'00	'01	'00	'01	'00	'01	'00	'01	'00	'01	'00	'01
<i>ECONOMIC FACTORS</i>																		
1.Past/current expenditures: environmental equipment, facilities and remediation					1	2					4	1			4	3	5	8
2.Past/current operating costs: environmental equipment, facilities and remediation	1	1	1		1	2					2	2			4	2	5	9
3.Future expenditures: environmental equipment, facilities and remediation					2	1									2	3	3	6
4.Future operating costs: environmental equipment, facilities and remediation															2		5	2
5.Accrued liabilities/ Deferred tax provision relating to environmental expenditures																		
6.Restructuring, shutdown and/or plant closing due to environmental concerns																		1
<i>LITIGATION</i>																		
7.Present litigation																		
8.Potential litigation																		
9.Estimated cost / Contingent liability																		
<i>POLLUTION ABATEMENT</i>																		
10.Pollution abatement											5	5			4	2	6	9
11.Emission and discharge information					2	2			1			1				1	4	2
12.Compliance status of facilities					1	1					4	5			9	8	11	15
<i>OTHER ENVIRONMENTALLY-RELATED INFORMATION</i>																		
13.Discussion of regulations and requirements											2	2			2	1	2	3
14.Policies or concern for the environment									1	1	9	10		1	15	12	14	18
15.Conservation of natural resources					3	2			1		4	5			8	3	7	9
16.Awards for environmental protection																1	2	5
17.Recycling					2	1			1		3	3			1	1	5	13
18.Department/committee/offices for pollution control															2	2	5	6
19.Other environmentally friendly products and/or activities									1		4	4			2	2		3

FS/N = Financial Statements and Notes to Accounts
 ## CSTAT = Chairman's Statement
 ### OR/O = Operations Review and Others

Table 2: Descriptive Statistics

Panel A: Continuous Variables						
Variable	Variable Description	Minimum	Maximum	Mean	Median	Standard Deviation
QLENDIS	Quality of Environmental Disclosure: Total score for quality of environmental disclosure for firm <i>i</i> at period <i>t</i> ;	0.00	22.00	6.58	5.00	5.92
QTENDIS	Quantity of Environmental Disclosure: Total quantity of environmental disclosure (number of sentences) for firm <i>i</i> at period <i>t</i>	0.00	95.00	16.37	9.00	20.37
SP	Shareholder Power: Percentage of ownership of firm <i>i</i> held by shareholders holding 5% or more of firm <i>i</i> at period <i>t</i>	14.87	86.59	58.88	59.16	18.61
CP	Creditor Power: Average debt to equity ratio of firm <i>i</i> at period <i>t</i>	2.47	1031.24	127.83	72.43	191.13
AROA	Average Return on Assets of firm <i>i</i> at period <i>t</i>	-10.32	21.09	6.22	5.72	5.26
LSIZ	Log Size: Natural log of average sales revenues of firm <i>i</i> at period <i>t</i> ;	7.51	10.15	8.86	8.77	0.59
AGE	Age: Number of years since incorporation of firm <i>i</i> at period <i>t</i>	3.00	51.00	25.46	28.00	12.18
Panel B: Indicator Variables						
Variable	Variable Description	Number of Firms with 1	(%)	Number of Firms with 0	(%)	
GP	Government Power: 1 for firms in environmentally sensitive industry; 0 otherwise	63	79.75	16	20.25	
EC	Environmental Concern: 1 for firms with environmental committee and/or includes environmental concern in Mission/Vision statement; 0 otherwise	27	34.18	52	65.82	
ISO	ISO 14001 Certification: 1for firms with ISO 14001 certification as of 2001; 0 otherwise	27	34.18	52	65.82	

Table 3: OLS Results for Quality and Quantity of Disclosure

Panel A: Quality of Environmental Disclosure- Full sample: 2000-2001 (N=79)

$$QLENDIS_{it} = \beta_0 + \beta_1 SP_{it} + \beta_2 CP_{it} + \beta_3 GP_{it} + \beta_4 EC_{it} / ISO_{it} + \beta_5 AROA_{it} + \beta_6 LSIZ_{it} + \beta_7 AGE_{it} + e_t$$

Variable	B_0	SP	CP	GP	EC / ISO	AROA	LSIZ	AGE	
coefficient	-0.908	-0.029	0.0023	2.9973	5.6152	3.153	-0.122	0.4569	0.0503
<i>t</i> -statistic	-0.095	-0.845	0.643	1.781*	4.298***	2.094**	-1.03	0.418	0.997
Adj. R ²	0.237	F	4.465	Sig.	0.000				

Panel B: Quantity of Environmental Disclosure- Full sample: 2000-2001 (N=79)

$$QTENDIS_{it} = \beta_0 + \beta_1 SP_{it} + \beta_2 CP_{it} + \beta_3 GP_{it} + \beta_4 EC_{it} / ISO_{it} + \beta_5 AROA_{it} + \beta_6 LSIZ_{it} + \beta_7 AGE_{it} + e_t$$

Variable	B_0	SP	CP	GP	EC / ISO	AROA	LSIZ	AGE	
coefficient	-24.998	-0.101	0.016	10.408	17.996	8.924	-0.0461	3.0198	0.1712
<i>t</i> -statistic	-0.738	-0.843	1.266	1.743*	3.882***	1.686*	-0.11	0.778	0.957
Adj. R ²	0.1884	F	3.5858	Sig.	0.0023				

*** Significant at the 1% level;

** Significant at the 5% level;

*Significant at the 10% level

<i>Where:</i>	
QLENDIS (quality)	total quality score of environmental disclosure for firm <i>i</i> at period <i>t</i> ;
QTENDIS (quantity)	total quantity score of environmental disclosure for firm <i>i</i> at period <i>t</i>
β_0	Intercept
SP (shareholder power)	% of ownership by shareholders holding 5% or more of total shareholding for firm <i>i</i> at period <i>t</i> ;
CP (creditor power)	average debt to asset ratio of firm <i>i</i> at period <i>t</i> ;
GP (government power)	1 for firms in environmentally sensitive industry; 0 otherwise;
EC (environmental concern)	1 for firms with environmental committee and/or includes environmental concern in Mission/Vision statement; 0 otherwise
ISO (ISO 14001 certification)	1 for firms with ISO 14001 certification as of 2001; 0 otherwise
AROA (ave. return on assets)	average return on assets of firm <i>i</i> at period <i>t</i> ;
LSIZ	Natural log of average sales revenues of firm <i>i</i> at period <i>t</i> ;
AGE	age since incorporation of firm <i>i</i> at period <i>t</i> ; and
<i>E</i>	error term

Table 4: Summary of Key Findings

Panel A: Phase 1 Hypotheses and Findings		
Legend: H1 - Stakeholder Power; H2 - Strategic Posture; H3 - Economic Performance <i>*Note that H2a and H2b are alternative dependent variables.</i>	Dependent Variable	Supported/ Not Supported
<i>H1a: Firms with high level of shareholder concentration are less likely to provide more and better quality environmental disclosures than firms with low level of shareholder concentration.</i>	Shareholder Power (SP)	Not Supported
<i>H1b: Firms with high leverage (i.e. debt/equity ratio) are more likely to provide more and better quality environmental disclosures than less leveraged firms.</i>	Creditor Power (CP)	Not Supported
<i>H1c: Firms that belong to environmentally sensitive industries are more likely to provide more and better quality environmental disclosures than those in non-sensitive industries.</i>	Government Power (GP)	Supported
<i>*H2a: Firms with environmental committees and/or environmental concern in their vision/mission statement are more likely to provide more and better quality environmental disclosures than those firms without such committees or concern.</i>	Environmental Concern (EC)	Supported
<i>*H2b: Firms that are ISO 14001 certified are more likely to provide more and better quality environmental disclosures than firms that do not have such certification.</i>	ISO 14001 certification	Supported
<i>H3: Firms with higher AROA are more likely to provide more and better quality environmental disclosure than firms with lower AROA.</i>	Ave. ROA (AROA)	Not Supported
Panel B: Phase 1 Questions and Phase 2 Findings		
Questions from Phase 1 Findings	Phase 2(a) Questions & Key Findings	
Stakeholder Power: <ul style="list-style-type: none"> ■ Are <i>shareholders</i> and <i>creditors</i> considered in the preparation of Annual Report environmental disclosures (AREDS)? ■ Are there <i>other stakeholders</i> interested with environmental matters and reporting? 	Providing ARED <ul style="list-style-type: none"> ■ YES. <i>Shareholders</i> and <i>creditors</i> are considered in preparing AREDS but no evidence of ARED demand from both stakeholders is evident. ■ YES. Among those mentioned are the <i>customers, employees, NGO/greenies, media.</i> 	
Strategic Posture: <ul style="list-style-type: none"> ■ Why don't all ISO-certified companies provide environmental policy disclosure in their Annual Reports? ■ Is AR perceived as an effective way of communicating environmental performance and concern to relevant stakeholders? 	ISO 14001 Policy and ARED: <ul style="list-style-type: none"> ■ It will take time before Malaysian companies embrace the idea of reporting but pressure on ESI-companies will improve AREDS. ■ YES. AR is perceived as an effective way by both respondents but there are other ways of communication. 	
Economic Value: <ul style="list-style-type: none"> ■ Does the provision of AREDS enhance firm value? 	<ul style="list-style-type: none"> ■ Both respondents agree that AREDS can enhance firm value but more indirectly rather than directly and is necessary for long-term focus. 	

¹ Malaysia's rapid growth since the 1960's is described by the then Prime Minister Dr. Mahathir Mohamad's Vision 2020: The Way Forward working paper: "In the 1960s, we grew by an annual average of 5.1%; in the 1970s... Malaysia grew by an average of 7.8%; in the 1980s, because of the recession years, we grew by an annual average of 5.9 per cent... If we take the last twenty years, we grew by an annual average of 6.9 per cent. (Wawasan 2020, cited on 19/7/06).

² Whilst ERMM indicated that there were forty disclosing companies in 2001, the study actually used some 2000 Annual Reports to represent 2001 since their cut-off date was the third quarter of 2001 (p. 18).

³ One of the two top executives interviewed is the Group CEO of a big plantation company in West Malaysia. He is also the Chairman of the Board of two other disclosing companies included in Phase 1.

⁴ *Memoing* is a data reduction analytical technique that allows the researcher to write 'memos' to self summarising the responses provided. Memos also help the researcher to identify recurring themes and to 'tie together different pieces of data into a recognisable cluster...' (Miles & Huberman 1994, p. 72).

⁵ Miles and Huberman (1994, p. 127) describe that a *conceptually clustered matrix* has its rows and columns arranged to bring together items that "belong together." The basic principle, however, is conceptual coherence. This analysis technique is similar to what Yin (1994) suggests as 'pattern-matching'.