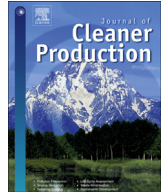




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Review

Environmental impact management of Brazilian companies: analyzing factors that influence disclosure of waste, emissions, effluents, and other impacts

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ABSTRACT

In an effort to understand the environmental disclosure mechanism from a business perspective, this article aims to identify the factors that influence environmental disclosure of Brazilian companies listed on the stock exchange. To achieve this goal, the annual and sustainability reports were observed from 50 Brazilian companies, during the period 2009–2011. First, the level of disclosure was measured for waste, emissions, effluents, and other impacts for each company, and the model to measure the disclosure level was constructed from a literature review and guidelines from the Global Reporting Initiative. After measuring the disclosure level, factors that explain what is reported by companies, which are used in the literature to measure the performance of environmental reporting, legitimacy, and economic performance, were identified. These determinant factors were then correlated with the level of environmental disclosure from the reports of the companies analyzed. The evaluation of the level of environmental reporting enabled us to identify: (i) the most evident aspects are related to atmospheric emissions and solid waste; (ii) the reports lack information on goals for reducing impacts; (iii) the lack of standards for comparison; and (iv) the need to expand information on the quantitative and financial data related to environmental impact. The analysis of the determining factors revealed a canonical correlation between the annual report and auditing, and between the sustainability report and environmental variables (potential pollutants, members of the environmental sustainability index, dissemination of information on the website and the sustainability report). However, there was little correlation between performance of environmental disclosure in the annual and sustainability reports with the economic variables, with a positive correlation only for the economic variable related to company size.

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1. Introduction

Environmental transparency for organizations gained prominence in the international scene as a response to societal demands related to natural resource consumption and environmental impacts from business activity and its effects on climate, biodiversity, and human health.

The scientific community recognizes the importance of assessing the level of environmental information from organizations to

contribute to sustainable development. As a result of this recognition, studies have been developed on environmental information and constructing tools to help decisions about disclosure.

Studies on environmental disclosure are developed to identify the profile of information, determinant factors for disclosure and to correlate levels of reporting performance with organizational performance (economic, financial, and environmental). The results show the importance of evaluating the evolution of information levels because we are in the process of global changes with respect to concerns about sustainability and its effects on organizational management, society, and the environment.

In this context, this study aims to identify the factors that influence the level of environmental reporting for Brazilian companies listed on the stock exchange from different economic sectors. To analyze the determinant factors for environmental

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reporting, the 50 companies that make up the IBRX-50 (Índice Brasil 50) index were selected, and their annual and sustainability reports were analyzed for the period 2009–2011.

2. Theoretical framework

Environmental Disclosure exposes how the rights and obligations of different types of organizations are being managed. This disclosure can help attend to societal rights with regards to questions about natural resource consumption/use in activities, and how impact management is performed (Branco et al., 2008; Rahaman et al., 2004; Cormier et al., 2004; Hasseldine et al., 2005; De Villiers and Van Staden, 2006).

In the context of environmental disclosure, international literature points to the understanding that the interaction between a company and the environment is unique for each context. As a result, the subject will vary from organization to organization (Freedman and Patten, 2004; Freedman and Stagliano, 2008) in an educational process (Murray et al., 2006) so that business and society remain in constant communication and learning about the causes, effects, and forms of environmental control and commitment in a sociopolitical vision (Cormier et al., 2004; Deegan and Rankin, 1997; Hasseldine et al., 2005; Tilt, 2001).

As a result of this understanding, Environmental Disclosure is seen as an important phenomenon used by organizations for different reasons (Gray et al., 2001), and used by stakeholders with the goal of examining the information profile shown on reports, websites, and other documents (Harte and Owen, 1991; Stray, 2008; Tilt, 2006; Tilt and Symes, 1999) over time (Burritt and Welch, 1997).

It can also be used as one of the strategies for organizations to seek acceptance and approval for their activities from society (Branco et al., 2008; da Rosa et al., 2012; Rahaman et al., 2004).

It is becoming a tool that can be used in corporate legitimacy strategies, exercising an important role so that organizations and society build knowledge and promote continuous improvement for sustainability issues.

So, Environmental Disclosure analyzes different aspects of interaction between the environment, organizations, and society, such as the following:

- (i) Inter-organizational collaboration (Albino et al., 2012),
- (ii) Consumer behavior (Bartiaux, 2008),
- (iii) Societal perception on information reported by companies with respect to pollution generated by their activities (Dong et al., 2011),
- (iv) Importance of the “Global Reporting Initiative” as an environmental reporting guideline (Brown et al., 2009; Fonseca et al., 2012; García-Sánchez et al., 2012; Marimon et al., 2012; Moseñe et al., 2012; O’connor and Spangenberg, 2008; Roca and Searcy, 2012; Skouloudis et al., 2010; Sobhani et al., 2012; Zeng et al., 2010);
- (v) Managing environmental information through evaluative tools (Christ and Burritt, 2012; da Rosa et al., 2012),
- (vi) Tools and communication channels used by organizations to report environmental aspects (Daub, 2007; Dragomir, 2012; Erlandsson and Tillman, 2009; Jenkins and Yakovleva, 2006; Moseñe et al., 2012; Lodhia, 2012; Murguía and Böhling, 2012; Northey et al., 2012; Park and Brorson, 2005; Trierweiler et al., 2012),
- (vii) Levels of environmental reporting and factors for institutional performance related to these levels (Erlandsson and Tillman, 2009; Liu and Anbumozhi, 2009; Liu et al., 2010; Lozano and Huisingsh, 2011; Oreja-Rodríguez and Armas-Cruz, 2012), and

- (viii) Factors related to regulation (Marimon et al., 2012; Skouloudis et al., 2010; Zeng et al., 2010; García-Sánchez et al., 2012; Moseñe et al., 2012; O’connor and Spangenberg, 2008; Roca and Searcy, 2012; Sobhani et al., 2012).

This dynamic tool is used, therefore, to help the process of evaluating and managing environmental information from organizations. Thus, it is noted that environmental disclosure is a means or process that relies on a set of criteria and can be used to evaluate how organizations influence and are influenced by the environment, as indicated in Fig. 1.

According to Fig. 1, Environmental Disclosure is a set of means used by organizations to show society how their activities’ interferences with the environment are being managed. This set of means emerges from demands from society itself (through social pressures), standards, guidelines, the scientific community, and strategic goals of organizations.

Therefore, it is considered that environmental disclosure is inserted in the context of organizations as one of the elements that make up the dynamic of studies on the relationship between the environment and society and that enables an evaluation of the performance level of information.

The process of evaluating environmental information, on which disclosure is based, is composed of a set of criteria and subcriteria, measured and integrated to obtain an indicator or group of indicators to measure the level of environmental information. The scientific community has been developing processes that allow: (i) identifying the criteria and subcriteria of disclosure through knowledge from specialists, the literature, or legislation; (ii) measuring these criteria through content analysis to quantify (count) sentences, phrases, or words highlighted; or using Likert scales (complete disclosure, partial disclosure, incomplete disclosure), and scales that express order and value (ordinal and cardinal); (iii) integrating the criteria that have been measured through assigning weights to each criterion; (iv) providing descriptive or analytical diagnostics on the performance of environmental disclosure (using data correlation or other statistical analyses) from the identified, measured, and integrated criteria. These diagnostics aim to help evaluate the performance of information provided by companies to different stakeholders (society, government, investors, financiers, organized civil society, etc.).

After the study by da Rosa et al. (2012), there was an increase in publications seeking to understand the disclosure of aspects related to environmental performance. According to Table 1, the criteria

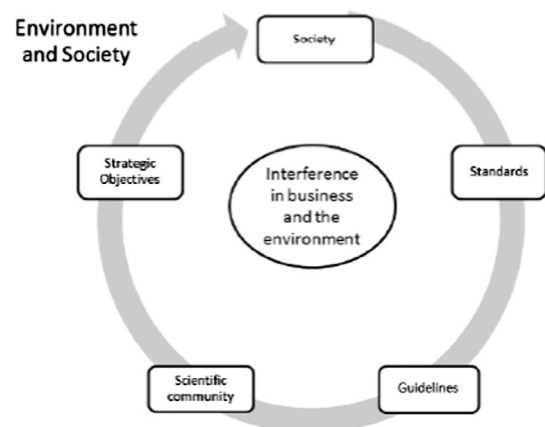


Fig. 1. Environmental disclosure in the context of organizations. Source: Authors.

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