
AN ANALYSIS OF THE GLOBAL REPORTING INITIATIVE (GRI) INDICATORS AND DATA QUALITY

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Abstract

The need for certification has changed the routine business with the growing demand by completing reports and questionnaires. Sustainability reporting is the main communication tool of social, environmental and economic organizations. Drafting process contributes to stakeholder engagement in the organization, the reflection of the main impacts, the definition of the indicators and communication with the public interest. Global Reporting Initiative (GRI) indicators provide comparability, credibility, and legitimacy of periodicity information in the communication of social, environmental and economic organizations. Currently, Brazil is the third in the world in number of companies that publish the GRI. As used globally and can be applied to any type of industry and company, GRI is an instrument of greater relevance in corporations from different countries. However, the publication of a report is not always a sign of transparency because the answers are not always clear and complete. Declared practices and show numbers is still a controversial process that is being built between the limits of corporate autonomy and the new values of society. In this context, this study presents a survey with has of twenty-four reports belong to the GRI standard for the years 2010 to 2012 with the aim of knowing the level of the indicators and data quality. The sample companies were selected by two requirements: be industrial and have issued GRI reporting in the years 2010, 2011 and 2012. The definition of these criteria was to eliminate financial firms and service providers because there are easier for the achievement of the targets since there is no industrial process. This is an exploratory research, literature and documents, whose starting point was the exhibition of conceptual aspects of sustainability reports and instruments. Statistical analysis will involve the development of a scale that would measure the degree of development of GRIs through a model Factorial Analysis of Correspondence. The indicators were analyzed from four perspectives: the company's willingness to answer every question, if the answer contains quantitative data, if these data are presented as performance metrics and finally, if they are compared to previous periods.

Key words: Global Reporting Initiative; sustainability; green washing

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1. Introduction

Concern related to climate change has increased the number of studies on the topic, as well as the understanding of society. Issues related to new product, the corporate image or strictly internal decisions such as hiring and firing recently began to respond to the scrutiny of environmental values as they were included in the annual reports and sustainability.

The limitation of governments to respond to growing social problems, has also contributed to the rising expectations of society regarding to the role of business in the care of social matters. More than offering a quality product, innovative and affordable, the company must also develop socially responsible and environmentally friendly practices.

Thus, the need for certifications has changed the routine related to business with the growing demand of filling out reports and questionnaires. Declare practices and show numbers is still a controversial process that is being built between the limits of corporate autonomy and the new values of society. However, sustainability reporting has been seen as the main communication tool of some aspects social, environmental and economic. The drafting process contributes to stakeholder engagement in the organization, the reflection of the main impacts, the definition of indicators and communication with the public interest.

The indicators of the Global Reporting Initiative (GRI) are designed to provide comparability, credibility and legitimacy of the information to be reported periodically by companies. Currently, Brazil is the third country in the world in number of companies that publish GRI, which can meet three application levels, A, B and C, with the plus sign (+) when external control, which results A +, B + and C +.

Although there is no mandatory publishing reports to obtaining the most certifications, in Brazil the number of companies in the portfolio of the Environmental Sustainability Index (ISE), publishing reports GRI, certified products with the seal Forest Stewardship Council (FSC) or changing practices for framing the different variations of the International Organization for Standardization (ISO) is increasing.

The visibility contributes greatly to public awareness and a significant change in the values of society, however the concept of sustainable development has become an instrument of business without advertising policies and no effective action in the name of sustainability, generating the so-called “green washing” (RADAR RIO +20, 2012). In this context, this study presents a survey with has of twenty-four reports belong to the GRI standard for the years 2010 to 2012 with the aim of knowing the level of the indicators and data quality. The sample companies were selected by two requirements: be industrial and have issued GRI reporting in the years 2010, 2011 and 2012. The purpose of these criteria was to eliminate financial firms

and service providers because the achievement of the targets becomes easier for them, since there is no industrial process.

Of course reading the reports takes time and this activity is compounded by the difficulty in finding the desired information. Not all reports show the location of each indicator, commenting tables or reference the results of the previous period. Unfortunately, this practice is perceived only when it intends to demonstrate improvement in performance from one period to another. Furthermore, the absence of external verification can increase the chances of errors in the publication of the report. However, from the reports analyzed, there was always an increase in the quantity and quality of the responses of the second period. In addition, it was noted association between levels of GRI with the performance of companies, fact that must be assessed in future research.

This is an exploratory research, supported in literature and documents, whose starting point was the exhibition of conceptual aspects of sustainability reports and instruments. Statistical analysis will involve the development of that portrays the association between the most common reported indicators of GRI and the companies sampled, through a model of factorial correspondence analysis. The indicators were analyzed from four perspectives: the company's willingness to answer every question, if the answer contains quantitative data, if the result is compared with previous years, and finally, if the company delivers specific results for each business unit.

2. Global Reporting Initiative

Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. Sustainability reports based on the GRI Reporting Framework disclose outcomes and results that occurred within the reporting period in the context of the organization's commitments, strategy, and management approach.

An organization self-declares a reporting level based on its reports content against the criteria in the GRI Application Levels. According to the volume of indicators met, the company has its report classified as A, B or C. When the report has external validation, the sign (+) will be added in the level, A +, B + or C +, as shown in Table 1.

Table 1 – Application Level Criteria

Report Application Level		C	B	A
Standard Disclosures	Profile Disclosures	Report on: 1.1; 2.1 - 2.10; 3.1 - 3.8, 3.10 - 3.12; 4.1 - 4.4, 4.14 - 4.15	Report on all criteria listed for Level C plus: 1.2; 3.9, 3.13; 4.5 - 4.13, 4.16 - 4.17.	Same as requirement for Level B
	Disclosures on Management Approach	Not required	Management Approach Disclosures for each Indicator Category	Management Approach disclosed for each Indicator Category.
	Performance Indicators & Sector Supplement Performance Indicators	Report fully on a minimum of any 10 Performance Indicators, including at least one from each of: social, economic, and environment.	Report fully on a minimum of any 20 Performance Indicators, at least one from each of: economic, environment, human rights, labor, society, product responsibility.	Respond on each core and Sector Supplement indicator with due regard to the materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission.
Report externally assured for level C+, B+, and A+.				

Source: GRI – Adapted by *Global Reporting Initiative*, 2012.

In addition to the self-declaration, reporting organizations can choose between have an assurance provider offer or request that the GRI check the information. In this second case, the report will receive a specific symbol.

With a huge increase of reports in the environmental area is also increasing the number of academic papers, theses and dissertations devoted to the study of GRI reports. Dias (2006) confronted with the demands of the GRI indicators actually published by organizations and showed that the use of the GRI is no guarantee of quality of information. With a similar goal Castro, Siqueira and Macedo (2009) developed a study of companies in the electricity sector.

3. Methods

This is an exploratory research, based on literature and documents, whose starting point was the exhibition of conceptual aspects of sustainability reports and instruments. Statistical analysis will involve the development of an association model that reveals the GRIs similarities among the sampled companies through Factorial Analysis of Correspondence. The indicators were analyzed from four perspectives: the company's willingness to answer every question, if the answer contains quantitative data, if these data are presented as performance metrics and finally, if they are compared to previous periods.

The companies whose reports would be incorporated into the sample were selected from the two situations: be industrial and have issued GRI reporting between the years 2010 to 2012. The definition of these criteria was to eliminate the business services sector considering that industrial companies face major challenges to meet environmental requirements in their processes. Table 2 presents the sample with the respective levels of publication of each report:

Table 2 – Sample

A	A+	B	B+	C	C+
Fibria 2011 BRF 2011 BRF 2012	Natura 2011 Natura 2012 Bunge 2011 Bunge 2012 Fibria 2012 Nestle 2011 Braskem 2012	Klabin 2011 Ambev 2011 Ambev 2012 Arcelor Mittal 2010 Arcelor Mittal 2011 Suzano 2011 Boticario 2010	Klabin 2012 Braskem 2011 Whirlpool 2010 Whirlpool 2012 Boticario 2011	Tigre 2012 Suzano 2010	

Source: reports studied by the authors

a) Economic Performance Indicators

The economic performance indicators are divided into three aspects: economic performance, market presence and indirect economic impacts. The last indicator will not be discussed in this document because it is strictly qualitative. Among the possible indicators of measurement and comparison we have:

Table 3 – Economic Performance Indicators

EC4	Significant financial assistance received from government
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation

Source: adapted by Economic Performance Indicators, EC (2012)

The first question, concerning the financial aid offered by the government, could be answered in order to disseminate good policies or none of them. The second indicator used is a question of legality because it shows if the company gives the payment of wage less than national minimum.

b) Environmental Performance Indicators

Among the environmental performance indicators, guidelines for preparation of the Sustainability Report GRI aspects recommend materials, energy, water, biodiversity, emissions, effluents and waste, as well as products and services, compliance, transport and the final aspect titled general. Among the 30 indicators, this study was focused on 18 questions that should be answered objectively through metrics, namely:

Table 4 – Environmental Performance Indicators

EN1	Materials used by weight or volume
EN2	Percentage of materials used that are recycled input materials
EN3	Direct energy consumption by primary energy source
EN4	Indirect energy consumption by primary source
EN5	Energy saved due to conservation and efficiency improvement
EN8	Total water withdrawal by source
EN10	Percentage and total volume of water recycled and reused
EN16	Total direct and indirect greenhouse gas emissions by weight
EN17	Other relevant indirect greenhouse gas emissions by weight
EN19	Emissions of ozone-depleting substances by weight
EN20	NOx, SOx, and other significant air emissions by type and weight
EN21	Total water discharge by quality and destination
EN22	Total weight of waste by type and disposal method
EN23	Total number and volume of significant spills
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally
EN27	Percentage of products sold and their packaging materials that are reclaimed by category
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations
EN30	Total environmental protection expenditures and investments by type

Source: adapted by Environment Performance Indicators, EN (2012)

c) Performance Indicators of Labor Practices and Decent Work

Performance indicators of Labor Practices and Decent Work are divided into five areas: employment, relations between workers and governance, health and safety at work, training and education, and finally, diversity and equal opportunities. Among the possible indicators of measurement and comparison we have:

Table 5 – Indicators Labor Practices and Decent Work

LA1	Total workforce by employment type, employment contract, and region, broken down by gender
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region
LA4	Percentage of employees covered by collective bargaining agreements
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender
LA10	Average hours of training per year per employee, by gender, and by employee category
LA12	Percentage of employees receiving regular performance and career development reviews, by gender
LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation

Source: adapted by Labor Practices and Decent Work Performance Indicators, LA (2012)

d) Performance Indicators for Human Rights

Five quantitative indicators were evaluated within the named aspects of investment practices and buy processes, non-discrimination, safety practices and indigenous rights. Indicators related to freedom of association and collective bargaining, child labor and forced or compulsory labor, were ignored because they are strictly descriptive.

Table 6 – Indicators Human Rights

HR2	Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening, and actions taken
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained
HR4	Total number of incidents of discrimination and corrective actions taken
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken

Source: adapted to Human Rights Performance Indicators, HR (2012)

e) Performance Indicators Society

Society indicators report on aspects related to corruption, public policies, unfair competition and compliance, not only the community aspect.

Table 7 – Indicators Society

SO2	Percentage of operations with implemented local community engagement, impact assessments, and development programs
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations

Source: adapted to Society Performance Indicators, SO (2012)

f) Product Responsibility Performance Indicators

The Product Responsibility Performance Indicators report on aspects relating to health and safety of the client, the labeling of products and services, marketing communications, customer privacy and compliance.

Table 8 – Product Responsibility Performance Indicators

PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services, by type outcomes
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning products and service information and labeling, by type of outcomes
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services

Source: adapted to Product Responsibility Performance Indicators, PR (2012)

Reading the reports we observed four dimensions for each indicator, as follows:

- a) The first dimension is proposed to measure the company's willingness to answer each question. Thus, it is assigned "1" to questions answered and "0" for unanswered questions.
- b) The second dimension analyzes if the response contains metrics. This aspect is relevant because part of this research provides quantitative response. We assessed the ability of measuring practices as well as the willingness to expose the result of their efforts. Quantitative answers received "1" and the quality received "0".

c) The third dimension notes the company's willingness to rescue previous results to emphasize the progress of their efforts. This is intended to check the alignment of the language used in the report. In this aspect, attributed to "1" for analysis able to portray the evolution and "0" for data without evolution.

d) Finally, the fourth dimension uniformity analyzes the practices adopted in each of the production units. This approach is supported by the technical diversity of different plants which favors the adoption of sustainable practices. In this aspect was assigned "1" to practices found in all units and "0" for specific actions of some plant.

The statistical analysis that studies the interdependence relationship between qualitative variables, allowing visualization of associations through perceptual maps that offer a sense of closeness, or combination of frequency, categories of variables non-metric (FAVERO; BELFIORE; SILVA; CHAN, 2009).

4. Result Analysis

Reading the reports takes time and the work is hampered by the difficulty of finding the information corresponding to the indicator. Unfortunately, reports only do a commentary when it is for demonstrating improvement in performance from one period to another. Furthermore, the lack of external verification can increase the chances of errors as the 2010 report that was published with a summary of the 2009 report.

The analysis found many cases where the indicator code is beside certain information demonstrating that it was answered. However, the information submitted is not sufficient to answer the question. Sometimes it doesn't have relation to the question or the metric requested.

This situation occurred with the indicator LA12 (percentage of employees receiving regular performance and career development reviews, by gender) that one company answered has a virtual tool to stimulate and support for the career planning. The company explains that to fill out the forms online, voluntarily, the employee has the opportunity to assess their skills and, as a result, establish a plan to develop them in order to prepare for the positions they want to fill future. Also contains important tips for building a successful professional career within the company. In 2010, 98.25% of the employees participated in the program.

The main question is that the issue presented does not correspond to the indicator question. With this practice the company believes that the indicator has been answered and can be used in accordance with the criteria of the application level, when in fact there is no answer.

The analysis of the mass showed the indicator with the lowest response was LA5 (minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements). Although several reports show a qualitative answer, the analysis considered only the responses that effectively present a period of time. We can analyze that companies studied did not consider relevant this practice. Moreover, one should consider that several operational changes need immediate deployment, which does not necessarily imply a harmful practice to work.

Continuing with the presentation of the indicators with smaller mass response as EN19 (emissions of ozone-depleting substances by weight) and EN27 (percentage of products sold and their packaging materials that are reclaimed by category) alert that some companies weren't prepared to issues Ecological Footprint and reverse logistics. Although the Política Nacional de Resíduos Sólidos has been deployed by the Law 12.305 of August 2, 2010, the results showed that even the reports with the highest level of application (A +), do not present information.

The lack of responses to the indicators HR3 (total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained) and HR8 (percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations) demonstrates the lack of investment in training or lack of control to report the practices adopted. Both cases are worrisome.

The next indicator least responded is PR5 (practices related to customer satisfaction, including results of surveys measuring customer satisfaction) and the research has shown that many businesses are using the contacts obtained through the communication channels to provided information for this indicators. In these cases, the results were eliminated by the research because the company doesn't have surveys to measuring customer satisfaction.

The failure to complete the EC5 indicator (range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation) is an omission of the company in view of data can be easily obtained by the Department of Human Resources.

This survey showed that some reports answer the indicator SO6 (total value of financial and in-kind contributions to political parties, politicians, and related institutions by country) reporting that financial contributions were made with legality and the amount can be obtained on the website of the Tribunal Superior Eleitoral - TSE. For this purpose of statistical analysis the results were eliminated because they do not have the required metric. From the social point of view is difficult to understand why the company did not declare the value in their document. As everybody knows the target for all reports is too show the business practices.

The contingency table of correspondence analysis indicated that the companies Tigre, Nestle and Ambev 2012 presents a report much poor in terms of information than the rest of the sample. This observation could be associated with the application of level C. However, the 2010 report of the Suzano was also level C but presents information enough to be included in

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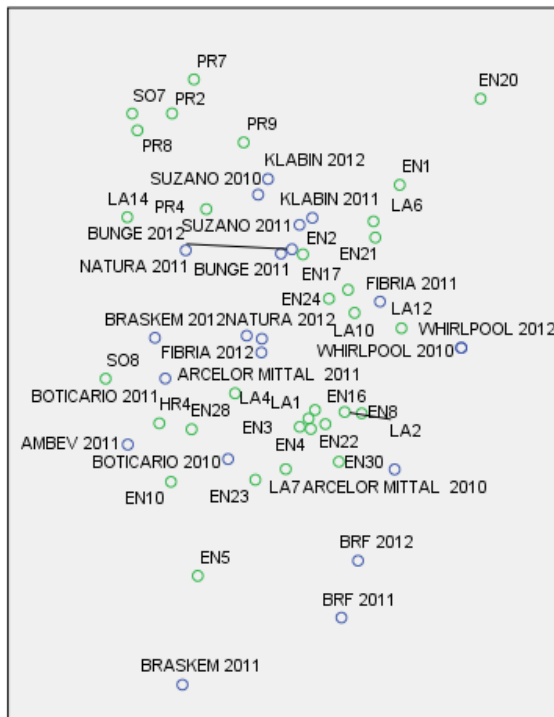
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the analysis. For this reason, justified the withdrawal of the report of the Tigre during the evolution of the statistical analyzes.

The analysis indicated that the first dimension explains 21.2% of the total inertia, the second dimension explains 15.4%, the third and the fourth explains 12.2%, 9.4%. Thus, the four dimensions are able to explain 58.1% of the total inertia. The contributions to inertia allows a better interpretation of the dimensions and quality (FAVERO; BELFIORE; SILVA; CHAN, 2009).

Thus, in four dimensions the predominance of environmental indicators can be observed, outweighing the social. This phenomenon can be positively, in the view of the greater difficulty that companies face in defining the methodology and monitoring of such indicators. Many social indicators such as number of employees, turnover, salary range in relation to the minimum wage and between men and women, for example, are easily amenable to monitoring.

Graphical 1 – Perceptual Map



Source: result of Correspondence Analysis

In the first dimension represented on the horizontal axis of the graphical 1 appear the environmental indicators EN10 (percentage and overall volume of water recycled and reused) and EN21 (total water discharge by quality and destination). The analysis showed that some companies are monitoring the disposal of water, such as Whirlpool, but without filling out the indicator of water disposal. On the other hand, Boticario presents its results for the reuse of water, but does not respond indicators EN20 (NO_x, SO_x, and other significant air emissions

contractors, and other business partners that have undergone human rights screening, and actions taken), HR4 (Total number of incidents of discrimination and corrective actions taken) and HR9 (Total number of incidents of violations involving rights of indigenous people and actions taken).

Appear in the fourth dimension indicators related to energy EN3 (Direct energy consumption by primary energy source), EN4 (Indirect energy consumption by primary source) and EN5 (Energy saved due to conservation and efficiency improvement). As reports highlighted in this scenario, appear Bunge 2012 and Ambev that failed to submit the answers to such indicators. BRF stopped measure the energy saved in its latest report but as positive highlights this dimension, the research point reports from Natura and AmBev.

Final Considerations

Correspondence analysis was used to display a set of associations between categorical variables in a non-metric perceptual map, allowing a visual examination of any pattern or structure in the data.

The research demonstrated the differences between reports with the same level of application, and even differences in the fill out the reports of the same company. Although the sample size has been reduced, representing a limitation of the study was to identify possible associations between the levels of the GRI with the evolution and consistency of the indicators monitored, especially in perceived levels A and A +.

It is hoped that this study is able to contribute to the development of business practices since the criticisms raised can inspire improving the quality of information disclosed in positioning and evolution of governance institutions for performance indicators.

Referências Bibliográficas

CASTRO, Fernanda Amorim Ribeiro; SIQUEIRA, José Ricardo Maia; MACEDO, Marcelo Álvaro da Silva. **Análise da utilização de indicadores essenciais da versão G3 da Global Reporting Initiative, nos Relatórios de Sustentabilidade das empresas do setor de energia elétrica sul americano.** Simpoi, 2009.

DIAS, Lidiane Nazaré da Silva. **Análise da utilização dos indicadores da Global Reporting Initiative nos relatórios sociais em empresas brasileiras.** Dissertação (Mestrado) – FACC/UFRJ, Rio de Janeiro, 2006.

FAVERO, Luiz Paulo; BELFIORE, Patricia; SILVA, Fabiana Lopes; CHAN, Betty Lilian. **Análise de dados – modelagem multivariada para tomada de decisões.** Rio de Janeiro: Elsevier, 2009.

HILLMAN, Amy J.; KEIM, Gerald D. **Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line?** Strategic Management Journal, p. 125-139, 2001.



RADAR RIO+20 – Por dentro da Conferência das Nações Unidas sobre Desenvolvimento Sustentável, São Paulo, Novembro, 2011

GRI – Sustainability Reporting Guidelines 2000-2011. Version 3.1. www.globalreporting.org

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