

An Investigation of the Association between Corporate Governance and Environmental Reporting in Malaysia

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Abstract

Environmental problems have become major headlines due to the negative effects they bring to the stability of the ecosystem. Thus, the increased awareness of social responsibility or, specifically, environmental concern is now a challenge facing the corporate world. This study tests whether the independence of Boards of Directors, CEO duality, management ownership and board size have any association with the companies' decision to disclose environmental information in annual reports. The data is based on a content analysis of the annual reports of 243 companies listed on the Main Board of Bursa Malaysia for the year 2005. The findings reveal that only board size has a significant relationship with environmental reporting.

Keywords: Corporate Governance, Environmental Reporting, Legitimacy Theory, Malaysian Public Listed Companies, Stakeholder Theory
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1. Introduction

Various studies on corporate social reporting and environmental reporting have been conducted in industrialized countries (see for example Gray *et al.* 1995; Deegan and Gordon, 1996; Hackston and Milne, 1996; Adams, 2002; Cormier and Magnan, 2003, 2007; Cho and Patten, 2007). In Malaysia, despite a recent phenomenon, it shows an increasing trend (see for example Zauwiyah *et al.*, 2003; Nik Nazli and Maliah, 2004; Romlah and Sharifah, 2004; Sumiani *et al.*, 2006; Amran and Devi, 2008).

The idea of this study is to link company's internal characteristics and tendency to report environmental information in the annual report. This is based on the claim by Adams (2000), who says there are three factors that can influence corporate social reporting, namely, corporate characteristics, general contextual factors and the internal context. Despite this possible link, there are limited studies examining corporate governance and corporate social reporting except Halme and Huse (1997) and Haniffa and Cooke (2005).

Therefore, this study attempts to achieve the following broad objectives:

- (1) To examine the existence of environmental reporting among Malaysian companies.
- (2) To identify any associations between selected corporate governance characteristics and the existence of environmental reporting.

This study is significant for three important reasons. First, it contributes to the literature by providing the recent state of environmental reporting practices in Malaysia. With so much effort on the part of the government and various non-profit organisations, perhaps we can observe the difference in the reporting practices in comparison with previous studies. Additionally, since the study incorporates the issue of corporate governance, it will be among the first attempts internationally to associate governance practices and the inclination to report on the environment. Second, the findings will impart the essentials of integrating environmental considerations to the investors' community in their decision making process. As for practitioners, this scenario will perhaps become a challenge to them to be more environmentally responsible in the future as more people value such a noble attribute. Finally, for policy makers, this research will provide indispensable evidence on the necessity of revisiting the existing standards and regulations. For instance, the Malaysian Institute of Corporate Governance (MICG) may need to reinstate the importance of environmental performance in its governance code, and, perhaps, it is very timely for the Malaysian Accounting Standards Board (MASB) to introduce specific standards on environmental accounting.

The remaining parts of the paper are organised as follows: Section 2.0 provides the literature review and institutional background. Section 3.0 discusses the theoretical framework of the paper and the development of the hypotheses. Section 4.0 describes the sample selection and methodology before Section 5.0 presents the findings and analysis. Finally, Section 6.0 concludes the paper.

2. Literature Review

2.1. Environmental Reporting in Malaysia

Environmental reporting in Malaysia has only emerged in the last decade or so. However, several reporting recommendations and guidelines, with direct and indirect reference to environmental information have been issued. These include the financial reporting standards (FRSs) by the Malaysian Accounting Standards Board (MASB), the Malaysian Code on Corporate Governance (MCCG), and the Association of Chartered Certified Accountant's (ACCA) Environmental Reporting Guidelines. Paragraph 10 of FRS 101 – *Presentation of Financial Statements* encourages business entities to prepare environmental reports to supplement the financial statements. Meanwhile, Paragraph XVII of the MCCG suggests that the board of directors seek and assess information that goes beyond financial performance of the company, including environmental performance. Moreover, the ACCA with the collaboration of the Malaysian Department of Environment (DOE) published the “Environmental Reporting Guidelines for Malaysian Companies” in March, 2003. This explains what environmental reporting is and provides an overview of its evolution over the last 12 years. In a recent development, Bursa Malaysia introduced the Corporate Social Responsibility (CSR) Framework for Malaysian public listed companies in 2006. The framework, which includes the environment, serves as a guide for companies to be more socially responsible and also to report their social performance in their annual reports.

Previous studies on the practice of environmental reporting in developing countries are still few and the findings show mixed results. This may be due to the absence of mandatory environmental reporting standards. In the case of Malaysia the findings from the previous study of Romlah et. al. (2002), show that environmental information is not well published in the annual reports of Malaysian companies. The findings also indicate that company size can influence the quantity of environmental information but cannot influence the quality of reporting. In accordance with Romlah et. al. (2002), Nik Nazli (2004) and Sumiani et. al. (2006) suggest that the level of current environmental reporting in Malaysia appears to be low and restricted to very general, ad-hoc statements on environmental matters. The information reported also lacks uniformity and has very little information value. In fact, the study on Malaysian ISO accredited companies

annual reports revealed that the environmental information reported is only in general or in qualitative terms (Sumiani et. al. 2006).

A few factors have been identified as the reasons why companies disclose environmental information. For instance, Zauwiyah et. al. (2003) indicates that the decision to disclose environmental issues in the annual report is a strategy to mitigate the political and contracting costs potentially associated with the firms. According to Cho and Patten (2007), the findings of their study evidenced that the companies do appear to use financial report environmental disclosure as a tool of legitimacy. In this case the nature of legitimacy was isolated by focusing on non-litigation-related environmental information and differentiating between monetary and non-monetary environmental disclosure. Meanwhile, Sumiani et. al (2006) indicated that most ISO companies believe that environmental disclosure can improve their corporate image. Similarly, the study by Romlah and Sharifah (2004) revealed that building a good corporate image is also one of the important factors that influence companies to disclose environmental information. The Malaysian government itself is really concerned with inculcating a corporate social reporting culture in companies that work closely with the government. Even though it was not specifically mentioned in reference to environmental issues the motivation for that action is attributable to the government's desire to enhance its image as a model for other developing countries (Amran and Devi, 2008).

2.2. Corporate Governance in Malaysia

In Malaysia, the corporate governance issue has become an important topic following the 1997 Asian financial crisis (Shamsul Nahar, 2001). Issues concerning the role and function of regulators and the need for improved disclosure and good corporate governance are among the issues that most generate analysis and debate by the public. This occurred since the crisis brought to the foreground the weak corporate governance practices, which include a lack of transparency, disclosure and accountability (Khoo, 2003). To overcome some of these problems, in 1997, the Financial Reporting Act was introduced and the Malaysian Accounting Standards was established as the sole authority to issue accounting standards. Subsequently, in March 1998, in order to enhance the standards of corporate governance, the Malaysian Government announced the foundation of FCCG (as described earlier) and in the same month, the Registrar of Companies (ROC), currently known as the Companies Commission of Malaysia (SSM), together with a few professional bodies formed an entity known as the Malaysian Institute of Corporate Governance (MICG).

Furthermore, in order to achieve better corporate governance, substantial reforms have also been introduced, particularly the amendments to the Securities Industries Act (1983) and the Securities Commission, and

the listing rules of Bursa Malaysia (Liew, 2006). Finally, the Malaysian Code on Corporate Governance was released in March 2000 (later amended in 2007), providing the recognition of corporate governance in Malaysia (Abdul Hadi, et. al., 2008). The code detailed prescriptions for companies to follow that included recommendations that the board should be made up of a balance of executive and independent directors. The objective of the code is to ensure the effectiveness of the board of directors in maintaining a high quality of disclosures and, therefore, helping investors make more informed investment decisions (Bliss and Balachandran, 2003).

The responsibility for good corporate governance is the responsibility of the board of directors. Accountability of directors is considered as one of the important issues. The job description and legal obligation of directors have been topics of debate among scholars, practitioners and policy makers (Blair and Stout, 2001), including the way they monitor any decisions made by the executives and approve major transactions, and initiate them for shareholders approval (Ribstein, 2005). The monitoring function requires the board to play an effective role in order to protect the interests of the shareholders. However, as an advisory function the monitoring approach is more hands off and uses the expertise of members to counsel management in establishing corporate strategies and policies (Chen, 2008). In essence, they are apparently accountable for any decisions made by the management to serve the best interests of the shareholders.

2.3. Influence of Corporate Governance on Disclosure of Environmental Reporting

The scandals of high profile companies such as Enron, WorldCom, Tyco and some other firms in the U.S, have raised the question of the effectiveness of monitoring mechanisms in organizations (Raphaelson and Wahlen, 2004). Therefore, it is claimed that the focus should now be more on improving the internal mechanism, which includes boards, particularly to increase shareholder's insight and influence on corporate behaviour in organizations (Kolk, 2006). Apart from the traditional approach to accountability in the context of corporate governance, sustainability reporting has also emerged, even though it is mostly on a voluntary basis concerning the societal and environmental implications (Kolk, 2006). Disclosure on environmental issues has the potential to increase shareholder's wealth and can be regarded as one of the elements of good corporate governance (SIO, 2002). However, the effectiveness of regulation on environmental risk, which emphasizes awareness and empowerment of shareholders, essentially depends on the quality of the environmental disclosure (Sinclair-Desgané and Gozlan, 2002).

Consequently, the proper reporting of environmental performance is now gaining significant interest in the business community and is being debated within the accounting profession and authoritative bodies (Rezaee

et. al., 1995). The reaction to global environmental awareness is apparent with the introduction of various reporting guidelines and scorecards by parties like the ACCA, Global Reporting Initiative (GRI), Canadian Institute of Chartered Accountants (CICA), Deloitte Touche Tohmatsu and the International Organization for Standardization (ISO).

Environmental costs and obligations will continue to grow in line with the consciousness of society, government regulation and corporations towards environmental concerns (Rezaee et. al, 1995). Therefore, as the scope of potential users may cover both internal and external stakeholders, there must be an assurance on the transparency and reliability of the information disclosed. Indeed, the growing interest and the rise in prominence of corporate environmental and social reporting for achieving corporate accountability, is in step with the new governance regulation model (Hess, 2007). It seems that sustainability, specifically, the environmental concern and corporate governance need to be converged for better reporting. This situation has also been closely linked to the recognition that good corporate governance requires consideration of the impact a corporation has on the wider community and the environment (Andrew, 2003).

Despite the importance of corporate governance and its potential influence on companies to engage in environmental reporting, research in this area is still lacking. However, most of the previous studies that examined the relationship between corporate governance and company voluntary disclosure found that *board independence* (Fama and Jensen, 1983; Ho and Wong, 2001; Cheng and Courtenay, 2004; Norita and Shamsul-Nahar, 2004; Haniffa and Cooke, 2005), *CEO duality* (Forker, 1992; Gul and Leung, 2004) and *management ownership* (Leung and Horwiz, 2004; Norita and Shamsul-Nahar, 2004) are among the significant variables. Additionally, in more related researches, Halme and Huse (1997) found that companies in industries that are environmentally sensitive reported most on the environment. However, the same association was not found for the number of board members and the proportion of stock owned by the largest shareholder. Meanwhile, Haniffa and Cooke (2002) discovered that the proportion of independent directors did not influence the extent of corporate social reporting among Malaysian companies.

3. Theoretical Framework and Hypothesis Development

The most frequently cited theory in social and environmental reporting studies is the *legitimacy theory* (Gray et. al., 1995). The theory is based on the notion of 'social contract', which limits the activities of an organisation within the boundaries set by the society (Gray et. al., 1996). In essence, the organisation will gain support from the stakeholders and continue in existence in so far as its activities give benefits, or at least are not harmful to society. 'Legitimacy' is said to exist as there is congruence between the

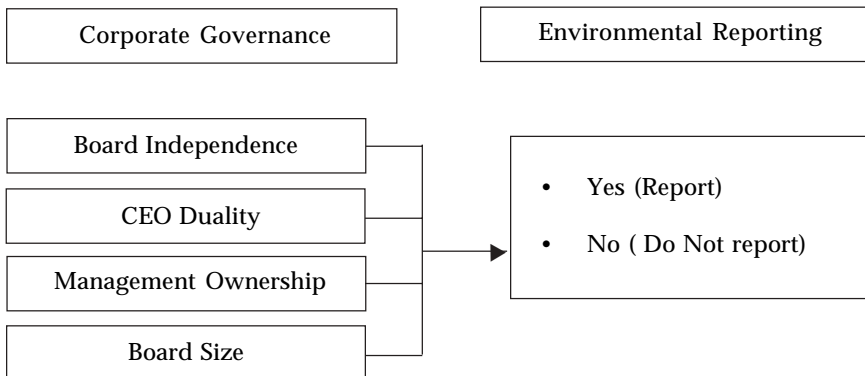
activities of the organisation and societal expectations. Otherwise, the organisation has to deal with the 'legitimacy gap' by improving its actual performance, changing the societal expectation, or the perception of its performance, or deviating away the public attention from the issue under scrutiny (Lindblom, 1994).

One of the effective mechanisms to educate the stakeholders when there is a 'legitimacy gap' is through disclosure in the corporate report. In Malaysia, with the increased attention being paid to environmental issues by the mass media and the government, there is a possible legitimacy threat to the organisation, particularly public listed companies and companies operating in industries that have a greater impact on the natural environment. Therefore, the affected organisations will need to demonstrate to the public their concern for the environment. Hence, the importance of environmental reporting sets in.

Another useful theory to explain the environmental reporting practice in Malaysia, which also overlaps with the *legitimacy theory*, is the *stakeholder theory*. There are two strands of theory, namely, the *normative stakeholder theory* and *empirical stakeholder theory* (Gray et. al., 1996). The *Normative stakeholder theory*, the more relevant of the two, posits that an organisation (this would mean any parties interested in the corporate environmental performance including NGOs, government and the public at large) will report on the environment simply because the 'environment' is one of its many stakeholders and its information needs must be fulfilled. Thus, in the absence of any mandatory reporting, a company should report on the environment voluntarily to discharge its environmental accountability to the public.

As described in the previous section, there is a possible link between the corporate governance structure and the tendency for companies to engage

Figure 1. Essential attributes of a board of directors that lead to environmental reporting



in environmental reporting. In fact, corporate governance is described as a critical element for driving excellence in the social responsibility sphere and can be a source of competitive advantage for companies in its own right (Shahin and Zairi, 2007). Additionally, the FCCG (2000) urges the board of directors to evaluate companies' financial performance as well as their environmental performance. Looking at this possibility, this study comes up with the "following research framework".

Figure 1 lists *board independence*, *CEO duality*, *management ownership* and *board size* as the essential attributes of corporate governance. The conceptual framework of the study is completed with environmental reporting as the dependent variable. Environmental reporting is determined by a particular company disclosing some form of environmental information in its annual report. To achieve this, the study uses the checklist and decision rules developed and used by Hackston and Milne (1996), Williams and Ho (1999) and Deegan et. al. (2002). In particular, we expect that certain corporate governance attributes may lead companies to report on the environment. The following paragraphs discuss the hypotheses development.

3.1. Board Independence

According to Weir and Laing (2001), the board of directors is responsible for the day-to-day management of the company and has a direct responsibility to formulate and implement corporate strategy. The board, which comprises a number of independent directors, has a greater monitoring and controlling ability over management (Fama and Jensen, 1983). The state of "independence" is met when a director *inter alia* is neither holding significant ownership nor holding any executive position in the company (Bursa Malaysia, 2006). It is expected that since these independent directors are supposed to represent the interests of other stakeholders, they will have more influence on environmental reporting (Haniffa and Cooke, 2005). Furthermore, since the involvement in social activities may enhance one's prestige and honour in society, they will be more interested in satisfying the social responsibility of the firm (Zahra and Stanton, 1988).

In Malaysia, the MCCG proposes that the composition of the board of directors comprises one-third independent members (FCCG, 2000). In fact, it becomes a requirement to be fulfilled by Malaysian companies that are listed on Bursa Malaysia. However, if a company has only three board members, two of them are required to be independent (Bursa Malaysia, 2006). Research on voluntary disclosures found mixed results. Those who found a significant positive association include Fama and Jensen (1983), Ho and Wong (2001), Cheng and Courtenay (2004) and Norita and Shamsul-Nahar (2004). On the other hand, Eng and Mak (2003), Gul and Leung (2004) and Barako *et al.* (2006) found a negative association. Thus, our hypothesis is as follows:

H_1 : *There is a significant association between board independence and the existence of environmental reporting.*

3.2. CEO Duality

Nelson (1998) and Zairi (2000) stressed the importance of leadership in ensuring the success of social responsibility endeavours. According to them, companies that are successful in integrating the CSR into their management systems shared four characteristics, namely, value-based transformational leadership, cross-boundary learning, stakeholder linkages and performance levers. Similarly, Adams (2002) included the 'internal context' as one of the factors that influence corporate social and ethical reporting, which includes *inter alia* the identity of the chair. Hence, the role of the CEO in guiding the organisation towards achieving social and environmental objectives is extremely significant.

In corporate governance literature, a separation of CEO roles from the roles of the chairman is needed to ensure the independence of the board of directors (Chaganti et. al., 1985). It is believed that if the CEO holds the chairman position, a state called "CEO duality", his/her influence may reduce the effectiveness of the board of directors in monitoring the management (Agrawal and Chadha, 2003). In fact, this is one of the problems described by Haniffa and Cooke (2002) as 'dominant personality phenomenon', which is increasingly receiving considerable concern.

Haniffa and Cooke (2002) further classified the issue in two views. The first view supports the separation of the two roles to provide checks and balances for the performance of management. While the second view argues that the separation is not crucial since many companies are well run even with the roles combined and have a strong and capable board for monitoring. Additionally, the combination of the roles of chairman and CEO is allowable under MCCG (FCCG, 2000). Nevertheless, the respective companies must make public the reasons underlying the combination of roles.

Previous studies by Forker (1992) found that CEO duality is associated with lower voluntary disclosures and it shows that the monitoring function of an individual who occupies the positions of both the CEO and chairman could be compromised. Consistent with the result, Gul and Leung (2004) show a significant and negative relationship between duality and voluntary disclosure. However, on the other hand, other research such as Barako et. al., (2006), Cheng and Courtenay (2004) and Ho and Wong (2001) found insignificant association between duality and voluntary disclosure. Following the claim of prior research, the following hypothesis is proposed:

H_2 : *There is a significant association between role duality and the existence of environmental reporting.*

3.3. Ownership

The MCCG does not specify the ideal level for management ownership. However, managers are more likely than shareholders to emphasise corporate social performance and environmental performance because they are not spending their own money (Graves and Waddock, 1994) or pursuing non-profit goals to secure their position (Wang and Coffey, 1992). This in turn may improve their reputation and gain public prestige (Halme and Huse, 1997). Therefore, it is suggested that the lower the management ownership, the higher the tendency that the company will report on the environment.

Previous studies found mixed observations concerning the association between ownership structure and reporting practices. Leung and Horwitz (2004) and Norita and Shamsul-Nahar (2004) found that management ownership has a positive and significant association with voluntary disclosure. A similar association was also found if the percentage of shares held by the largest shareholders is considered (Haniffa and Cooke, 2002; Birt et. al., 2006). In contrast, there are also studies that found either insignificant (Halme and Huse, 1997; Nagar et. al., 2003; Leung and Horwitz, 2004) or negative associations (Mahmud et. al., 1994; Leung and Horwitz, 2004). Therefore, it is reasonable to come up with the following hypothesis:

H_3 : *There is a significant association between management ownership and the existence of environmental reporting*

3.4. Board Size

There is no requirement pertaining to the number of directors to make up the board but the MCCG asserts that the number of directors is an important factor in the board of directors' effectiveness (FCCG, 2000). A larger board size may bring a greater number of directors with experience (Xie et. al., 2001) that may represent a multitude of values (Halme and Huse, 1997) on the board. On the contrary, Chaganti et. al. (1985) claimed that smaller boards are manageable and more often play a role as a controlling function whereas larger boards may not be able to function effectively as the board leaves the management relatively free.

Published studies that linked board size and voluntary disclosure (including environmental information) are rather lacking. Besides Halme and Huse (1997), which found no significant association between the number of board members and the tendency for companies to report on the environment, and Cheng and Courtenay (2004), which found a similar result for voluntary disclosure (in which environmental information is a part of

it), other studies are almost untraceable. However, there are studies linking corporate performance (financially) and board size (see for example, Bonn, 2004; Dwivedi and Jain, 2005).

The study by Bonn (2004) found no relationship between board size and firm performance. She further argued that the board size only measures the factual number of directors without capturing their task. Hence, one could argue that it is the skills and knowledge base that the board brings to the firm not the number. In contrast, Dwivedi and Jain (2005), found a positive relationship although the association was weak. They conclude that larger boards are in a position to improve the governance of the company. Thus, we hypothesise that:

H_4 : *There is a significant relationship between board size and the existence of environmental reporting.*

4. Methodology

The population for this study is all public companies listed on the Main Board (652 companies) of Bursa Malaysia as of 31 December 2005. However, all financial firms (55 companies) are excluded from the sample, as these sectors are governed by certain rules and procedures from regulatory bodies such as Bank Negara Malaysia and the Ministry of Finance. The final sample consists of 243 companies randomly selected using the random number generator available in Excel. This represents 37 percent of the total population and, thus, is consistent with the minimum sample size as suggested by either the conventional sample size table proposed by Krejcie and Morgan (1970, as cited in Sekaran, 2003) or the modern online sample size calculator by Raosoft, Inc.

The data is extracted using the content analysis method from the annual reports of these companies for the year 2005. There is one dependent variable, four independent variables and two control variables tested in this study. The dependent variable is the decision to report environmental information and is measured by identifying any information related to the environment. A company that reports the information is coded as '1' and if non-disclosed is coded as '0'. The independent variables are *board independence*, *CEO duality*, *management ownership* and *board size*.

Meanwhile, the control variables are company size and industry. These two variables are consistently found to be related to the level and extent of disclosure (Wilmshurst and Frost, 2000; Cormier and Magnan, 2003; Campbell, 2004). Company size is measured by total assets. Previous studies that used total assets as a proxy for size include Romlah et. al., 2002; Zauwiyah et. al., 2003; Cormier and Magnan, 2003). As for industry, companies are divided into two: high environmentally sensitive and low environmentally sensitive. This involves reviewing the works of previous

researchers (see for example, Wilmshurst and Frost, 2000) and also a report issued by the Department of Environment, Malaysia (DOE, 2002). Thus, companies regarded as highly environmentally sensitive are involved in the following operations – mining, chemicals, transportation, oil and gas, wood and timber, utilities, agriculture, construction and properties, and manufacturing. For diversified companies, they are classified as highly environmentally sensitive if 51 percent of their revenue is derived from these nine operations (Lemon and Cahan, 1997). The summary of measurement for each variable is described in the following table.

The data is analysed using a logistic regression analysis to test the relationship between the dependent variable and six independent variables including two control variables. The use of this analysis is considered appropriate for this study as the dependent variable is a dummy variable (Field, 2000; and de Vaus, 2002). Code “1” is used to classify companies that do have environmental reporting and “0” for companies that do not

Table 1. Measurement of variables

No	Variables	Definition	Measurement
1	Board independence	Percentage of independent directors	Number of independent non executive directors divided by total number of directors on board (%)
2	CEO duality	Whether the CEO and the chairman of the board are the same	1 = if CEO is also the chairman; 0 = if the position is held by different individuals
3	Management ownership	Percentage of executive directors' direct equities ownership	Total executive directors' direct equities ownership divided by total equity outstanding (%)
4	Board size	Total number of members on the board of directors	Number of board members (n)
5	Company size	Company size	Total Assets
6	Industry	Industrial classification based on the operations	1 = High environmentally sensitive; and 0 = low environmentally sensitive

report any environmental information in the annual report. The logistic regression equation for this study is as follows:

$$\text{Log [P/1-P]} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

P = the probabilities that companies disclose environmental information in the annual report

1-P = the probabilities that companies do not disclose environmental information

β_0 = Constant

X_1 = Board independence

X_2 = CEO duality

X_3 = Management ownership

X_4 = Board size

5. Findings and Discussion

Table 2 depicts the distribution of companies according to industrial sector. These companies represent various sectors, with considerable numbers from the industrial products sector (30%), followed by trading/services sector (22%) and properties sector (19%). None of the companies from the mining sector and, in fact, only one company from that sector was listed on the Board as of the cut-off date. Since the sample selection method is based on random-sampling, such exclusion is considered as insignificant.

5.1. Dependent Variable - Existence of Environmental Reporting

Table 3 presents the findings on the number of reporting companies according to the Bursa Malaysia's industrial classification. Overall, there are only 68 companies (28%), which reported some form of environmental information in their annual reports for the year 2005. This indicates an improvement from the study by Zauwiyah et. al., (2003), which reported

Table 2. Distribution of companies according to industrial sector

No	Industry	Number	%
1	Industrial Products	73	30
2	Trading/Services	53	22
3	Properties	47	19
4	Consumer Products	28	11
5	Construction	17	7
6	Plantation	14	6
7	Technology	7	3
8	Infrastructure Project Companies	2	1
9	Hotel	1	0
10	Trusts	1	0
	Total	243	100*

*rounding error

that only 13% of companies reported some form of environmental information in 1999. Sectors with a high number of reporting incidences include industrial products (28%), trading/services (26%), properties (15%) and plantation (13%). However, if the reporting practices are analysed on a per industry basis, it is found that the plantation sector has the highest number of reporting incidences (64%) compared to other industrial sectors.

5.2. Independent Variable - Corporate Governance Practices

The study attempts to investigate the association between corporate governance practices (if any) with the decision to report on environmental information. Thus, the four most cited important corporate governance characteristics are utilised in this study, namely, *board independence*, *CEO duality*, *board size*, and *management ownership*. For *CEO duality*, it is observed Table 3. Reporting companies according to industrial classification

No	Industry	Frequency	Per reporting companies (%)	Per industry (%)
1	Industrial Products	19	28	27
2	Trading/Services	19	26	35
3	Properties	10	15	23
4	Consumer Products	6	8	21
5	Construction	4	7	29
6	Plantation	8	13	64
7	Technology	1	1	14
8	Infrastructure Project Companies	1	1	50
9	Hotel	0	0	0
10	Trusts	0	0	0
	Total	68	100	

that the CEO plays a dual role in only 11.5% (28) of the companies. In addition, 59 companies (24%) are classified as highly environmentally sensitive. The descriptive statistics of the other variables are presented in Table 4.

Based on Table 4, it is found that, on average, the sample companies have eight members on their board of directors, of which 40% are independent from the management and have significant ownership. Surprisingly, there are 55 companies (23%) that do not meet the requirements of the Bursa Malaysia listing requirements to have at least two or one-third (whichever is higher) independent board members. In fact, one of these companies does not even have one independent member. Additionally, the management

Table 4. Descriptive statistics for continuous variables

	Board Size	Board Independence	Management Ownership	Total assets
Mean	7.81	40.1865	8.4106	1608611363
Standard deviation	2.040	11.30209	13.45115	5258385837
Minimum	3	.00	.00	1697524
Maximum	15	83.33	58.55	63438200000
Skewness	.513	.650	1.930	8.776
Kurtosis	.540	1.139	2.916	90.889

holds an insignificant direct shareholding in the companies with an average of 8%.

The study found that there are significant variations between reporting and non-reporting companies with board size, management ownership and total assets. However, Table 5 shows that the study failed to identify the differences between reporting and non-reporting companies with board independence, CEO duality and environmental sensitivity.

The normality test is not necessary for regression logistics since the test can be run even though the data is not normally distributed (Tabachnick and Fidell, 2001). For data goodness of fit, the Hosmer Lemeshow test is used to determine any significant difference between predicted value and the model. According to Field (2000), the insignificant value of chi square shows that the model is significantly indifferent with the data tested. Based on the Hosmer Lemeshow test, the chi square value for this data is

Table 5. The differences in corporate governance and corporate characteristic companies between the reporting and non-reporting companies

Variables	Means		t-test t value	Variables	Frequency		Chi-square
	Report	Do Not Report			Report	Do Not Report	
<i>BSize</i>	8.47	7.56	0.02***	<i>CEODual</i>	62	153	0.411
<i>BInd</i>	41.99	39.49	0.121				
<i>MOwnership</i>	5.41	9.58	0.03***	<i>EnvSen</i>	12	47	0.411
Σ Assets	3.56	8.52	0.016***				
				1	56	128	

*** Significant at 0.01 level

insignificant (6.583). This result is also supported by a classification accuracy rate of 74.1%. Thus, this result suggests that the model is significantly stable and, hence, suitable for further examination. Prior to performing the multivariate analysis, the correlation test is conducted to determine the existence of any multicollinearity problem among the independent variables. According to Cooper and Schindler (2003), serious multicollinearity problems exist when the bivariate correlation score is 0.80 or greater. Table 6 presents the result of the Spearman's rho correlation analysis. Although there are significant relationships between board size and board independence, the correlation coefficient of .219 indicates that multicollinearity is absent.

The results of the logistic regression are presented in Table 7. The reported pseudo- R^2 , namely Cox & Snell R^2 and Nagelkerke R^2 are 0.136 and 0.196, respectively. These results show that the model is significant and qualify for further assessment.

The study finds that *board size* has a significant positive relationship with environmental reporting ($p = 0.003$). This indicates that the larger the number of board members, the higher the tendency for companies to report on the environment in the annual report. The result is consistent with Cheng Table 6. Spearman's rho correlations

	<i>BSize</i>	<i>BInd</i>	<i>CEODual</i>	<i>MOwnership</i>	Σ assets	<i>EnvSen</i>
<i>BSize</i>	1.000	-.213**	-.119	-.059	.272**	-.167**
<i>BInd</i>	-.213**	1.000	.092	-.114	.206**	.013
<i>CEODual</i>	-.119	.092	1.000	.064	-.074	-.036
<i>MOwnership</i>	-.059	-.114	.064	1.000	-.266**	.086
Σ Assets	.272**	.206**	-.074	-.266**	1.000	-.085
<i>EnvSen</i>	-.167**	.013	-.036	.086	-.085	1.000

** Significance at 0.01 level

and Courtenay (2004) although environmental reporting is just part of the total voluntary disclosure tested. Larger board size, as argued in the hypotheses development section, may comprise directors from different backgrounds, expertise and values. Pluralism among the board members may stimulate environmental attention (Halme and Huse, 1997). At the same time, 'size' is always associated with the level of political cost (though more often than not, it refers to 'size' of company, instead of 'size' of the board). Hence, there is a greater need for these companies to report on the environment.

On the other hand, insignificant relationships are found for the remaining variables, namely, *board independence*, *CEO duality* and *management ownership*. The result for *board independence* is consistent with the finding of Ho and Wong (2001). A possible explanation is that although non-executive

Table 7. Result of Logistic Regression (n = 243)

Variables	Coefficient	Wald Statistics	p-value
Constant	0.21	13.290	0.000
<i>BSize</i>	1.257	8.664	0.003
<i>BInd</i>	1.024	2.848	0.092
<i>CEODua</i>	1.207	.136	0.713
<i>MOwnership</i>	.982	1.880	0.170
Σ <i>Assets</i>	1.000	7.145	0.008
<i>EnvSen</i>	.395	5.206	0.023
Cox & Snell R^2	0.136		
Nagelkerke R^2	0.196		

directors are presumed to be independent, in fact they may not be, and are, therefore, not effective as monitors (Barako et. al. 2006) and/or to contribute to environmental reporting. In fact, as suggested by the MIA (2004), independence may be divided into independence of mind and independence of appearance. Thus, although the board members appear to be independent, state of mind may be affected by influences that compromise one's professional judgment and scepticism, integrity and objectivity.

As for *CEO duality*, this implies that the duality role is less influential in inducing the tendency of the firm to report on environmental concerns. Although the finding is inconsistent with Forker (1992) and Gul and Leung (2004), which found that separation of roles is important to increase the quality of disclosure, the result is consistent with previous research by Ho and Wong (2001), Cheng and Courtenay (2004) and Barako et. al., (2006), who document an insignificant relationship between duality and voluntary disclosure, albeit not specifically for environmental reporting. Cheng and Couterney (2004) also stressed that *CEO duality* does not necessarily need to be abolished. According to Norita and Shamsul Nahar (2004) the insignificant association could be due to the fact that a CEO duality is also the substantial shareholder. This might be true as Daily and Dalton (1997) in their research, which examines six dimensions to differentiate joint from separate CEO, reveals no significant differences between duality and the non duality role in any of the six factors, which include inside/outside succession, organizational tenure, tenure as CEO, equity holdings in the firm, the extent of familial relationships and the composition. The result by Daily and Dalton (1997) further explained that the independence of a separate CEO, compared to the duality role, can itself still be compromised. This issue creates a loophole in examining the efficiency of separation/duality roles for monitoring purposes, specifically, in influencing firms to disclose environmental information. Therefore, various factors need to be

considered before analysing the relationship between both CEO positions with information disclosure.

Management ownership seems not to have a significant influence on the company's decision to engage in environmental reporting. This is consistent with the findings of Halme and Huse (1997), Nagar et. al., (2003) and Leung and Horwitz (2004). A closer look at the level of management ownership among the sample companies found that on average, 8% of the ownership is held by the management. This, however, contradicts this study's earlier prediction, which suggests that lower management ownership will result in a greater tendency for environmental reporting. Because environmental reporting is a voluntary initiative, companies do not feel the pressure to do so.

Besides, as expected, we found positive and significant relationships between the existence of environmental reporting and company size and environmental sensitivity. The results explain that bigger companies disclose a higher volume of environmental information in the annual report. This is consistent with the findings of Halme and Huse (1997), Wilmshurst and Frost (2000), Romlah et. al. (2002), and Cormier and Magnan (2003). According to Cormier and Gordon (2001), a larger company becomes more visible and accountable to the public and, therefore, more accountable with respect to environmental issues. Consequently, a larger company will disclose more environmental issues to decrease public pressure.

Our findings also found that companies operating in highly environmentally sensitive industries tend to disclose more environmental information in the annual report, which is consistent with earlier studies by Halme and Huse (1997), Romlah et. al. (2002), Cormier and Magnan (2003) and Zauwiyah et. al. (2003). According to Romlah et. al. (2002), the purpose of the reporting is to minimize the potential political cost that can be imposed on the companies in the future and this is especially true for companies that pollute the environment. Both these findings provide support to the legitimacy theory.

6. Conclusion

The purpose of the current study is to examine the level of environmental reporting among Malaysian companies and its association with corporate governance characteristics. On the whole, this study concludes that environmental reporting in Malaysia is still low. Only 28% of the companies reported environmental information in their 2005 annual reports. This finding provides limited evidence on the application of the stakeholder theory where 'environment' is considered as one of the important stakeholders.

Additionally, findings on the corporate governance variables suggest that only the *board size* is positively related to environmental reporting. The

results imply that the decision to engage in environmental reporting is likely to be affected by a larger number of directors in the board. However, similar associations are not found for *board independence*, *CEO duality* and *management ownership*. Additionally, as proposed by the legitimacy theory, we find positive and significant relationships between the existence of environmental reporting and company size and environmental sensitivity. These findings suggest that environmental reporting in Malaysia is predisposed towards 'image building' endeavours, rather than to achieve accountability to the environment. This certainly has policy implications as until environmental reporting becomes mandatory, companies will refuse to report or rather report the 'positive' information only.

The findings of the study should be interpreted in light of several limitations. First, only one year of data was considered in the current study. Hence, it would be interesting to conduct a longitudinal study on a yearly basis as it may help to trace the trend of environmental disclosure and the impact of corporate governance on environmental reporting practices. Second, the study focuses merely on examining the existence of environmental reporting in annual reports. Future research may adopt content analysis to examine the quantity, quality and nature of the reporting. Such a study will help validate the conclusion of this study.

Finally, due to the lack of previous studies (except Halme and Huse, 1997 and Haniffa and Cooke, 2005), this study only utilized a few corporate governance variables to be tested on environmental reporting. Further studies could consider other variables such as board competency. With regard to corporate characteristics, we tested the two most significant variables, namely, company size and environmental sensitivity. This is consistent with Patten (1991) who asserts that size and industry influence the level of political cost facing an organisation. Other variables that are not tested but could provide important findings include cash flow, leverage and audit firms. This would be the aim of future studies. A continued research in this line based on these variables seems essential for any generalized picture about the possible association between potential determinants and the existence of environmental reporting practice in Malaysia. The findings might have altered if these variables had been applied and, therefore, would be able to explain environmental reporting behaviours. Additionally, the result will possibly have important implications on our understanding of the motive and consequences of environmental disclosure.

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