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Environmental Reporting and Good Practice of Corporate Governance: Petroleum Industry Case Study

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Abstract

Because environmental reporting remains voluntary on an international level, there are major differences in terms of the quality and quantity of environmental information, reported by entities from varied industries and countries. Starting from the agency theory, the company is accountable for the decision to report environmental information, decision which is made by the management to serve for the best interest of the shareholders (Buniamin et al., 2011: 56). Within this study, we would therefore focus on certain factors related to the entity's internal characteristics, consisting mainly in how the entity is managed, in order to identify if good corporate governance practices explain the voluntary environmental reporting. The research is conducted as an empirical study which explains how the disclosure of environmental information varies across the largest entities operating in the petroleum industry and reflects factors that could account for these variations. The paper identifies the corporate governance characteristics such as the percentage of independent directors and the existence of an environmental committee as factors that explain the variation in environmental information disclosure. We conclude that in order to secure the transparency of environmental performance within a company, the board should ensure a sufficiently number of independent members able to exercise an independent reasoning for solving potential conflicts of interests. Also, the environmental committee monitors the company's activity in terms of its environmental impact, bringing about increasing transparency regarding the environmental aspects.

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Keywords: environmental reporting, corporate governance, environmental committee, board independence, petroleum companies, voluntary reporting

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1. Introduction

Environmental reporting represents a tool for providing environmental information to the stakeholders and for reflecting environmental performance and companies' concerns on environmental issues Shearer, 2002. As environmental reporting remains voluntary on an international scale, there are major differences in terms of the quality and quantity of environmental information, reported by entities from varied industries and countries. Starting from the agency theory, the company is accountable for the decision to report environmental information, decision made by the management in order to serve the interests of the shareholders Buniamin et al., 2011: 56. Kolk 2006, considering that for increasing the shareholders insight and for influencing the corporate behavior, emphasis should be made on the internal context.

Within this study, we have focused on certain factors related to the entity, such as internal characteristics, consisting mainly in how the entity is managed, in order to identify the existence of certain correlations between the characteristics of corporate governance and the level of environmental reporting. Among the characteristics of corporate governance we could mention the board structure and composition and the existence of environmental committees. The findings reveal that the independence of the board and the existence of an environmental committee have a significant relationship with environmental reporting as far as Petroleum and Petroleum Refining companies are concerned. The paper is organized as follows: the next section provides a presentation of the research methodology. The following section highlights the study findings and results and the final section provides the conclusions and limitations of the study and directions for future research.

2. Research methodology

The study represents an empirical research that uses archival data as the primary source of information. This archival data helped us present the level of environmental reporting within the biggest companies that operate in the Petroleum and Petroleum Refining industry for the year 2009. The main argument for choosing Petroleum and Petroleum Refining sector is that companies in this sector have high environmental impact.

The specialized literature proved that the industry the activity sector the entity operates within influences environmental reporting Deegan and Blomquist, 2006. Due to this, we have used as research sample companies operating in a single sector, i.e. Petroleum and Petroleum Refining sector, thus attempting to eliminated the differences related to environmental impact that might occur between sectors of activity. Hence, the present paper is a fundamental, applicative research leading to the proposal of a model to be tested within 54 largest companies that operate in the Petroleum and Petroleum Refining sector.

We believe that "larger companies are also more likely to be under public and governmental scrutiny than small ones, high revenue corporations are often also more motivated to genuinely improve sustainability performance. There is usually an authentic relationship between reporting quality and practice, and the added transparency reinforces constant performance improvement" Roberts Environmental Center, 2010.

2.1. Data used

In Table 1 we introduce the variables used. The *2010 Sustainability Reporting of the World's Largest Petroleum Refining Companies* published by Roberts Environmental Center is the main data source used for determining the level of environmental reporting. "This report is an analysis of the voluntary environmental and social reporting of companies on the Petroleum and Petroleum Refining sector lists. Data was collected from corporate websites during the initial analysis period dates shown below." Roberts Environmental Center, 2010. The report and the methodology used in determining the indicator are available at *http://www.roberts.cmc.edu/psi/PDF/PetRefining2010.pdf*. The independent variables were selected from the 2009 annual report or 2009 corporate governance report of the analyzed companies.

2.2. Variable description

In this section we are presenting the dependent and independent variables used and their source:

- *Environmental reporting.* The dependent variable, i.e. environmental reporting, represents the degree in which the company discusses its emissions, energy sources and consumption, environmental incidents and violations, materials use, mitigations and remediation, waste produced and water used. It also includes the use of life cycle analysis, environmental performance and stewardship of products, and environmental performance of suppliers and contractors. Roberts Environmental Center, 2010. We will be using the total score obtained by each company in terms of environmental reporting.
- *The size and structure of the Board of Directors.* A larger board size can bring directors with experience that may represent a multitude of values in the board Buniamin et al., 2008. We will be using the total number of board members in 2009 for each company. Regarding the structure of the board we have analyzed the ratio between the independent directors in the board and the total number of board members. Independent directors are considering accountability mechanisms because their role is to help ensuring that companies are protecting the interests of stakeholders Haniffa and Cooke, 2005. We will be using the percentage of independent directors from the total number of directors in the board.
- *Existence of Board Committees.* Bradbury 1990 considers that the audit committees are monitoring mechanisms that enhance the audit function and McMullen 1996 argues that an audit committee determines good corporate disclosure of information. All selected companies have created audit committees and therefore this variable is not representative for our study. Instead, we have turned our attention towards the existence of other committees that could determine the level of environmental reporting, such as the environmental sustainability committee, which we believe could have an important role in determining the level of environmental reporting. The aim of an environmental committee is to motivate a firm into implementing policies and practices for measuring and reporting of environmental impact. The environmental committee is likely to reduce risk associated with environmental impact and to see the importance of environmental reporting for stakeholders Rankin et al., 2011. We have therefore marked with 0 if the company does not have an environmental committee and with 1 if the company has an environmental committee. The main source of information for the independent variable is the 2009 annual report of the companies in our sample. We use also a control variable i.e. the size of the company expressed by its revenues for 2009.

The description of the variables used is presented in table 1:

Table 1. Descriptive analysis

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Environmental reporting	54	.00	57.00	24.5370	2.20803	16.22566
ProcentInd	54	.00	100.00	55.8704	3.62537	26.64090
CSR_Committee	54	.00	1.00	.6296	.06633	.48744
NoBoard	54	5.00	17.00	11.0556	.39953	2.93590
Revenues ($Million)	54	2489.00	458361.00	82189.9074	14203.54052	1.04374E5

2.3. Hypothesis

Each hypothesis represents our personal view regarding the connection between the determined variable and each independent variable. We are developing the following theoretical frameworks:

- *H1: The level of environmental reporting is positively influenced by the percentage of independent non-executive directors in the board.* The OECD principles and the majority of corporate governance codes, respectively, suggest the existence of both executive and non-executive directors in the board, the role thereof being to monitor or to make management decisions. The executive managers are employees of the company with a direct role in its management, while the non-executive managers do not participate directly in managing the company, having an objective and independent monitoring role on how the company is managed. From the perspective of agency theory Solomon, 2007: 82 the presence of independent non-executive managers in the board board of directors should help reduce the conflict of interests existing between the shareholders and the company's management, because their role is to independently monitor the company’s activity, bringing about increasing objectivity, independence inside the board, thus leading to the minimization of agency costs. According to the OECD principles OECD Principles, part VI the board should be capable to objectively and independently analyze the economic operations exercised by the company. For this purpose, the board should ensure a sufficiently large number of independent members able to exercise an independent reasoning in order to solve potential conflict of interests. As independent managers should represent the interests of stakeholders, it is to be expected that they have more influence on reporting the environmental performance related information Haniffa and Cooke, 2002. Nevertheless, the specialized literature also introduces a negative perspective related to the existence of independent non-executive managers: in the event of a large board, the non-executive managers represent a powerless unjustifiable element within the structure. The supporters of this theory believe that the market wherein the company operates has the capacity to determine a company's management to function properly, thus supporting the shareholders' interests Solomon, 2007. Studies suggest various results related to the correspondence between the number or percentage of independent non-executive managers and the level of voluntary reporting. Therefore, Akhtaruddin et al. 2009, Donnelly and Mulcahy 2008, Huafang and Jianguo 2007, Kelton and Yang 2008 are all studies reflecting the existence of a positive correlation between the number of independent non-executive managers and the level of reporting, on the basis of empirical approaches, while Barako et al. 2006 reflect a negative association between the level of voluntary reporting and the ratio of non-executive managers.
- *H2: The level of environmental reporting is influenced by the board size.* Specialized literature believes that board size determines the efficiency and efficacy thereof (Xie et. al., 2001) because a larger board attracts more experienced individuals. A more efficient board incurs a more efficient reporting system and a more increased level of voluntary reporting at the same time, environmental reporting included. Nevertheless, there are studies having proven statistically that there is no relation between the board size and the level of voluntary reporting: Halme and Huse (1997), Cheng and Courtenay (2004). We believe that the level of environmental reporting could be correlated with the board size.
- *H3: The level of environmental reporting is influenced by the existence of a safety and social responsibility committee.* The existence of such a committee would lead to an increasing importance given to these particular aspects of the governance system, and as a result, an increase in the information related to the social and environmental performance of the company. Firms with an environmental committee are also more likely to publicly disclose their emissions levels and present a more credible disclosure, on a voluntary basis, in order to indicate their commitment to climate change. We believe that a company’s environmental committee, however, shows evidence that proactive corporate governance is used to guide the organizational long-term strategy towards a more carbon constrained future Rankin et al., 2011.

We have also used revenues as a control variable. The intensity of the work carried out represents an essential factor of the quality level of environmental reporting. The more intense the activity the entity carries out, the more increased the risk for the entity to pollute, the risk of frequent coverage in the media, thus being inclined to provide as much information as possible to users. Hackston and Milne 1996, Cormier et al. 2005 are some of the researchers that have demonstrated in time that there are correlations between the size of the entity and the level of environmental reporting in different samples of entities, in different countries. The size of the entity is expressed by the turnover for 2010.

3. Analysis and results

The analysis of the hypothesis formulated above was tested using a multiple linear regression model. We have used *environmental reporting EnvRep* as the dependent variable and the corporate governance characteristics presented in Appendix 1 as the independent variables. The regression equation we are suggesting in order to explain the level of environmental reporting would be as follows: F(*EnvRep*) = λ_i + β_1*IndBord + β_2*NoBoard + β_3*EnvCommittee + β_4*Revenues + ε_i, where a0 – constant; β_1, $\beta 2$, $\beta 3$, $\beta 4$– equation coefficients; *EnvRep* – environmental reporting; IndBord – board independence number of independent directors divided by the total number of directors; NoBoard – the number of the directors in the Board; EnvCommittee – the existence of the Environmental Committee; Revenues – the revenues for 2009 expressed in US$; ε_i = error term.

The regression model was analyzed using SPSS, version 17.00 and we are applying the Stepwise method in order to determine the variable that could explain the variation of the environmental reporting. The correlation between variables was tested using the software SPSS, version 17.0 and the obtained results are presented in the below table.

Table 2. Correlation table

		EnvRep	IndBord	EnvCommittee	NoBoard	Ln of Revenues
Pearson Correlation	*EnvRep*	1.000	.476	.677	.090	.382
	IndBord	.476	1.000	.346	.139	.307
	EnvCommittee	.677	.346	1.000	.028	.390
	NoBoard	.090	.139	.028	1.000	.334
	Ln of Revenues	.382	.307	.390	.334	1.000
Sig. (1-tailed)	*EnvRep*	.	.000	.000	.259	.002
	IndBord	.000	.	.005	.159	.012
	EnvCommittee	.000	.005	.	.421	.002
	NoBoard	.259	.159	.421	.	.007
	Ln of Revenues	.002	.012	.002	.007	.
N		54	54	54	54	54

The analysis of the considered variables, based on the equation (1) is presented in the following table:

Table 3. Regression results

	Coefficients (β)	*t* - value	*p* value	VIF
(Constant)	2.995	0.789	0.429	
EnvCommittee	19.364	5.652	0.000	1.136
IndBord	0.167	2.670	0.010	1.136

Notes: Model summary: $R = 0.724$, $R^2 = 0.525$, adjusted $R^2 = 0.506$, F = 28.143, *p* value = 0.000, Durbin-Watson = 1.778

After having applied the stepwise regression, the significant independent variables were only those presented in the above table, variables considered as most influential on the level of corporate environmental reporting. Analyzing the tables above R square 0.525, Durbin-Watson 1.778 we notice that the board structure expressed by board independence percentage of independent directors and the existence of the environmental committee determine environmental reporting. F-ration is 28.143 which is significant at $p<0.000$ Sig. is less than 0.000 and the VIF coefficient confirms the lack of colinearity between independent variables and supports the model. Contrary to the results obtained by Rankin et al. 2011, the board with an environmental committee is associated with the decision of disclosing information. Also the independence of the board has an important role in ensuring the transparency of environmental information. Between the size of the board and environmental reporting we have not been able to notice a correlation showing that large boards are not very efficient.

4. Conclusions

We can therefore consider that implementing good corporate governance practices by establishing environmental, safety or responsibility committees that monitor the environmental impact within the company and by introducing a sufficient numbers of independent directors can ensure transparency and objectivity, solve the agency's theory conflict and determine companies to report more voluntary information regarding environmental performance and other aspects. Our theory regarding good corporate governance ensuring environmental performance and good environmental reporting can be partially validated for this sample and will be tested for other samples. The findings can influence the investors' community in their decision making process and can be a challenge for the practitioners to become more environmentally responsible in the future. The results of this study may be interpreted depending on several limitations. Firstly, we have considered data only for a one year period of analysis. It would be interesting in the future to conduct a longitudinal analysis on a yearly basis to highlight the trend of environmental reporting and the impact of corporate governance on environmental reporting practices. Secondly, the study utilized only a few corporate governance variables in order to analyze the environmental reporting practices. Further studies could consider other variables.

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