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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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EXAMINING THE EFFECT OF COMPANY'S SIZE AND RESOURCES ON THE RELATIONSHIP BETWEEN STAKEHOLDERS' PRESSURE AND ENVIRONMENTAL STRATEGIES IN THE MALAYSIAN PALM OIL INDUSTRY

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ABSTRACT

Palm oil is one of the most important commodity exports for Malaysia, contributing billions of ringgit to the country. In terms on number of employment half a million people involved in the industry. Over the last four decades more and more plantation areas have been developed in the country. However, the disproportionate expansion of oil palms contributes to environmental degradations. The excessive usage of insecticides and pesticides, soil erosion, air and water pollution and depletion of flora and fauna are closely related with this industry. As a result, various stakeholders including department of environment, environmental non-governmental organizations, medias and the public have exerted influenced on the industry to be environmentally responsible. Coping with these pressures, players the industry could not help but be environmentally responsible in their activities. In other words environmental strategies of players in the industry are determined by magnitude of pressures from their stakeholders. While it is well established in the literature that the extent of pressure would determine a business environmental strategies, but not many researchers measure the impact of company's size and resources on the relationship between these two variables. This study seeks to examine the effect of a company's size on the relationship between stakeholders' pressure and environmental strategy in the industry. The results of the study clearly show a company's size and resources influence the relationship of stakeholders' pressure and environmental strategy.

KEYWORDS

Company's size, resources, stakeholders pressure and environmental strategies.

INTRODUCTION

Over the last four decades palm oil has been one of the most important commodities for Malaysia. This industry contributes billions of ringgit to the country. In 2003 its earnings from foreign exchange contributed more than RM20 Billion (US$5 Billion), amounting for 45.9 percent of the export earnings from commodities and 6.5 percent of the whole country's total export earnings (http://www.miccos.com.my). In terms on number of employment the industry provides employment to about 567,4000 workers in private plantations, government schemes and independent smallholdings; taken together with those who are linked to the palm oil industry in both the upstream and downstream sectors, approximately 1 million out of the total 10 million Malaysian workforce are engaged in the palm oil industry (Chandran, 2005).

However, disproportionate expansion of this monoculture crops contributes to environmental degradations in the country. In Malaysia, the palm oil industry together with forestry, rubber, tin and chemical-based agriculture are considered environmentally damaging activities (Wong, 1998 p.2). In planting, environmental impacts are deforestation, depletion of flora and fauna, soil erosion and sedimentation. In addition, air pollution occurs when operators use fire for land clearing. On plantations, various pesticides and artificial fertilizers are continuously applied for the 'health' of the oil palms. Additionally, processing of fresh fruit bunches (FFB) at palm oil mills uses a large amount of fresh water, since for every tonne of FFB one tonne of water is required (Chuan, 1982 p.10). Untreated POME often pollutes rivers near to the mills. Moreover, palm oil mills emit black smoke when empty fruit bunches (EFB) are burnt for manure and to produce steam to sterilize FFB to facilitate the extraction of the palm oil. Due to these reasons the industry is one of the most highly regulated industries in Malaysia.

Various stakeholders including department of environment (DOE), environmental non-governmental organizations (ENGOs), medias and the public have exerted influenced on the industry to be environmentally responsible. Coping with these pressures, players the industry could not help but be environmentally responsible in their activities. In other words environmental strategies of players in the industry are determined by magnitude of pressures from their stakeholders. While it is well established in the literature that the extent of pressure would determine a business environmental strategies, but not many researchers measure the impact of companies size and resources on the relationship between these two variables. Hence, this study seeks to examine the effect of a company's size on the relationship between stakeholders' pressure and environmental strategy in the Malaysian Palm Oil industry.

LITERATURE REVIEW

STAKEHOLDERS ENVIRONMENTAL PRESSURE

The Stakeholder Theory emerged in the mid 1980s. One focal point in the movement was the publication of Edward Freeman's book, *Strategic Management: A stakeholder approach,* in 1984 (Freeman & McVea, 2001 p.189). The central task in a strategic management process is to manage and integrate the relationships and interests of shareholders, employees, customers, communities and other groups in a way that ensures the long-term success of the firm (Freeman & McVea, 2001 p.192).

Freeman (1984 p.46) defines stakeholder as 'any group or individual who can affect or is affected by the achievement of the organization's objectives.' Another researcher Caroll (1996 p.60) defines a stakeholder as 'any individual or group who can affect or is affected by the actions, decisions, policies, practices, or goals of the organization'. Meanwhile, Buchholz (1993 p.347) defines stakeholder as '[A]n individual or group that has some kind of stake in what business does and may also affect the organisation in some fashion'. Among various definitions of stakeholders, Freeman's definition is the most widely quoted and used in environmental management literature (Banerjee, Iyer, & Kashyap, 2003 p.107; Sternberg, 1997 p.4; Moir, 2001 p.19).

A manager needs to understand the concerns of stakeholders in order to develop objectives that stakeholders would support for his or her organisation's long-term success. The number of stakeholders and variety of their interests can be quite large; thus, a company's decisions can become very complex (Henriques & Sadorsky, 1996 p.383; Post, Lawrence, & Weber, 1999 p.7). But in practice, it is difficult and costly to identify and meet all the stakeholders' demands. Consequently, it is crucial for the manager to identify and analyse the meaning and significance of each individual group and to determine their respective power to be prepared for the conflict that may follow from the prioritizing of competing groups of stakeholders (Madsen & Ulhoi, 2001 p.79).

Traditionally the main focus of stakeholder interest has been upon the financial performance of a company. Increasingly, however, stakeholder pressure is concentrating on the environmental performance of the company (Welford & Gouldson, 1993 p.7). Environmental pressure against palm oil companies may come from various stakeholders including environmental regulators such as DOE, customers, suppliers and distributors, trade associations such as Malaysian Palm Oil Association, employees, shareholders, financial institutions, Malaysian Environmental Non Governmental Organisations (MENGOs) and Media.

ENVIRONMENTAL STRATEGIES

In strategic management, business strategy is defined as 'the direction and scope of organisation over the long term which achieves advantage for organisation through its arrangement of resources within a changing environment and fulfils stakeholder expectation' (Johnson & Scholes, 2002 p.10). An environmental strategy is 'a plan which aims to mitigate the environmental effects of the firm's operations and products' (Bansal, 1997 p.174). According to Sharma (2000

p.683) environmental strategy refers to 'outcomes in the form of actions firms take for regulatory compliance and to those they take voluntarily to further reduce the environmental impacts of operations.' Moreover, Banerjee, Iyer and Kashyap (2003 p.106) define environmental strategy as 'the extent to which environmental issues are integrated with a firm's strategic plans.' In corporate environmental management literature, other similar themes on environmental strategy that discuss how organisations react to environmental pressure: 'corporate environmental responsiveness' (Shrivastava & Scott, 1992; Souitaris & Pujari, 1998); 'corporate environmental approach' (Vastag, Kerekes, & Rondinelli, 1996); 'corporate environmentalism' (Banerjee, 1998, 1999); and 'corporate greening' (Preuss, 2005).

COMPANY SIZE AND RESOURCES, AND ENVIRONMENTAL STRATEGY

Apart from stakeholders' pressure, a firm's size and its resources are seen as important factors that could determine companies' environmental strategies. There are several arguments why the size of the business will be a determinant of environmental strategies. First, large companies are likely to have more resources, and that increases a company's ability to better access environmental information, which in turn provides the business more competitive advantage (Russo & Fouts, 1997; Sharma, 2000). Second, firm size has been related to the existence of economy of scale which is inherent in environmentally oriented investments (Chapple, Morrison, & Harris, 2005). Third, firm size is related to visibility to the public; where large businesses are more visible, this visibility might make them more sensitive to public opinion and in turn make them more likely to invest in environmental innovation and be perceived as an industry leader (Henriques & Sadorsky, 1996; Rothenberg & Zyglidopoulos, 2007). Fourth, larger companies have more power to influence regulatory authorities to set tighter standards for the industry (Epstein & Roy, 2000). Lastly, strategic management in small and medium-sized businesses focuses on short-term profitability, while on the contrary big businesses have a long-term vision; this puts big companies in a conducive situation to evaluate environmental investment (Epstein & Roy, 2000).

Although many authors believed that there was an impact of size on environmental strategy proactiveness, findings of empirical studies showed mixed results. On the positive side, a study by Elsayed (2006) of various businesses in the UK demonstrated that company size explained the different in environmental strategy. Likewise, Rothenberg and Zyglidopoulos (2007), in their recent study on the adoption of environmental innovations in the US printing industry, also found a strong correlation between size and environmental innovations. In a further study by Sharma (2000) on the 99 petroleum and gas businesses in Canada, he found company size (average annual sales for the last three years) had a positive effect on environmental strategy. In study of 197 companies of various industries in Belgium, Buysse and Verbeke (2003) found size (annual sales) moderate the relationship between environmental strategy and stakeholder orientation. In addition, a study of 750 large companies in Canada by Henriques and Sadorsky (1999) also found size (sales per assets) moderates the relationship between both regulatory stakeholders and community stakeholders on environmental strategy.

While the above-mentioned studies showed positive correlation between size of a company and its environmental strategy, other studies presented opposing findings. Using the survey data collected from a wide variety of firms and industries based in the US, Judge and Douglas (1998) examined the effect on size on environmental strategy of those companies, and found no significant correlation between size and environmental strategy. A further example is a study by Waddock and Graves (1997) who found no significant relationship - using three proxies for the firm size (i.e. total assets, total sales and total number of employees). Likewise, Toms's study (2002) of 260 British companies found no significant correlation between company's size (sales turnover) with either environmental reputation or environmental corporate disclosure.

The proponents of Resource-based View of the Firm (RBVF) have argued strongly that the greater resources that are available to a firm, the greater the proactiveness of their environmental strategy (Hart, 1995; Russo & Fouts, 1997; Sharma, 2000). The availability of resources gives companies advantages to choose a proactive strategy. Unfortunately, empirical studies have yield mixed results. Findings of study by Judge and Douglas (1998) supported the hypothesis that the availability of resources correlated with the integration of environmental issues into the strategic planning process. In a similar vein, Stanwick and Stanwick (1998) in their study concluded that environmentally responsible companies were likely to have more resources.

On the other hand, the recent study by Elsayed (2006) did not find any significant impact of the availability of resources on a company's environmental orientation. This is further supported by study by Henriques and Sadorsky (1996) of various industries in Canada. In their study they found the level of environmental strategy proactiveness was not influenced by the resources owned by these companies. Similarly, a study by Toms (2002) in the UK found no support for the availability of resources influencing environmental strategy.

Due to inconclusive results regarding the effect of both size and resources of companies on their environmental strategies, more research is needed to investigate the relationship between both size and resources on environmental strategy proactiveness.

RESEARCH METHOD

The list of palm oil companies on the Kuala Lumpur Stock Exchange (KLSE) was used as sampling frame of this study. Altogether 37 palm oil companies are listed on the stock exchange. There are two categories of palm oil companies; first - plantation companies whose main revenue comes from the palm oil industry; and second - diversified companies in which palm oil revenues are only part of their businesses activities. These companies not only have their own plantations (more than 10, 000 hectares to close 150,000 hectares) but also have their own palm oil mills. Only a handful of them have their own refineries. Some that are considered as main players in the MPOI have diversified into the downstream sector of the industry and have their own oleo chemicals plants. Many have expanded their business outside Malaysia, and are involved in plantation activities in Indonesia, Papua New Guinea and Solomon Islands. Others smaller companies only operate their businesses in Malaysia.

Out of 37 palm oil companies nine companies agreed to participate in the study, representing 25% of the total number of plantation companies on the KLSE. In each, four management personnel from various departments were approached. Altogether 36 surveys were completed.

Quantitative data analysis supports the central aim of the research model, which is to establish whether a relationship exists between selected independent variables and dependent variables. Based on the literature review on corporate environmental management, as well as the background information of the MPOI, two testable hypotheses have been developed for the study. Both a null hypothesis (H_a) and its alternative (H_b) have been developed for each:

HYPOTHESIS 1

H1a Company's size does not affect the correlation between stakeholders' pressure and environmental strategies adopts by surveyed companies

H2b Company's size affects the correlation between stakeholders' pressure and environmental strategies adopts by surveyed companies

HYPOTHESIS 2

H2a Company's resource availability does not affect the correlation between stakeholders' pressure and environmental strategies adopted by surveyed companies

H2b Company's resource availability affects the correlation between stakeholders' pressure and environmental strategies adopted by surveyed companies

Statistical tests aim to establish the probability of a specific event occurring from a set of possible events, expressed as proportion. If the probability distribution of p-value of a test is small, less than the significant level at 0.05, this would be used as evidence against H_a (null hypothesis). Rejection of H_a means accepting the alternative hypothesis (H_b). On the contrary, if the p-value is larger than the significant levels of 0.05, H_0 fails to be rejected, on the basis that insufficient evidence has been recorded to justify the claim of significance (Hinton, 1995).

The Statistical Package for Social Science (SPSS), Version 14, was used to conduct all data analysis as well as hypothesis testing. Various statistical tests were performed on the data. Statistical techniques involved in this study were: data descriptives - mean, mode, median and standard deviation; a test of normality; reliability testing (Cronbach's Alpha). Meanwhile, the two hypotheses of the study were tested using partial correlation analysis

In the demographic section of the questionnaire asked for general information about the firm and participant profile. In the former, among questions were: number of employees, years of establishment, total area of oil palms, number of palm oil mills, refineries and oleo chemical plants. Second section related to the company's resources. A seven-point scale (ranging from 1 = scarce to 7 = abundant) was used to measure company's situation in terms of:: (i) financial resources, (ii) physical resources (e.g. equipment), (iii) human resources, (iv) organisational resources (e.g. having well-established quality control systems and cash management systems), (v) technological resources (e.g. unique technologies to produce quality products), and (vi) company's reputation. These six major categories of resources were adopted based on a study by Grant (1991) on companies' resources. The third section measured the managers' perception of the

pressure of stakeholders on their companies to improve their environmental performance. Using a scale of '1 = no pressure at all to 7 = a great deal of pressure' respondents were asked to measure to what extent 14 identified stakeholders within the industry exerted influence on, or exercised power over, their organisations to be more environmentally responsible. Various stakeholders in this subscale were: shareholders, financial institutions, insurance companies, regulators, local communities, employees, media, customers, competitors, suppliers, distributors, ENGOs, and the MPOA and MPOB. The following section of the questionnaire, measured the company's environmental strategies. This section was divided into three subscales: operational level, tactical level, and strategic level. Items in this section were adapted from those used in the studies examined in the extensive literature (Banerjee, 2001; Petulla 1987; Hunt and Auster 1990; Roome, 1992; Byrne and Kavanagh 1996; Hart 1997; Tilley 1999; Henriques and Sadorky, 1999) on corporate environmental strategies.

BACKGROUND OF PARTICIPATED PALM OIL COMPANIES

Altogether nine palm oil companies listed in the KLSE were involved in this survey. All companies were GLCs that were linked either to the federal or state governments of Malaysia. In order to disguise the surveyed companies they were given alphabetical designations - A to I. Table 1 shows details of the surveyed companies' backgrounds.

TABLE 1: PARTICIPANT COMPANIES' BACKGROUNDS

Company	Year Establish	% contribution of Palm oil activities to total revenue	No. of wokers	Employees in palm oil business (Malaysia)	Total Planted Area in Malaysia (ha)	No. of Mills	Location of Oil palm plantation operation
A	1990s	95	640	610	25,000	1	Malaysia
B	1840s	80	25,335	23,611	147,369	24	Malaysia and Indonesia
C	1960s	70	3,600	3,270	35,000	2	Malaysia
D	1930s	65	4,597	3,774	64,512	7	Malaysia and PNG
E	1820s	40	12,000	9,969	85,000	10	Malaysia and Indonesia
F	1820s	73	18,543	10,567	100,098	14	Malaysia and Indonesia
G	1970s	95	2,500	2,400	15,471	3	Malaysia and Indonesia
H	1970s	55	10,676	7,666	75,355	4	Malaysia and Indonesia
I	1970s	90	3112	2856	25,191	2	Malaysia

Source: Based on the sample survey (2006)

RESPONDENTS' PROFILES

Altogether thirty six participants from the palm oil companies were involved in the survey; each company was represented by 4 individuals who held various management positions. Obtaining multiple responses from both higher and middle management levels, and from various job categories, provided perspectives of corporate environmentalism from different levels and functional areas within a company. Table 2 shows respondents' position, educational background, years in current position, and years working for their companies.

TABLE 2: PROFILES OF RESPONDENTS FROM STUDIED COMPANIES

Company	Participant	Current Position	Educational Background	Years in Current Position	Years in Company
A	1	Estate Manager	Degree	6	14
	2	Estate Manager	Degree	6	6
	3	Mill Manager	Degree	2	5
	4	General Manager	Degree	5	14
B	1	Plantations Director	Diploma	4	28
	2	Senior Estate Manager	Degree	1	21
	3	Mill Manager	Degree	10	16
	4	General Manager	Diploma	1	32
C	1	Estate Manager	Certificate	17	26
	2	Mill Manager	Degree	5	5
	3	Estate Manager	Diploma	12	16
	4	Assistant Mill Manager	Degree	3	3
D	1	General Manager	Degree	10	26
	2	Manager (Corporate)	Degree	2	11
	3	Environmental Officer	Master	1	1
	4	Estate Manager	Certificate	7	15
E	1	Visiting Agent *	Master	13	26
	2	Deputy Group Engineer	Certificate	10	25
	3	Mill Manager	Diploma	3	3
	4	Estate Manager	Degree	6	6
F	1	Mill Manager	Degree	4	11
	2	General Manager (Mills)	Degree	2	17
	3	General Manager (Mill operations)	Degree	10	15
	4	General Manager (controller)	Degree	12	22
G	1	Planting Advisor *	Diploma	10	25
	2	Senior General Manager	Degree	10	20
	3	Group Engineer	Degree	10	21
	4	Estate Manager	Master	4	23
H	1	Plantations Director	Degree	5	23
	2	Estate Manager	Diploma	2	15
	3	Estate Manager	Diploma	4	20
	4	Assistant Mill Manager	Degree	6	11
I	1	Process Engineer	Degree	5	14
	2	Senior Estate Manager	Master	1	12
	3	Regional Manager*	Degree	1	25
	4	Estate Manager	Degree	6	16

* Because of the same nature of the job, this position is categorised as general manager in SPSS analysis.

Source: Based on the sample survey (2006)

COMPANY'S RESOURCES

Altogether, there were six items under the variable of company's resources. Descriptive statistics of the company resources variable are shown in Table 3. All respondents (N=36) answered the items in the variable. In the scale 1 (scarce) to 7 (abundant), overwhelmingly, all respondents seemed to rate towards the high

scale in regard to their company's possession of resources. The highest mean and mode were for company's reputation item - 6.28 and 7 respectively. Meanwhile, means of other resources were close to 6, except for technological resources, with its mean at 5.36. Among these resources, the two highest standard deviations were observed for financial resources (0.81) and technological resources (0.80) of which showed more deviation among respondents than other items. In contrast, organisational resources showed the lowest standard deviation, 0.62, indicates less deviation among respondents in their responses to the question. In general the differences among participants in this variable can be considered small, judging from variation being less than 1 in the 1 to 7 scale.

TABLE 3: DESCRIPTIVE STATISTICS OF COMPANY'S RESOURCES

	Descriptive statistics							
Resources	N	Mean	Median	Mode	Min.	Max.	Std.Dev.	Skewness	Kurtosis
Company's reputation	36	6.28	6.0	7	5	7	0.74	-0.51	-0.98
Organisational resources	36	5.81	6.0	6	4	7	0.62	-0.59	1.22
Financial resources	36	5.58	6.0	6	4	7	0.81	-0.11	-0.309
Physical resources	36	5.58	6.0	6	4	7	0.60	-0.34	-0.07
Human resources	36	5.56	6.0	6	4	7	0.69	-0.21	-0.01
Technological resources	36	5.36	5.5	6	4	7	0.80	-0.41	0.70

Source: Based on the sample survey (2006)

Among these resources, the two highest standard deviations were observed for financial resources (0.81) and technological resources (0.80) - showed more deviation among respondents than other items. In contrast, organisational resources showed the lowest standard deviation, 0.62, which indicates less deviation among respondents in their responses to the question. In general the differences among participants in this variable can be considered small, judging from variation being less than 1 in the 1 to 7 scale. Negative skewness of all resources items showed that participants seemed to choose the high end scale of the items. This was shown by skewness, where the highest skew and lowest skew related to the organisational resources item (-0.59) and the financial resources item (-0.11) respectively. In addition, negative and positive kurtosis showed two types of variation of the items. Negative kurtosis items such as financial resources and company's reputation showed their distributions were widely spread. Positive kurtosis of organisational resources and company's reputation items indicated most answers from participants were closely clustered around the mode.

Overall, judging from all negative skewness values, and both positive and negative kurtosis, items under this variable, company's resources were considered as *not normally distributed*.

ENVIRONMENTAL STRATEGIES

Overall environmental strategy level is also showed in table 4. Company F had the highest level of overall environmental strategies (m=5.84); this was closely followed by company B (m=5.72). For the other three companies, D, E, H their means were closely grouped at 5.18, 5.06 and 5.14 respectively. Two companies had their mean between 4 and 5 - company C (m=4.25) and company I (m=4.07). Companies A and G had the lowest means - 3.62 and 3.73 respectively.

TABLE 4: LEVELS OF COMPANIES' ENVIRONMENTAL STRATEGIES

	Company								
Strategy	A	B	C	D	E	F	G	H	I
Operational	4.89	5.50	5.45	5.29	4.89	5.42	4.95	5.84	5.05
Tactical	2.60	5.60	3.20	4.70	4.90	5.50	3.40	3.93	3.70
Strategic	3.36	6.05	4.09	5.55	5.41	6.61	2.85	5.64	3.45
Overall	3.62	5.72	4.25	5.18	5.06	5.84	3.73	5.14	4.07

Source: Based on the sample survey (2006)

HYPOTHESIS TESTING

In the test, the effects of control variables (plantation area and resources availability of companies) on the correlation between stakeholders' pressure and environmental strategy can be observed by comparing zero-order correlations (without any control variable) with partial correlations (with control variable). Additionally, in the zero-order correlations, the correlation between the control variables (plantation area and resources availability) and stakeholders' pressure and environmental strategies can also be observed, to see if there is any significant correlation between them.

HYPOTHESIS 1

To evaluate the effect of the control variables for company's size (that is, plantation size and number of employees of company) on the relationship between stakeholder pressure (average stakeholder pressure) and environmental strategies (average environmental strategy) the researcher performed a partial correlation (Pearson correlation). In this partial correlation the researcher used zero order correlations as basis of comparison.

The correlation table (Table 5) shows both the zero-order correlations (correlation without any control variables) of all three variables, and partial correlation controlling for the effects of plantation area on the correlations. It is observed from the results that zero order correlation between stakeholder pressure and environmental strategies is fairly high 0.77 and statistically significant at 0.05 level.

TABLE 5: ZERO ORDER CORRELATION AND PARTIAL CORRELATION BETWEEN STAKEHOLDERS' PRESSURES AND ENVIRONMENTAL STRATEGIES USING TOTAL PLANTED AREA AS CONTROL VARIABLE

Control Variables			Stakeholders' pressure	Strategy	Area
None	Stakeholders' pressure	Correlation	1.00	0.77	0.78
		Sign. (1-tailed)	.	0.01**	0.01**
		df	0	7	7
	Strategy	Correlation		1.00	0.92
		Sign. (1-tailed)		.	0.01**
		Df		0	7
	Area	Correlation			1.00
		Sign. (1-tailed)			.
		df			0
Area	Stakeholders' pressure	Correlation	1.00	0.23	
		Sign. (1-tailed)	.	0.29	
		df	0	6	
	Strategy	Correlation		1.00	
		Sign. (1-tailed)		.	
		df		0	

**Correlation is significant at the 0.01 level (1-tailed).

Source: Based on the sample survey (2006)

On the other hand, the partial (Pearson) correlation control for company size (total planted area) is very low (0.23) and not statistically significant at 0.05 level. Based on this finding it is clear that plantation area of the company does influence the relationship between stakeholder pressure and environmental strategy. This is supported by the observation in the zero-order correlations, where both stakeholder pressure and environmental strategies are significantly correlated with the control variable (i.e. total planted area of oil palms) at a 0.01 significance level.

In terms of the second variable of company's size, the correlation table (Table 6) shows both the zero-order correlations of all three variables, and partial correlation controlling for the effects of number of employees on the correlations. The partial (Pearson) correlation control for company size (number of employees) is very low (0.47) and not statistically significant at 0.05 level. This is in contrast with the zero order correlation between stakeholder pressure and environmental strategies where the correlation is fairly high 0.77, and statistically significant at 0.05 level. Based on this finding it is clear that the number of employees does influence the relationship between stakeholder pressure and environmental strategy. This is further supported by the observation in the zero-order correlations, where both stakeholder pressure (r=0.74, p=0.01) and environmental strategies (r=0.77, p=0.01) are significantly correlated with control variable - number of employees in the company - at 0.01 significance level.

TABLE 6: ZERO ORDER CORRELATION AND PARTIAL CORRELATION BETWEEN STAKEHOLDERS' PRESSURES AND ENVIRONMENTAL STRATEGIES USING NUMBER OF EMPLOYEES AS CONTROL VARIABLE

Control Variables			Stakeholders' pressure	Strategy	Employees
None	Stakeholders' pressure	Correlation	1.00	0.77	0.74
		Sign. (1-tailed)	.	0.01**	0.01**
		df	0	7	7
	Strategy	Correlation		1.00	0.77
		Sign. (1-tailed)		.	0.01**
		df		0	7
	Employees	Correlation			1.00
		Sign. (1-tailed)			.
		df			0
Employees	Stakeholders' pressure	Correlation	1.00	0.47	
		Sign.	.	0.18	
		df	0	6	
	Strategy	Correlation		1.00	
		Sign.		.	
		df		0	

**Correlation is significant at the 0.01 level.

Source: Based on the sample survey (2006)

So based on these two tests, the null hypothesis is rejected and the alternative hypothesis is accepted.

HYPOTHESIS 2

The same statistical hypothesis testing was also used to determine the effect of another control variable, that is company's resources (average resources), on the correlation between stakeholder pressure and environmental strategy.

Table 7 shows both the zero-order correlations (correlation without any control variables) of all three variables and partial (Pearson) correlation controlling for the effects of resources on the correlations between stakeholder pressure and environmental strategy. Zero order correlation between stakeholder pressure and environmental strategies which is fairly high 0.77 and statistically significant at 0.01 level is compared with the partial correlation. The partial correlation control for company's resources is still quite high (0.76) and statistically significant at the same level, 0.01.

TABLE 7: ZERO ORDER CORRELATION AND PARTIAL CORRELATION BETWEEN STAKEHOLDERS' PRESSURES AND ENVIRONMENTAL STRATEGIES USING COMPANY RESOURCES AS CONTROL VARIABLE

Control Variables			Stakeholders' pressure	Strategy	Resources
None	Stakeholders' pressure	Correlation	1.00	0.77	0.34
		Sign. (1-tailed)	.	0.01**	0.19
		Df	0	7	7
	Strategy	Correlation		1.00	0.23
		Sign. (1-tailed)		.	0.28
		Df		0	7
	Resources	Correlation			1.00
		Sign. (1-tailed)			.
		df			0
Resources	Stakeholders' pressure	Correlation	1.00	0.76	
		Sign. (1-tailed)	.	0.01**	
		df	0	6	
	Strategy	Correlation		1.00	
		Sign. (1-tailed)		.	
		df		0	

** Correlation is significant at the 0.01 level.

Source: Based on the sample survey (2006)

Based on this finding it is clear that company's resources does not influence the relationship between stakeholder pressure and environmental strategy This is supported by zero-order correlations, where both stakeholder pressure (r=0.34, p=0.19) and environmental strategies (r=0.23. p=0.28) are not significantly correlated with the control variable-of company's resources. Therefore, this test shows that the null hypothesis fails to be rejected.

The impact of company's size (number of employees and plantation area) was observable in the relationship between stakeholder's pressure and environmental strategy; but there was no observable impact from company's resources.

DISCUSSION AND CONCLUSION

In terms of the impact of a company's size, and its resources, on the level of environmental strategies, the results from quantitative analysis will be used to answer these questions. In this study two proxies of size – plantation area, and number of employees engaged in the palm oil sector of each palm oil company- were used to represent a company's size. The effects of plantation area and number of employees were then tested against the relationship between stakeholders' pressure and environmental strategy of the nine palm oil companies participating in the study. The results of the analysis showed both proxies of

size affect the relationship between stakeholders' pressure and environmental strategies. These results indicate that a company's size is a moderator that affects the relationship between environmental stakeholders' pressure and environmental strategy. This finding matches the study by Buysse and Verbeke's (2003) in various industries in Belgium, and Henriques and Sadorsky's study (1999) on 750 large companies in Canada, which established that the size of a company moderates the relationship between stakeholders' pressure and a company's environmental strategy.

The results of this study also showed a significant positive relationship between size (i.e. plantation area and number of employees) and both stakeholders' pressure and environmental strategy. This tends to imply that the larger the size of palm oil companies, the more likely that they will get pressure from stakeholders, and the more likely that they exercise a proactive strategy, and vice versa. This finding of a strong correlation between size and environmental proactiveness supports studies elsewhere by Elsayed (2006), Rothenberg and Zyglidopoulous (2007) and Sharma (2000). Hence is clear that the area of palm oil plantations related to stakeholders pressure. The respondents of the big companies admitted that due to their plantation area they are more vulnerable, as they are more visible to the public. This makes them more sensitive to public opinion, in turn makes them more likely to invest in environmental innovation to avoid negative publicity. For example, the expansion of the oil palm plantations is always associated with deforestation and depletion of flora and fauna. The big plantation companies who are involved in massive deforestation will be easily vulnerable to such kind of an accusation. Hence, to anticipate and manage stakeholders' pressure, especially from ENGOs and the public, big companies exercise a proactive strategy. At the same time, they believe by doing so they could project their images to gain a better corporate reputation.

The average from responses of the four managers of each palm oil company in the study was used to represent a company's resources - financial resources, physical equipment, human resources, management systems, technology, and reputation. The results of quantitative analysis showed that resources did not affect the relationship between stakeholder's pressure and environmental strategy. This finding seems to support previous studies undertaken elsewhere by Elsayed (2006), Henriques and Sadorsky (1996) and Toms (2002). Nonetheless, these findings need to be treated with caution. Arguably, as explained in the previous chapter, the researcher suspects that respondents were more likely to exaggerate their companies' resources in the survey. This is evident as, whatever the size of their company, respondents rated all resources variables at the high end of the scale. As a result, large companies and medium size companies in the study showed no difference.To validate this argument, the researcher compared the resources of one company, a medium size and newly listed company under the KLSE, with a number of multinational companies. Surprisingly it was rated as having higher resources than the multinational companies in the study. Perhaps, a more accurate alternative for measuring resources would be based on financial ratios from annual reports, rather than the multi-scale items measure as used in the study. Nevertheless, financial ratio statistics only provide information on financial resources of a company. Financial resources alone are not enough to explain other resources, such as physical resources, human resources, control systems, technological resources, and company reputation. All of this information is not usually available in a company annual report.

In conclusion the study demonstrated that the size of palm oil companies moderated the relationship between stakeholder's pressure and environmental strategies. This implies that the greater the size of companies the more likely that they will exercise proactive strategies. But, this relationship was not observed for company's resources. Arguably, this is due to exaggeration of the companies' resources by respondents in the study.

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