AN EVALUATION OF CORPORATE ENVIRONMENTAL DISCLOSURES BY VIETNAMESE LISTED FIRMS

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Abstract

Purpose – This study evaluates the extent of corporate environmental disclosures (CED) made by Vietnamese listed firms (VLF) on their annual reports and web sites for the years 2012 to 2014.

Approach – The study was conducted at the company level, with the target sample of Vietnamese listed companies that provided their profiles on the Ho Chi Minh Stock Exchange (HOSE) web site. The sample consisted of both sensitive and non-sensitive companies. Content analysis methods were employed and descriptive analysis was performed to explore the extent of this disclosure. Kruskal-Wallis and Mann-Whitney U test were chosen to test the similarity of CED scores among the three years examination, and the differences of CED scores caused by the industry type, company size.

Findings – The results of this study suggest that the extent of CED made by Vietnamese listed companies on their corporate web sites and annual reports is relatively low and similar among the three years examination. The nature of disclosure is mostly positive and descriptive. It was noticed that sensitive industries provided more environmental information compared to non-sensitive ones, demonstrating that industry type had an effect on differences in CED. Also, there was a significant impact of company size on CED by VLF over three years.

Value – In the lack of studies which explore the practice of CED within the developing country context, and in media other than annual reports, this paper provides some insight into the extent and nature of CED in Vietnam.

Keywords: Corporate environmental disclosures; Corporate environmental responsibility; Content analysis; Vietnamese listed firms

1. Introduction

In striving for sustainable development, a primary goal is to attain economic prosperity without compromising the integrity of the society on which all life depends (Deegan, 2007). As the forces of globalization push industrialization forward, it is critical that industry be able to manage its environmental footprint and governments be able to create the right mix of policies to protect the environment while sustaining economic growth (Shah, 2007). This challenge would be no more relevant than in the developing economies, where public awareness of environmental responsibility is still behind, leading to serious environmental problems (Pham, 2010). Since 1980, the economy has been the fastest growing in Asia; its price is environment pollution. Although many multinational companies have accepted their responsibility to do no harm to the environment, companies in developing countries are still not motivated to do so (Chen, 2009). This raises the concern of corporate environmental accountability in developing countries.

Corporate environmental responsibility (CER) is the environmental aspect of corporate social responsibility (CSR). CER is defined as the duty to cover the environmental implications of the company’s operations, products, and facilities; eliminate waste and emissions; maximize the efficiency and productivity of its resources; and minimize practices that might adversely affect the enjoyment of the country’s resources by future generations (Chen, 2009). Canadian environmental non-governmental organization (ENGO) put forward three main themes for CER (Jamison et al. 2005): (1) environmental commitment in which the company fully embraces sustainability and has a net positive impact on the environment and society; (2) material and energy management in which the company operates within the finite ecological limits of the environment; and (3) effective stakeholder engagement in which the company is fully transparent and accountable.

The practice of corporate environmental disclosure (CED) has been in existence for more than a decade now,
ranging to prominence as a result of the upsurge in environmental accounting in the 1990s (Ahmad, 2010). The term 'corporate environmental disclosure' (CED) as applied by the United Nations Commission of Transnational Corporations’ Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (UN ISAR, 1992, 1994); is chosen for the purpose of this paper. Deegan (2007) defines that sustainability reporting associated with social and environmental reporting. Gray et al. (1996) also point out that the acceptance of social and environmental responsibility is discharged by an organization through corporate social and environmental disclosures (CSED). Although the issuance of corporate environmental reports (CERs) has been voluntary, this is a fairly recent and growing phenomenon (Marshall et. al, 2003). Stakeholders all expect information about how corporations’ activities affect the environment, also are understandably frustrated and angry at what they see as a lack of corporate transparency and accountability. The shareholder movement's concept of Corporate Sustainability includes increased transparency, and with that is expected increased accountability to shareholders. Evidence shows that transparency comes improved performance, when the Toxics Release Inventory was first published listing an array of emissions levels from different companies (Delmas, 2001). Higher levels of transparency are achieved through dialogue, and occasionally threats of divestiture, through the rights laid out for shareholders (Stewart, 2005). Thus, managers should be responsible to reveal all information to stakeholders, including CER.

Scholars have traditionally limited the geographical scope of their studies of CED to the developed world, mainly Europe countries, US, Australia and New Zealand. More recently, some researchers have started to pay attention to emerging markets, but have not mentioned to transitional countries (Araya, 2006). Belal (2009) argue that studies of CED in transitional countries are of an initial and exploratory nature.

While transparent, sufficient CER disclosure would not only build up corporate credit, improve the effectiveness of business management, but also contribute to sustainable development, not many listed companies in Vietnam realize this benefit (Nguyen, et al., 2011). As a result of environmental disaster and negative effects of Vietnam society, CER in Vietnam is in urgent need of improvements (Nguyen, 2011). Due to pressure of international integration, it is crucial for Vietnam to abide by globalization standards of environment protection. However, according to Vietnam Central Institute of Economics, up to 2010, 28% of Vietnamese listed firms (VLF) abided by environmental standard; only 5% admitted their contribution to health care (Pham, 2010). Many VLF has engendered environment pollution. Typical illustrations were the release of wastewater into Thi Vai, Pink river by companies such as Vedan, Miwon, Hao Duong, Viet Tri paper, Hyundai Vinashin; harmful products such as soy sauce with 3-MCPD which causes cancer, noodle with Phormol, food with borax, milk with melanine.

Although the recent CER disclosure literature has highlighted a variety of different aspects of this phenomenon, there is one issue, however, which has not been addressed sufficiently in previous studies; namely, evaluating the extent of CER disclosures by VLF. According to International Finance Corporation (IFC), Vietnam is one of developing countries, which break from those of developed ones in that they have relatively weak regulatory environment, leading to expropriation of minority shareholders, and low information disclosure level causing high information gaps between managers and investors. Thus, research studies about these markets are needed and are vital to improve the weak transparency and disclosure situation by attracting the attention of regulatory bodies and firm managers. This study will examine the extent of CED by VLF, in order to provide a reliable reference for Vietnamese regulators in reforming CED regulations.

2. Literature review
2.1 Theoretical foundation
2.1.1 Corporate environmental responsibility (CER)

The study by Chen (2009) uses CSR theory to identify motivations and stakeholders of CER.

Enlightened Self-Interest

Social scientists have pointed to two reasons why the self-interest assumption is so important in the literature of CER. First, this assumption has long been central to neoclassical economics and rational choice approaches to economics. Second, because scholars invoke the self-interest assumption to explain many other aspects of human behaviour. Thus, explanations based on self-interest are ubiquitous in Western social science and are likely to prevail for some time (Chen, 2009). Davis (1973) indicates numerous reasons for adopting CSR into a firm’s daily practice that will lead to business advantages. He argues that the long run self-interest is one of the most prevalent reasons to practice CSR. This belief assumes that business needs to provide a variety of social goods in
order to remain profitable in the long run. The company that takes community needs into account will create a better community for conducting business (Davis 1973). For instance, employees will be more willing to work for the company and their labour potential will be better, or environmental improvements will lead to fewer costs for protection. There are many examples indicating that a better community or society will lead to more profits in the long run. Another well known advantage of CER is the increased positive publicity, or a better public image (Davis 1973). This notion is supported by several authors. Maignan and Ralston (2002) note that, especially in the United States, CER is used as a marketing tool or impression management tool to influence the perception stakeholders have of the corporation. This same idea is shared by Morimoto et al. (2005), who see CER as a tool for the development of a positive corporate image. With increasing public pressure on companies and increasing interest for CER these days, companies need to adjust to these cultural changes of business and society and keep up with the CER activities of most large companies.

Instrumental, Political, Integrative, and Ethical Motives

In their article Garriga and Mele’ (2004) identify four groups of theories can classify all mayor theoretical approaches to CSR. These theories are focused on the relation between CSR or societal issues and business. The four theoretical approaches to CSR as described by Garriga and Mele’ (2004) differ in their belief why businesses should adopt CSR, how they should do it and to what extent. Since CER is the environmental aspect of CSR, these four theories could also use to explain the motivation of CER.

The first group of theories is classified as instrumental theories and overlaps with the theory on enlightened self-interest. Stakeholder satisfaction, or philanthropic contributions are all possible, as long as they lead to profit, long- or short run. Within this first approach to CSR, Garriga and Mele’ (2004) identify three types of instrumental theoretical considerations that are maximizing shareholder wealth, improving or maintaining a competitive advantage, and using as a marketing tool. The second group of theories can be classified as political. The ideas and theories brought forward in this group appear to be more philosophical on the role of business in society. Several concepts are discussed, such as corporate constitutionalism, social contract theory and corporate citizenship. The political view legitimizes CSR in a broader, more philosophical context. The third approach towards CSR denoted by Garriga and Mele’ (2004) brings together the integrative theories. Here the main reason for CER is the belief that business depends on society for its existence. The social demands placed on businesses need to be adhered to in order to gain legitimacy and respect, this concurs with Wood’s (1991) first level of CSR, that he called the institutional level. Another view on responding to societal demands is the idea of public responsibility, this can form a guideline for managerial behaviour (Preston and Post 1981). The final theory in the integrative approach tries to identify the right way to gain social legitimacy. The political and integrative theories have similarities, but the political theory is concerned with the power business has in society, while integrative theories look more at how to integrate the social demands, thereby arguing that business depends on society for its existence (Garriga and Mele’ 2004). The fourth, theoretical approach to CSR as categorized by Garriga and Mele(2004) is the group of ethical theories. These theories are concerned with the right thing to do or the necessary requirements to achieve a good society (Garriga and Mele’ 2004). All of the ethical approaches share the idea that business must contribute to a good society and in this respect do the right thing.

2.1.2 Corporate environmental disclosure (CED)

The empirical studies of CED are mainly dominated in the industrialised countries of Western Europe, the United States and Australia (Villiers and Staden, 2006). Nevertheless, international comparative studies of CED have focused on analyses of the differences and similarities of CED practices in these countries only (Aerts et al., 2008). There is a general lack of knowledge on the state of CED in developing countries, in particular in the South East Asia (Hossain et al., 2009). It would be dangerous to generalise the results of studies on developed countries to developing countries, as the stage of economic development and other environmental circumstances is likely to be important factor affecting CED practices (Hossain et al., 2006; Gao et al., 2005). This, thus, pushes toward the need for more research especially in those countries including Vietnam, which have been given a view attention in the literature.

The study by Gunawan (2007) focuses on two notable theories to analyse the extent of Corporate social disclosure (CSD): legitimacy and stakeholder theories.

The Stakeholder Concerning CSR (CER)

Stakeholders are the central focus of stakeholder theory. Stakeholders include a wide range of people and interest
groups who have some kind of involvement with the organisation (Price, 2004). Stakeholders are ““any group or individual who can affect or is affected by the achievement of the organization’s objectives”” (Freeman, 1984). In addition to shareholders, stakeholders include creditors, employees, customers, suppliers, and the communities at large. Stakeholder theory explains that there is more than just a relationship between agents who have fiduciary responsibility to a principal (Lantos 2001). These duties exist because, like stockholders, these other stakeholders also make investments in enterprises: employees invest their time and intellectual capital, customers invest their trust and repeated business, communities provide infrastructure and education for future employees as well as tax support, and so on” (Graves et al. 2001, p. 17). In other words, we need to go beyond profit maximization to trusteeship, or the multi-fiduciary stakeholder concept, whereby management sees itself as responsible for achieving balance among all stakeholders’ interests (Goodpaster, 1996), especially in avoiding harm to any groups or rectifying any injuries caused. Hence, management should not only consider its shareholders in the decision making process, but also anyone who is affected by business decisions. In contrast to the classical view, the stakeholder view holds that “the goal of any company is or should be the flourishing of the company and all its principal stakeholders.” (Werhane & Freeman, 1999).

According to Freeman’s theory, the stakeholders are divided into two groups: internal and external stakeholders. The company has responsibilities towards each of these stakeholders and these responsibilities can be qualified as economic, legal, and ethical responsibilities in Carroll’s approach (Carroll 1979, 1991, 2004). This will lead to an overview of the type of stakeholders and the consequential responsibilities (Cochius 2006), which is summarized in Table 1.

### Table 1. Stakeholders for CER

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Type of responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal</strong></td>
<td></td>
</tr>
<tr>
<td>Financiers</td>
<td>Economic</td>
</tr>
<tr>
<td>Consumers</td>
<td>Economic, legal, and ethical</td>
</tr>
<tr>
<td>Suppliers</td>
<td>Economic and legal</td>
</tr>
<tr>
<td>Employees</td>
<td>Economic, legal, and ethical</td>
</tr>
<tr>
<td>Community</td>
<td>Economic and ethical</td>
</tr>
<tr>
<td><strong>External</strong></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>Economic, legal, and ethical</td>
</tr>
<tr>
<td>Environment</td>
<td>Legal and ethical</td>
</tr>
<tr>
<td>Non-Governmental Organizations</td>
<td>Economic, legal, and ethical</td>
</tr>
<tr>
<td>Critics</td>
<td>Economic, legal, and ethical</td>
</tr>
<tr>
<td>Media</td>
<td>Economic, legal, and ethical</td>
</tr>
</tbody>
</table>


Stakeholder theory has become an important basis of knowledge for companies to secure their relationship with stakeholders through CSD. Snider, Hill and Martin (2003) believe that stakeholder theory serves as an integral part of the concept of CSD. This view is also supported by Carroll (1999) who explains that CSD relates to a society, which is represented by stakeholders. Wilson (2001) argues the importance of stakeholder theory as a concept whereby companies are able to integrate social and environmental information in their business operations and in their interactions with stakeholders.

**Legitimacy theory**

Legitimacy is defined as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definition” (Schuman, 1995, p.574 cited in Tilling, 2004). Legitimacy theory has been used by a number of researchers as a framework to analyse corporate disclosure policies (Brown & Deegan, 1998; Deegan & Gordon, 1996; Guthrie & Parker, 1990; O’Donovan, 2002; Wilmshurst & Frost, 2000). Deegan (2002b) suggests that organisations need to adapt to community expectations if they want to be successful. In contrast, organisations will be penalised if they do not operate in a manner consistent with community expectations. Guthrie and Parker (1990) apply legitimacy theory to analyse corporate disclosure policies in Australian companies during the 1970s. They conclude that the peak level of social disclosures was at the time when mining, steel and oil industries became targets for conservationists. These results, among others, indicate legitimacy theory as being a basis for CSD practices which are responsive to environmental pressures.
2.2 Themes of disclosure management

This study applies four themes of disclosure measurement. The majority of these themes are those most cited and relevant in the CED literature, namely environment, energy, products, sustainability (Deegan, Rankin, & Tobin, 2002; Kuasirikun & Sherer, 2004; Purushothaman et al., 2000; Raar, 2002; Ratanajongkol, Davey & Low, 2006; Thompson & Zakaria, 2004; Wilmshurst & Frost, 2000 cited in Gunawan et al. 2009). Each theme has either a single item or is elaborated into a few items. In total, there are 21 items used as measures to examine the extent of CED through a content analysis process. A brief discussion of each theme is provided below.

2.2.1. Environment

This study applied theme of environmental by Gunawan (2007) containing three main items such as environmental pollution, aesthetics, and other issues.

2.2.2. Energy

Energy also relates to the importance of existing natural resources. Also non-renewable ‘energy’ is becoming a crucial issue due to the huge exploitation of fossil related energy globally. If companies continue to exploit non-renewable energy, the environment is also likely to suffer. Therefore, information about the importance of energy conservation can be a good campaign for raising energy awareness and showing the company’s responsibility to their environment.

2.2.3. Product

An environmental process must include a product’s full life-cycle, its supply, production, use and waste handling. A part of a company's environmental analysis is to evaluate its suppliers of products and their effect on the environment (Enarsson, 1998). Therefore, the considerable public concern is whether consuming the product is safe and no harm to environment. Through product information, a company may deliver its image to the public so that they can evaluate the impacts of products on environment. Product quality, safety and development process provide a basis for a company’s strategic advantage and any improvement in this quality and safety may lead to positive impacts on environment (Dunk, 2002).

2.2.4. Sustainability

’Sustainability’ issues have grown enormously in recent years. Sustainability is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations World Commission on Environment and Development, 1987, p. 8). In order for a company to maintain its reputation and stakeholders needs, it should include the sustainability information of its business operations in its CED.

2.3 Content and nature of CED

The content of CED varies across countries (Djajadikerta, et. al, 2012). Companies in Europe and Australia are more likely to disclose information about the environment, energy, recycling, and pollution (Gray, Kouhy & Lavers, 1995; Tilt, 2001, and Deegan et al., 2002). Companies in Asia have focussed on information about employees and human resources in disclosing their social activities (see e.g. Kuasirikun & Sherer, 2004; Purushothaman et al., 2000; Ramasamy & Hung, 2004; Ratanajongkol et al., 2006).

Djajadikerta, et. al. (2012) and Gunawan (2007) highlight that although the content of CSD is generally different from country to country, the nature of this information has been similar throughout the world, in a neutral, positive, and descriptive nature rather than a negative or quantitative one. Positive disclosures include information about compliance with standards and receiving awards (Deegan & Gordon, 1996; Tilt, 2001); while negative disclosures include information about penalties as well as other ‘bad news’ to environment (Deegan, Rankin, & Tobin, 2002). Other information, such as training for employees, pollution control, product development, environment campaign, and recycling, are considered to be neutral disclosures (Ahmad & Sulaiman, 2004).

Previous studies note that most companies tend primarily to use descriptive, narrative, or qualitative information
to report their CSD (Gunawan, 2007). These kinds of information have taken up a large portion of CSD reporting rather than quantitative information, pictures, graphs, and charts (Guthrie & Parker, 1990; Tilt, 2001; Belal, 2001; Raar, 2002; Ahmad & Sulaiman, 2004; Kuasirikun & Sherer, 2004). In practice, quantitative and monetary information, to a certain degree, can be used to assess feasibility. Graphs and charts can be used to turn numbers into pictures and represent comparisons that allow people to understand the information easier (Burch, 1986). Thus, disclosing information in corporate social and environmental activities both descriptively and quantitatively, using graphs or charts, may provide a more comprehensive report to the readers.

3. Research methods

3.1. Sample selection

In this study, company annual reports and information from their websites were used as secondary data for conducting the content analysis. Alternative sources were from the Ho Chi Minh Stock Exchange (HOSE) website (http://www.hsx.vn/), the company’s own website and statistics website (http://www.cophieu68.vn/).

This study uses annual reports of companies that were listed in the HOSE for the period of 2012 to 2014. There were about 310 companies listed on the HOSE for each of the years 2012, 2013 and 2014. The selection of sampled companies was initially based on the stratified random sampling method. However, the aim is to gather the annual reports from the same company for three consecutive years, the sample has to be selected based on companies that provided annual reports for each year from 2012 until 2014. Companies that were delisting during the period and listed after 01/01/2012 were not included in the sample. Finally, 158 company annual reports were collected each year, a total of 474 annual reports for three years, also 158 company websites were examined. Of the 158 companies, 143 were from sensitive industries and 15 from non-sensitive industries.

3.2. Content analysis

Content analysis is used in this study and defined by Krippendorff (1980, p. 21) as ‘a research technique for making replicate and valid inferences from data to their context’. Since content analysis has been used broadly in earlier studies into CED (Unerman, 2000) and because it allows CED to be systematically classified and compared, which is useful for determining trends (Milne and Adler, 1999), it is performed to analyse the annual reports and company websites, in order to measure the level of CED in the reports and websites.

Wolfe (1991) defined content analysis as systematic procedures for studying the content of written documents. The application of content analysis was carried out by converting the qualitative information in the annual reports and websites into quantitative scores. Some issues surrounding the validity of the content analysis method may appear because the technique of codifying text into numbers is still considered to be subjective (Gunawan, 2007). However, the content analysis method has been widely used and considered as an appropriate method to analyse the extent of disclosures, which is associated with the issues of reliability and validity (Guthrie & Parker, 1990; Choi, 1999; Tilt, 2001; Raar, 2002; Ahmad & Sulaiman, 2004).

3.2.1. Guidelines for identifying items

In order to reduce the subjectivity in this study, a set of guidelines that govern the content analysis procedure was established to achieve reliable and systematic coding (Gunawan, 2007). Applying a set of CSD items by Gunawan (2007), after doing a deep interview by two experts from the audit firm, KPMG and one from Centre for Social research and development in Vietnam, the CED items of 21 used in this study were considered to be both comprehensive and appropriate for a Vietnamese context.

3.2.2. Guidelines for conducting content analysis

Content analysis procedure was performed through steps (Krippendorff, 1980):
- Read the texts in the annual reports and company websites
- Indicate each statement disclosed and its relationship to the keywords, in the context of CED items
- Interpret and select the appropriate items for CED
- Award scores for both quantity and quality
- Ignore all the irrelevant information that was not considered as CED and thus, avoid awarding scores for this content.
• Draw inferences

After the scoring process was completed, the scores in each theme were calculated, all these scores were then added to obtain overall total disclosure scores. These total scores inform readers about CED practices undertaken by Vietnamese listed firms.

3.2.3. Guidelines for awarding scores

The score for quality disclosures ranges from zero to seven and measures how the information is disclosed, using the following guide:

• Score ‘zero’ for non disclosures.
• Score ‘one’ for monetary information. Monetary information can be described as a quantitative item in currency terms. Any currency terms disclosed without other descriptions are given a score of one.
• Score ‘two’ for non-monetary information. Quantified numeric terms, other than currency, such as numerics for weight, volume, and size are awarded a score of two.
• Score ‘three’ for qualitative information. Descriptive, narrative, or qualitative information, forming the majority of a disclosure, should be awarded a score of three. This information is relatively easy to identify.
• Score ‘four’ for qualitative and monetary information. If the CED stated is a combination of qualitative and monetary information, a score of four should be awarded.
• Score ‘five’ for qualitative and nonmonetary information. Qualitative disclosures combined with non-monetary information are given a score of five.
• Score ‘six’ for monetary and nonmonetary information. The information disclosed in currency and other numeric terms is awarded a score of six.
• Score ‘seven’ for qualitative, monetary, and non-monetary information. The highest possible score for qualitative measurement is ‘seven’, which should be awarded for the most comprehensive nature of CED information that combines qualitative, monetary, and non-monetary aspects.

The maximum score that can be achieved is 147 for total quality, which is obtained by multiplying the maximum score for each measurement (7) by the total number of CED items (21).

4. Results and discussion

4.1. CED score and descriptive analysis

A descriptive analysis was performed to observe mean scores of CED for the years 2012 to 2014. Considering that the maximum possible scores for 21 items is 147, the average total scores by VLF fluctuated between 15 and 16 during three years. This revealed a relatively low level of CED by VLF from 2012 to 2014. It is clear that the practice of CED in Vietnam companies is still in its infancy.

Table 2. Descriptive Statistics for CED by VLF during 2012-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>16.3987</td>
<td>1.1512E+01</td>
</tr>
<tr>
<td>2013</td>
<td>16.0633</td>
<td>1.2107E+01</td>
</tr>
<tr>
<td>2014</td>
<td>15.5696</td>
<td>1.2513E+01</td>
</tr>
</tbody>
</table>

Despite a slightly decrease, Table 2 demonstrates that the mean scores were relatively similar during three years. Inferential statistics were subsequently conducted to test whether these changes were significant. A Kolmogorov-Smirnov test was initially applied to check the normality of the data distribution. The results indicated that the majority of CED scores from 2012 to 2014 were not normally distributed due to the significant level of 0.00 (p-value < 0.05). For this reason, an appropriate nonparametric test named Kruskal-Wallis was performed on the raw data. The results showed similarity among the three years examination (p-value = 0.730 > 0.05), the hypothesis of Ho was accepted.

Table 3. Kruskal-Wallis Test Result

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>Asymp.Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>.631</td>
<td>.730</td>
</tr>
</tbody>
</table>

Test variable list: CED score
Grouping Variable: Year
In previous research, industry together with size, is the most common variable in order to explain the content and extent of environmental disclosures. Reverte (2009) points out firms with higher CSR ratings present a statistically significant larger size, and belong to more environmentally sensitive industries, as compared to firms with lower CSR ratings. Industry and firm size have positive and significant effects on CSRD (Gamerschlag, 2011; Zali, 2013). These hypotheses will be tested with the data of VLF via Kruskal-Wallis, Mann-Whitney test.

To compare the means of CED in two groups, including sensitive and non-sensitive industry, a nonparametric counterpart of the t test namely Mann-Whitney test was performed. The two-tailed hypotheses being analysed with Mann-Whitney U test are as follows:

H₀: CED of the two populations, including sensitive and non-sensitive industry, were identical
H₁: CED of the two populations, including sensitive and non-sensitive industry, were not identical

As explained above that the dependent variable – CED- is not normally distributed, Mann-Whitney U test was the appropriate test to compare mean scores. The goal of the test is to test for differences of CED that are caused by the independent variable - Industry.

Table 4. Mann-Whitney U test – Ranks

<table>
<thead>
<tr>
<th>CED</th>
<th>Industry</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CED.Y1</td>
<td>Non-sensitive Industry</td>
<td>15</td>
<td>29.00</td>
<td>435.00</td>
</tr>
<tr>
<td></td>
<td>Sensitive Industry</td>
<td>143</td>
<td>84.80</td>
<td>12126.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CED.Y2</td>
<td>Non-sensitive Industry</td>
<td>15</td>
<td>32.50</td>
<td>487.50</td>
</tr>
<tr>
<td></td>
<td>Sensitive Industry</td>
<td>143</td>
<td>84.43</td>
<td>12073.50</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CED.Y3</td>
<td>Non-sensitive Industry</td>
<td>15</td>
<td>43.53</td>
<td>653.00</td>
</tr>
<tr>
<td></td>
<td>Sensitive Industry</td>
<td>143</td>
<td>83.27</td>
<td>11908.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>158</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Mann-Whitney U test- Test Statistics

<table>
<thead>
<tr>
<th></th>
<th>CED.Y1</th>
<th>CED.Y2</th>
<th>CED.Y3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>315.000</td>
<td>367.500</td>
<td>533.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>435.000</td>
<td>487.500</td>
<td>653.000</td>
</tr>
<tr>
<td>Z</td>
<td>-4.512</td>
<td>-4.196</td>
<td>-3.214</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
</tr>
</tbody>
</table>

Grouping Variable: Industry

Since the resulting P-value is small (P<0.05) then H₀ was rejected, a statistically significant difference between the two groups of industry can be accepted (H₁ was accepted). Results from Table 4, firms in sensitive industry had higher mean CED score than non-sensitive firms over three years. Mann-Whitney U test that compares the mean scores of an independent and a dependent variable assumes that differences in the mean score of the dependent variable – CED - are caused by the independent variable - industry. Thus, industry splitting the sample in two groups, sensitive and non-sensitive is also called factor (Chomvilailuk, et al., 2010).

Next, the Kruskal-Wallis test was conduct to test whether the CED differ between three groups of size. As mentioned above, this test is appropriate for use under the following circumstances of over three or more different group to compare; also the data did not meet the requirements for a parametric test.

H₀: CED of the three populations including small, medium, large size were identical
H₁: CED of the three populations including small, medium, large size were not identical

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1 Adams et al., 1998; Cowen et al., 1987; Clarke et al., 1999; Jenkins et al., 2006; Line et al., 2002; Ness et al., 1991; Bowen, 2000; Hoffman, 1999; Morris, 1997.
Table 6. Kruskal-Wallis test for Group of Size

<table>
<thead>
<tr>
<th></th>
<th>Size</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>CED.Y1</td>
<td>Small</td>
<td>25</td>
<td>30.02</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>17</td>
<td>84.50</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>116</td>
<td>89.43</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>CED.Y2</td>
<td>Small</td>
<td>25</td>
<td>34.66</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>17</td>
<td>83.68</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>116</td>
<td>88.55</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>CED.Y3</td>
<td>Small</td>
<td>25</td>
<td>43.58</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>17</td>
<td>88.53</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>116</td>
<td>85.92</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>158</td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Kruskal-Wallis test - Test Statistics\[a,b\]

<table>
<thead>
<tr>
<th></th>
<th>CED.Y1</th>
<th>CED.Y2</th>
<th>CED.Y3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>35.191</td>
<td>28.883</td>
<td>18.517</td>
</tr>
<tr>
<td>df</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>(.000)</td>
<td>(.000)</td>
<td>(.000)</td>
</tr>
</tbody>
</table>

Since the resulting P-value is small (P<0.05) then Ho was rejected, H1 was accepted, there was a difference of CED between three groups of size. A Kruskal-Wallis test revealed that there was a significant effect of size on CED over three year.

4.2. Content of disclosure and theme analysis

Table 8. Descriptive Statistics for CED themes disclosed by VLF during 2012-2014

<table>
<thead>
<tr>
<th>Themes</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sum</td>
<td>Mean</td>
<td>Std.</td>
</tr>
<tr>
<td>Energy</td>
<td>187</td>
<td>1.184</td>
<td>2.179</td>
</tr>
<tr>
<td>Sustainability</td>
<td>263</td>
<td>1.66</td>
<td>1.474</td>
</tr>
</tbody>
</table>

The mean scores for each theme were calculated using descriptive analysis; a summary is provided in Table 8. The following discussion describes the items disclosed by Vietnamese listed companies under each CED theme.

4.2.1. Environment

Compared to other three themes, ‘Environment’ information was the dominant disclosure in the company annual reports and their websites during the three years of examination. However, considering that the maximum possible score for ‘Environment’ theme is 91, the average total scores for this theme fluctuated between 6.6 and 6.9 during three year. This revealed a relatively low amount of ‘environmental’ information disclosed in the annual reports and company’s websites by VLF from 2012 to 2014. Some companies tended to report some statements indicating the company’s compliance with environmental law and regulation, also efficiently using materials in manufacturing process but not in details. The fewer disclosures that were made refer to pollution control, designing facilities harmonious with the environment. The companies were evidently unaware of the need to disclose information such as undertaking environmental studies to monitor the company’s impact on the environment or the training of employees in environmental issues or reducing pollution or prevention of damage to the environment. There was also no disclosure about ‘receiving penalties’ as a result of environmental violations, although in fact, some companies had received penalties. Interestingly, it was noticed that companies in the manufacturing of chemicals, food and beverages, paper and allied products; mining, agriculture, provided more environmental information compared to other industries, demonstrating that industry type may have an
effect on differences in CED information. This hypothesis was tested with the data of VLF via Mann-Whitney test above.

Environmental reports were identified as another form of reporting environmental activities. These reports did not usually accompany the annual reports, but were separate reports. Although few in number, the bigger companies tended to produce this kind of report more comprehensive than the others. It is likely that there was a significant effect of company size on environmental information disclosures over three year, which was verified via Kruskal-Wallis test above.

The high variance numbers show that the CED scores were widely spread between the most and the least disclosed information, indicating that some companies provided high CED scores, while others were much lower. This also reflected the lack of standard or consistent CED reporting within the company annual reports and their websites. Gray, et al. (1996) explain that since the practice of CED is still voluntary, the moral responsibility of companies plays an important role, therefore the practice of CED varies among them. Even in Australia, a developed country, social and Environmental Reporting is voluntary (Deegan and Gordon, 1996 cited in Kathyayini, et al. 2012), motivation to disclose such information is said to be less likely in the absence of legislation on the one hand, and quantifiable benefits on the other.

4.2.2. Product

The second most disclosed theme was ‘product’ followed by ‘sustainability’. ‘Products’ information was easily identified in the annual reports. A summary of product items is provided in Table 9.

| Table 9. Descriptive Statistics for Product items disclosed by VLF during 2012-2014 |
|-----------------------------------------------|---|---|---|---|
| Items                                         | 2012 | 2013 | 2014 |
|                                               | Sum | Mean | Std. | Sum | Mean | Std. | Sum | Mean | Std. |
| Product development                           | 365 | 2.31 | 1.306 | 356 | 2.25 | 1.340 | 341 | 2.16 | 1.337 |
| Product safety                                | 326 | 2.06 | 1.422 | 318 | 2.01 | 1.437 | 298 | 1.89 | 1.484 |
| Product quality                               | 357 | 2.26 | 1.307 | 350 | 2.22 | 1.403 | 329 | 2.08 | 1.400 |

Although product information reporting by VLF was not adequate for three items, most of companies introduced their products on their annual reports and websites. Similar to the study by Gunawan. (2007) in Indonesian, ‘Product safety’ seemed to be neglected when compared with other product information, such as ‘product development’ and ‘product quality’, while this was the most expected disclosure by stakeholders. The disclosures in ‘product safety’ were only provided by companies in food and Pharmaceutical industries as they are obliged to comply with product safety regulations. This may be the reason why companies not involved with food or pharmaceutical manufacture tended to be resistant to disclosing this information. Another reason is, perhaps, that the nature of the industries was not compatible with the issue of product safety, for example, in companies in service industries. Other examples of ‘products’ disclosures were associated with new product packaging, the amount or percentage of research and development expenditure to improve existing products, and the release of new products. Information about the achievement and maintenance of ISO 9001(2008), TQM (Total Quality Management) certification was also dominant, showing that companies fulfilled the requirements in producing quality products.

4.2.3. Sustainability

| Table 10. Descriptive Statistics for Product items disclosed by VLF during 2012-2014 |
|-----------------------------------------------|---|---|---|---|
| Items                                         | 2012 | 2013 | 2014 |
|                                               | Mean | Std. | Mean | Std. | Mean | Std. |
| Sustainability                                | 1.66 | 1.474 | 1.67 | 1.469 | 1.62 | 1.470 |

With the mean of around 1.67, this described the low level of sustainability information reported by VLF during three years from 2012. Most of the companies only outlined that they would perform social goals and values in relation to long term decision making, but have not made any explanation for details. One of the reasons was that disclosure about the linkage between sustainability and economic and social values was hard to identify in the annual reports and company websites (Gunawan, 2007). A similar reason for minor disclosure in ‘sustainability’
is that the companies were not familiar with disclosing sustainability in terms of economic and social activities, although they understand that maintaining economic and social values could create sustainability.

### 4.2.4. Energy

<table>
<thead>
<tr>
<th>Items</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage of No inf</td>
<td>Mean</td>
<td>Std.</td>
</tr>
<tr>
<td>Conservation Energy</td>
<td>93.7</td>
<td>0.18</td>
<td>0.70</td>
</tr>
<tr>
<td>Efficiently using energy</td>
<td>78.5</td>
<td>0.61</td>
<td>1.21</td>
</tr>
<tr>
<td>Reducing energy consumption</td>
<td>86.7</td>
<td>0.39</td>
<td>1.02</td>
</tr>
<tr>
<td>Concern about Energy shortage</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

A summary of energy items is provided in Table 11. In contrast to the most disclosed information, ‘energy’ information was found to be the least important. In general, appropriately over 90% VLF did not report the conservation energy item in their annual reports and websites during three years. None of companies disclosed the concern about energy shortage. While the mean of each item was incredibly low, the high standard deviation numbers show that the energy scores were widely spread between the most and the least disclosed information, indicating that some companies provided higher energy scores, while others were much lower.

Two possible reasons explain this situation: first, companies were unaware of efficient energy utilisation, and second, many companies did not realise that ‘energy’ closely relates to CED. In this context, the knowledge of reporting should be improved so that companies better understand the information relevant to CED, and how to inform the activities relative to CED (Gunawan, 2009).

### 4.3. Nature of Disclosure

Deegan & Gordon (1996); Tilt (2001) predict positive and descriptive information as a common practice of CSD, including environmental disclosures. During this study, no negative information could be found, and little information disclosed comprehensively, in the context of qualitative, graph, or monetary. The positive descriptive (declarative) information was predominant. Companies seem to fear negative public reaction to any ‘bad news’ reports, such as fines or penalties. This public reaction could have an adverse impact on the company image (Adams, 2002). Declarative ‘good news’ was predicted, as the VLF may use CED to obtain a good company image and enhanced credibility. This situation coincides with other major studies, which reported the same findings (Adams, 2002; Milne, Owen & Tilt 2000; Wilmshurst & Frost, 2000). Specific events may increase the extent and nature of CED, as indicated during the content analysis process. Given the fact that many VLF provide extensive information about environmental activities, the nature of focused on supporting environmental campaigns or awards, designing facilities harmonious with the environment.

However, apart from the similarities in disclosing the nature of environmental activities, the other content of disclosures varied across industries. Non-sensitive industries, including finance, investment and media, broadcasting companies provided the lowest disclosures on the ‘environmental’ theme, but the greatest information on the ‘human resources’ and the ‘external relations’ themes, especially regarding customers. Companies involved in mining, manufacturing and agriculture tend to disclose compliance to specific government regulation in pollution control and supporting environmental campaigns.

### 4.4. Implications for Corporate environmental disclosure in Vietnam

Vietnam economy faced to many challenges in the period from 2012 to 2014, especially after global crisis in 2008-2009 and Vietnam financial crisis in 2011. Vietnam suffered from substantial trade and fiscal deficits, leaving the economy vulnerable to global economic uncertainties. The fiscal deficit was dominated by
substantial spending on social subsidies that could be difficult to withdraw. The heavily-managed and weak currency reduced incentives to improve quality of exports, and also kept import costs high, contributing to inflationary pressures (Business Monitor International, 2014). The VN index dropped nearly 60%; investors reduced and hesitated their trading due to negative effect from unstable domestic and global macroeconomics. In the face of economy barriers, Vietnamese listed companies concentrated their resources to struggle for their existence, but ignored their long term goals for sustainable development. This explained why the CED score was relatively low during this period, showing the limited awareness about the environment responsibility by VLF.

Regulations of CER disclosures in Vietnam have not been strict and still ambiguous, giving some rooms for CEOs to selectively disclose in the annual report. According to Vietnam Securities Law issued in 2006, the chapter 8 relates to Disclosure including 7 sections, which only focuses on the time of unusual events disclosure. Sections 128 and 129 state on breach of disclosure regulations in only four lines that listed firms are forced to abide by disclosure regulations, otherwise be warned or fined but not in detail situations. The only guideline of CER disclosure was Guideline No 3105/TNMT-QLMT in 2008 by Resource and Environment Office, which require companies to report their environmental responsibility, including corporate impacts to environment and process to reduce these effects. However, the general fines usually rank from 500USD-2500 USD, this low amount was not strong enough to make listed firms abide by corporate disclosure regulations. To enhance the transparency of Vietnamese stock exchange, Disclosure guideline No. 52/2012/TT-TT-BTC was issued by Ministry of Finance in 2012. However, the findings of low CED score provided a conclusive evidence of the ineffectiveness, the weakness made by the Disclosure guideline No. 52 and the inaction of Securities Law No. 62/2010/QH12 in 2010.

According to Asia News Monitor, nearly half of the value of industrial production came from the foreign direct investment (FDI) sector. To encourage more investors to make their investment decisions on Vietnamese stock exchange, VLFs need to enhance their transparency, not only financial but also non-financial information, in turn create their competitive advantage and achieve sustainable development. More voluntary CER disclosure would increase the credibility of Vietnam listed companies and decrease social cost. In addition, the lack of transparency causes investors to lose their confidence in the Vietnamese stock market.

Since the practice of CED in Vietnam is still in the embryonic stage of development; it may generate unsatisfied results for the extent of CED. A need exists to improve the quantity and quality of CED among companies. It may, therefore, be timely for accounting professional bodies and the ‘Vietnamese Accounting Standards Board’ to seriously consider the development of environmental reporting standards. At the same time, however, this body can also play a significant role in improving the knowledge of conducting environmental reporting, for example, by promoting other report formats beyond financial statements or annual reports, such as environmental reports or sustainability reports. The ‘State Securities Commission of Vietnam (SSC)’ should also provide guidelines for informing environmental activities in company annual reports and websites. Government, industrial bodies, accounting profession, and scholars should also be involved to improve this CED practice in Vietnam. More accessible approaches and guidelines need to be developed so that entities can discharge a broader accountability than is currently reflected in reporting practices in the public and private sectors in Vietnam. Hence it is important to have some control mechanisms within the organisation to make sure that environmental information is disclosed properly.

The paper calls for standard setting bodies to set policy guiding and principles in order to improve the financial and non-financial environmental disclosures of Vietnamese listed companies. The new disclosure regulation should adopt International Organization for Standardization (ISO) enacted the ISO14031-2013 in 2013, which provide a framework for the organization, facing different environmental conditions, and give a guide for the acquisition and calculation of the indicators. Under these indicator systems, companies can use their own approaches to make environmental performance evaluation (Wan, et al., 2014). In order to improve the comparability and credibility of sustainability reporting worldwide, a reference of Global Reporting Initiative guidelines (GRI) which is global social responsibility information disclosure standards would be essential. The once every two years “KPMG 2013 Corporate Responsibility Report International Investigation”, published in December 9, 2013, displayed that nowadays there are 80 percent enterprises using the GRI sustainability

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3 Costs imposed on society as a result of the conventional accounting procedures (Deegan, 2006).
reporting guidelines among the world's top 100 enterprises in 41 countries, releasing a corporate responsibility report (Wan. et al., 2014).

5. Conclusion

5.1 Contributions

This study provides some important contributions. Firstly, this study used electronic media, namely the Internet to investigate environmental information disclosures rather than just traditional print media (printed annual reports). Secondly, this study drew on previous studies that used content analysis and statistical analysis to study environmental disclosures in both annual reports and websites including being able to make comparisons with studies of firms in developed countries. Previously, little was known about environmental disclosures by firms in Vietnam. Finally, this study also contributes to environmental accounting literature, because it provided insight into the environmental disclosure practices of listed companies with respect to their operations within developing countries, where there are limited published studies. Various broader stakeholders such as creditors, suppliers, unions, environmentalists and media groups are also able to gain a better understanding of the overall comprehensive information disclosure levels among Vietnamese listed firms.

5.2 Limitations and further study

There are some limitations associated with the method adopted in the study including the sample sampling. The sample data was selected on Ho Chi Minh Stock Exchange while there is another stock exchange in Vietnam, HNX (Hanoi Stock Exchange), it may not be possible to generalise these results to the wider Vietnam context. Further research is needed to investigate the extent of CED on HNX, also the obligatory and non-obligatory factors motivating top management to provide, or not provide, environmental disclosures in their annual reports and websites.

6. References


