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Supply chain sustainability reporting in the global south: the role of funding

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RELATO DE SUSTENTABILIDADE NA CADEIA DE SUPRIMENTOS: O PAPEL DO FINANCIAMENTO

Supply Chain Sustainability Reporting in the Global South: The Role of Funding

Informe de Sostenibilidad en la Cadena de Suministro: El Papel del Financiamiento

RESUMO

Empresas lidam com a crescente pressão de stakeholders diversos para relatar não apenas suas práticas sustentáveis, mas também a sustentabilidade da sua cadeia de suprimentos (SCS). No entanto, de que maneira pressões de stakeholders são moldadas no Sul Global caracterizado por vazios institucionais (contratação, terceirização e frágil aplicação da legislação), têm recebido menos atenção da literatura. Este estudo mapeia quais pressões de stakeholders estão associadas ao relato de SCS analisando um painel de dados não balanceado de 220 relatórios de sustentabilidade corporativa de 2016 a 2018 por empresas brasileiras de capital aberto. Os resultados mostram que acionistas e credores orientados para o longo prazo, o tamanho da empresa e a adoção do GRI framework estão associados a níveis mais altos de relato de SCS, enquanto as pressões públicas e regulatórias não estão. Este resultado oferece suporte à lente de vazios institucionais. Na ausência de pressões regulatórias, fontes de financiamento de longo prazo e acesso a recursos parecem emergir em associação ao relato de SCS.

PALAVRAS-CHAVE: Sustentabilidade na cadeia de suprimentos, Transparência, Relato, Stakeholder, Global Reporting Initiative

ABSTRACT

Companies deal with increasing pressure from multiple stakeholders to report not only their sustainable practices, but also their extended supply chain sustainability (SCS). However, how stakeholder pressures are shaped in the Global South characterized by institutional voids related to contracting, outsourcing, and weak legislation enforcement have received less attention from the literature. This study maps which stakeholder pressures are associated with SCS reporting analyzing an unbalanced panel data of 220 corporate sustainability reports from 2016 to 2018 by Brazilian publicly listed companies. Results show that long-term oriented shareholders and creditors, company size and adoption of GRI guidelines are all associated with higher levels of SCS reporting, while public and regulatory pressures are not, offering support to the institutional voids rationale. In the absence or weakness of regulatory

pressures, long-term funding sources and access to resources seem to step-in as associated drivers to SCS reporting.

KEYWORDS: Supply chain sustainability, Transparency, Reporting, Stakeholder, Global Reporting Initiative

RESUMÉN

Empresas tienen que tratar de la creciente presión de stakeholders para producir informe corporativo no solo sobre sus prácticas sostenibles, sino también sobre la sostenibilidad de su cadena de suministro (SCS). Sin embargo, la forma en que se configuran las presiones de stakeholders en el Sur Global, caracterizado por brechas institucionales (subcontratación y cumplimiento débil de la legislación), ha recibido menos atención en la literatura. Este estudio mapea qué presiones de stakeholders están asociadas con los informes corporativos de SCS mediante el análisis de un panel de datos desequilibrado de 220 informes de sostenibilidad corporativa de 2016 a 2018 de empresas brasileñas que cotizan en bolsa. Los resultados muestran que los accionistas y acreedores orientados a largo plazo, el tamaño de la empresa y la adopción del GRI están asociados con niveles más altos de informes corporativos de SCS, mientras que las presiones públicas y regulatorias no lo están. Este resultado apoya la lente del vacío institucional. En ausencia de presiones regulatorias, las fuentes de financiamiento a largo plazo y el acceso a los recursos emergen en asociación con los informes de SCS.

PALABRAS CLAVE: Sostenibilidad de la cadena de suministro, Transparencia, Informe corporativo, Stakeholder, Global Reporting Initiative

INTRODUCTION

Corporate sustainability reporting is on the spotlight. What has been labelled as the “Super Transparency Era” pushes companies to improve their reporting and amplifies the risks of miscommunicating and/or ignoring external pressures (Austin & Upton, 2016).

While corporate reporting addressing environmental and social concerns has become a core corporate activity, a plethora of sustainability-related incidents have showed that sustainability breaches often happens beyond the purview of the focal company, in the extended supply chain instead (Marques, 2019). Thus, corporate sustainability reporting must include information not only about the company’s own activities, but also about their

extended supply chain (Yadava & Sinha, 2016). Reporting issues related to supply chain sustainability (SCS) should become then an integral part of corporate sustainability reporting (Marshall et al., 2016), although companies yet do not properly disclosure their actual and potential impacts along their supply chain.

The increased complexity of supply chain (Wilhelm et al., 2016) imposes a significant barrier to SCS reporting. In many cases, ompanies may wish to report, but lack visibility of their own supply chains (Sodhi & Tang, 2019). Moreover, as the most relevant impacts of a supply chain take place at developing countries, different stakeholders with specific characteristics – such as more permissive regulations – will influence the level of accountability, thus the level of transparency of a company.

As a response to the combined effects of transparency demands and the supply chain complexity, companies should map the stakeholders' pressure in order to filter down what needs to be prioritized. The extent that companies can address and communicate environmental and social issues is a reflection of how they perceive the attention that their key stakeholders devote to these concerns (Yadava & Sinha, 2016). Successful companies must shift from a short-term/single-oriented economic focus to a longer-term/multiple-stakeholder approach that balances and incorporate multiple goals from multiple stakeholders (Reimsbach et al., 2019). The journey towards effective corporate sustainability reporting is hence a tough one, raising the importance of methodologies that support this process, such as the Global Reporting Initiative (GRI). The GRI offers guidelines to companies on the disclosure to stakeholders about how they deal with their material topics. Supply chains is an element of particular concern in the GRI framework (Islam et al., 2016). It is already known that stakeholders do play a key role in SCS reporting (Sodhi & Tang, 2019). And that front-runner companies tend to adopt frameworks such as the GRI. However, less is known about what types of stakeholders impose more pressure on SCS reporting (Okongwu et al., 2013). And even less is known regarding SCS reporting beyond the Global North. Most research on this topic has, firstly, not included supply chain-related issues, and secondly, has been focused on the Global North context (Kuzey & Uyar, 2017). Thus, our study aims to fulfill a gap within research on SCS reporting focusing on the Global South – a core region when discussing environmental and social impacts while characterized by institutional voids that reshape how SCS can be addressed (Barkemeyer et al., 2015; Silvestre, 2015).

Institutional voids produce uncertainty that result from weak control over outsourcing contracts, untrained labor force, and lack of enforcement of existing legislation (Marques et

al., 2021). These institutional voids are all highly related to SCS and their existence allows companies to engage in poor supply chain practices without being punished (Khanna & Palepu, 1997). Institutional voids can also reshape how stakeholder pressures co-exist. For example, while governmental pressures may be weaker, private pressure may become stronger. However, this is yet to be confirmed by research. The present study starts from the research question (RQ):

- *Which stakeholder pressures are associated with higher levels of supply chain sustainability (SCS) reporting in the context of institutional voids?*

In the following sections, this manuscript offers the theoretical background on corporate sustainability reporting SCS reporting and stakeholder pressures. In doing so, we develop hypotheses of stakeholder influences to SCS reporting in the context of institutional voids. Next, we delineate the research method while grounding our choice of Brazil as a representative of the Global South. Brazil is chosen due to two key reasons. First, previous research has showed that institutional voids influence SCS in the country (Silvestre, 2015). Second, the well-developed stock market allows robust data collection from publicly listed companies issuing annually corporate sustainability reports (In 2020, Brazil was the 14th stock market in the world, and the 8th among Global South countries¹). We offer results on a mixed-method content analysis of 220 corporate sustainability reports from the 2016-2018 period. Finally, we present implications to theory and practice, highlighting two key roles of funding as driver of SCS reporting. While funding is represented by pressure from shareholders (via participation in a sustainability index) and creditors (via long-term debt profile), the complementary perspective of access to resources is represented by company size and adoption GRI guidelines which seem interconnected as adherence to standards demands funding and time for knowledge acquisition and implementation.

THEORETICAL BACKGROUND

Supply chain sustainability reporting

SCM has been defined by Mentzer et al (2001, p. 18) as *“the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole”*. The definition emphasizes the coordination of common goals between the focal

¹ See: https://www.theglobaleconomy.com/rankings/stock_market_capitalization_dollars/

company and their suppliers, but historically the goal has been restricted to economic performance. Yet, since 2008, the relationship between sustainability and SCM has been increasingly addressed, giving rise to the term sustainable SCM (SSCM) (Carter & Rogers, 2008, p. 368): “*the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systematic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains.*” The SSCM definition thus expands the notion of common performance to the intersection of environmental, social, and economic performance.

Complementarily, supply chain sustainability (SCS) reflects the company’s balanced efforts to make the extended supply chain comply with sustainability standards (Bird et al., 2019). Effective SCS reporting can “prevent or reduce reputation damages caused by the public exposure of unacceptable supplier practices or undesirable supply provenance” (Sodhi & Tang, 2019, p. 2950). Good practices related to supply chain sustainability include fair sourcing, transparent contracting conditions, collaboration with suppliers to support their adherence to sustainability standards, among others. Wilhelm et al. (2016) and Huq and Stevenson (2018) discuss the challenges of diffusing such practices and standards in ever complex supply chains. The more complex the supply chains become, the higher the numbers of suppliers to impose new sustainability standards, and the wider the array of stakeholder pressures, that might be eventually conflicting. Therefore, companies find it hard to define exactly which social and environmental concerns they should prioritize.

The path commonly taken by firms to incorporate and prioritize social and environmental concerns along their supply chains has been listening to stakeholder demands. Thus, stakeholder pressures rise as a key driving force towards the adoption of SCS. In other words, companies map the sustainability risks they need to address according to the pressures they receive from multiple stakeholders (Reimsbach et al., 2019). In fact, misreading a stakeholder demand may be a source of risk in itself. Conversely, effective listening to and responding to stakeholder demands may allow companies to communicate what they have implemented/ are in the process of implementing.

To ensure quality in their SCS reporting, companies have often resorted to standards such as the GRI to reflect commitment to higher standards of public integrity (Islam et al., 2016). GRI guidelines emphasize the importance of reporting topics that are salient for stakeholders and their framework influences how companies respond to stakeholder pressures through reporting while ensuring credibility and comparability of information, making

reporting more tangible (Yadava & Sinha, 2016), reducing uncertainties, and helping financial analysts generate more accurate forecasts (García-Sánchez et al., 2019a). GRI emphasizes the importance of reporting supply chain related issues, but many companies still fail to provide both quantified and qualitative reporting of their supply chains (Rashidfarokhi et al., 2018). Limited information hinders data access both to researchers and the broader society (Jia et al., 2018).

There is a third challenge to SCS reporting related to the Global South reality. In the Global South context, Barkemeyer et al. (2015) and Silvestre (2015) state that companies face institutional voids that hinder and reshape SCS. Institutional voids mean lack of clarity and enforcement in outsourcing contracts, undeveloped labor market and weak enforcement of existing regulation all feed into turbulence and uncertainty that is less present in the Global North. These institutional voids allow companies to engage in corruption, informality and other poor supply chain practices without being punished (Khanna & Palepu, 1997). Understanding regional characteristics is thus key to understand SCS reporting more globally (Gold et al., 2017). Yet, despite the global reality of supply chains, the extant research has devoted more attention to the Global North (Jia et al., 2018; Kuzey & Uyar, 2017; Silvestre, 2015a) and thus we face a lack of understanding of how companies translate stakeholder pressures into SCS reporting in a reality where institutional voids prevail.

Next, we turn our attention to unpacking the different types of stakeholder pressures that usually pressure companies to engage with SCS reporting.

Stakeholder pressures and SCS reporting

Corporate sustainability reports can support internal development, favoring alignment and helping companies to detect and correct poor supply chain practices (García-Sánchez et al., 2019b). But the key objective of reporting has been decreasing information asymmetry between the company and stakeholders, legitimizing response to their demands (Fuente et al., 2017) and showing commitment (Okongwu et al., 2013). Key stakeholders may include customers, employees, regulators, investors, competitors and NGOs (Miniaoui et al., 2019) (Hahn et al., 2015; Tate et al., 2010). Engagement with this wide array of stakeholder can decrease legal and financial risks and improve reputation (Rashidfarokhi et al., 2018). Anticipation towards stakeholders' demands via reporting can not only mitigate risks but also sustain competitive advantage responding to pressures (Marshall et al., 2016).

Previous studies have aimed to establish connections between stakeholder pressures and corporate sustainability reporting. The majority has found a positive relation the two, covering pressures from customers (Okongwu et al., 2013; Vitolla et al., 2019), investors (Chithambo et al., 2020; Fernandez-Feijoo et al., 2014; Vitolla et al., 2019), and employees (Fernandez-Feijoo et al., 2014; Vitolla et al., 2019). Yet, research of stakeholder influence on reporting specifically focused on supply chain issues is limited (Dubey et al., 2017), as much as research focusing on specificities of the Global South, that might reshape those pressures.

The first key stakeholder group are the customers. Customers “seek information on the environmental impact of production, customer health and safety, marketing and labelling, and customer privacy” (Vitolla et al., 2019, p. 1596). This is particularly important for companies which are known by their proximity to the end consumer (Fernandez-Feijoo et al., 2014). Companies which are considered next to the end-consumers are more easily perceived and pressured by the consumer base. Previous research found a positive relation between customer pressures and reporting (Okongwu et al., 2013; Vitolla et al., 2019).

Supply chain research also found that companies closer the final consumers have more pressure to adopt SCS (Schmidt et al., 2017). Yet, when turning attention to the Global South, research shows that customers may have limited or inhospitable access to information regarding companies in order to judge on their transparency (Marques et al., 2021). Therefore, classifying companies according to their proximity to final consumers can serve as a proxy to investigate whether customer pressure is positively associated with SCS reporting.

H1: Customer pressure is positively associated with SCS reporting.

The second key stakeholder group is composed of non-governmental organizations (NGOs). The scenario where companies operate have decisively changed due to the emerging force of such entities. NGOs can focus on a plethora of priorities, and some are more influential to focal companies than others. These NGOs can be sub-grouped under the two main elements of sustainability: social and environmental concerns.

NGOs oriented towards environmental concerns aim to raise citizens' sensitivity to ecological issues (Vitolla et al., 2019). This pressure certainly affects different industries in different ways. It is reasonable to believe that the pressure for SCS reporting in regards with environmental impacts become more salient for companies perceived as the main contributors to problems like pollution and greenhouse gases emissions. Some studies have investigated the influence of NGOs focused on protection of the natural environment on sustainability

reporting, exhibiting a positive relationship between the two (Huang & Kung, 2010; Vitolla et al., 2019).

Instead of environmental concerns, some NGOs are devoted to discussing social issues, and working conditions stand out as a major issue related to supply chains (Stevenson & Cole, 2018). According to the Global Slavery Index (The Minderoo Foundation, 2018), 24.9 million people were working under forced labor conditions in 2016 globally. This results from suppliers around the globe that may prefer short-term economic gains in detriment of social improvements (Huq & Stevenson, 2018), particularly among those under high-productivity incentives due to buyers' pressure (Bird et al., 2019). Therefore, supply chains are at the core of modern slavery and poor working conditions. Buying firms impose productivity gains and 'close their eyes' to supplier malpractice and poor working conditions, often justifying with lack of visibility and control (Marques et al., 2021).

Sometimes, an industry sector improves while another deteriorates. In Bangladesh for example, after the Rana Plaza disaster, Huq and Stevenson (2018) found that child labor was moved from the garment industry to other more harmful activities, such as construction. In Brazil, as another example, even though the partnership between the Public Ministry of Labor and ILO have been intensified in the last years, the challenge of irregular work is still a problem to overcome (SmartLab MPT/OIT, 2017). As pressure from NGOs grows, companies increasingly engage in processes to improve their transparency regarding their SCS (Benstead et al., 2018).

Hence, we hypothesize a positive association between both dimensions of NGO pressure and SCS reporting.

H2: Environmental NGO pressure is positively associated with SCS reporting.

H3: Social NGO pressure is positively associated with SCS reporting.

Corporate sustainability reporting has been often a result of shareholder pressure. Conscious shareholders, activist shareholders and long-term oriented shareholders are terms used to describe those that demand higher levels of compliance and who are increasingly interested in reinforcing a long-term investment strategy by funding companies that can provide evidence of sustainability/SCS (Chithambo et al., 2020; Fernandez-Feijoo et al., 2014; Vitolla et al., 2019). Vitolla et al (2019) for example, indicates a positive influence of shareholders on reporting quality, but measured in terms of shareholder concentration, in line with Chithambo et al (2020). An alternative perspective would be to consider the

shareholders' long-term orientation, captured by sustainability-oriented stock market rankings.

By the same token that shareholders are sources of pressure, creditors may also pressure for SCS reporting (Chan et al., 2013). In more debt leveraged companies, creditors become more influential, calling for more monitoring on opportunistic behaviors and integrity, ultimately avoiding future penalties and fines (Huang & Kung, 2010). Previous research has found conflicting evidence: while Chithambo et al (2020) found a negative relationship, Chan et al 2014 found a positive one. Common to both studies, creditor pressure was measured in terms of the ratio between debt and equity. We turn our attention to two different angles. First, we look at long-term debt as a sign of creditor with a long-term orientation. Such creditors may tend to engage with the recipient companies through a strategic, rather than transactional approach, and this might lead to stronger pressures towards SCS reporting. Second, we focus on one single country to avoid uncontrolled institutional influences.

Taken together, shareholder pressure and creditor pressure represent the recent ESG trend (i.e., acronym for environmental, social and governance) in investment analysis oriented towards the long-term. Previous research has showed that different types of investors may impact reporting differently (García-Sánchez et al., 2020), therefore we hypothesize that both shareholders and creditors, when *long-term orientated*, are expected to be positively associated with SCS reporting.

H4: Long-term oriented shareholder pressure is positively associated with SCS reporting.

H5: Long-term oriented creditor pressure is positively associated with SCS reporting.

The fourth stakeholder group is represented by the Governments. Regulation can play a central role on the promotion of reporting practices, due to their power over companies (Vitolla et al., 2019). Government institutions may fine enterprises that violate socio-environmental regulations or even impose them to cease activities. Research shows that higher levels of environmental disclosure are positively related to fines paid due to violations of environmental legislation (Huang & Kung, 2010). Because of that, it is expected that companies which are penalized by government agencies and under higher regulatory pressure are more prone to be active players on SCS reporting. As much as environmental requirements, companies which fail to attend regulatory social requirements such as working conditions may also face penalties and negative media (Chithambo et al., 2020).

Yet, when driving research attention to the Global South, it is expected that governmental pressures might be lower due to institutional voids related to weak contracting legislation and room for malpractice in outsourcing schemes (Khanna & Palepu, 1997). Companies operating in the Global South can navigate in a context where regulation is weak, and even when existent, enforcement is limited, allowing corruption and informality (Marques et al., 2021). Although we expect that there is less governmental pressure overall, for those sectors under specific regulatory scrutiny (such as mining, for example) we expect to see a positive effect on SCS reporting, on both the environmental and the social fronts.

H6: Environmental government pressure is positively associated with SCS reporting.

H7: Social government pressure is positively associated with SCS reporting.

The last stakeholder group refers to the internal stakeholders – i.e., the employees. Previous research has showed that employees can influence SCS (Meixell & Luoma, 2015). Vitolla et al. (2019) found that employee pressure affected the quality of integrated reporting among companies from different industries and regions. Same result was found by Huang and Kung (2010), which state that workers have the power to make use of organized unions to “make sure their voices reach the managerial levels in the firm” (Huang & Kung, 2010, p. 440). In addition, Unions contribute to more coupled labor conducts and practices among suppliers (Bird et al., 2019).

Since previous empirical research cross-country or focused on the Global North have showed a positive influence of employee pressure related to Unionization, in countries where institutional voids prevail, the role of Unions tend to be fragile or incipient (Khanna & Palepu, 1997). Therefore, although employee pressure may also be present, fragile regulation may hinder its effectiveness, hence further research is needed. We hypothesize that employee pressure will be positively associated with SCS reporting.

H8: Employee pressure is positively associated with SCS reporting.

In addition to the stakeholder pressures previously discussed, one final key driver is related to the adoption of GRI as a framework for SCS reporting. The adoption of GRI has been used as a tool to access good quality data and to homogenize the sample (Fernandez-Feijoo et al., 2014). GRI adoption has been posited as an indicator of higher levels of reporting (Tran & Beddewela, 2020). Indeed, higher levels of sustainability disclosure were found to be positively correlated to GRI adoption (Kuzey & Uyar, 2017). Islam et al. (2016),

for example, found a significant difference in the reporting levels after six large banks joined GRI. Barkemeyer et al. (2015) found that GRI promoted the dissemination of sustainability reporting globally, particularly in Asian and South American countries. Such evidence suggests a significant and positive impact of GRI adoption on SCS reporting.

H9: GRI adoption is positively associated with SCS reporting.

METHODOLOGY

Research method

This research frames Brazil as exemplar of the Global South due to (a) extant research showing how institutional voids reshape SCS in the country, (b) the availability of corporate sustainability reports from publicly listed companies, and (c) the scale of adoption of GRI as a standard among these publicly listed companies (GRI, 2013). To assess the level of SCS reporting, we conducted a mixed-method content analysis.

First, specific keywords were defined to reflect how much attention each report had given to SCS. The selection of keywords reflects those words considered determinants of SCM, in line with previous literature reviews (Marques, 2019) and thematic analysis (Tate et al., 2010) on the topic. The sole different from lists used before, was the elimination of “supply network”, as in Portuguese this term is not used, and the addition of “third-party”, which by the same token is largely used in Portuguese to reflect suppliers. The final list was composed of: (in both English and the Portuguese counterpart): *suppl** (*fornece**), *sourcing* (*suprimento*), *purchas** (*compra**), *procurement* (*contrata**), *outsource** (*terceiriz**), *third-party/third party*.

The keyword search was followed by a qualitative assessment of the meaning of the words, to avoid misuse of the terms. Such qualitative cleanup of the data has eliminated words that were not related to SCS. For example, mentions related to “*contrata**” were often associated with human resources hiring policies not related to SCM, therefore excluded. In case of doubt, the reading was expanded to paragraphs before and after the identified word for a better assessment. Some headings or subheadings, without further contextualization, were also ignored. The number of mentions on each report, after this laborious process was the one considered as company’s wordcount of SCS issues.

In order to position ourselves from the stakeholder perspective, the most critical industries in terms of social, economic and environmental impact, according to the GRI Topics (2013) report were consulted. The GRI Topics (2013) was a study that involved 194

different organizations, representing all sort of stakeholder groups, listing 1,612 material topics for 52 business activity groups and was supported by over 600 documental sources (GRI, 2013). Among the stakeholders included, the report mentions “business associations, labor representatives, civil society organizations, information users, and experts” (GRI, 2013, p. 8). This study helped to limit the number of industries covered by the present investigation.

Sample definition

The same keywords used to analyze sustainability reports were used to search the GRI Topics documents. In total, 159 out of 1,612 sensitive topics covered by the document were found to be related to SCS issues; nine of them were excluded because they did not deal with SCS directly (for example, materials management). Finally, 150 topics were computed. Industries with at least one topic related to SCS were initially considered, reducing the range of industry sectors from 52 to 33.

From those 33 industries initially considered, eight of them were excluded. Even though NGOs and Public Agencies industries, for example, had raised concerns from their stakeholders about SCS practices, they were excluded from the study as they do not trade shares and do not have the obligation to be fully transparent on internal information. The other missing cases were mainly due to the absence of reporting by companies (such as companies from media, software, and services industries). After that, an analysis was made to match the remaining 25 industries from the GRI topics’ classification with the industry classification adopted by the Brazilian Stock Exchange. The procedure was made through the description of economic activities. This resulted in a potential sample of 275 listed companies.

The final step was the exclusion of companies from sensitive SCS industries but with no reporting, or without comprehensive SCS information, i.e., short statements that poorly covered SCS issues and did not configure corporate sustainability reporting. The final sample was composed by 220 reports. Those reports are originated from 88 different listed companies on the Brazilian exchange market (32% of the total 275). Both sustainability reports and annual/integrated reports were downloaded from companies’ websites and/or the GRI Database. Data collection was conducted between May 25th and Jun 7th, 2020, with the intent of compiling three years of panel data. In May 2020 many companies had not yet released their reports since the COVID-19 outbreak delayed corporate reporting significantly in early 2020. Thus, the final dataset covers the years 2016, 2017 and 2018. Reports in both

Portuguese and English were considered valid. **Table 1** presents the demographics of the sample by industries and years.

[Table 1]

The sample was composed of an unbalanced short panel data. The most representative industry was Banks, Diverse Financials and Insurance, with the contribution of 45 sustainability reports from 17 different companies. Reports are reasonably balanced across the three years.

Variable definition

The hypotheses were operationalized by a multiple regression in order to know which stakeholder pressures influence SCS reporting.

The dependent variable, here labelled as *supply chain mentions (SC mentions)*, consisted of the total number of citations of the predefined terms presented previously as keywords, with a further qualitative analysis if the words were indeed related to SCS. In a second step, the quantity of citations was transformed into a natural log scale to control for differences on the length of the reports – naturally leading longer reports to have higher number of citations. This allowed the distribution of the dependent variable accommodates a possible influence of the variability on report length and be significantly less skewed – on the descriptive statistics subsection (Table 3), it is shown that SCmentions presented almost the same mean and median values, added to a standard deviation close to 1.

Table 2 presents the independent variables and the control variables.

[Table 2]

Some variables are invariant through time - Customer, EnvNGO and SocNGO. Another factor is the variation within companies (Shareholder, Creditor, EnvGov, GRI and Size) or only within industries (Customer, EnvNGO, SocNGO, SocGov and Employee). Financial information, including long-term debt (LTDebt) and equity were collected at Economica Database. We choose LTDebt instead of the whole debt structure (short + long-term debt), which is more prominent in the literature (Chithambo et al., 2020; Kalu et al.,

2016; Kuzey & Uyar, 2017), because short-term debtholders do not necessarily have enough power and interest to change corporate policies regarding long-term sustainability actions.

Some proxies had to be adapted to the Brazilian reality such as governmental pressure. The obligation for companies to report their environmental/social performance is not applied for the Brazilian reality, as sustainability reporting is not enforced by law. Alternative measures were defined to evaluate the enforcement of the regulation on companies. For EnvGov pressure, a binary code was applied due to data dispersion (i.e. some companies had high amounts of fines while others have never been punished). The social perspective to the NGO pressure was considered relevant to be included as most of the studies just operationalize this specific stakeholder pressure on environmental sensitive industries.

FINDINGS & DISCUSSION

Descriptive results and statistical tests

The descriptive statistics for the variables included in the model are presented in **Table 3**.

[Table 3]

For Customer pressure median is 0.5, meaning half the companies are from industries that are close to the final customer. The mean for EnvNGO and SocNGO are below 0.5. This means that most companies are not under NGO pressure – either environmental or socially. In addition, most of companies did not receive any fine from IBAMA during the period searched - expressed by EnvGov pressure, which presented a median of zero with a mean close to the same number. Such finding may contradict the fact that most companies are classified as members of environmental sensitive industries. This leads to two possible interpretations: either companies have followed environmental regulations, or the monitoring/execution of fines have not been properly applied. Results from shareholder variable shows that, in general, companies are not involved in Brazilian voluntary best reporting practices – 67 out of 88 companies did not join the ISE initiative. However, most of the sample adopted the GRI framework during the three-year period (183 out of 220 reports). Regarding creditors, some companies presented negative values. This is due to losses on net income for specific companies and years.

In order to run the regression model with no problems of multicollinearity, a Spearman correlation matrix with the respective correlations and significances among dependent,

independent and control variables was produced (see Appendix A). At this stage, EnvNGO and SocNGO presented high correlation, and the former was dropped from the equation. As a result, H2 could not be verified in this study.

It is also interesting to notice that industries with major union membership rates (Employee) tend to have more people rescued from modern slavery work conditions (SocNGO), 0.35, p-value 0.00, and less fines applied due to labor legislation penalties (SocGov), -0.3, p-value 0.00. In conclusion, it seems that the pressure imposed by organized workers in Brazil have had a positive impact on the application of labor law. Even though, it is not possible to affirm that companies have stopped to violate labor laws in the reality of their SCs, regardless of legal punishments.

Also, larger companies were found to be significant and positively correlated with environmental law violations (EnvGov), 0.26, p-value 0.00, and membership on ISE (Shareholder), 0.22, p-value 0.00. The latter, incidentally, is generally related to GRI adoption. In this regard, it is perceived a movement from the same companies applying best sustainability reporting practices simultaneously. It is possible to state that marginal costs on joining similar initiatives are lower for them, compared to less responsible companies.

Next, multiple regressions were performed, using the three main approaches to panel data. Pooled OLS, fixed effects and random effects methods were run and test to know which one would result best estimates for the model proposed. Statistical results in Table 4.

[Table 4]

Lagrange-Multiplier test was performed to know whether the model would consider effects and time variance. The null hypothesis was rejected (10.71, p-value 0.00), i.e., there is a significant effect to examine. Following, the Hausman test assessed what type of effect should be employed (fixed or random), resulting in a Chi-square value of 16.28 (p-value = 0.061), thus accepting the null hypothesis in favor of the Random Effects model. Finally, Breusch-Pagan test revealed that the random effects model was homoscedastic. The H_0 was accepted, with a value of 15.52 (p-value = 0.16). However, autocorrelation was detected in Breusch-Godfrey tests for first and second orders (41.94, p-value 0.00; 44.80, p-value 0.00, respectively). To correct the above problem and carry lower standard error levels, the study employed the robust covariance matrix estimation. Huber/White cluster robust method was applied, generating the results in Table 5. Random panel regression (Huber/White covariance robust matrix)

[Table 5]

Discussion of the results

At the final stage, customer pressure, previously significant, lost statistical significance when added to panel regression models (0.015, p-value = 0.93, thus rejecting H1). The fact that customer pressure has been previously associated with both SCS adoption (Svensson et al., 2018) and higher levels of reporting (Okongwu et al., 2013) is a first evidence that institutional voids may be playing a role. In other words, in a context where there is lack of transparency regarding poor corporate practices, customers have either less accessibility or no accessibility to key information to support their judgement. Moreover, even when faced with information of poor practices, they lack tools to enforce change (Marques et al., 2021).

Also at the final stage, social government pressure, previously significant, lost statistical significance when added to panel regression models (0.017, p-value = 0.78 rejecting H7), and environmental government pressure remained not relevant (0.048, p-value = 0.52, rejecting H6). Taken together, the non-significance of both governmental pressures reinforces the argument that institutional voids are in place, characterizing weak law enforcement (Khanna & Palepu, 1997).

In line with the previous results (rejection of H1, H6 and H7), employee pressure was also not relevant (-1.573, p-value = 0.46, rejecting H8). This forth rejection completes a cluster of results that corroborate the presence of institutional voids in a Global South country. Previous research has showed that employee pressure is present in the Global North. In Germany for example employees have been perceived as the most influential driver for SCS adoption (Maas et al., 2018). However, voids related to weak professionalization and weak Unionization can hinder employee pressure and this lack of association is present in our study.

Regarding NGO pressure, while environmental pressure (H2) was dropped in the course of data analysis, social pressure was confirmed (0.378, p-value = 0.02, thus confirming H3). This may indicate the rising presence of NGOs in the corporate arena and aligns with recent research discussing the role of non-traditional stakeholders (Tate et al., 2010).

Turning our attention to the remaining hypotheses, we see that shareholder pressure has been confirmed (0.415, p-value = 0.01, accepting H4). Shareholder pressure has been noted as positive to disclosure among German publicly listed companies (Gamerschlag et al., 2011) and a sign of higher reporting quality in a multi-country study (Vitolla et al., 2019).

Yet, these studies were looking at shareholder pressure from the perspective of shareholder concentration. This study conversely innovates by looking at shareholder long-term orientation. The fact that an association was found may indicate that within the context of institutional voids, long-term oriented shareholders rise as a key driver of SCS reporting. In fact, the correlation here was the stronger among all tested drivers.

In line with what was found in H4, creditor pressure has also been confirmed (0.007, p-value = 0.00, accepting H5). Creditor pressure was also found positive to SCS adoption and reporting. Kalu et al. (2016) found a positive relationship between voluntary carbon disclosure and creditor pressure among Malaysian companies. Yunus et al. (2020) found that creditors' influence among Australian publicly listed companies drives carbon reduction strategies. Implication of these results are twofold. While Chithambo et al. (2020) have found a negative association between creditor and reporting, their focus was on credit leverage. In our study, the focus has changed to creditor long-term orientation. The fact that the study shows a positive association corroborates results from the shareholder long-term orientation and together indicate both sources of funding – investors and creditor – may be associated with advancements in SCS reporting (Chan et al., 2013). This also reflects the recent trend on ESG funding analysis.

The two final hypotheses can also be discussed as a cluster. First, GRI adoption exhibited a positive association with SCS reporting (1.196, p-value = 0.00, accepting H9). And the control variable for size (number of employees) was also confirmed (0.378, p-value = 0.02). Results are in line with Gamerschlag et al. (2011), Chithambo et al. (2020) and Kalu et al. (2016), which have considered number of assets instead of number of employees as a proxy for size. While the adoption of the GRI framework is an indication of knowledge and maturity in SCS reporting, it is also costly, and thus it is expected that larger companies will more often subscribe to the GRI framework. Resource availability may explain these results. The planning, preparation and execution of sustainability reports, alongside the adherence to GRI standards require human and financial resources that, are often not available for smaller companies (Svensson et al., 2018).

CONCLUSION

Main contributions to theory and practice

This study offers complementary evidence to research by analyzing stakeholder pressures association to higher levels of SCS reporting (Okongwu et al., 2013) and delineates contributions to theory and practice regarding the study of institutional voids and SCS.

Theoretical implications emerge from results showing that drivers associated with SCS reporting can be clustered in three angles. We found no association between pressures from customers, employees, and government to SCS reporting. This implies that in a context of weak law enforcement, weak professionalization and weak Unionization, pressure from these stakeholder groups may be hindered (Khanna & Palepu, 1997). Future research should look further into these interactions between different stakeholder pressures and reporting which may lead refinement of stakeholder theory and the concept of stakeholder salience in the context of the Global South (Ali, 2015). Conversely, our study shows that a positive association between pressures related to long-term funding (shareholders and creditors) and SCS reporting. The long-term perspective taking in these two variables show novel evidence regarding the association of funding and reporting, in line with recent research (Kim et al., 2019). Finally, the third angle relates to GRI adoption and company size, which may reflect access to resources. The profile of companies leading SCS reporting is associated with pressure from funding sources, adherence to standards, and access to resources.

Practical implications emerge from the association between SCS reporting and the long-term profile of funding sources. This provides an indication for companies that both investors and creditors with a long-term orientation may influence not only financial reporting but also sustainability reporting (García-Sánchez et al., 2020). It also corroborates the importance of adherence to standards. Ultimately, it calls attention to the fact that even in countries characterized by institutional voids, there may still be rising pressures for SCS reporting. When legislation fails, other pressures may eventually replace it. Further research is needed, but maybe companies not advancing on the road to better SCS even within the context of voids may face challenges market challenges.

Limitations and future research

Our study is based on self-reporting. However, it is plausible to believe that some companies may not report salient impacts of their activities as well as may not have mentioned strategic projects they do not want to make public. Companies may engage on selective reporting and

disclosure only “good news” (Sodhi & Tang, 2019). Moreover, mentions to supply chain issues does not guarantee the quality of the practices being reported. Our focus has been on reporting, rather than actual practice. Future studies complementing reporting data with primary data (interviews and other data collection methods) could better evaluate the quality of the SCS practices reported.

Our study looks only at GRI as a framework. GRI currently acknowledges the need to improve their focus on SCS. For example, Mancini and Sala (2018) found that some health and safety aspects were not included in the G4 guidelines (active version in 2021); same case for poor working conditions. The increasing attention devoted to supply chains should serve as a signal to both GRI and companies of the importance of SCS reporting.

The absence of companies not publicly listed in the stock market is explained by the lack of information available. In most countries (and Brazil is no exception), a large share of small and medium companies is not publicly listed. Future studies should find ways to incorporate this share of companies in the data analysis, although this is a challenging endeavor.

Finally, the scarcity of studies on the Global South calls for further studies in other countries other than Brazil to allow confirmation of the role of institutional voids. The current paucity of studies focused on the region leaves question marks related to the adequate proxies for each stakeholder pressure and other issues that are particular to companies operating in the Global South. Proxies for regulation, for example, were particularly difficult to be defined, due to the absence of systematic enforcement.

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List of Tables

Table 1. **Data sample – Number of reports by industry and year**

Table 2. **List of independent and control variables**

Table 3. **Descriptive statistics of variables**

Table 4. **Multiple regression models**

Table 5. **Random panel regression (Huber/White covariance robust matrix)**