THE RELATIONSHIP BETWEEN HOFSTEDE'S NATIONAL CULTURE VALUES AND CORPORATE ENVIRONMENTAL DISCLOSURE: AN INTERNATIONAL PERSPECTİVE

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ABSTRACT

In Turkey and most other countries, there are many of organizations that have both social and economic objectives. These organizations may include non-profit organizations, co-operatives, social enterprises, other for profit with environmental and social obligations, and public sector organizations. At the same time the countries around the world became collectively dealing with environmental crises by formulating and enacting rules and regulations to sustain the environment. This paper involves a cross-cultural comparison of the effect of national culture values on corporate environmental disclosure (CED) within the annual reports of sample consist of about 655 large companies from 20 countries based on Gray's (1988) classification methodology of cultural areas. We focus on the 2012 environmental disclosures within six industries are automobiles, chemicals, foods, metals and mining, oil and gas, and pulp and paper. In this paper we utilized the content analysis technique which is a research method for making replicable and valid inferences from data to operationalize the voluntary environmental disclosure variables. The findings indicate that two of Hofstede's national culture dimensions are linked to a higher degree of corporate environmental disclosure. In particular, a nation's high degree of individualism and long-term orientation were both related to high level of corporate environmental disclosure. While one of Hofstede's national culture dimensions is linked to a low degree of corporate environmental disclosure. The nation's high degree of power distance was related to low degree of corporate environmental disclosure. The control variables (regions, industries and firm size) were significantly related to corporate environmental disclosure.

1. INTRODUCTION

The environmental accounting and reporting can be considered one of the modern topics that have entered to the attention of companies and in business sector, it indicates environmental cost account of any economical businesses of the country or on one region or on the whole world, this concept has been generated in accounting thought as a result of the perception of the business organizations that its role must not be productive, and trying to gain profit only, but that there is a responsibility and social and environmental goals that should be obligated by the industrial companies towards the society and the environment. Over the past few years researches in the field of environmental accounting dominate the social accounting literature, and the predominant is represented by national practices or regulations on environmental accounting. Internationally, there are several

nations that are leaders in social and environmental reporting practices. For example, Scandinavian countries and the Netherlands have mandatory corporate environmental performance reporting requirements. In the US, companies have to submit emissions data to the Environment Protection Authority, which is made publicly available. The US Securities and Exchange Commission, Canada's Securities Commission and the UK Companies Act require the disclosure of social and environmental information that affects current or future financial performance. The influences of culture are pervasive and underlie nation's institutional arrangements; all organizations exist within cultural contexts. Gray (1988) hypothesized that cultural values influence a country's accounting system and disclosure practices.

As a result, examining societal values or culture would be helpful in identifying countries that would have different perceptions of a company's stakeholders and their influences on a corporation's environmental disclosure practices. Therefore, the purpose of this paper is to investigate whether corporate environmental disclosure levels relate to national culture values depending upon Hofstede's individualism, masculinity, power distance, uncertainty avoidance, and long term-orientation dimensions. In summary, this study applies Hofstede's cultural value theory to investigate cultural effects on Corporate Environmental Disclosure practices. The remainder of this paper covers the literature review, and then the research methodology and data analysis are presented and discussed, while the last part discusses the findings and resulting conclusions.

2. LITERATURE REVIEW

The literature review sheds light on the variety of studies examining the effect of cultural orientation in various accounting disciplines. The results of most empirical studies contribute to supporting the accounting literatures related to environmental disclosure forms, the effects of the national cultural variations on financial reporting generally, and documenting the association between the national cultural orientation and the organizations' attitudes toward voluntary environmental disclosure, and managers' decision-making with regard to environment protections activities. Many studies try to investigate the factors affecting corporate environmental disclosures (e.g. Bewley and Li (2000), Liu and Anbumozhi (2009), Sun et al. (2010) ,Zhongfu et al. (2011), De Villiers and Van Staden (2012), and Bowrin (2013). In this context, Bewley and Li (2000) examine factors associated with the environmental disclosures in Canada from a voluntary disclosure theory perspective. The authors measure environmental disclosures by 188 Canadian manufacturing firms in their 1993 annual reports using the Wiseman index. The study finds that firms with more news media coverage of their environmental exposure, higher pollution propensity, and more political exposure are more likely to disclose general environmental information, suggesting a negative association between environmental disclosures and environmental performance. Liu and Anbumozhi (2009) identify the determinant factors affecting the disclosure level of corporate environmental information on the basis of stakeholder theory, and give an empirical observation on Chinese listed companies. They find that the Environmental Information Disclosure (EID) strategy of Chinese listed companies is oriented to fill up the government's environmental concerns and the corporate EID effort is significantly associated with its environmental sensitivity and its size. While the role of other stakeholders, like shareholders and

creditors in effecting the EID still weak. Sun et al. (2010) examine the association between corporate environmental disclosure (CED) and earnings management (EM) and the impact of corporate governance (CG) mechanisms on that association. They use performance-matched discretionary accrual (DA) as a measure of EM for a sample of 245 UK non-financial firms for the financial year ended on March 2007. Three different theoretical frameworks are used to identify the expected association between CER and EM. These include: signaling, agency and stakeholder-legitimacy theories. They find no significant statistical association between various measures of DA and environmental disclosure. At the same context, Zhongfu et al. (2011) find that environmental information disclosure has a positive effect on economic performance, as is shown that enterprises which sufficiently disclose their environmental information have better economic performance. Bowrin (2013) finds that the level of SED in the Caribbean was relatively and the amount of SED was positively related to firm size, industry affiliation, foreign influence and organizational culture. Other studies emphasized on the relation between environmental performance and corporate environmental disclosure (e.g. Hughes et al. (2001), Patten (2002), Al-Tuwaijri et al. (2004), Clarkson et al (2007), Cho et al. (2010), and Iatridis (2013)), most of these studies found a positive relation between environmental performance and corporate environmental disclosure.

As discussed above, the environmental disclosure has affected by internal and external consequences; however, these studies contain implicit indication that there is a differences in the extent to which the companies disclose their environmental information, these difference can be attributed to the social, legal, or cultural differences among countries. The impact of national culture on corporate disclosure has received more attention in the last two decades, the national culture and financial reporting was one of the most important topics in accounting literature. In this regard, several studies have explained the impact of cultural environments on accounting systems and financial Reporting (e.g., Gray, 1988; Guthrie and Parker, 1990; Jaggi and low, 2000; Hope et al, 2008). Gray (1988) applies Hofstede's cultural value dimensions to national accounting systems and practices presumed to reflect degrees of professionalism, uniformity, conservatism, and secrecy. Gray's framework proposes that cultures' societal values shape the values of accounting-related professions (Gray, 1988). As such, accountants' values influence their judgments and decisions regarding financial reporting systems, information disclosure and similar issues, which in turn influence national accounting systems. Accordingly, Gray (1988) classified financial reporting based on Hofstede's national culture dimensions. Even though the Gray's classification has received more attention in accounting literature, his attention still emphasize on the financial reporting rather than social and environmental reporting practices.

However, several studies have attempted to investigate the country effect by adopting a comparative framework in examining environmental disclosure issues. These studies emphasize generally on the corporate social disclosure (CSD) and suggest that CSD varies across countries but few of the studies have attempted to explain the underlying reasons for the observed variations in CSD.

In this context, Buhr & Freedman (2001) explore the role of cultural and institutional factors in motivating production of mandatory and voluntary disclosure by comparing

environmental disclosure produced by Canadian and US companies. They show that Canadian culture and institutional infrastructure is more conducive to the production of environmental disclosure than US counterparts. They indicate that the collectivistic nature of Canadian society has led to the production of a greater level of voluntary environmental disclosure. Mathews and Reynolds (2001), test a possible classification of CSD based on Hofstede's dimensions, applying Gray's (1988) classification methodology of financial reporting. This classification is also based on Hofstede's work. They show that differences in CSD levels between Nordic countries and the US relate to Hofstede's (1983) dimensions. Newson and Deegan (2002) explore the social disclosure policies of large Australian, Singaporean, and South Korean multinational corporations. They indicate that country of origin and industry of operation appears to significantly influence the social disclosure practices. Van der Laan Smith et al. (2005), study CSD in combination with three of Hofstede's dimensions: masculinity (MAS), power distance (PDI) and individualism (IDV). Application of the latter two dimensions was based on Gannon (2001), who combines PDI and IDV in a classification schedule for generic types of cultures. Van der Laan Smith et al. (2005) construct a prediction model for country of origin, with CSD as predictor to explain the differences in CSD between Norway/Denmark and the US companies.

Simnett et al. (2009) study determinants of assurance of sustainability reports. They focus on company, industry and country-related factors. The only country-related factor they apply is the distinction between stakeholder and shareholder orientation, for which the proxy legal system is used. They conclude that this orientation partly determines choices made on assurance of sustainability reports. Vachon (2010) suggests that two of Hofstede's national culture dimensions are linked to a higher degree of sustainable practices by corporations. In particular, a nation's high degree of individualism and uncertainty avoidance were both related to green corporatism, environmental innovation, fair labor practices and corporate social involvement. Orij (2010) investigates whether corporate social disclosure levels relate to national cultures. The sample consisted of 600 large companies from 22 countries. Cultural measures were applied: a measure for secrecy, as proposed by Hope et al. and a constructed measure for generic types of cultures (Gannon, 2001); both derived from Hofstede's national culture dimensions. The results state that corporate social disclosure levels are likely to be influenced by national cultures.

Unlike most prior researches, this research applies Hofstede's cultural value theory to investigate cultural effects on environmental disclosure practices only, applying Gray's (1988) classification. Therefore, our analysis will include the annual reports of 655 companies from 20 countries within 10 cultural areas (See appendix 1). The study will contributes to a greater understanding of observed variations in CED among countries. To achieve this goal the paper proposes that the national cultural values of the societies play an important role in corporate environmental disclosure decision. The research for cultural values that have an influence on corporate environmental disclosure (CED) can be achieved by hypothesizing that there are theoretically reasonable differences in levels of CED among corporations with different scores for particular national culture measures. A separate hypothesis is generated for each of cultural value measures tested, which according to Hofstede (1988) include; Power Distance (PDI), Individualism (IDV),

Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO). Therefore, this research hypothesizes that there is a negative relationship between Power Distance (PDI), Masculinity (MAS), and Uncertainty Avoidance (UAI) and the level of corporate environmental disclosure (CED) on one hand, on the other hand the research also hypothesizes that there is a positive relationship between Individualism (IDV), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED). Hence, the following hypotheses are developed for the correlation study:

1. **Large versus Small Power Distance:** Power Distance is the extent to which less powerful members of a society accept and expect that power is distributed unequally (Hofstede, 2001). The people in large power distance countries accept a hierarchical order in which everybody has a place which needs no further justification. On the other hand, in lower power distance countries the people strive for power equalization and demand justification for power inequalities. When power distance is large, managers are expected to retain and not disclose information to preserve power inequalities, leading to more secrecy. Therefore the Power distance is assumed-to-be-related, positively to secrecy, as a low level of information to secondary stakeholders of the corporation helps to preserve the level of power relations. Then, it is hypothesized that:

H1: There is a negative relationship between Power Distance (PDI) as a national cultural value and the level of corporate environmental disclosure

2. **Individualism versus Collectivism:** The second dimension is individualism (IDV), which refers to the extent to which the individual expects personal freedom versus the acceptance of responsibility to family, tribal, or national groups (i.e., collectivism). Gray (1988) notes that secrecy is consistent with a preference for collectivism, as opposed to individualism, and the individualistic societies are expected to be less secretive than collectivist societies, where people share the common beliefs and possibly information and require extensive disclosure relative to collectivist societies. Analysis by Van der Laan Smith et al. (2005) indicates that a high score on IDV can relate to both a stakeholder and shareholder orientation of society. Then, a negative relation is proposed between secrecy and individualism. In other words, a positive correlation between individualism and the extent of transparency is expected. Accordingly, it is hypothesized that:

H2: There is a positive relationship between Individualism (IDV) as a national cultural value and the level of corporate environmental disclosure.

3. **Masculinity versus Femininity:** Masculinity stands for a preference in society for achievement, heroism, assertiveness, and material success. Its opposite, Femininity stands for a preference for relationships, modesty, caring for the weak, and the quality of life. Gray (1988) hypothesizes that MAS is less likely to be related to secrecy with financial disclosures, although he argues that transparency is more likely in the case of an orientation on "quality of life". More caring societies (i.e. feminine societies) will tend to be more open especially for socially related information. On the other hand, Jaggi and Low (2000), and Hope (2003) determine a negative relation between

masculinity and financial disclosure. In addition, Orij (2010) finds that the Masculinity is negatively related to Corporate Social Disclosure levels (CSD), which supports the results of Van der Laan Smith et al. (2005). Consequently, the third hypothesis is:

H3: There is a negative relationship between Masculinity (MAS) as a national cultural value and the level of corporate environmental disclosure.

4. **Strong versus Weak Uncertainty Avoidance:** Uncertainty Avoidance is the extent to which society avoids risk and creates security by emphasizing technology and buildings, laws and rules, and religion. Weak uncertainty avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated. Gray (1988) indicates that a preference for secrecy is consistent with strong uncertainty avoidance following from a need to restrict information disclosures so as to avoid conflict and competition and to preserve security. Therefore, the Uncertainty Avoidance is assumed-to-be-related positively to secrecy, as secrecy is helpful in preserving security. This leads to fourth hypothesis:

H4: There is a negative relationship between Uncertainty Avoidance (UAI) as a national cultural value and the level of corporate environmental disclosure

5. **Long-term versus Short-term Orientation:** A fifth dimension, long-term orientation (LTO), was added in 1987 by Hofstede (2001). The LTO dimension refers to a forward-looking perspective rather than an historical perspective. Such a future orientation is related to thrift and perseverance. The opposite - short-term - orientation means a focus on social status, being fixed in the present and past. Bradley et al. (1999) state that long-term orientation of society is related to a stakeholder or social perspective. Hence, long-term orientation is likely to be consistent with transparency, and consequently, CED is likely to be positively related to LTO. It is therefore hypothesized that:

H5: There is a positive relationship between Long-Term Orientation (LTO) as a national cultural value and the level of corporate environmental disclosure

6. The hypotheses for the multiple regression models are similar to the correlation study. That is, this research study hypothesizes that there is a relationship between level Power Distance, Individualism, Masculinity, Uncertainty Avoidance, and Long-Term Orientation and the level of corporate environmental disclosure. For the multiple regression models, the control variables are regions, industries, and firm size. Due to the cultural differences, Regions are expected to have an impact on the relationship between the above cultural values and the level of corporate environmental disclosure. As for Industries, they are expected to have an impact on the relationship between those cultural values and the level of corporate environmental disclosure, because the companies that work in more environmental sensitive industries are likely to disclose more environmental information than the companies that work in less sensitive industries. Finally, the firm size is expected to have an impact on the relationship between level Power Distance, Individualism, Masculinity, Uncertainty Avoidance, and Long-Term Orientation and the level of corporate environmental

disclosure, since larger companies are probably to have better resources to engage in environment protection activities than the small companies. Hence, the following hypotheses are developed for the multiple regression models:

H6: There is a relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED).

H6a:There is a relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling regions.

H6b: There is a relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling industries.

H6c: There is a relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling firm size.

3. METHODOLOGY AND DATA

The content analysis method was adopted in this research because it allows corporate environmental disclosure to be systematically classified and compared; which is useful for determining trends and extent of disclosures. Furthermore, this method is one of the most systematic, objective and quantitative methods of data analysis technique employed in other prior research studies involving corporate environmental disclosures practices (Wiseman, 1982; Deegan and Rankin, 1996; Patten, 2002; Cormier and Magnan 2003; and Al-Tuwaijri et al. 2004). It is also one of the most common or dominant research technique used to study, measure and analyze corporate environmental disclosure in corporate annual reports. The environmental disclosure index comprises 40 items measuring environmental disclosure level, where the items are grouped into six categories (Expenditures and risk, Laws and regulation, Pollution abatement, Sustainable development, Land remediation, and Environmental management). The rating is based on a scores ranged from one to three, three points are awarded for an item described in quantitative or qualitative monetary or quantitative terms, two non-quantitative disclosure, and one for an items discussed in general. (See appendix 2)

As stated earlier, the research objective of this study is to investigate the relationship among Hofstede's cultural dimensions and level of Corporate Environmental Disclosure CED. To investigate the relationship, this study conducts a correlation study where the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) are each correlated to Corporate Environmental Disclosure (CED). The reason for investigating the cultural dimensions as separating variables into five components is to gain an understanding of the relationship of each component with Corporate Environmental Disclosure (CED) and then to investigate the relationship between cultural dimensions as whole with the level of   Corporate

Environmental Disclosure (CED). This procedure is implemented for examining the validity of Hofstede theory related to social and cultural values in different area.

In addition to the correlation study, this research study develops multiple regression models to investigate the relationships between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and level of Corporate Environmental Disclosure CED. This is to determine the R-square values. For the multiple regression models, the control variables used are regions, industries, and firm size. Regions are included as a control variable. The reason to include them is to confirm the results of the correlation study, that is, regions may have a significant impact on the relationships between national cultural dimensions and level of Corporate Environmental Disclosure CED.

In this paper four multiple regression equations are used. The first equation is used when no control variable is introduced. The second equation is used when the control variable for regions is introduced in the analysis. The third equation is used when the control variable for industries is introduced. The fourth equation is used when the control variable for firm size is introduced.

The first equation, when no control variable is introduced, takes the following form:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

where:
   Y = the dependent variable: environmental disclosure value (EDV).
   α = a constant
   $\beta_1 .. \beta_5$ = regression coefficients for independent variables x1 to x5 respectively.
   $X_1 .. X_5$ = the independent variables Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), or Long-Term Orientation (LTO) respectively.
   ε = error term

The second equation, when the control variable for regions is introduced, is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

where:
   Y = the dependent variable: environmental disclosure value (EDV).
   α = a constant
   $\beta_1 .. \beta_5$ = regression coefficients for independent variables x1 to x5 respectively.
   B_6 = regression coefficient for control variable x6.
   $X_1 .. X_5$ = the independent variables Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), or Long-Term Orientation (LTO) respectively.
   X_6 = the control variable for regions.
   ε = error term

The third equation, when the control variable for industries is introduced, is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_7 X_7 + \varepsilon$$

where:

Y = the dependent variable: environmental disclosure value (EDV).

α = a constant

$\beta_1 .. \beta_5$ = regression coefficients for independent variables x1 to x5 respectively.

B_7 = regression coefficient for control variable x7.

$X_1 .. X_5$ = the independent variables Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), or Long-Term Orientation (LTO) respectively.

X_7 = the control variable for industries.

ε = error term

The fourth equation, when the control variable for firm size is introduced, is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_8 X_8 + \varepsilon$$

where:

Y = the dependent variable: environmental disclosure value (EDV).

α = a constant

$\beta_1 .. \beta_5$ = regression coefficients for independent variables x1 to x5 respectively.

B_8 = regression coefficient for control variable x8.

$x_1 .. x_5$ = the independent variables Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), or Long-Term Orientation (LTO) respectively.

X_8 = the control variable for firm size.

ε = error term

Table 1 shows the mean, standard deviation, minimum and maximum of the environmental information disclosed by companies in different regions. The table shows that, by regions, the mean for the environmental information scores disclosed by companies in Anglo countries is 38.20 and the standard deviation is 22.59. The table also shows that, by industries, the mean for the environmental information scores disclosed by companies in Asian Colonial countries is 9.81 and the standard deviation is 10.36. At the same time, the other regions range from Nordic (31.64) to Near Eastern (12.98).

Therefore, the different means between regions suggest that the value of environmental information disclosed by companies between regions may be significantly different.

Table 1: Statistics of Environmental Disclosure Scorers by Regions

		African	Anglo	Asian Colonial	German ic	Less Developed Asian	Less Developed Latin	More Developed Asian	More Developed Latin	Near Eastern	Nordic
N	Valid	15	222	64	55	94	9	59	48	45	44
	Missing	207	0	158	167	128	213	163	174	177	178
Mean		**29.200**	**38.203**	**9.813**	**27.618**	**20.787**	**34.111**	**24.441**	**29.000**	**12.978**	**31.636**
Std. Deviation		21.874	22.592	10.355	18.333	15.773	23.273	14.128	21.141	11.377	18.651
Minimum		1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00
Maximum		79.00	120.00	56.00	86.00	65.00	64.00	58.00	79.00	44.00	74.00

Industries are also included as a control variable because previous studies have shown that they can affect the level of Corporate Environmental Disclosure (CED) and there are specific environmentally sensitive industries. In this research, we investigate six industries are Automobiles, Chemicals, Foods, Metals and Mining, Oil and Gas, and Pulp and Paper.

Table 2 shows the mean, standard deviation, minimum and maximum of the environmental information disclosed by companies work in 10 industries. The table shows than, the mean for the environmental information scores disclosed by Oil and Gas industry companies is 32.96 and the standard deviation is 21.87. The table also shows that, the mean for the environmental information scores disclosed by Food industry companies is 19.57 and the standard deviation is 12.94.

Table 2: Statistics of Environmental Disclosure Scorers by Industries

		Automobiles	Chemicals	Food	Metal and mining	Oil and Gas	Pulp and paper
N	Valid	63	125	106	156	138	67
	Missing	93	31	50	0	18	89
Mean		**23.3651**	**27.3360**	**19.5660**	**31.9615**	**32.9565**	**24.4776**
Std. Deviation		15.41606	23.75138	12.93870	22.79216	21.86951	18.36198
Minimum		1.00	1.00	1.00	1.00	1.00	1.00
Maximum		60.00	109.00	71.00	120.00	99.00	67.00

Prior research studies have included size as a control variable too because larger companies have better resources to engage in Environmental activities compared to smaller companies (Monteiro and Aibar-Guzmán, 2010; Cho et al. 2012; Suttipun and Stanton, 2012; and Bowrin, 2013). Therefore, the firm size is included as a control variable in this study. In an attempt to provide answers to the hypotheses highlighted in this paper, this section therefore presents both the results of correlation study and multiple regression study.

The results of hypotheses 1 to 5 are below (The Pearson correlation is used to test hypotheses 1 and 4 because the assumption of normality in the Pearson correlation has been met for these two hypotheses).

Hypothesis 1 / Pearson Correlation
H0: There is no relationship between the level of Power Distance and Corporate Environmental Disclosure.

Table 3. Results of Hypothesis 1

Correlations

		EDV2	PDI
EDV2	Pearson Correlation	1	-.656[**]
	Sig. (2-tailed)		.002
	N	20	20
PDI	Pearson Correlation	-.656[**]	1
	Sig. (2-tailed)	.002	
	N	20	20

 **. Correlation is significant at the 0.01 level (2-tailed).

Given that p < .05 which means that the null hypothesis is rejected. Consequently, the alternative hypothesis H1 is supported, which states that there is a relationship the level of Power Distance and Corporate Environmental Disclosure, r (20) = -.656, p < .05.

Hypothesis 2/ Spearman Correlation
H0: There is no relationship between the level of Individualism and Corporate Environmental Disclosure.

Table 4. Results of Hypothesis 2

Correlations

			EDV2	IDV
Spearman's rho	EDV2	Correlation Coefficient	1.000	.696[**]
		Sig. (2-tailed)	.	.001

		N	20	20
IDV	Correlation Coefficient		.696[**]	1.000
	Sig. (2-tailed)		.001	.
	N		20	20

**. Correlation is significant at the 0.01 level (2-tailed).

Given that p < .05 which means that the null hypothesis is rejected. Consequently, the alternative hypothesis H1 is supported, which states that there is a relationship the level of Individualism and Corporate Environmental Disclosure, r (20) = .696, p < .05.

Hypothesis 3/ Spearman Correlation
H0: There is no relationship between the level of Masculinity and Corporate Environmental Disclosure.

Table 5. Results of Hypothesis 3

Correlations

			EDV2	MAS
Spearman's rho	EDV2	Correlation Coefficient	1.000	-.230
		Sig. (2-tailed)	.	.330
		N	20	20
	MAS	Correlation Coefficient	-.230	1.000
		Sig. (2-tailed)	.330	.
		N	20	20

Given that p > .05 which means that the null hypothesis is accepted. Consequently, the alternative hypothesis H1 is not supported, which states that there is a relationship the level of Masculinity and Corporate Environmental Disclosure, r (20) = -.230, p > .05.

Hypothesis 4/ Pearson Correlation
H0: There is no relationship between the level of Uncertainty Avoidance and Corporate Environmental Disclosure.

Table 6. Results of Hypothesis 4

Correlations

		EDV2	UAI
EDV2	Pearson Correlation	1	.111
	Sig. (2-tailed)		.641

	N	20	20
	Pearson Correlation	.111	1
UAI	Sig. (2-tailed)	.641	
	N	20	20

Hypothesis 5/ Spearman Correlation
H0: There is no relationship between the level of Long-Term Orientation and Corporate Environmental Disclosure.

Table 7: Results of Hypothesis 5

Correlations

			EDV2	LTO
	EDV2	Correlation Coefficient	1.000	-.662[**]
		Sig. (2-tailed)	.	.003
		N	18	18
Spearman's rho	LTO	Correlation Coefficient	-.662[**]	1.000
		Sig. (2-tailed)	.003	.
		N	18	18

**. Correlation is significant at the 0.01 level (2-tailed).

Given that p < .05 which means that the null hypothesis is rejected. Consequently, the alternative hypothesis H1 is supported, which states that there is a relationship between the level of Long-Term Orientation and Corporate Environmental Disclosure, r (10) = -.662, p < .05.

Results of Hypothesis 6
The results of hypothesis 6 are shown in Table 8 and Table 9 below:

Table 8: Model Summary of Hypothesis 6

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755[a]	.570	.390	8.34330

a. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

b. Dependent Variable: EDV2

Table 9: ANOVA of Hypothesis 6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1105.116	5	221.023	3.175	.047[b]
1	Residual	835.328	12	69.611		
	Total	1940.444	17			

a. Dependent Variable: EDV2

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

Hypothesis 6 / Multiple Regression Model
H0: There is no relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED).

Given that p < .05, H1 is supported, which states that there is a relationship between the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED), $F(5,12) = 3.175$, $p < .05$.

Results of Hypothesis 6a
The results of hypothesis 6a are shown in Table 10 and Table 11 below:

Table 10: Model Summary of Hypothesis 6a

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755[a]	.570	.390	8.34330
2	.838[b]	.702	.539	7.25485

a. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, Region

c. Dependent Variable: EDV2

Table 11: ANOVA of Hypothesis 6a

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1105.116	5	221.023	3.175	.047[b]
1	Residual	835.328	12	69.611		
	Total	1940.444	17			

	Regression	1361.483	6	226.914	4.311	.018[c]
2	Residual	578.961	11	52.633		
	Total	1940.444	17			

a. Dependent Variable: EDV2

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

c. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, Region

Hypothesis 6a / Multiple Regression Model
H0: There is no relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling regions

Given that p < .05, H1 is supported, which states that there is a relationship between the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling regions, $F(6,11) = 4.311$, $p < .05$.

Results of Hypothesis 6b
The results of hypothesis 6b are shown in Table 12 and Table 13 below:

Table 12: Model Summary of Hypothesis 6b

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755[a]	.570	.390	8.34330
2	.819[b]	.671	.491	7.62034

a. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, Industry

c. Dependent Variable: EDV2

Table 13: ANOVA of Hypothesis 6b

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1105.116	5	221.023	3.175	.047[b]
	Residual	835.328	12	69.611		
	Total	1940.444	17			
2	Regression	1301.679	6	216.946	3.736	.028[c]

Residual	638.766	11	58.070			
Total	1940.444	17				

a. Dependent Variable: EDV2

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

c. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, Industry

Hypothesis 6b / Multiple Regression Model

H0: There is no relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling industries.

Given that p < .05, H1 is supported, which states that there is a relationship between the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling industries, $F_{(6,11)} = 3.736$, $p < .05$.

Results of Hypothesis 6c

The results of hypothesis 6c are shown in Table 14 to Table 15 below:

Table 14: Model Summary of Hypothesis 6c

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755[a]	.570	.390	8.34330
2	.893[b]	.797	.686	5.98546

a. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, FirmSize

c. Dependent Variable: EDV2

Table 15: ANOVA of Hypothesis 6c

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1105.116	5	221.023	3.175	.047[b]
	Residual	835.328	12	69.611		
	Total	1940.444	17			
2	Regression	1546.362	6	257.727	7.194	.003[c]
	Residual	394.083	11	35.826		

Total	1940.444	17				

a. Dependent Variable: EDV2

b. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV

c. Predictors: (Constant), LTO, UAI, MAS, PDI, IDV, Firm Size

Hypothesis 6c / Multiple Regression Model

H0: There is no relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling firm size.

Given that p < .05, H1 is supported, which states that there is a relationship between the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling firm size, F(6,11) = 7.194, p < .05.

The summary of the Pearson correlation results for hypothesis 1 as depicted in Table 3 shows clearly that the level of Power Distance (PDI) is negatively correlated with the extent of corporate environmental disclosure and it is significant (sig. 0.001). These results indicate therefore that there is significant relationship between the level of Power Distance and Corporate Environmental Disclosure. This finding is consistent with Vachon (2010) who found a negative relationship. Vachon (2010) found that the higher level of power distance in a country is associated with a lower degree of sustainable development practices. A possible explanation for this finding is that, societies with high power distance usually present a higher degree of acceptance of poor working conditions and polluted environment. Accordingly, the society's pressure on companies to disclose environmental disclosure would be lower than the pressure in societies with lower power distance. In the same context, the power distance was negatively linked to a country's environmental performance as measured by the Environmental Sustainability Index developed by the World Economic Forum (Husted, 2005; Park et al., 2007). Therefore, the higher power distance has a negative impact on the tendency of society to achieve and disclose the environmental protection activities generally.

The summary of the result on the Spearman correlation coefficient for Hypothesis 2 as depicted in Table 4 reveals that there is a significant positive relationship between the level of Individualism and Corporate Environmental Disclosure at 0.1% level of significance with a two–tailed test. This result thus implies that firms in countries with high degree of Individualism would be willing to disclose more environmental information than those in countries lower degree of individualism. This finding is consistent with Vachon (2010) who found a negative relationship between individualism and environmental innovation. He indicates that the higher level of individualism in a country (as opposed to collectivism) is associated with a higher degree of sustainable development practices by corporations in that country. In contrast, Van der Laan Smith et al. (2005) and Orij (2010) indicated that there is no relationship between Generic types of cultures (as a combination of the national culture dimensions individualism and power distance) and corporate social disclosure. However, our results is related to environmental disclosure rather than social

disclosure, consequently, this mean that the companies are more likely to disclose environmental information when they work in countries with high degree of individualism. An explanation for this outcome is that due to the individualistic societies are expected to be less secretive than collectivist societies, where people share the common beliefs and possibly information and require extensive disclosure relative to collectivist societies, the companies in those societies would face higher social pressure to disclose environmental information compared to other companies. Table 3 shows the results of Spearman Correlation for hypothesis 3; these results indicate that there is no relationship between the level of Masculinity and Corporate Environmental Disclosure. This finding is not consistent with Orij (2010) who found that the Masculinity is negatively related to Corporate Social Disclosure levels (CSD), that is, the companies in countries with higher level of masculinity tend to disclose less social information than those in countries with lower level of masculinity.

The summary of the Pearson correlation result for hypothesis 4 as depicted in Table 6 shows that there is no relationship between the level of Uncertainty Avoidance and Corporate Environmental Disclosure. However, this finding is not consistent with Vachon (2010) who found a negative relationship. Vachon (2010) found the higher level of uncertainty avoidance in a country is associated with a lower degree of sustainable development practices by corporations in that country. Finally, the summary of the result on the Spearman correlation coefficient for Hypothesis 5 as depicted in Table 7 shows that the level of Long-Term Orientation LTO is positively correlated with Corporate Environmental Disclosure and it is significant (sig. 0.001). These results indicate that there is negative relationship between the level of Long-Term Orientation and Corporate Environmental Disclosure. However, the theoretically predicted relationship between long-term orientation and Corporate Environmental Disclosure is not confirmed, when assuming that long-term orientation is correlated positively with Corporate Environmental Disclosure.

A possible explanation of this finding is, that the sample of this research study includes many eastern countries which countries which have high long-term orientation values. For example, China and Singapore have the highest values of (118), and (96) respectively whereas more developed countries such as the United States , the United Kingdom, Canada, Sweden, and Spain have significantly low values of 29 , 25, 23, 20, and 19 respectively. Evidently, the more companies in developed countries are likely to disclose more environmental information than that those in eastern or less developed countries. In other words, the companies in some developed countries would reasonably be expected to have made strategic decisions to support the environmental reporting practices due to the higher social pressure and sustainability reporting guidelines and regulations required in these countries. This situation could lead to unexpected results for long-term orientation which consequently explain the reason of the negative correlation resulted.

The multiple regression analysis performed on data set from 20 countries indicates clearly the following empirical findings as presented in Table 8 to Table 15. The results of hypothesis 6 as depicted in Table 8 and Table 8 show that there is a relationship between the Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental

disclosure (CED). It is noted that the results here are consistent with the results of hypotheses 1 to 5 that show that there is significant relationship between the corporate environmental disclosure (CED) as independent variable and Power Distance (PDI), Individualism (IDV), and Long-Term Orientation (LTO). Therefore, it is logical to find a significant joint relationship between the cultural dimension as whole and the independent variable (CED). This outcome suggests that the cultural factors play an important role in environmental reporting process and consequently would influence the quality and magnitude of environmental information disclosed by companies in different cultures. To examine the effect of control variables (Regions, Industries, and Firm size) hypotheses 6a, 6b, and 6c are constructed to show the results of multiple regression models related to these variables.

Coming back to the results of hypotheses 6a to 6c, when the control variable of Regions is introduced, the results of hypothesis 6a (as depicted in Table 10 and Table 11) show that there is a significant relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling regions. This is expected as the results of the One- Way ANOVA which show that there is a significant difference in the corporate environmental disclosure level between the Regions. The One-Way ANOVA suggests that the companies in different cultural areas disclose environmental information at different levels. The possible reason for these results is that the companies operating in more developed countries may face more strict environmental reporting regulations that other companies operating in less developed countries, in addition to the increasing concern being given by companies in some societies to improve the environmental disclosure.

Similarly, when the control variable of industries is introduced, there is a significant effect. The results of hypothesis 6b (as depicted in Table 12 and Table 13) show that there is a significant relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling industries. This suggests that, when the control variable of industries is introduced, the differences in the mean corporate environmental disclosure level of companies between the industries become more important than Power Distance variable, Individualism variable, Masculinity variable, Uncertainty Avoidance variable, and Long-Term Orientation variable. The results are consistent with results of Deegan and Gordon (1996) who found that companies operating in more environmentally-sensitive industries disclose more environmental performance information compared to companies operating in less environmentally-sensitive industries. The reason for companies operating in more environmentally-sensitive industries to disclose more is because they want to legitimize their existence.

Finally, when the control variable of firm size is introduced, there is a significant effect. The results of hypothesis 6c (as depicted in Table 14 and Table 15) show that there is a relationship between Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), and Long-Term Orientation (LTO) and the level of corporate environmental disclosure (CED) after controlling firm size. This suggests that, when the control variable of firm size is introduced, the differences in the mean corporate

environmental disclosure level of companies between the companies with different sizes become more important the Power Distance variable, Individualism variable, Masculinity variable, Uncertainty Avoidance variable, and Long-Term Orientation variable. The results are consistent with Liu and Anbumozhi (2009), Monteiro and Aibar-Guzmán (2010), and Suttipun and Stanton (2012) who found that the firm size is positively related to the extent of environmental disclosure. This implies that companies with higher firm size level disclose lesser environmental information than companies with lower firm size level. Therefore, the corporate environmental disclosure of companies with different firm size cannot be compared effectively. The result also indicates that firm's size proxied by total assets (TA) play a very significant role in corporate environmental disclosure. The explanation for this result is that the larger or bigger the size of a firms, the more ability to invest their resources into corporate environmental technologies and management that is environmentally friendly since they tend to be more concerned with the company's corporate environmental reputation and corporate image while at the same time being visible to external stakeholders who demand higher corporate social environmental performance.

4. CONCLUSION

This paper provides an examination of the environmental disclosure levels of companies that is conducted by evaluating all the audited annual reports of companies in the English language which were prepared in 2012 and which were available on the companies' websites as of 31st Dec, 2012. Altogether, 655 corporate annual reports were collected. The control variables are regions, industries and firm size, the firm size alone is included because large companies are more likely to voluntarily disclose environmental information due to visibility and political exposure (Cowen et al. 1987; Patten 1992; Hackston and Milne 1996; Bewley and Li 2000; Patten 2002; Cormier and Magnan 2003). The purpose of this paper is to investigate whether corporate environmental disclosure levels relate to national culture values based upon Hofstede's individualism, masculinity, power distance, uncertainty avoidance, and long term-orientation dimensions. Our findings based on a content analysis of 2012 annual reports for 655 companies from 20 countries (Australia, Brazil, Canada, China, France, Germany, Hong Kong, India, Iraq, Japan, Malaysia, Netherlands, Portugal, Singapore, Spain, Sweden, Switzerland, turkey, UK, and USA) in 6 industries are automobiles, chemicals, food, metal and mining, oil and gas, and pulp and paper. The objective of selecting these countries in this study was the identification of countries whose cultures would have differing views of a company's stakeholders and which are differ in their level of transparency orientation.

The findings suggest that three of Hofstede's Cultural dimensions are related to corporate environmental disclosure CED. In particular, a nation's high degree of individualism and Long-Term Orientation were both related to high degree of corporate environmental Disclosure, while a nation's high degree of Power Distance is related to low degree of CED. This result implies that firms in countries with high degree of Individualism would be willing to disclose more environmental information than those in countries lower degree of individualism. The findings also show that the level of Long-Term Orientation LTO is negatively correlated with Corporate Environmental Disclosure. The national culture dimension of long-term orientation stands for the long term perspective and it is likely to

be similar to management long term decision perspective. In fact, the long-term orientation dimension is expected to be similar to Chinese Confucian values and may lead to encourage management to disclose the information related to environment as part of long term planning of environmental protection activities. The negative relationship between power distance and corporate environmental disclosure reflects the close relationship between secrecy and power distance that suggests that high power distance societies are likely to be characterized by the restriction of information to preserve power inequalities.

Similarly, the control variables (regions, industries, and firm size) were significantly related to corporate environmental disclosure CED. The results suggest that the levels of corporate environmental disclosure between companies working in different countries, different industries, or with different sizes are not comparable. Moreover, when the control variables of regions, industries, or firm size is introduced, the differences in the mean corporate environmental disclosure level of companies between the regions, industries, or different firm sizes become more important than Power Distance variable, Individualism variable, Masculinity variable, Uncertainty Avoidance variable, and Long-Term Orientation variable. Our results give an explanation for the relationship between corporate environmental disclosure and national cultures, and will lead to support the stakeholders to understand the observed international differences in CED. These results can be useful to the managers of multinational corporations, because the preparing of annual report in different societies require considering the national cultures and the social orientation of countries in relation to the level of environmental information disclosures to stakeholders.

REFERENCES

Baker, W. E. and Sinkula, J. M. (1999), The synergistic effect of market orientation and learning orientation on organizational performance, Journal of the Academy of Marketing Science, Vol. 27, No.4, pp.411-427.

Al-Tuwaijri, S., Christensen, T.E., Hughes II, K.E., 2004. ''The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach''. Accounting, Organizations and Society 29, 447–471.

Bewley, K. and Y. Li, , 2000. "Disclosure of Environmental Information by Canadian Manufacturing Companies: A Voluntary Disclosure Perspective", Advances in Environmental Accounting and Management, Vol. 1, 2000, pp. 201-226

Bowrin, A. R., (2013). ''Corporate Social and Environmental Reporting in the Caribbean''. Social Responsibility Journal, VOL. 9 NO. 2 2013, pp. 259-280.

Bradley, M., Schipani, C.A., Sundaram, A.K. and Walsh, J.P. (1999), "The purposes and accountability of the corporation in contemporary society: corporate governance at a crossroads", Law and Contemporary Problems, Vol. 62 No. 3, pp. 9-86.

Buhr, N. & Freedman, M. (2001) "Culture, institutional factors and differences in environmental disclosure between Canada and the United States", Critical Perspectives in Accounting, vol. 12: 293–312

Cho, C. H., Roberts, R. W., & Patten, D. M. (2010). ''The language of US corporate environmental disclosure''. Accounting, Organizations and Society, 35 (4), 431-443

Clarkson, P. M., Y. Li, G. D. Richardson, and F. P. Vasvari. 2006. ''Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis'': The University of Queensland and University of Toronto.

Cormier, D., Magnan, M., 2003.''Environmental reporting management: a European perspective''. Journal of Accounting and Public Policy 22,

De Villiers, C., and van Staden, C. (2012), "New Zealand shareholder attitudes towards corporate environmental disclosure," Pacific Accounting Review, Vol. 24 (2), pp. 186-210.

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, Vol. 9, No. 2, pp.50-67.

Gray, S.J. (1988), "Towards a theory of cultural influence on the development of accounting systems internationally", Abacus, Vol. 24 No. 1, pp. 1-15.

Guthrie, J. and Parker, L.D. (1990), "Corporate social disclosure practice: A comparative international analysis", Advances in Public Interest Accounting, Vol, 3 pp. 159-175.

Hofstede, G.H. and Bond, M.H. (1988), "The Confucius connection: from cultural roots to economic growth", Organizational Dynamics, Vol. 16 No. 4, pp. 5-21.

Hofstede, Geert H., 2001, "Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations across Nations," 2nd edition, Sage, Thousand Oaks, CA.

Hope, O., Kang, T., Thomas, W., and Yoo, Y. (2008). ''Culture and auditor choice: A test of the secrecy hypothesis". Journal of Accounting and Public Policy 27:357-373.

Hope, O.K., , 2003. „Firm-Level Disclosures and the Relative Roles of Culture and Legal Origin", Journal of International Financial Management and Accounting, Vol. 14, No. 3.

Hughes, S. B., A. Anderson, S. Golden. 2001. ''Corporate environmental disclosures: are they useful in determining environmental performance?'' Journal of Accounting and Public Policy. Vol. 20, pp. 217-240.

Iatridis, G. E., (2013), '' Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance'', Emerging Markets Review 14 (2013) 55–75

Jaggi, B., and P. Low (2000): "Impact of Culture, Market Forces and Legal System on Financial Disclosures", International Journal of Accounting, Vol. 35, 4, 495-519.

Liu XB, Anbumozhi V (2009) ''Determinant factors of corporate environmental information disclosure: An empirical study of Chinese listed companies''. J. Clean. Prod., 17: 593-600.

Mathews, M.R. and Reynolds, M.A. (2001), "Cultural relativity and accounting for sustainability: a research note", Accounting Forum, Vol. 25 No. 1, pp. 79-88.

Monteiro, S. and Aibar-Guzmán, B. (2010). ''Determinants of environmental disclosure in the annual reports of large companies operating in Portugal''. Corporate Social Responsibility and Environmental Management, No 17, pp. 185-204.

Newson, M and Deegan, C. (2002), "Global Expectations and their Association with Corporate Social Disclosure Practices in Australia, Singapore, and South Korea", The International Journal of Accounting, Vol. 37, pp. 183-213.

Orij, R. (2010),"Corporate social disclosures in the context of national cultures and stakeholder theory", Accounting, Auditing & Accountability Journal, Vol. 23 Iss: 7 pp. 868 – 889.

Patten, Dennis, 2002. ''The relation between environmental performance and environmental disclosure: a research note''. Accounting, Organizations, and Society. 27, pp. 763-773.

Simnett, R., A. Vanstraelen, and W. Chua, 2009, ''Assurance on Sustainability Reports: An International Comparison'', the Accounting Review 84 (3), 937-967.

Sun, N., Salama, A., Hussainey, K., & Habbash, M. (2010). ''Corporate environmental disclosure, corporate governance and earnings management''. Managerial Auditing Journal, 25(7), 679-700.

Suttipun, M. & Stanton P. (2012) —''Determinants of Environmental Disclosure in Thai Corporate Annual Reports''. International Journal of Accounting and Financial Reporting 2(1): 99-115.

Vachon, S. (2010). ''International Operations and Sustainable Development: Should National Culture Matter?'' Sustainable Development, 18, 350–361.

Van der Laan Smith, J., Adikhari, A. and Tondkar, R.H. (2005), "Exploring differences in social disclosures internationally: a stakeholder perspective", Journal of Accounting and Public Policy, Vol. 24 No. 2, pp. 123-51.

Wiseman, J. 1982. ''An evaluation of environmental disclosures made in corporate annual reports''. Accounting, Organizations and Society. Vol. 7, No. 1, pp. 553-563.

Zhongfu, Y., Jianhui, J., and Pinglin, H. (2011). ''The Study on the Correlation between Environmental Information Disclosure and Economic Performance-With empirical data from the manufacturing industries at Shanghai Stock Exchange in China''. Energy Procedia 5 (2011) 1218–1224.

Appendix 1: Sample Companies by Countries and Sectors

No	Country	Automobile	Chemicals	Food	Metal and mining	Oil and Gas	Pulp and Paper	total
1	Australia		1	4	18	14	1	38
2	Brazil	2	1	3	5	6	4	21
3	Canada	1	3	4	14	36	1	59
4	China	6	1		4	3	1	15
5	France	3	1	3	1	4	3	15
6	Germany	11	12	3	7	4	1	38
7	Honk Kong			8	10	2	1	21
8	India	10	20	5	15	5	7	62
9	Iraq		7	3	7		3	20
10	Japan	12	20	12	7	4	6	61
11	Malaysia	2	3	5	5	5	8	28
12	Netherlands	1	6	11	2		1	21
13	Portugal	1		3	1	1	3	9
14	Singapore	2	17	2	9	6	5	41
15	Spain		1	1	1	2	3	8
16	Sweden	1	2	4	9	6	4	26
17	Switzerland	2	7	3	3	1	2	18
18	Turkey	3	6	7	9	2	2	29
19	UK	1	3	4	15	9	1	33
20	USA	6	14	22	17	28	5	92
		63	125	106	156	138	67	655

Appendix 2: Content Analysis Index

No	Items	Monetary or Quantitative (3)	Described Specifically (2)	General (1)	Not Available (0)
	Expenditures and risks				
1	Investments				
2	Operation costs				
3	Future investments				

4	Future operating costs				
5	Financing for investments				
6	Environmental debts				
7	Risks provisions				
8	Risks litigations				
9	Provision for future expenditures				
	Laws and regulations conformity				
10	Litigations, actual and potential				
11	Fines				
12	Orders to conform				
13	Corrective actions				
14	Incidents				
15	Future legislation and regulations				
	Pollution abatement				
16	Emission of pollutants				
17	Discharges				
18	Waste management				
19	Installation and process controls				
20	Compliance status of facilities				
21	Noise and odors				
22	Energy consumption /conservation				
	Sustainable development				
23	Natural resource conservation				
24	Recycling				
25	Life cycle information				

	Land remediation and contamination				
26	Sites				
27	Efforts of remediation				
28	Potential liability-remediation				
29	Implicit liability				
30	Spills (number, nature, efforts of reduction)				
	Environmental management				
31	Environmental policies or company concern for the environment				
32	Environmental management system				
33	Environmental auditing				
34	Goals and targets				
35	Awards				
36	Department, group, service affected to the Environment				
37	ISO 14000				
38	Involvement of the firm to the development of environmental standards				
39	Involvement to environmental organizations (industry committees, etc)				
40	Joint projects with other firms on environmental management				