

**CORPORATE ENVIRONMENTAL DISCLOSURE AND ECONOMIC
PERFORMANCE LEVELS: DATA ENVELOPMENT ANALYSIS APPLICATION**

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ABSTRACT

The study poses to investigate the relationship between the level of environmental disclosure and economic performance of open capital companies as classified by the Você S/A – As Melhores Empresas para Você Trabalhar (The Best Companies to Work) guide. A descriptive study, employing a quantitative approach, was conducted via documental analysis of financial statements of the therein featured, 21 open capital companies. Survey results evidence that: a) in the environmental disclosure categorization, 680 data entries were found, ranging from 99 deemed complete information, 126 as incomplete and 455 absent; b) in terms of environmental disclosure score levels, 55% of the companies were graded as unsatisfactory, 35% regular and 9% good; and c) the relationship between corporate environmental disclosure levels and economic performance revealed bleak correlation. Thus, once employing the Data Envelopment Analysis (DEA) methodology, the study concludes that not all companies that presented higher environmental information disclosure levels attained efficient economic performance.

Key-words: Environmental disclosure. Level of disclosure. Relationship. Financial performance. Data Envelopment Analysis.

RESUMO

Neste estudo, objetiva-se verificar a relação entre o nível de evidenciação ambiental e o desempenho econômico de empresas de capital aberto, classificadas no Guia Você S/A – As Melhores Empresas para Você Trabalhar. Foi realizada pesquisa descritiva com abordagem quantitativa, por meio de análise documental nas demonstrações financeiras das 21 empresas de capital aberto. Os resultados da pesquisa mostram que: a) na categorização da evidenciação ambiental, 680 informações foram evidenciadas, distribuídas em 99 informações completas, 126 informações incompletas e 455 informações ausentes; b) no nível de pontuação da evidenciação ambiental, 55% das empresas receberam conceito insuficiente, 35% regular e 9% bom; e c) a relação entre o nível de evidenciação ambiental e o desempenho econômico das empresas apresentou correlação fraca. Conclui-se, utilizando-se a metodologia Análise Envoltória de Dados (DEA), que nem todas as empresas que apresentaram maior nível de evidenciação das informações ambientais obtiveram desempenho econômico eficiente.

Palavras-chave: Evidenciação ambiental. Nível de evidenciação. Relação. Desempenho econômico-financeiro. Análise Envoltória de Dados.

1 INTRODUCTION

Somehow, companies disclose facts and acts arising from their activities, which are compiled according to their very nature and disclosed to potential stakeholders. Ponte and Oliveira (2004) emphasize that there are several ways to highlight information yet core focus lies in disclose the same at qualitative and quantitative levels that address aimed user needs. Disclosed content, may either be mandatory – given legal requirements - or voluntary in nature, with views to ensuring legitimacy to managerial decisions.

Different stakeholder groups call for different types of corporate information. This study's concern rests on environmental information disclosure, a subject matter that according Ponte and Oliveira (2004), is extensively discussed in existing literature, particularly in as much as complying with the disclosure of the theme within accounting statements companies report. Both society in general and regulatory agencies, are demanding companies behave in a more environmentally responsible manner (Jose & Lee, 2007), and certainly the interest of groups of the kind lies far beyond issues which merely comprise economic and financial matters.

Trapped by pressures of the kind inflowing from varied stakeholders, companies are thus driven to take action not only in terms of restoring penalized by development environments, but also proactive preservation attitudes with views to ensuring environment perpetuity and natural resource conservation for the sake of future generations. Actions of the kind ought to or may be disclosed so as to promote corporate transparency. The Global Reporting Initiative (GRI, 2006) proposes, on an international basis, the preparation of a sustainability report describing corporate economic, social and environmental (triple bottom line) impacts.

However, a given set of information may not be of use to all users. This drives a complex task: the ruling of environmental information structuring and dissemination involving companies from different locations, of diverse sizing and industries. Several agencies are creating norms to this effect, such as – on a nationwide basis - the Federal Accounting Council (CFC), which sets rules as to technical procedures for professional accounting compliance purposes, amongst which those relative to the disclosure of environmental and social matters.

On January 1, 2006, the Brazilian Technical Accounting Standard No. 15 (NBC-T 15) - duly approved by Resolution CFC No. 1003/04- entered into force and established procedures for corporate social and environmental information disclosure, with views to their demonstrating both participation and responsibility before society. The norm defines and deems as environmental information that which evidences the entity's interaction with the environment within which it operates.

Albuquerque and Cavalcante (2007, pg 8) emphasize that "the need to disclose is embedded within the interest in addressing users." Proxy is ground on the premise that companies featuring superior economic performance tend to extend disclosure, given that they understand transparency as means of maintaining or improving their own performance. According to Cruz and Lima (2010) disclosure is significantly associated with the organizational performance and reputation of large Brazilian open capital companies.

Several initiatives are in effect throughout the country with views to directing business sector efforts towards sustainable development. In 1997, for instance, the Brazilian Business Council for Sustainable Development (CEBDS) - which in Brazil represents the World Business Council for Sustainable Development (WBCSD) network - was formed. Via articulations involving governments, companies and civil society, this entity seeks to promote local sustainable development.

Despite comparably reduced scope, in 1997 yet another interesting initiative sprung commissioned to praise value to companies that best care for their employees: Editora Abril (Abril Publisher) thereafter published, on an annual basis, the *Você S/A Guide - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At). To prepare the annual ranking of the top 150 companies, the Guide employs a research methodology that has been improved over the years and that currently counts on FIA's - Administration Institute Foundation - technical support.

Simply taking part in this group serves as indicator that reveals this is a differentiated company, which is able to attract and retain best talent. In as much as this is concerned, the assumption lies in the fact that companies of the kind seek to ensure their reputation, also featuring superiority as to

environmental matters. Oliveira (2005), Vieira (2006) and Vieira and Faria (2007) and Boff, Beuren, Horn and Horn (2009) claim that these companies present a set of initiatives that focus on corporate strategy and management, citizenship, diversity and development concerns.

In light of that introduced, the research query to drive this study was hence formulated: What kind of relationship is there between the level of environmental disclosure during the years prior to the enforcement of NBC T 15 - i.e., the period comprising 2005 (previous year), 2006 (year of enforcement), 2007 and 2008 - and, during this same period, the economic performance of open capital companies ranked in the *Você S/A Guide - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At), in its 2007 edition? To this effect, this study poses to investigate the relationship between the level of environmental disclosure and the economic performance of open capital companies classified in the *Você S/A Guide - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At).

This study demonstrates the query's relevance by analyzing the level of environmental information disclosure in Management Reports (*RA*), Explanatory Notes (*NE*) and Consolidated Financial Statements (*DFCs*) of those open capital companies as listed in the *Você S/A Guide - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At). Literature provides assorted motivational drivers involving environmental disclosure, yet highlights the so-called Triple Bottom Line (TBL), which, as per Vellani and Ribeiro (2009), requires companies to take into account at times of strategic decision making, the economic, social and environmental bottom line. To this effect, the intent rests on contributing with literature by linking environmental disclosure to corporate economic performance.

2 ENVIRONMENTAL DISCLOSURE

Corporate relations with natural resources mustn't rest at odds with customer expectations and environmental preservation. Callado, Callado and Almeida (2008) highlight that globalized world market pressures and consumer awareness have sown new paradigms and challenges to business environments - namely, environmental matters with views to improved sustainability. From a

social perspective, sustainability's greatest concern lies in human wellbeing, especially as to human conditions and the means employed to foster life quality (Spangenberg, 2002).

Lima and Viegas (2002, pg. 47) state that "it's not about whether the company is or not environmentally friendly. Concern with environmental issues is that which involves ethics and economics. Companies have come to depend on this matter to remain in the marketplace." According to Ferreira and Carvalho (2007), over time, several instruments emerged to support corporate economic, environmental and social performance management. However, given the selected research query, this study chose to focus on corporate environmental disclosure.

Gallon and Beuren (2006) emphasize, amidst key factors securing corporate reputation at the marketplace, the process disseminating information concerning the company's economic, environmental and social management to external users. Disclosure is a mode of reporting accounts (accountability) to society (Gonçalves, Pirani & Borger, 2007). As far as Melo, Bridge and Oliveira (2007) are concerned, the underlying intent involving disclosure is to expose information that inspires trust and confidence to investors and potential corporate investors.

To this effect, disclosure must bear quality, timely and clear information (Dantas, Zendersky & Niyama, 2004). Dissemination must provide enough information so that users may both understand activities developed by the company and pertaining risks. Abidance with aspects involving the timeliness, detailing and relevance of information is vital, which in turn contributes, according to Nossa (2002), with corporate performance transparency as to environmental matters before its many users, whether internal or external.

Management is entitled to sharing or not disclosing at all given information which is not subject to legal requirement, thus varying disclosure according to each manager's understanding as to their responsibility before the society they interact with. Per Nossa (2002, p. 31), "as a given company sees its competitor produce and disseminate environmental information, the pressure for it to likewise proceed with equivalent disclosure, increases". According to Melo, Ponte and Oliveira (2007), the market tends to take into consideration once making

choices, companies that portray greater accounting disclosure transparency.

Accounting offers companies a set of financial statements that pose to disclose information which is inherent to activities undertaken, providing interested parties access opportunities to information of the kind in a systemized and understandable manner. According to Ferreira (2011), accounting's social approach obliges the procedure to inform events conducted by organizations, both economic and those of environmental and social nature. Within the set of accounting reports, in the management report and amongst explanatory notes, the latter elements are in particular, most emphasized.

Law No. 6404 of December 15, 1976 - the Law of Corporations, (Brazil, 1976), in its Article 133 foresees, at the end of each fiscal year, the preparation and presentation of the management report featuring information that is inherent to the company's business and major administrative facts. Despite the fact that the management report is foreseen by law, which in turn provides guidance as to several items required for its very preparation, it is still one of the most flexible reports amongst the set of mandatory financial statements publicly traded companies are required to disclose. This derives from the document's qualitative nature given that it poses to facilitate the understanding of the company's message before its internal and external audience.

The company prepares management report content in compliance with the Law and according to the scope and depth it deems pertinent to its business. Silva, Rodrigues and Abreu (2004, p. 2) point out that "given that this report is less technical and more descriptive than the other documents, it holds relevant communication power and is able to both account for actions taken and present expectations concerning future performance".

As far as explanatory notes are concerned, in addition to accounting policies and practices, they must supply fact or event descriptions and details as to positions presented in financial statements or information as to values that are not eligible for the purpose of inclusion said statements (NPC 27). Explanatory notes are mandatory as laid forth by Law No. 6.404/76 and pose to unveil to users, criteria adopted by the organization so as to ensure improved understanding in as much as its asset, financial and economic status is concerned.

Nevertheless, Nossa (2002) warns readers that a large number of investor decisions are taken ground on information obtained from corporate consolidated financial statements so consequently, information disseminated via financial reports must be comprehensive, accurate and reliable. In terms of scope information ought to comprise, a civil society and accounting regulatory institution movement has sprung relative to the need for disclosure of information beyond those of economic nature, especially those pertaining to environmental and social matters.

Jose and Lee (2007) mention that an increase in the number of countries that hold rulings requiring some sort of public dissemination of environmental information has been reported. Nevertheless, Norman and MacDonald (2003) call for attention as to the frailness of a sustainability report that describes the economic, social and environmental (triple bottom line) impacts of an organization. These authors alert readers that subjectivity involving corporate social responsibility and environmental sustainability disclosures, might drive the public dissemination of misleading information.

Although the possibility a given company might seek legitimacy via strategies that drive the public towards forming distorted impressions that distort reality does effectively exist, disclosure supports transparency of the company's economic, social and environmental actions. Verrechia (1983) emphasizes that despite incurring in disclosure costs, companies do favour dissemination. For Gray and Bebbington (2001), this is by no means a voluntary action since companies present a set of both favourable and non-favourable factors in as much as the disclosure of environmental information is concerned.

3 THE BRAZILIAN TECHNICAL ACCOUNTING STANDARD – NBC T 15

One of the country's instruments that rests in alignment with public dissemination environmental information is the Brazilian Technical Accounting Standard Technical - NBC T 15. Nevertheless, one must fully comprehend the both the effective power and scope of a given norm. According to Moura (2008, p. 57), "norms are documents of private nature that are prepared by an accredited entity." However, adoption of the same is voluntary, fact that distinguishes norms from laws established by public authorities and which

comprise mandatory adoption. In as much as the scope of application is concerned, since the above mentioned information is deemed complementary to financial statements, the norm or standard solely relates to open capital companies, given that these, in turn - as per Law 6.404/76 - are obliged to publish the mentioned set of documents.

On August 19, 2004, the Federal Accounting Council (CFC, 2004), enforced Resolution No. 1.003/04 and approved NBC T 15 – Information of Social and Environmental Nature standard. This norm establishes procedures as to social and environmental information disclosure, with views to demonstrating to society corporate social and environmental participation and responsibility. Item 15.1.2 of NBC T 15 defines what ought to be understood as social and environmental information: "information of social and environmental nature is understood as that pertaining to: a) the generation and distribution of wealth; b) human resources; c) interaction of the entity with the external environment; d) interaction with the environment."

The standard determines that when disseminated, this kind of information must be deemed complementary to the financial statements and distinctive of those construed as explanatory notes. Even if a given company disseminates the above mentioned information within the explanatory notes or in the management report, it still must also disclose the same in another supplementary statement known as Social and Environmental Nature Information Statement. NBC T 15 further informs that the entity may add or further detail other information it deems of relevance, in addition to those laid forth in item 15.2, and that this statement must be object of an independent audit at the time the company is submitted to such a process. NBC T 15 further specifies, in section 15.2, information that ought to be disseminated concerning the generation and distribution of wealth, human resources, entity interaction with the external environment and that with the environment.

NBC T 15 specifically in item 15.2.4, covers information that ought to be disclosed in as much as the entity's interaction with the environment is concerned, such as : a) operational processes investments and maintenance expenditures for environmental improvement; b) investments and expenditures to preserve or restore degraded environments; c) investments and expenditures

involving corporate employee, subcontractor and independent contractor-oriented environmental education; d) investments and expenditures involving community-oriented environmental education; e) other environmental projects; f) number of environmental suits, whether administrative or judicially initiated, the company partied at; g) value of fines and indemnities relative to environmental matters, whether administrative or judicially determined; h) environmental liabilities and contingencies.

The International Accounting Standards Board (IASB) determines in norm IAS 8, that corporate management must follow the recommended requirements in this norm so as to disseminate relevant information to financial statements users (IASB, 2010). It further adds that "in the absence of a standard or specific interpretation, management ought to make use of its judgment to develop and apply accounting policies of relevance to financial statement users and deemed trustworthy within the context of the set of statements, as a whole." Nossa (2002, p. 32) emphasizes the need for basic rules and regulations as to the preparation of environmental reports, whether dissemination occurs in conjunction with that of financial statements or in separate. Therefore, even though a company may chose not to adopt NBC T 15, it may disclose environmental and social information in specific reports which supplement the set of financial statements.

4 RESEARCH METODOLOGY

In this study, attempt was made to describe the relationship between the level of environmental disclosure at Brazilian open capital companies during the period between 2005 and 2008 (previous year, year NTB T 15 became effective and two years after the standard entered into force) and their economic performance during the same period. To this effect, desk research was conducted and a quantitative approach to the problem outlined in the study was employed.

The researched universe comprised the 150 companies listed in the *Você S/A Guide's - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At), 2007 special edition. Twenty one open capital companies were selected amongst those listed, chosen according to ease of access to the financial statements, a requirement companies must comply with so as to trade

their shares on São Paulo’s Stock Exchange (Bovespa).

For the purpose of collecting data related to environmental information disclosure and economic-financial performance of companies analyzed, Management Reports (AR, in Portuguese), Explanatory Notes (NE, in Portuguese) and Consolidated Financial Statements (DFCs, in Portuguese) of years 2005 to 2008 were extracted from Bovespa’s site (www.bovespa.com.br). Data was compiled in two stages.

For starters, a checklist was prepared based on the eight guidelines laid forth in NBC T 15’s item 15.2.4 that cover the entity’s interaction with the environment. The eight checklist questions presented in Chart 1 focused on classifying analyzed companies in terms of environmental disclosure and were used to infer selected company adequacy before recommendations within NBC T-15.

	Company Name	Year1	Year2	Year3	Year 4
Environmental Information	... discloses operational processes investment and maintenance expenditures to improve the environment?				
	... discloses investments and expenditures in the preservation and / or restoration of degraded environments?				
	... discloses investments and expenditures in corporate employee, subcontractor and independent contractor-oriented environmental education?				
	... discloses investments and expenditures involving community-oriented environmental education?				
	... discloses investments and expenditures in other environmental projects?				
	... discloses the number of				

environmental, administrative and judicial proceedings filed against the company?				
... discloses the value of fines and indemnities relative to environmental matters, whether administratively and/or judicially determined?				
... discloses environmental liabilities and contingencies?				

Chart 1: Checklist to collect data from companies of the sample

Source: Prepared by the authors based on NBC T-15

Ground on the checklist pictured in Chart 1 above, environmental information disclosed by surveyed companies were identified with views to filling in a form featuring each respective year’s findings. As of information published by each company, disclosure was subsequently categorized into complete information (CI), incomplete information (II) and absent information (AI). Each category was multiplied by its respective weight, according a model adapted from Beuren, Boff and Hein (2008) and defined as: CI = 5, II = 3 and AI = 1, as pictured in Chart 2.

Categories	Weight	Position	Understanding
CI	5	Complete Information	Foreseen information is present and complete whether within the management report or explanatory notes.
II	3	Incomplete Information	Foreseen information is present in either the management report or explanatory notes, yet in an incomplete, deficient manner.
AI	1	Absent Information	Foreseen is not present whether in the management report or explanatory notes.

Chart 2: Information quality categories

Source: Adapted from Beuren, Boff and Hein (2008)

Chart 2 presents information quality categories relative to environmental disclosure. Subsequently, scores were assigned to categorize environmental disclosure levels, as per Chart 3, so as to classify companies per disclosure as: insufficient, fair, good and excellent.

Chart 3: Social disclosure classification

Final Score	Classification of Disclosure
32 to 63 points	Insufficient
64 to 96 points	Regular
97 to 128 points	Good
129 to 160 points	Excellent

Source: Adapted from Boff, Beuren, Horn and Horn (2009)

Considering the four years analyzed, companies could have at least scored 32 points and at most, 160 points. To this effect, the research's major constraint derives from subjectivity involving document analysis which calls for researcher interpretations and personal de-codifications.

The second stage involved the collection of the following data as of the Financial Statements (DFCs, in Portuguese): Revenue, Gross Operating Profit (*LOB*) and Net Operational Income (*LOL*). These were employed to calculate the efficiency of companies analyzed via Data Envelopment Analysis - DEA. Charnes, Cooper and Rhoder (1978) understand that DEA is a mathematical programming model that is applied to data observation, with views to providing a new form of obtaining empirical estimates between production possibilities or efficiency surface relations. Thus, this methodology was used to calculate the efficiency of analyzed companies. Chart 4 presents both inputs and outputs employed to apply the chosen methodology to this research.

Inputs (X)	Outputs (Y)
X ₁ – Revenue	Y ₁ – Net Operational Profit (<i>LOL</i>)
	Y ₂ – Gross Operational Profit (<i>LOB</i>)
	Y ₃ – Return on Equity

Chart 4: Variables employed to apply DEA

Source: Prepared by the authors

Chart 4 highlights both inputs and outputs taken into account when calculating corporate efficiency. The DEA methodology uses variable scale returns (VRS) to consider the possibility of increasing or decreasing scale returns at the programmed efficiency borderline in a dual form of the multiplying problem (Fried, Lowell & Schmidt, 1993). Chart 5 pictures formulas employed per DEA’s methodology.

<p>Primal Program:</p> $VRS_M(Y_r, X_i)$ $\max_{\mu_r, v_i, \varpi} \left(\sum_{r=1}^s y_{rj} \mu_r - \sum_{i=1}^m x_{ij} v_i + \varpi \right)$	<p>Dual Program:</p> $VRS_E(Y_r, X_i)$ $\min_{\lambda_j, s_r, e_i} \left(\sum_{r=1}^s s_r + \sum_{i=1}^m e_i \right)$
<p>Subject to:</p> $\max_{\mu_r, v_i, \varpi} \left(\sum_{r=1}^s y_{rj} \mu_r - \sum_{i=1}^m x_{ij} v_i + \varpi \right) \leq 0, j = 1, \dots, n$ $\mu_r \geq 1, r = 1, \dots, s$ $v_i \geq 1, i = 1, \dots, m$	<p>Subject to:</p> $\sum_{j=1}^n y_{rj} - s_r = y_{r1}, r = 1, \dots, s$ $- \sum_{j=1}^n x_{ij} - e_i = -x_{i1}, i = 1, \dots, m$ $\sum_{j=1}^n \lambda_j = 1$ $\lambda_j \geq 0, j = 1, \dots, n$ $s_r \geq 0, r = 1, \dots, s$ $e_i \geq 0, i = 1, \dots, m$

Chart 5: Formulas employed by DEA methodology with variable scale return

Source: Based on Fried, Lowell and Schmidt (1993)

5 DESCRIPTION AND RESULTS ANALYSIS

This section first introduced corporate environmental disclosure categorization, scoring levels and environmental disclosure classification during the periods prior and subsequent to NBC T 15 enforcement. In suit, the economic performance of analyzed companies is presented. Finally, studied companies’ economic performance is collated with their respective level of environmental disclosure.

5.1 CORPORATE ENVIRONMENTAL DISCLOSURE CATEGORIZATION

So as to categorize environmental disclosure at companies subject to analysis, the model proposed by Beuren, Boff and Hein (2008) was adapted,

classifying disclosed information into: complete information (CI), incomplete information (II) and absent information (AI). Table 1 presents the categorization of environmental disclosures encountered within companies analyzed which results from the checklist prepared as of NBC T-15's recommendations, that in turn was employed to analyse management reports and explanatory notes published each studied year by those companies subject to this study.

Legal Denomination of Sample Comprising Companies	CI				II				AI			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
AES Sul Dist. Gaúcha Energia S.A.	3	3	3	2	2	1	3	2	3	4	2	4
AES Tietê S.A.	4	4	2	4	1	2	4	1	4	2	2	2
Ampla Energia e Serviços S.A.	0	0	1	2	1	1	0	3	8	7	7	2
Banco Bradesco S.A.	0	0	0	0	0	1	1	3	9	7	7	4
Banco Industrial e Comercial S. A.	0	0	0	0	0	1	0	0	1	7	8	7
Braskem S. A	0	0	3	3	0	3	1	1	9	5	4	3
Cia Energética de Minas Gerais S.A	5	1	5	4	0	0	0	0	3	0	3	3
Cia Energética do Ceará S.A.	1	4	5	4	2	1	0	0	6	3	3	3
Cia.Bebidas das Américas-AMBEV	1	2	2	0	2	3	2	4	6	3	4	3
CPFL Geração de Energia S.A	5	3	3	3	1	2	2	1	3	3	3	3
Fras-le S.A.	2	0	1	0	2	2	3	0	4	6	4	8
Lojas Renner S.A.	0	0	0	0	0	0	0	1	8	8	8	7
Marcopolo S.A.	0	0	0	0	4	4	4	6	4	4	4	2
Natura Cosméticos S.A.	0	0	5	0	2	4	1	4	6	4	2	4
Odontoprev S.A.	0	0	0	0	0	0	0	0	0	8	8	8
Plascar Part. Industrial S.A.	0	0	2	0	0	0	2	0	8	8	4	8
Souza Cruz S.A.	0	0	0	0	0	1	1	1	8	7	7	7
Springer S.A.	0	0	0	0	0	0	0	0	8	8	8	8
Unibanco S.A.	0	0	0	0	2	2	2	2	6	6	6	6
Weg S.A.	3	2	2	0	1	1	1	0	4	5	5	8
Whirlpool S.A.	0	0	0	0	3	3	3	3	5	5	5	5
Total	24	19	34	22	23	32	30	32	113	110	104	105

Table 1: Corporate environmental disclosure categorization

Source: Survey data

For the purpose of illustrating the use of the checklist and respective allotting of scores, the question "... discloses operational processes investment

and maintenance expenditures to improve the environment? " is herein mentioned as an example, whereby in AES Sul Distr. Gaucho Energia SA's 2005 Management Report, the following excerpt was identified:

The most relevant environmental activities undertaken by *AES Sul* in 2005 were:

- licenses, registrations and authorizations for the implementation and maintenance of ventures, adjusting the same to comply with legal requirements;
- corporate representation before public agencies and civil organizations that are subject to pertinence with environmental matters, with views to developing internal and external awareness projects;
- development of preliminary evaluation studies - environmental impact and risk analysis of ventures, foreseeing eventual environmental and social impacts;
- environmental impact diagnosis, prevention and mitigation;
- monitoring and definition of directives to ensure compliance with applicable legal requirements;
- procedure feasibility and training to perform the pruning of trees;
- direct collaboration with strategies to promote Corporate image;
- Environmental audits (*AES Sul's* 2005 Management Report).

One notices that the subject matter is fully replied in this paragraph of the company's management report, which thus corresponds to what was deemed as complete information (CI) and corresponds to 5 points. Thus, the very existence of a complete response (CI) to this question in this paragraph of the company's management report equals 5 points. Amongst the eight questions observed in this report, three appeared and were deemed complete information (CI), two questions were interpreted as II and three questions were classified as being AI.

Table 1 demonstrates that predominant grade amongst the 21 companies during the researched period corresponds to absent information (AI), accounting for 66.91% of the entire sample, followed by incomplete information (II) representing 18.53% whilst complete information (CI) represent 14.56% of the studied universe. The following companies, all of which belong to the Electric Power sector, are worthy of special mention: AES Sul Distr. Gaúcha de Energia SA, AES Tietê SA, Broad and Energy Services SA, Cia Energetica de Minas Gerais SA, Cia Energética do Ceará Generation and CPFL Energia SA.

Upon category analysis findings confirm that companies presenting the

largest amount of complete information (CI) - ranging from 14-15 CI - include: AES Tietê S.A., Cia Energética de Minas Gerais S.A., Cia Energética do Ceará S.A., Cia Energética do Ceará S.A. and CPFL Geração de Energia S.A. Nevertheless, four companies were highlighted given incomplete information (II), namely: Marcopolo S.A., with 18 disclosures; Whirlpool S.A., with 12; Cia. de Bebidas das Américas –AMBEV S.A. and Natura Cosméticos S.A. with 11 disclosures. Attention is also drawn to four companies as to the absence of information: Springer S.A., with 32 disclosures; Lojas Renner S.A., with 31 disclosures; Odontoprev S.A., with 24 and Banco Industrial and Comercial S.A., with 23.

Special mention ought to be made as to the high percentage pertaining to absent information (AI) which account for 66.91% of environmental disclosures foreseen in the checklist designed as of NBC T – 15’s recommendations, employed in the analysis of both corporate management reports and explanatory notes. These results are consistent with Oliveira’s (2005) findings, who analyzed companies of the chemical and petrochemical sector and states that these likewise demonstrated bleak adequacy before NBC T 15’s requirements.

5.2 ENVIRONMENTAL DISCLOSURE SCORE LEVELS AND CLASSIFICATION DURING PERIODS PRIOR AND SUBSEQUENT TO NBC T-15 ENFORCEMENT

This subsection analyzes environmental disclosure’s total score level and classification, taking into account the periods before and after NBC T 15 entered into force as pictured in Table 2.

Table 2: Environmental disclosure score level and classification prior and after NBC T 15 entered into force

Legal Denomination of Sample Comprising Companies	Disclosure per Year				Disclosure Total	Disclosure Classification	Quartile
	2005	2006	2007	2008			
Odontoprev S.A.	0	8	8	8	24	Insufficient	1°
Banco Industrial e Comercial S.A.	1	10	8	7	26	Insufficient	
Springer S.A.	8	8	8	8	32	Insufficient	
Lojas Renner S.A.	8	8	8	10	34	Insufficient	
Souza Cruz S.A.	8	10	10	10	38	Insufficient	
Banco Bradesco S.A.	9	10	10	13	42	Insufficient	

Plascar Part. Industrial S.A.	8	8	20	8	44	Insufficient	(32 to 63 points)
Unibanco S.A.	12	12	12	12	48	Insufficient	
Ampla Energia e Serviços S.A.	11	10	12	21	54	Insufficient	
Whirlpool S.A.	14	14	14	14	56	Insufficient	
Fras-le S.A.	20	12	18	8	58	Insufficient	
Braskem S.A.	9	14	22	21	66	Regular	2° (64 to 96 points)
Weg S.A.	22	18	18	8	66	Regular	
Marcopolo S.A.	16	16	16	20	68	Regular	
Cia.Beb. das Américas-AMBEV	17	22	20	15	74	Regular	
Natura cosméticos S.A.	12	16	30	16	74	Regular	
Cia Energética de Minas Ger S.A.	28	5	28	23	84	Regular	
AES Sul Dist. Gaúcha Energ. S.A.	24	22	26	20	92	Regular	
Cia Energética do Ceará S.A.	17	26	28	23	94	Regular	3° (97 to 128 points)
CPFL Geração de Energia S.A.	31	24	24	21	100	Good	
AES Tietê S.A	27	28	24	25	104	Good	

Source: Survey data

In as much as Table 2 is concerned, emphasis must be placed in the fact that each year’s total disclosure is calculated as of the score each company achieved during the analyzed period. To illustrate the calculation of such disclosure, Figure 1 is herein introduced.

FRAS-LE S.A					
	2005	2006	2007	2008	CÁLCULO
IC = 5 Pontos	2		1		15
II = 3 Pontos	2	2	3		21
IA = 1 Ponto	4	6	4	8	22
CÁLCULO	20	12	18	8	58

$2 + 2 + 3 = 7$
 $7 \times 3 = 21$

$1 \times 5 = 5$
 $3 \times 3 = 9$
 $4 \times 1 = 4$
Total = 18

Figure 1: Annual environmental disclosure sample score calculation

Source: Survey data

One may infer from Figure 1 that, in 2007, Fras-le SA published one single complete (1 CI x 5 = 5 points), three incomplete (3 II x 3 = 9 points) and four absent information entries (4 AI x 1 = 4 points), thus totaling 18 points.

Table 2 highlights the fact that in the year prior to NBC T 15 entering into force, i.e, 2005 disclosures, the overall sum of disclosures totaled 319 points whilst, in 2007 – the subsequent year of the norm's enforcement, environmental disclosures totaled 376 points. One thus infers that the standard effectively stimulated environmental disclosures in 2007 – the year that was immediately subsequent to the entry into force of the Federal Accounting Council's NBC T 15, thus corroborating Oliveira's (2005) findings. In 2008 however, companies totaled 320 points thus revealing a 56 points decrease in environmental information dissemination.

To classify environmental disclosure, four categories were pondered, namely: excellent (129 to 160 points), good (97 to 128 points), fair (64 to 96 points) and insufficient (32 to 63 points). For classification purposes, in compliance with the model adapted from Beuren, Boff and Hein's (2008) studies, the overall sum of corporate disclosures during the analyzed period of those companies analyzed was taken into account.

Table 2 highlights the fact that 12 companies (*Odontoprev S.A., Banco Industrial e Comercial S.A., Springer S.A., Lojas Renner S.A., Souza Cruz S.A., Banco Bradesco S.A., Plascar Part. Industrial S.A., Unibanco S.A., Ampla Energia e Serviços S.A., Whirlpool S.A. and Fras-le S.A.*), which represent 55 % of the studied sample, presented an insufficient level of disclosure level thus being included in the first quartile that comprises companies scoring 24 to 58 points. It is further worth noting that in 2005, both *Odontoprev S.A.* and *Banco Industrial e Comercial S.A.* did not at all release their respective management reports or explanatory notes.

Eight companies were graded regular (*Braskem S.A., Weg S.A., Marcopolo S.A., Companhia de Bebidas das Américas-AMBEV S.A., Natura Cosméticos S.A., Cia Energética do Ceará S.A., Cia Energética de Minas Gerais S.A. and AES Sul Dist. Gaúcha Energia S.A.*), representing 36 % of the studied sample. These

companies scored totaled within the 66 to 94 points range and thus were allotted to the second quartile.

Finally, two companies - *CPFL Geração de Energia S.A.* and *AES Tietê S.A.* - present what is deemed as being a good or sound level of disclosure and participate in the third quartile, representing a mere 9 % of the studied sample. These are precisely the companies which present the highest level of environmental disclosure. Note that not one single company was effectively graded as excellent in terms of published evidence before the theme. This study's findings corroborate Oliveira's (2005) results, whereby analytical studies were conducted as of financial statements published by Petrobrás, Braskem, Refap, Copesul, Bunge Fertilizantes, Basf, Petroquímica União and OPP. This author emphasizes that the set of analysed companies prove to be poorly aligned with the new needs of accounting information users changing needs and insufficient in as much as meeting NBC T 15 - Social and Environmental Nature Information's requirements.

5.3 REVIEW OF COMPANIES ECONOMIC PERFORMANCE

The Data Envelopment Analysis (DEA) with Variable Scale Return (VRS) model was employed to determine corporate efficiency in as much as economic performance is concerned. For calculation purposes, data was collected from Financial Statements (DFCs, in Portuguese) published between 2005 and 2008. Subsequently, the DEA methodology was applied using Revenue as inputs and Net Operational Income (LOL), Gross Operating Profit (LOB) and Return on Equity, as outputs. Table 3 presents efficiency calculations conducted on data published by the companies that comprise the studied sample.

Table 3: Corporate efficiency calculation per DEA with Variable Scale Return (VRS)

COMPANIES	2005				2006			
	Excess	Float 1	Float 2	Float 3	Excess	Float 1	Float 2	Float 3
AES Sul	651,68	727,39	663,40	1,00	517,10	819,67	836,73	1,19
AES Tietê	EFFICIENT				EFFICIENT			
Ampla	1757,40	54,13	514,62	1,00	1726,57	185,84	768,16	1,16
Bradesco	EFFICIENT				EFFICIENT			

Banco Industrial		344,05	268,97	0,50		400,89	484,77	0,71
Braskem	12360,20		1225,32	0,82	12234,50		1345,05	1,16
Cia Energética de MG	7581,26	93,48		0,85	3459,40	1565,45		0,73
Cia Energética do Ceará	885,38	356,55	535,52	1,00	789,43	570,77	567,21	0,91
AMBEV	10325,60		4585,15	0,09	4877,59		1380,67	0,12
CPFL	EFFICIENT				EFFICIENT			
Fras-le		231,58	49,29	0,03		189,33	171,93	0,11
Lojas Renner	193,40	389,24	590,46	1,00	501,08	326,06	782,22	1,11
Marcopolo	632,56	648,54	580,23	1,00	511,57	738,11	749,13	1,07
Natura	685,12		618,37		404,10		666,54	0,49
Odontoprev	EFFICIENT				EFFICIENT			
Plascar		270,42	93,91	0,03		245,89	228,92	0,19
Souza Cruz	4310,01		812,39	0,88	3922,17		525,27	0,68
Springer		63,12	73,08	1,92	EFFICIENT			
Unibanco	EFFICIENT				EFFICIENT			
Weg	1632,00	72,00	224,00	1,00	1947,77	28,63	310,92	0,97
Whirlpool	4829,63		569,00	0,99	4626,26		585,18	1,11
COMPANIES	2007				2008			
	Excess	Float 1	Float 2	Float 3	Excess	Float 1	Float 2	Float 3
AES Sul	528,00	820,00	56,00	1,16	488,00	926,00	942,00	1,31
AES Tietê	EFFICIENT				EFFICIENT			
Ampla	1466,54	457,90		1,11	2148,00	441,00	604,00	1,20
Bradesco	EFFICIENT				EFFICIENT			
Banco Industrial		302,80		0,50	306,00	484,00	634,00	1,19
Braskem	16169,40		510,65	0,96	18114,10		4080,16	1,35
Cia Energética de MG	6302,37	903,13		0,77	EFFICIENT			
Cia Energética do Ceará	173,95	896,51		0,91	1006,00	620,00	627,00	1,01
AMBEV	9922,41		4696,04	0,28	EFFICIENT			
CPFL	EFFICIENT				EFFICIENT			
Fras-le		207,19	7,64	0,20		229,48	258,05	0,28
Lojas Renner	659,43	263,74		0,95	1166,00	105,00	803,00	1,16
Marcopolo	648,28	876,34		0,96	1334,00	766,00	862,00	1,19
Natura	651,41		227,78	0,47	731,16		666,52	0,09
Odontoprev	EFFICIENT				EFFICIENT			
Plascar		282,35	36,05	0,29		368,99	390,95	0,49
Souza Cruz	EFFICIENT				EFFICIENT			
Springer	EFFICIENT				EFFICIENT			

Unibanco	EFFICIENT				35603,60		4432,95	0,12
Weg	1243,39	522,67		0,85	3112,98		463,86	0,98
Whirlpool	4119,59	222,86		0,87	4700,45		461,86	0,68

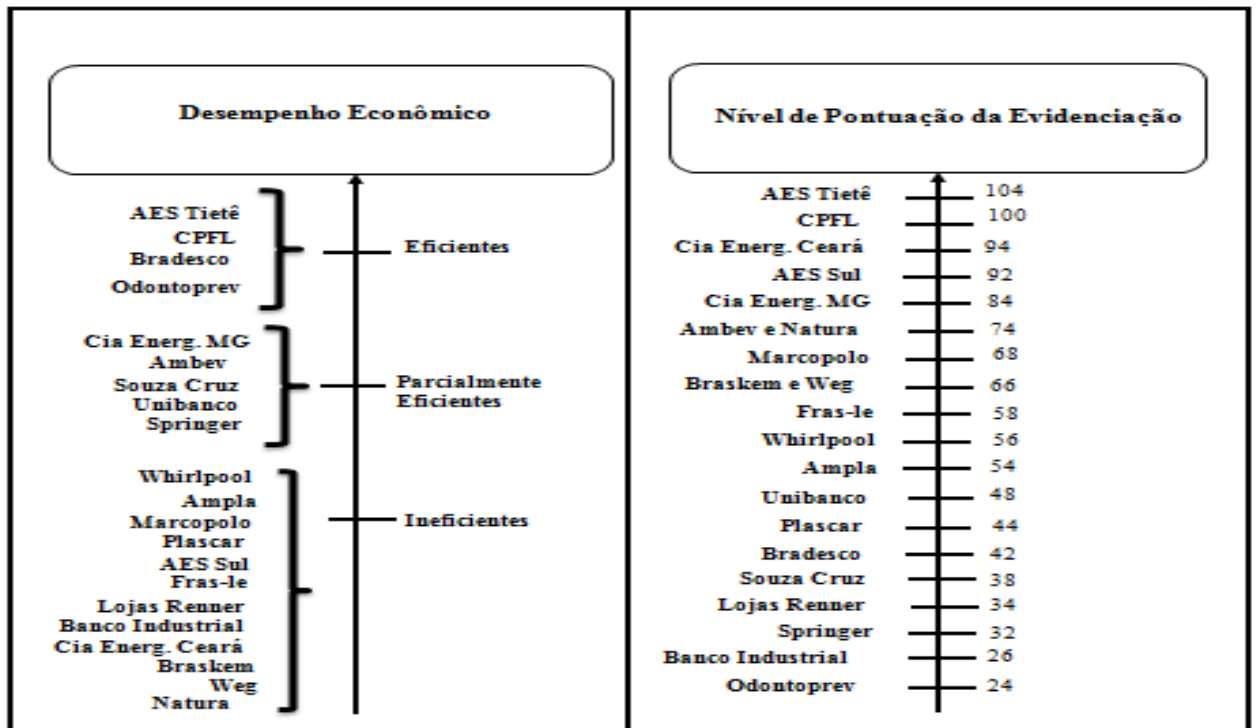
Source: Survey data

Table 3 highlights the application of DEA to identify efficient companies and inefficiencies during the analyzed period. In 2005, for instance, AEs Tietê S.A., Banco Bradesco S.A., CPFL Geração de Energia S.A., Odontoprev S.A. and *Unibanco S.A.* were deemed efficient. In 2006, the same group of companies continued to present efficient grades and only a new member joined in - *Springer S.A.* In 2007, the group that presented efficient performances in 2006 remained and received yet another member - *Souza Cruz S.A.* However, in 2008, AEs Tietê S.A., Banco Bradesco S.A., CPFL Geração de Energia S.A., Souza Cruz S.A., Springer S.A., Odontoprev S.A., Cia. de Bebidas das Américas-AMBEV S.A. and Cia Energética de Minas Gerais S.A. presented efficient grades. Thus, one may conclude that, throughout the analysed period, the companies that consistently presented efficient performance are: AEs Tietê S.A., Banco Bradesco S.A., CPFL Geração de Energia S.A. and Odontoprev S.A.

5.4 COMPARISON BETWEEN ECONOMIC PERFORMANCE AND ENVIRONMENTAL DISCLOSURE SCORE LEVELS OF STUDIED COMPANIES

For economic performance to be deemed efficient, companies were required to demonstrate efficiency throughout the four years subject to analysis. Therefore, those that presented efficient economic performance in some years were classified as being partially efficient. Figure 2 compares two variables, namely: economic performance and environmental disclosure score levels.

Figure 2: Economic performance versus disclosure scoring level



Source: Survey data

Figure 2 demonstrates that, throughout the four year period of analysis, not all companies that feature higher environmental information disclosure levels of information effectively were those that attained efficient economic performance. Nevertheless, one notices that in as much as disclosure level is concerned, AEs Tietê S.A. and CPFL Geração de Energia S.A. appear in first and second place respectively yet do belong to the group of efficient economic performance companies. However, occupying the fourth level of disclosure, Cia. Energia Elétrica de Minas Gerais S.A.'s economic performance deemed partially efficient. Finally, scores reveal that, during the studied period, companies such as Banco Bradesco S.A. and Odontoprev S.A. presented efficient economic performance during yet lagged behind in the last positions as prioritized in the environmental information disclosure level ranking, presenting mere 42 and 24 points, respectively.

One thus infers that economic performance bears no relation with environmental disclosure levels at researched companies, during the study's period. This contrasts with Al-Tuwaijri, Christensen and Hughes II's (2004) findings. These authors resorted to simultaneous equations to analyze the interrelation between environmental disclosure, environmental performance and

economic performance. Findings demonstrated that good environmental performance is significantly associated with good economic performance and with more quantitatively extensive measures and specific pollution event environmental disclosures. Differences in terms of outcomes may have arisen from both a diverse research context and the mathematical model employed to treat variables.

7 FINAL CONSIDERATIONS

The study posed to verify the relationship between the level of environmental disclosure and the economic performance of companies classified in the *Você S/A Guide's - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At), 2007 special edition. To calculate and categorize corporate economic performance efficiency, the Data Envelopment Analysis (DEA) technique was employed.

In as much as selected corporate environmental disclosure categorization is concerned, findings demonstrated that absent information (AI) predominated, accounting for 66.91 % of the sample universe; followed by incomplete information (II) representing 18.53 %; and complete information (CI) 14.56 %. Electrical power companies featured the largest number of complete disclosures, i.e., 71 disclosures (71.72 %) of complete information (CI) as compared to the remaining information categories, namely II and AI. These results are consistent with Oliveira's (2005) findings as to demonstrating bleak corporate adequacy to NBC T 15 requirements in as much as disclosure of information of social and environmental nature is concerned.

Taking the period prior and subsequent NBC T 15's entry into force, when comparing environmental disclosure score levels, findings indicated that in 2005 (the year that preceded the publication of the standard) disclosure sum totaled 319 points. In 2007 (the year subsequent to the publication of the standard), disclosures totaled 376 points, thus presenting a 56 point increase. However, this behavior was not observed in 2008 - which totaled 320 points - resulting in a 56 point decrease. Belief rests in the possibility that the standard encouraged environmental information disclosure solely in the year subsequent to entry into force given the behavior analyzed companies publicly expressed in the following

year.

As to corporate environmental disclosure classification, findings revealed that 12 companies were graded insufficient since scores ranged from 24 to 58 points: Odontoprev S.A., Banco Industrial e Comercial S.A., Springer S.A., Lojas Renner S.A., Souza Cruz S.A., Banco Bradesco S.A., Plaspar Part. Industrial S.A., Unibanco S.A., Ampla Energia e Serviços S.A., Whirlpool S.A. and Frasc-le S.A.. Eight companies were deemed regular, i.e., scored 66 to 94 points, namely: Braskem S.A., Weg S.A., Marcopolo S.A., Companhia de Bebidas das Américas- AMBEV S.A., Natura Cosméticos S.A., Cia Energética de Minas Gerais S.A., AES Sul Distr. Gaúcha de Energia S.A. and Cia Energética do Ceará S.A. Finally, only two companies presented disclosures graded as being "good", representing no more than 9% of companies analyzed, namely: CPFL Geração de Energia S.A. and AES Tietê S.A. Results thus Oliveira's (2005) studies which state that financial statements are hardly aligned with the changing needs of its users, in addition to being insufficient in terms of addressing NBC T 15 recommendations.

In as much as economic performance calculated using the Data Envelopment Analysis (DEA) methodology is concerned, the companies that prevailed for performed at efficient levels throughout the studied period were: AES Tietê S.A., Banco Bradesco S.A., CPFL Geração de Energia S.A. and Odontoprev S.A. Special mention is worth making to companies such as Souza Cruz S.A., Springer S.A., Unibanco S.A., Cia. Energia Elétrica de Minas Gerais S.A. and Cia. de Bebidas das Américas – AMBEV S.A., that were graded partially efficient since at given times, they effectively demonstrated efficiency.

When comparing economic performance and environmental information disclosure scoring levels, results confirmed that companies that presented greater efficiency were not necessarily those that likewise presented higher disclosure levels, as noted in Odontoprev S.A. and Banco Bradesco S.A.'s behavior. These companies were deemed the most efficient, yet presented the lowest disclosure levels. On the other hand, this status was not to repeat itself since AES Tietê S.A. and the CPF Geração de Energia S.A. both presented the highest disclosure levels and also demonstrated efficient economic performance.

One concludes that despite the fact that this study qualifies as an embryonic analysis of the relationship between disclosure levels *versus* economic

performance, during the studied period, the latter does not directly relate with environmental information disclosure levels at the researched companies. Considering forthcoming research, recommendations include the reapplication of the study at closed capital companies - likewise listed in the the *Você S/A Guide's - As Melhores Empresas para Você Trabalhar* (The Best Companies for You To Work At) – given that this study in particular, was limited to open capital companies. Furthermore, analysis ought to be reapplied to subsequent years so as to verify the eventual evolution, or involution, of environmental information disclosure.

BIBLIOGRAPHY

- Albuquerque, L. S., & Cavalcante, P. R. N. (2007). O nível de evidenciação das informações contábeis geradas pelas Organizações da Sociedade Civil de Interesse Público (OSCIP) da Paraíba. Anais do Encontro Nacional da Associação dos Programas de Pós-Graduação e Pesquisa em Administração, 31, Rio de Janeiro, RJ, Brasil.
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes II, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, Organization and Society*, 29(5-6), 447-471.
- Beuren, I. M., Boff, M. L., & Hein, N. (2008). Informações recomendadas pelo Parecer de Orientação nº 15/87 da CVM nos relatórios da administração de empresas familiares de capital aberto. Anais do Congresso USP de Controladoria e Contabilidade, 8, São Paulo, SP, Brasil.
- Beuren, I. M., & Gallon, A. V. (2006). Análise do conteúdo da evidenciação nos relatórios da administração das empresas participantes dos níveis de governança da Bovespa. Anais do Congresso USP de Controladoria e Contabilidade, 6, São Paulo, SP, Brasil.
- Boff, M. L., Beuren, I. M., Horn, J. E., & Horn, M. A. (2009) Adequação da evidenciação social das empresas de capital aberto no relatório da administração e notas explicativas às recomendações da NBC T – 15. Anais do Seminário de Administração, 12, São Paulo, SP, Brasil.
- Brasil. (1976). Lei nº 6.404, de 15 de dezembro de 1976. Dispõe sobre a Lei das Sociedades por Ações. Publicada no DOU de 17.12.1976 (suplemento),
- Callado, A. L. C., Callado, A. A. C., & Almeida, M. A. (2008). A utilização de indicadores de desempenho não-financeiros em organizações agroindustriais: um estudo exploratório. *Revista Organizações Rurais & Agroindustriais*, 10(1), 1-152.

- Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2(6), 429-444.
- Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS). Quem somos? Recuperado em 20 de junho de 2013, de <http://cebds.org.br/quem-somos/>.
- Conselho Regional de Contabilidade – CFC. (2004). NBC T 15. Recuperado em 03 de março de 2010, de http://www.cfc.org.br/sisweb/sre/detalhes_sre.aspx?Codigo=2004/001003.
- Cruz, C. V. O. A., & Lima, G. A. S. F. (2010). Reputação corporativa e nível de disclosure das empresas de capital aberto no Brasil. *Revista Universo Contábil*, 6(1), 85-101.
- Dantas, J. A., Zendersky, H. C., & Niyama, J. K. (2004). A dualidade entre os benefícios do disclosure e a relutância das organizações em aumentar o grau de evidenciação. *Anais do Encontro Nacional da Associação dos Programas de Pós-Graduação e Pesquisa em Administração*, 28, Curitiba, PR, Brasil.
- Ferreira, A. C. S. (2011). *Contabilidade ambiental* (3a ed.). São Paulo: Atlas.
- Ferreira, A. C. S., & Carvalho, M. S. (2007). Um estudo sobre a evidenciação dos benefícios econômicos, sociais e ambientais da Central de Separação de Recicláveis (CSR) da Companhia de Limpeza Urbana da Cidade do Rio de Janeiro. *ConTexto*, 7(11), 1-23.
- Fried, H. O., Lowell, C. A. K., & Schmidt, S. S. (1993). *The measurement of productive efficiency - techniques and applications*. Oxford: Oxford University Press.
- Gonçalves, R. C. M. G., Pirani, D. C., & Borger, F. G. (2007). Qualidade das informações sobre responsabilidade social divulgadas pelos bancos privados com ações listadas no índice de sustentabilidade empresarial da Bovespa. *Anais do Encontro Nacional da Associação dos Programas de Pós-Graduação e Pesquisa em Administração*, 31, Rio de Janeiro, RJ, Brasil.
- Global Reporting Initiative – GRI. (2006). *Diretrizes para relatório de sustentabilidade*. Recuperado em 20 de junho de 2013, de <https://www.globalreporting.org/resourcelibrary/Brazil-Portuguese-G3-Reporting-Guidelines.pdf>.
- Gray, R., & Bebbington, J. (2001). *Accounting for the environment* (2nd ed.). London: Sage.
- Guia Você S.A. – As Melhores Empresas para Você Trabalhar. (2007). *As melhores empresas para você trabalhar 2007*. Recuperado em 20 de junho de 2013, de <http://exame.abril.com.br/revista-voce-sa/melhores-empresas-para-trabalhar/inscricoes/2007/>.

- International Accounting Standards Board – IASB.(2010). IAS 8. Recuperado em 03 de março de 2010, de <http://www.iasb.org/NR/rdonlyres/F9A4C4D6-4C87-43C3-BF614DC8CA8BC1A1/0/IAS8>.
- Jose, A., & Lee, S. (2007). Environmental reporting of global corporations: a content analysis based on website disclosures. *Journal of Business Ethics*, 72(4), 307-321.
- Lima, D. V., & Viegas, W. (2002). Tratamento contábil e evidenciação das externalidades ecológicas. *Revista Contabilidade & Finanças*, 6(30), 46-53.
- Melo, F. M. A., Ponte, V. M. R., & Oliveira, M. C. (2007). Análise das práticas de evidenciação de informações avançadas e não-obrigatórias nas demonstrações contábeis das empresas brasileiras. *Revista de Contabilidade e Organizações*, 1(1), 31-42.
- Moura, L. A. A. (2008). *Qualidade e gestão ambiental* (5a ed.). São Paulo: Juarez de Oliveira.
- Norman, W., & Macdonald, C. (2003, March). Getting to the bottom of “triple bottom line”. *Business Ethics Quarterly*, 14(2), 243-262.
- Nossa, V. (2002). *Disclosure ambiental: uma análise do conteúdo dos relatórios ambientais de empresas do setor de papel e celulose em nível internacional*. Tese de Doutorado, Universidade de São Paulo, São Paulo, SP, Brasil.
- Oliveira, R. (2005). *Contabilidade ambiental: evidenciação de eventos econômicos de natureza ambiental pelas empresas do setor químico e petroquímico*. Dissertação de Mestrado, Centro Universitário Álvares Penteado, São Paulo, SP, Brasil.
- Ponte, V. M. R., & Oliveira, M. C. (2004). A prática da evidenciação de informações avançadas e não obrigatórias nas demonstrações contábeis das empresas brasileiras. *Revista Contabilidade & Finanças*, 1(36), 7-20.
- Silva, C. A. T., Rodrigues, F. F., & Abreu, R. L. (2004). Análise dos relatórios de administração das companhias abertas brasileiras: um estudo do exercício social de 2002. *Anais do Encontro Nacional da Associação dos Programas de Pós-Graduação e Pesquisa em Administração*, 28, Rio de Janeiro, RJ, Brasil.
- Spangenberg, J. H. (2002). Institutional sustainability indicators: an analysis of the institutions in Agenda 21 and a draft set of indicators for monitoring their affectivity. *Sustainable Development*, 2(10), 103-115.
- Vellani, C. L., & Ribeiro, M. S. (2009). Sustentabilidade e contabilidade. *Revista Contemporânea de Contabilidade*, 1(11), 187-206.
- Verrecchia, R. (1983). Discretionary disclosure. *Journal of accounting and economics*, 5(1), 179-194.

Vieira, M. T. (2006). Evidenciação de informações de responsabilidade social na maior empresa em cada segmento da economia brasileira. Dissertação de Mestrado, Universidade Regional de Blumenau, Blumenau, SC, Brasil.

Vieira, M. T., & Faria, A. C. (2007). Aplicação da NBC T 15 por empresas dos segmentos de bebidas e alimentos: uma pesquisa documental. *Revista Universo Contábil*, 3(1), 49-69.