The signaling of earnings management through corporate social responsibility in Brazil

A sinalização do gerenciamento de resultados por meio da responsabilidade social corporativa no Brasil

La señalización de la gestión de resultados a través de la responsabilidad social empresarial en Brasil

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Abstract
The objective was to study the relationship between Corporate Social Responsibility (CSR) and the level of Earnings Management (GR), from the perspective of the Signaling Theory. The literature points out that managers can present CSR in an ethical or opportunistic way. The non-financial listed companies listed in [B]³ between 2010 and 2018 were used as a sample. The level of GR was obtained by the residual module (GRit) of the Pae model (2005), estimated by System Generalized Method of Moments (GMM). The level of disclosure of CSR was captured through the content analysis of the Sustainability Reports, Reference Forms and Explanatory Notes, analyzing the presence of economic, environmental and social indicators, based on Callado (2010) and Murcia and Wuerges (2011). It was identified that the presence of more information of an environmental nature may signal possible manipulations in profits, served as a warning to stakeholders.
Keywords: Corporate Social Responsibility; Earnings Management; Signaling Theory; Voluntary Disclosure; Information Quality

Resumo
Objetivou-se estudar a relação entre a Responsabilidade Social Corporativa (RSC) e o nível de Gerenciamento de Resultados (GR), sob a ótica da Teoria da Sinalização. A literatura aponta que os gestores podem apresentar a RSC de forma ética ou oportunista. Utilizou-se como amostra as empresas de capital aberto listadas na [B]³, não financeiras, entre o período de 2010 a 2018. Obteve-se o nível de GR pelo módulo dos resíduos (*GR*it) do modelo de Pae (2005), estimado por *System Generalized Method of Moments* (*GMM*). Captou-se o nível de divulgação de RSC por meio da análise de conteúdo dos Relatórios de Sustentabilidade, Formulários de Referência e Notas Explicativas, analisando a presença de indicadores econômicos, ambientais e sociais, baseados em Callado (2010) e Murcia e Wuerges (2011). Identificou-se que a presença de maiores informações de cunho ambiental podem sinalizar possíveis manipulações nos lucros, servido como um alerta para os *stakeholders*.
Palavras-chave: Responsabilidade Social Corporativa; Gerenciamento de Resultados; Teoria da Sinalização; Evidenciação Voluntária; Qualidade da Informação

Resumen
El objetivo fue estudiar la relación entre la Responsabilidad Social Corporativa (RSC) y el nivel de Gestión de Resultados (GR), desde la perspectiva de la Teoría de la Señalización. La literatura señala que los gerentes pueden presentar la RSE de manera ética u oportunista. Se utilizaron como muestra las sociedades cotizadas no financieras enumeradas en [B]³ entre 2010 y 2018. El nivel de GR se obtuvo mediante el módulo residual (GRit) del modelo Pae (2005), estimado por el Método Generalizado de

Momentos del Sistema (GMM). El nivel de divulgación de la RSE se capturó a través del análisis de contenido de los Informes de Sostenibilidad, Formularios de Referencia y Notas Explicativas, analizando la presencia de indicadores económicos, ambientales y sociales, con base en Callado (2010) y Murcia y Wuerges (2011). Se identificó que la presencia de más información de carácter ambiental puede señalar posibles manipulaciones en las ganancias, sirvió de advertencia a los interesados.

Palabras clave: Responsabilidad Social Empresarial; Gestión de resultados; Teoría de la Señalización; Divulgación Voluntaria; Calidad de la Información

1 Introduction

Corporate Social Responsibility (RSC) has become important to business due to the growing interest of stakeholders. It is understood that RSC can serve as a criterion for adding business value so that managers can use it ethically, respecting their relationship with investors and the environment, or opportunistically, masking possible discretionary management practices, harming the decision-making power of interested parties.

In this way, we aimed to study whether in non-financial Brazilian publicly traded companies listed in Brazil, Bolsa, Balcão [B]³, RSC can be considered a signaling factor for the presence of Earnings Management (GR) in the period from 2010 to 2018. This perspective assumes that the voluntary disclosure of information related to RSC would be a determining factor for the quality of accounting information.

In addition to the mandatory information, companies started to use voluntary disclosure to demonstrate additional information, ensuring the attention of stakeholders, who interpret the addition of new information as signaling factors of possible business scenarios, reducing possible information asymmetry (Ji, Lu & Qu, 2017).

In this way, disclosing information becomes important for the Signaling Theory to take shape. In addition, Sun, Salama, Hussainey and Habbash (2010) believe that the Signaling Theory gains strength from the existence of information asymmetry between management and stakeholders, in which any additional information provided becomes an attractive signal for users, allowing for forecasting scenarios, attributing effects to the quality of accounting information.

Among the voluntary disclosures, Lokuwaduge and Heenetigala (2017) point out that demonstrating sustainability in the business has become a strategic plan, stating that such a practice contributes to meeting the expectations of information users interested in environmental, social and economic issues, ensuring possible futures returns. In this way, these authors corroborate the thought of Elkington (2004), who defined economic, social, and environmental issues as the three pillars that arouse sustainable development, which gave rise to the Triple Bottom Line perspective.

RSC is associated with the Triple Bottom Line, so business information related to this issue can generate benefits. We can mention business values, improvement in reputation, approximation, and minimization of asymmetries with stakeholders, reduction of concern about negative behavior, decrease in tax costs, legitimacy, and increasing future returns, among others (Becchetti, Ciciretti, Hasan & Kobeissi, 2012; Servaes & Tamayo, 2013).

With this, knowing the interest of stakeholders on this topic, managers may not always ethically use RSC. Brooks & Oikonomou (2018) state that the real motivations for investing in sustainability disclosure can be focused on informational conduct issues or even be used opportunistically.

This behavior characterizes two theoretical strands because by disclosing sustainable information, companies can become more transparent, reducing asymmetry; increasing informational quality; reducing chances of possible profit management (Almahrog, Aribi & Arun, 2018). However, such a practice can also be used to mask negative results or discretionary earnings management, harming investors in their decision-making, as the quality of information would be damaged, with legitimacy as a camouflage factor (Rezaee & Tuo, 2019).

With this, it can be seen that the manager's behavior regarding RSC can interfere with the quality of the accounting information provided to investors. Consequently, the question can be raised: **What is the relationship between the disclosure of information on Corporate Social Responsibility and the level of Management of Business Results in the Brazilian scenario?**

Such questioning is justified because RSC is considered an essential factor for companies. It may influence the quality of accounting information depending on managers' ethical or opportune positioning of their strategies.

In Brazilian literature, such themes were cited in a few papers, such as Murcia and Wuerges (2011), Silva (2016), Silva and Costa (2017), and Consoni, Colauto and Lima (2017). In these studies, the ethical perspective was considered by associating a negative relationship between RSC and GR. In addition, it was noted that the proxies used in the research with samples coming from the post-IFRS period did not capture the content of the reports, demonstrating a gap and possibility for conducting this research.

Another vital factor is inherent to the methodological procedures used in this research when estimating the discretionary accruals by the Pae model (2005) by the System Generalized Method of

Moments (GMM). With this, its use was aimed at correcting the endogenous and autocorrelation effects of the model's residuals.

The results showed that RSC information, especially environmental issues, would be directly related to GR practices. Thus, it could be considered that such a relationship could express opportune attitudes of managers as a possible strategic plan. Thus, investors should be attentive to signs of possible opportunistic intentions by managers when evidencing responsibly sustainable practices.

2 Theoretical Background

2.1 Corporate Social Responsibility (RSC)

The Industrial Revolution triggered the corporate perception of development, which aimed at economic growth as the primary developmental factor. However, as of the 1980s, it was realized that social and environmental issues would also be important pillars for building a promising market influenced by a good economic scenario (Coelho, Coelho & Godoi, 2013). With the awakening of the perspective of sustainable development, companies began to adopt new practices that optimize the three pillars: economic, social, and environmental, defined by Elkington (2004) as the Triple Bottom Line.

With this, RSC has come to be regarded as a corporate commitment to operate at the economic, social, and environmental levels, recognizing the rights of stakeholders to business. Companies receive constant attention and pressure from regulatory bodies and investors to become increasingly responsible for social and environmental issues (Lokuwaduge & Heenetigala, 2017), being an essential element for the business world.

Thus, corporate commitment to social and environmental issues has become a factor of interest for the users of accounting information and may generate benefits in the long term, constituting a relevant factor for the corporate environment. Showing practices related to sustainability has become a common act among companies to satisfy possible stakeholders' needs.

According to Servaes and Tamayo (2013), corporate sustainability can be considered a significant investment that meets the needs of users interested in corporate business. With this, Rezaee and Tuo (2019) state that stakeholders have started to pay attention to the disclosure of information related to sustainable performance with more intensity.

With the gradual increase in companies' involvement in RSC activities, the content of the information related to the social and environmental perspective to be disclosed becomes a determining factor for the organization's transparency (Becchetti et al., 2012). Thus, transparent companies are better able to meet the demand of investors and regulatory bodies by demonstrating in their scope non-financial information, including reports of social and environmental actions (Rezaee & Tuo, 2019).

Lokuwaduge and Heenetigala (2017) point to a growing corporate strategy based on integrating sustainability into business, claiming it to be a possible way forward contributing to stakeholder expectations regarding environmental, social, and economic issues.

Coelho et al. (2013) state that the whole impulse for voluntary RSC disclosure is loaded with interests, in which companies seek to get out of possible legal interventions and perceived negative impacts on the environment, both through legality and opportunistic practices, aiming at the lowest impact to their business. In this way, Brooks and Oikonomou (2018) discuss that the real motivations for RSC investment and disclosure are informational conduct and opportunistic conduct.

With this, it is understood that all business apparatus for the disclosure of information relevant to RSC has a strategic purpose, ensuring future benefits, a possible increase in profits, higher returns on shares, or more significant investments. However, to achieve such success, companies tend to act or not act legally with their users, evidencing real information to increase the power of disclosure and improve relations with stakeholders, or else use artifices to mask possible managerial tactics or unsatisfactory results.

2.2 Earnings Management (GR)

Accounting standards present broad criteria for measurement and disclosure, allowing managers to use their discretionary power to use the form that best suits the desired disclosure of their information (Paulo, 2007). Consoni et al. (2014) state that the absence of a more precise measure of profits and the subjectivity of accounting choices about standards and practices, which the Accounting Principles do not cover, facilitate managerial opportunism. The authors further comment that the complexity of accounting choices is challenging for investors to understand.

For Omar et al. (2014), whatever the reason why the GR was performed will reflect misleading information to the users of the information. It is noted that management practices have the common purpose of trying to mask possible unsatisfactory results that could damage managers' image. With this, they use their discretionary power under loopholes in the accounting laws.

GR occurs through purposes that the literature states are favorable to the managers' vision and well-being, even if such an act violates the assumption of the accounting report's trustworthiness and relevance.

Dechow, Ge and Schrand (2010) show evidence that goals incentivize GR to contribute to managers trying to achieve it somehow, even by manipulating results.

The managerial tactics used by managers to achieve their goals occur in different ways. Among such forms, Omar et al. (2014) point out the GR through discretionary accruals. In this form of management, the result of the fiscal year for the period is affected by the discretionary accounting choices made by managers. Chan, Chan, Jegadeesh and Lakonishok (2001) state that accruals comprise the difference between accounting profit and underlying cash flow and are segregated into two distinct parts, discretionary accruals, and non-discretionary accruals.

The non-discretionary or normal accruals represent the adjustments that reflect the company's real performance related to the ordinary course of its activities. In contrast, discretionary or abnormal accruals capture the distortions produced by the discretion of managers through the GR in order to manipulate the results (Paulo & Leme, 2009).

According to Cassell, Myers and Seidel (2015), GR through accruals becomes riskier since auditors find it easier to detect such discretion in reported earnings. Investors, boards of directors, regulators, and other stakeholders may also detect possible biases in questionable accounting practices.

However, the practice of GR cannot be confused with or considered fraud. GR occurs within the limits of accounting standards. In contrast, fraud violates the rules and Principles of Accounting, but the magnitude of the management can later be configured as a fraudulent action (Franceschetti, 2018).

By managing results, regulators and some authors conclude that it directly harms the quality of accounting information. Despite the possible benefits of such a practice, such a purpose has a more opportunistic bias.

2.3 Disclosure of RSC as a Flag for GR

It is noticed that the discretionary power of managers can influence the quality of the information shown. Managers have economic incentives to decide whether or not to disclose privileged information, and this decision-making power has a more significant influence on voluntary information, which can be reliably disclosed or biased (Murcia & Wuerges, 2011). This perspective is associated with the Signaling Theory, which comes from the existence of the asymmetry of information existing between managers and investors, in which any additional information provided already becomes a sign of attraction for stakeholders, improving the corporate image, attributing possible effects on information quality (Sun et al., 2010).

Signaling Theory demonstrates that the disclosure of additional information by companies can reduce information asymmetry with external users, enabling more informed decision-making (Mota, Coelho & Queiroz, 2014). In this way, signaling can be considered a cycle in which signals can be sent by companies, which are received and interpreted by stakeholders, which can subsequently reflect in future returns (Ji et al., 2017). Consequently, the voluntary disclosure of additional information can be explained by the Signaling Theory because by demonstrating important information to the market, there is the idea that the market may correspond to greater returns, and this aspect can be used as a differentiating strategy for possible competitive advantages. (Watson, Shrives & Marston, 2002).

It is considered that information related to RSC has a voluntary nature of disclosure, driven by stakeholders' growing interest in corporate actions of a socio-environmental nature. Lokuwaduge and Heenetigala (2017) state that companies are more engaged in RSC activities and developing reports that voluntarily inform such actions and sustainable behaviors.

The RSC disclosure process, despite the costs incurred for its execution, such as data collection for the formulation of reports, becomes beneficial for companies, as they tend to strengthen the loyalty relationship with stakeholders by showing a more responsible image, enabling positive returns, which becomes a strategic means as it also constitutes a competitive advantage over competitors (Rezaee & Tuo, 2019; Schuster & Klann, 2019).

From the perspective of disclosure of information related to RSC, Rezaee and Tuo (2019) show that voluntary disclosure would positively impact earnings quality, referring to fewer earnings management, which would provide greater transparency and reliability in the face of relevant information.

Almahrog et al. (2018) observed that in non-financial companies in the United Kingdom, the level of RSC was decisive for the reduction of GR, demonstrating that the disclosure of socio-environmental information improved the quality of accounting information by reducing discretionary managerial acts.

Other research has shown that disclosing information about RSC would also be inversely related to the practice of GR in companies from emerging countries, such as South Africa, Vietnam, Indonesia and Iran (Jordaan, Klerk & Villiers, 2018; Alipour, Ghanbari, Jamshidinavid & Taherabadi, 2019; Hoang; Abeysekera & Ma, 2019; Christina & Alexander, 2019). Moreover, such a relationship would intensify due to ethical, cultural, and corporate governance issues in the United States (Rezaee & Tuo, 2019).

It is understood that managers are motivated to disclose RSC, information to meet stakeholder expectations and thus guarantee possible returns for the organization. Based on this perspective and the results observed in emerging countries, such as Brazil, the following hypothesis was considered:

H₁: There is a negative relationship between the disclosure of information about RSC and the level of corporate GR.

The literature points out that RSC, can be driven by ethical reasons, corroborating a more optimized informational quality. However, managers can highlight RSC as a way to "make up" the corporate image, blurring information users so as not to pay attention to possible GR practices. Hoang et al. (2019) believe managers could also use long-term opportunistic practices regarding RSC disclosure. Thus, Martínez-Ferrero, Banerjee and García-Sánchez (2016) state that RSC can be used as a strategic means to avoid the negative consequences of GR, arguing that the market cannot capture the opportunistic effect of RSC disclosure, helping to mask it.

The logic of this perspective lies in the users' non-perception of profit-manipulating practices since they are satisfied and attentive to the good impression concerning sustainable practices and their voluntary disclosure, appearing to be transparent.

The arguments used for the opportunistic purpose are that it can improve business reputation and ensure legitimacy, being used as an entrenchment strategy (Faisal, Prasetya, Chariri, & Haryanto 2018). According to Rezaee and Tuo (2019), the Legitimacy Theory supports the hypothesis that the disclosure of RSC can mask discretionary increases, which would harm investors in decision-making, putting legitimacy as a camouflage factor. Prior, Surroca and Tribó (2008) also point to this perspective based on Agency Theory, indicating the conflict of interests between the management that intends to optimize its profits through sustainable aspects and its users who invest in these actions without realizing the possible manipulation of results.

In this way, it is understood that companies can use RSC as a distraction so that stakeholders do not perceive possible GR practices, having Legitimacy Theory and Agency Theory as support and complement to Signaling Theory for a possible indication of a direct association between these two variables.

Based on the Signaling Theory, the hypothesis was defined with an optimistic perspective. However, it was considered to analyze whether the disclosure of RSC could also indicate an opportune signal about the practice of GR in Brazil.

3 Methodology

3.1 Sample and Data Collection

We sought to work with all publicly traded companies, active, listed in Brazil, Bolsa, Balcão [B][3], with data referring to the years 2010 to 2018, this interval being chosen because it encompasses the period of adoption of the standard imposed by Internacional Financial Reporting Standards (IFRS).

From the financial data collection carried out at Thomson Reuters Eikon® in July 2019, there was information referring to 426 companies. The 135 companies classified as financial were removed from the sample due to the leverage specificities belonging to this sector. Seventy-five companies that did not provide sufficient data to estimate discretionary accruals were also discarded.

The lag of total accruals in 1 period was used to estimate discretionary accruals. In addition, 25 companies were unable to be analyzed due to the absence or difficulty in accessing at least one of the reports (Sustainability Reports, Reference Form, and Financial Statements) stipulated for the content analysis or the absence of data necessary for calculating the variables of models 3 and 4. Thus, the final sample corresponded to a total of 191 companies.

3.2 Estimation of Discretionary Accruals

We used the management model of Pae (2005) to estimate the GR level of the companies in the sample. This choice is justified by the fact that this is an improved model, which aimed to overcome the weaknesses of the Jones model (1991), hitherto widely cited and used in the literature. It is defined as follows:

$$AT_{it} = \alpha_0(1/A_{it-1}) + \alpha_1\Delta R_{it} + \alpha_2 PPE_{it} + \alpha_3 FCO_{it} + \alpha_4 FCO_{it-1} + \alpha_5 AT_{it-1} + \varepsilon t_{it} \qquad (1)$$

Where:
- AT_t: total accruals of the company in period t;
- A_{t-1}: the company's total assets in period t – 1;
- ΔR_t: the quotient of the variation in net revenues between period t – 1 and t, due to total assets in period t – 1;
- PPE_t: balances resulting from the fixed assets account in period t, divided by total assets in t – 1;
- FCO_t: operating cash flows at the end of period t divided by total assets at t – 1;
- FCO_{t-1}: operating cash flows at the end of period t – 1, divided by its total assets at t – 2;
- AT_{t-1}: total accruals calculated in period t – 1, weighted by total assets in t – 2.

We used the estimation model adopted by Martins (2016) to estimate the value of the companies' Total Accruals (AT_{it} and AT_{it-1})

$$ATit = \frac{profitit - FCOit}{Ait-1} \qquad (2)$$

Where:
- AT_{it}: total accruals of the company in period t;
- LUC_{it}: earnings before special items and discontinued operations of the company in period t - 1;
- FCO_{it}: company's operating cash flow in period t;
- A_{it}: total assets of companies in period t – 1.

Subsequently, the regression residuals were estimated being defined as the companies' discretionary accruals (εt_{it}), considered in absolute value, because according to Paulo (2007), the module of such value best represents the level of earnings management, this being the range of distance from zero.

3.3 Estimation of RSC Variables

A content analysis was performed on the Sustainability Reports (comprising Annual Reports and Integrated Reports), Reference Forms, and Explanatory Notes issued annually by the companies. This metric is usually used to translate qualitative information into quantitative information (Beretta & Bozzolan, 2007).

Table 1
RSC Indicators Used

Dimensions		
Environmental (DA$_{it}$)	**Economical (DE$_{it}$)**	**Social (DS$_{it}$)**
A$_1$ Environmental Management Systems A$_2$ Water Used A$_3$ Processes Arising from Environmental Infractions A$_4$ Training and Education of Employees in Relation to the Environment A$_5$ Energy Savings and Conservation A$_6$ Projects and Development of Sustainable Technologies A$_7$ Life Cycle of Products and Services A$_8$ Quantity of Fossil Fuel Used per year A$_9$ Recycling and Reuse of Water A$_{10}$ Environmental Accidents A$_{11}$ Sources of Funds Used A$_{12}$ Waste Reduction A$_{13}$ Production of Toxic Waste A$_{14}$ ISO 14001 A$_{15}$ Soil Quality A$_{16}$ Surface Water Quality	E$_1$ Ethical Investments E$_2$ Spending on Health and Safety E$_3$ Investment in Clean Development Mechanisms E$_4$ Debt Level E$_5$ Profitability E$_6$ Interest and Market Value E$_7$ Environmental Liabilities E$_8$ Spending on Environmental Protection E$_9$ Environmental Audit E$_{10}$ Evaluation or Projection of Company Results E$_{11}$ Sales Volume E$_{12}$ Expenses with Benefits E$_{13}$ Return on Invested Capital (ROIC) E$_{14}$ Awards or Quality Seals	S$_1$ Generation of Work and Income S$_2$ Assistance in Education and Training S$_3$ Occupational Safety Standard S$_4$ Organizational Ethics S$_5$ Social Investments S$_6$ Employee Retirement S$_7$ Distribution of Profits and Results among Employees S$_8$ Statement of Conduct, Policies, and Social Practices S$_9$ Employee Training and Development S$_{10}$ Fatal Accidents S$_{11}$ Legal Contracts S$_{12}$ Work Stress S$_{13}$ Safety of Products and Services

Source: Adapted from Callado (2010) and Murcia and Wuerges (2011).

Information relevant to the indicators encompassing the three aspects of RSC was collected: Environmental, Social and Economic, based on the sustainability indicators used by Murcia and Wuerges (2011) adapted to the perspective developed by Callado (2010). Forty-three indicators were classified, where 16 were of the environmental dimension, 14 of the economic dimension, and 13 of the social dimension, as described in Table 1.

To quantify the indicators collected in the Sustainability Reports, Reference Forms, and Explanatory Notes, we used a metric based on the perspective of Petty and Guthrie (2000). Also used by Consoni et al. (2017) establishes that sustainable information can be evidenced in a descriptive, non-monetary quantitative and quantitative monetary way. With this, the information relevant to such indicators was quantified as follows:
- 0 for information not included in the reports;
- 1, for the information that is expressed in the reports in a descriptive way;
- 2, for the information that is expressed in the reports in a quantitative way: monetary or not.

After quantifying the indicators, it was possible to estimate the variables DA_{it}, DE_{it}, DS_{it}, RSC_{it}, the first three being the ratio between the sum of the indicators present in the specific dimensions, divided by the expected total. At the same time, the latter will be the total sum of all indicators due to the total expected value, as shown in Table 2.

Table 2
Definition of Corporate Social Responsibility Variables

Variable	Dimension	Formula
Environmental	DA_{it}	$\dfrac{A_1 + A_2 + A_3 + A_4 + A_5 + \cdots + A_{16}}{32}$
Economical	DE_{it}	$\dfrac{E_1 + E_2 + E_3 + E_4 + E_5 + \cdots + E_{14}}{28}$
Social	DS_{it}	$\dfrac{S_1 + S_2 + S_3 + S_4 + S_5 + \cdots + S_{13}}{26}$
General	RSC_{it}	$\dfrac{(A_1 + \cdots + A_{16}) + (E_1 + \cdots + E_{14}) + (S_1 + \cdots + S_{13})}{86}$

Source: Prepared by the Authors (2021).

The segregation of the RSC_{it} variable into the DA_{it}, DE_{it} and DS_{it} variables reflected the intention of observing whether the other specific groups of environmental, economic, and social information present, respectively, a significant influence on the dependent variable. Thus, it was possible to analyze in greater detail the relationship between RSC and GR, as well as Murcia and Wuerges (2011) and Consoni et al. (2017) did in their research.

3.4 Definition of Models

The following statistical models were estimated based on the comprehensive theory of the subject to investigate the relationship between the level of GR and the level of disclosure of information regarding RSC.

$$GR_{it} = \beta_0 + \beta_1 RSC_{it} + \beta_2 ROA_{it} + \beta_3 END_{it} + \beta_4 ISE_{it} + \beta_5 TAM_{it} + \beta_6 MTB_{it} + \beta_7 GR_{it\text{-}1} + \beta_8 \textstyle\sum SETOR_{it} + \beta_9 \textstyle\sum ANO_{it} + \varepsilon t_{it} \quad (3)$$

$$GR_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 DE_{it} + \beta_3 DS_{it} + \beta_4 ROA_{it} + \beta_5 END_{it} + \beta_6 ISE_{it} + \beta_7 TAM_{it} + \beta_8 MTB_{it} + \beta_9 GR_{it\text{-}1} + \beta_{10} \textstyle\sum SETOR_{it} + \beta_{11} \textstyle\sum ANO_{it} + \varepsilon t_{it} \quad (4)$$

In both equations, the Results Management Level (*GRit*) will be considered as a dependent variable, and the variables related to Corporate Social Responsibility (DAit, DEit, DSit, and RSCit) were considered as variables of interest.

In both models, eight variables were added, corresponding to return on assets, corporate debt, the Corporate Sustainability Index (ISE), size, market-to-book; the GR level of the previous period as an instrumental variable; and sector and year as statistical control variables. Such proxies are expressed in Table 3.

3.5 Statistical Procedures

We used the System Generalized Method of Moments (GMM) which, based on the presence of endogeneity, correlation in the residuals, and the use of an instrumental variable as a form of control, make this method more efficient and prevent possible operationalization errors in the usual estimation of accruals (Martinez, 2008). In model 1, total accruals (*ATit*) lagged as an instrumental variable. Although Pae (2005) considered only the lag of total accruals in a single period ($AT_{it\text{-}1}$), the importance of testing the lag in two periods ($AT_{it\text{-}2}$) was seen.

For models 3 and 4, the level of earnings management (GR_{it}), resulting from the discretionary accruals module (estimated by the residuals of model 1), lagged as an instrumental variable in one period as a way of mitigating naturally occurring endogeneity effects in accruals (Martinez, 2008). The GR_{it} lag was tested in 2 periods, but this instrument did not show a statistically significant relationship.

The Arellano-Bond estimator by dynamic panel (Arellano & Bond, 1991) was applied to determine if there were problems of overidentification and autocorrelation and if the instrumental variables were well-defined and appropriate. The multicollinearity of the data was tested using the VIF Test (Variance Inflation Factor). A 5% winsorization was applied to variables with high standard deviation.

Table 3
Control Variables of Models 3 and 4

Proxy	Expected Signal	Description	Source
ROA_{it}	+	$$\frac{EBIT_{it}}{Total\ accruals\ _{it-1}}$$	Jordaan et al. (2018); Alipour et al. (2019)
END_{it}	+	$$\frac{Liabilities_{it}}{Net\ worth_{it}}$$	Consoni et al. (2017); Jordaan et al. (2018); Alipour et al. (2019).
ISE_{it}	-	Dummy: value 1 for companies considered sustainable, which made up the list of the Corporate Sustainability Index; and 0 for those not classified in the index.	Silva (2016); Cunha and Campos (2018)
TAM_{it}	-	Ln ($Total\ accruals\ _{it}$)	Silva (2016); Cunha and Campos (2018); Haga, Ittonen, Tronnes, and Wong (2018); Schuster and Klann (2019).
MTB_{it}	+/-	$$\frac{Market\ value_{it}}{Net\ worth_{it}}$$	Cunha and Campos (2018); Rezaee and Tuo (2019).
GR_{it-1}	+/-	Prior period discretionary accruals module	Statistical Instrument (Martinez, 2008)
$\sum SETOR_{it}$	NA	Statistical control for possible peculiarities and influences of Brazilian sectors on the dependent variable. Sectors coded according to the Thomson Reuters Eikon® Global Industry Classification Standard (GICS Sector Name and GICS Sector Code)	Graafland and Noorderhaven (2018)
$\sum ANO_{it}$	NA	Statistical control for possible peculiarities and influences of Brazilian periods on the dependent variable. Periods coded by the corresponding year.	Prior et al. (2008)

Caption: EBIT – Net Income before Taxes; NA – None of the Alternatives.
Source: Prepared by the Author (2021).

4 Results Analysis

Aiming to study the relationship between the level of GR and the disclosure of information related to RSC, the first step was to estimate the discretionary accruals using Pae's model (2005). Thus, through the estimation of the model by GMM, the results are shown in Table 4.

Table 4
Model Regression Results (1)

AT_{it}	Expected Signal	Lag in 1 year		Lag in 2 years	
		Coefficients	P-value	Coefficients	P-value
AT_{it-1}	-	-0,04228	0,046	-0,35547	0,000
AT_{it-2}	-			-0,29029	0,000
$1/A_{it-1}$	+/-	5151718	0,016	8775974	0,019
ΔR_{it}	+	0,17887	0,000	0,11576	0,000
PPE_{it}	-	-0,11603	0,001	-0,09063	0,233
FCO_{it}	-	-0,71435	0,000	-0,76957	0,000
FCO_{it-1}	+	0,05292	0,253	-0,13181	0,007
Const.		-0,00287	0,796	-0,00965	0,640
Prob > F		0,0000		0,0000	
observation		1728		1512	
Arellano-Bond		0,1623		0,3521	
Sargan		0,0012		0,0017	
VIF		1,14		1,14	

Source: Research Results (2021).

When estimating the dynamic panel using the Arellano-Bond test, Table 4 shows that both models did not show serial autocorrelation in their residuals, accepting the null hypothesis. It was possible to observe that the variables (AT_{it-1} and AT_{it-2}) were good instruments for the models by using the Sargan test. Through the values of this test, it could be seen that the estimation with a lag of 1 year would provide better results by presenting a lower p-value (0,0012).

Considering the model with a lag of 1 lag as the best estimate, based on the Sargan test, it was observed that, with the exception of the lagged cash flow (FCO_{it-1}), all variables showed statistical significance, with the signs of the coefficients according to the expectations of Pae (2005), reinforcing the excellence of such estimation.

Thus, the residuals of this model (εt_{it}) were extracted, considering them as discretionary accruals. Such values were put in a module so that they could demonstrate the amplitude in relation to zero, thus defining the earnings management level (GR_{it}). Subsequently, they were used in models (3) and (4) as dependent variables to be related to the Corporate Social Responsibility variables (RSC_{it}, DA_{it}, DE_{it}, and DS_{it}) and other variables.

From the descriptive statistics in Table 5, it can be seen that all companies managed their results through accruals for the minimum value of 0.0002 of the variable *GRit*. Based on the mean and median values, the GR was not high.

Table 5
Descriptive Analysis of Models (3) and (4)

	GR_{it}	RSC_{it}	DA_{it}	DE_{it}	DS_{it}	ROA_{it}	END_{it}	ISE_{it}	TAM_{it}	MTB_{it}
Mean	0,0777	0,5	0,3472	0,6464	0,5291	0,0361	1,0521	0,1289	21,902	1,8156
Median	0,0697	0,4767	0,2813	0,6429	0,5385	0,0423	0,6509	0	21,986	1,0813
Standard deviation	0,0585	0,1709	0,2671	0,1099	0,1879	0,1531	17,989	0,3352	1,7455	4,2272
Minimum value	0,0002	0,1163	0	0,2857	0	-1,3424	-554,75	0	16,376	-21,835
Maximum value	0,8821	0,9302	0,9688	1	1	2,8727	218,22	1	27,525	99,246

Source: Research Results (2021).

Regarding the variables of interest, the average points to the disclosure of 50% of the information reported by the content analysis for the *RSCit*, with the environmental dimension being the least evidenced on average (34.72%), while the economic dimensions (64 .64%) and social (52.91%) are more evident. By the minimum values, it could be identified that the economic dimension was the only one that presented data evidenced by all companies. In contrast, no company reached the maximum disclosure of environmental information.

As for the other variables, the ROA_{it} showed varied returns in the sample; a little less than 13% of the sample did not qualify for the ISE seal, and the analyzed companies showed large sizes. A high standard deviation was observed for the debt (END_{it}) and market-to-book (MTB_{it}), variables, with maximum and minimum values that differed. As a result, these variables were winsorized at 5% to reduce the effects of outliers.Models (3) and (4) were estimated using these data, with the results shown in table 6.

Table 6
Results of the Regressions of Models (3) and (4)

GR_{it}	Expected Signal	Model 3		Model 4	
		Coefficients	P-value	Coefficients	P-value
RSC_{it}	-	0,06848	0,003		
DA_{it}	-			0,33501	0,047
DE_{it}	-			0,02554	0,301
DS_{it}	-			0,00507	0,844
ROA_{it}	+	0,02749	0,000	0,02681	0,000
END_{it}	+	0,00001	0,575	0,00001	0,510
ISE_{it}	-	-0,00422	0,605	-0,00432	0,595
TAM_{it}	-	-0,00034	0,960	-0,00002	0,997
MTB_{it}	+/-	-0,00019	0,676	-0,00018	0,685
GR_{it-1}	+/-	0,150322	0,000	0,15306	0,000
Const.		0,03593	0,813	0,03219	0,833
Prob > F		0,0000		0,0000	
Observations		1144		1144	
Arellano-Bond		0,9903		0,9656	
Sargan		0,1703		0,1684	
VIF		5,56		9,35	

Note: Estimated models with statistical control for sectors ($\sum SETOR_{it}$) and years ($\sum ANO_{it}$).
Source: Survey Results (2021).

By the Arellano-Bond test, it was seen that there was no serial autocorrelation and that by the Sargan test, it was possible to observe that the instrumental variable (GR_{it-1}) did not present overidentification problems. It was noticed that through this test the estimation of model 4 provided better results by presenting a lower p-value (0.1684).

Analyzing the results of the coefficients obtained by the models, it was identified that the RSC_{it} as a whole presented positive statistical significance at 1% in relation to the GR_{it} (p-value = 0,003). Moreover, when analyzing the separate RSC proxies, it was noted that despite the economic (DE_{it}) and social (DS_{it}) dimensions not showing a significant relationship with the GR, the environmental dimension showed significance at 5% (p-value = 0,047) in relation to the GR. In addition, the coefficient generated by this relationship showed a positive sign, demonstrating that the disclosure of information regarding the environmental dimension is directly associated with the GR.

Observing that the RSC information was directly associated with the GR, specifically with significant environmental nature, the findings of Murcia and Wuerges (2011) are confronted, because according to these authors, only financial information would be associated with the GR. On the other hand, such responses are in line with Consoni et al. (2017).

As for the direct relationship presented by the RSC and the DA with the GR, this factor may come from questions of interest to the business, which leads us to reject the research hypothesis and consider the hypothesis of an opportunistic relationship between the GR and the RSC, associated environmental information. This finding can be explained by the need for managers to try to show a sustainable image to the market to subsequently achieve goals that would not really be favorable to investors (Hoang et al., 2019). With this, the voluntary disclosure of environmental information could have been used to hide possible GR practices (Martínez-Ferrero et al., 2016).

For the other variables, both models showed the same responses. Among the significant estimates, the returns ($ROAit$) were directly related to the practice of GR, which can be substantiated by the discussion addressed by Hoang et al. (2019), Faisal et al. (2018) and Rezaee and Tuo (2019) on the disclosure of additional information resulting in greater returns for companies, caused by the stakeholders' glimpse of the disclosure presented, but having unnoticed management practices, facilitating the manipulation process in the shadows of legitimacy, intensifying possible agency problems. The instrumental variable ($GRit-1$) demonstrated that the discretionary accruals of the previous period tend to have a direct relationship with the recent discretionary accruals.

Regarding non-significant variables, indebtedness showed no association with GR, contradicting Jordaan et al. (2018) and Alipour et al. (2019), where participation in the ISE seal was not decisive for RSC, confronting the perspective that companies participating in this seal would be less likely to manage their results (Silva, 2016; Cunha & Campos, 2018); large companies, which tend to be more prone to inspection, and therefore avoid management (Cunha & Campos, 2018; Haga et al., 2018), showed no association with this practice; and contrary to Cunha and Campos (2018), the market-to-book index was not significant to the GR. The sector and the year were used as statistical control for estimating the model, but they were not studied in depth and individually.

In this scenario, the data show that the companies that made up the sample in the period after IFRS adoption demonstrated a trend of opportune behavior to the disclosure of information of an environmental nature. The positive association indicates that the higher the RSC disclosure levels, especially of an environmental nature, the higher the GR levels.

5 Final Considerations

This research aimed to study the possible relationship between the disclosure of practices related to Corporate Social Responsibility and the results management level. This relationship was based on the perspective that the voluntary disclosure of additional information to the accounting context enables the idea that the information asymmetry between management and stakeholders could be mitigated.

However, through the managers' discretion, some information could be disclosed strategically and for possible GR practices. Associating this act with the disclosure of information related to RSC, we sought, through the Signaling Theory, to demonstrate whether the voluntary disclosure of environmental, social, and economic information would be associated with ethical or opportune behavior by managers.

Public companies were analyzed, with active shares in [B][3] that did not belong to the financial sector. They had all the information necessary for the analysis within the years of IFRS post-adoption (2010 to 2018).

The methodological mechanism occurred in two stages. The first one comprised estimating the GR level through the model described by Pae (2005), estimated by the GMM method (System Generalized Method of Moments). In the second moment, giving rise to the variables related to RSC (environmental, economic and social), a content analysis of the Sustainability Reports, Reference Forms and Explanatory Notes was carried out, investigating information related to the 43 RSC indicators based on Callado's research (2010) and Murcia and Wuerges (2011).

Regarding RSC as a determinant for GR, two econometric models were also estimated by GMM. The results showed that RSC had a positive and significant relationship with the GR. However, specifically, the information related to environmental issues would be associated with a higher level of GR, confronting the perspective of Murcia and Wuerges (2011).

This result could demonstrate that, in the light of the Signaling Theory, the disclosure of information related to environmental issues can signify that companies are intensifying management practices through accruals. This fact contradicts the perspective that RSC would lead to a lower GR, as defended nationally by Silva (2016) and Silva & Costa (2017); and internationally by Jordaan et al. (2018); Alipour et al. (2019); Hoang et al. (2019); Christina and Alexander (2019) and Rezaee and Tuo (2019).

However, such results align with the ideals that consider RSC a strategic mechanism, which avoids possible adverse effects arising from GR because by satisfying the needs of stakeholders, the corporate image would be optimized, diverting attention from profit management (Martínez-Ferrero et al., 2016). Such authors also state that managers tend to opportunism because it is not so easy to capture attitudes and manipulation effects related to RSC disclosure, which helps to mask GR. Moreover, in this aspect, the present research sought to support this gap in the Brazilian scenario.

From an Accounting perspective, the discretionary position of managers, through an opportunistic attitude, represents a decline in the quality of information reported to users. This fact demonstrates a fragility of the main qualitative characteristic of Accounting, which is the faithful representation of business data. When considering that in emerging countries, the relationship between such variables presented an ethical perspective, it is noted that in the Brazilian scenario, opportunism can stand out as a differential in this relationship, going against the perspective of other emerging countries.

In this way, stakeholders must pay attention to corporate attitudes and, based on these results, consider RSC as a signaling factor for possible opportune acts, given what is disclosed. Thus, the voluntary disclosure of RSC, associated with information of an environmental nature, can be considered a possible signal to the market that such companies tend to manage their results through discretionary accruals.

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NOTES

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