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Prioritizing sustainability issues

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Prioritizing Sustainability Issues: Insights from Corporate Managers about Key Decision-Makers, Reporting Models, and Stakeholder Communications

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ABSTRACT

Capital constraints require companies to prioritize among the host of sustainability issues to which they can allocate capital. In this study, we investigate the role of three important factors that can affect this prioritization process: key decision-makers, sustainability reporting models, and stakeholder communications. We investigate these factors through the lenses of economic theory (i.e., the shareholder value approach), stakeholder theory, and enlightened stakeholder theory by collecting survey evidence from 104 managers in the resource transformation sector who are involved in or familiar with their company's prioritization process. This study contributes to the literature by providing important insights into companies' internal decision-making processes regarding sustainability issue prioritization.

Keywords: corporate governance; sustainability; corporate social responsibility; capital allocations; social environmental accounting.

JEL Classification: G34, M14, M41.

Data Availability: The data is available from the authors upon request.

I. INTRODUCTION

Identifying and addressing sustainability issues has become increasingly important for companies (Nambiar and Chitty 2014; Khan, Serafeim, and Yoon 2016; Brulhart, Gherra, and Quelin 2019). One evidence of this is the growth in the number of companies that produce sustainability reports to disclose the sustainability issues they are addressing. Specifically, in 1999, only 35 percent of the Global 250 companies produced these reports compared to 93 percent in 2017 (KPMG 2017). In addition, companies are expending a considerable amount of capital on sustainability issues. For instance, Fortune 500 companies collectively spend an estimated \$20 billion annually on sustainability issues (EPG 2015).

Despite sustainability's increasing importance to companies and the substantial expenditures companies are making on sustainability, companies lack the resources to address every possible sustainability issue. In addition, the relevance of these issues can vary across companies and industries. That is, some sustainability issues like greenhouse gas emissions are broadly relevant because every company produces them and can act to mitigate them. Other issues, however, are more industry- or company-specific. For example, responsible sourcing of raw materials is very relevant for manufacturers but much less so for service providers. Companies must therefore think about sustainability strategically (Faller and Knyphausen-Afuseb 2018), prioritize issues they deem to be sufficiently important, and allocate capital accordingly.

Because “the responsibility for ensuring a sustainable world falls largely on the shoulders of the world’s enterprises” (Hart 1997, 75), companies’ sustainability prioritization processes have important implications not only for companies, but also for society and the environment. Notwithstanding the importance of companies’ sustainability prioritization processes, we have

limited information about the factors that influence the ultimate outcome of these decision processes (Ehrgott, Reimann, Kaufman, and Carter 2011). Accessing this information poses a challenge because information about companies' prioritization processes are private and company-specific, and access to managers with the requisite information is limited. To overcome these challenges, we designed an anonymous survey and elicited responses from over one hundred, U.S.-based managers in the resource transformation sector who are involved in or familiar with their company's sustainability prioritization process.¹ The specific focus of our survey is to peek inside companies' prioritization processes by specifically examining the roles of the internal decision-makers, the sustainability reporting models companies choose, and stakeholder communications.

We examine decision-makers within companies because these individuals make the ultimate decisions with respect to allocating company capital to sustainability issues (Klettner, Clarke, and Boersma 2014; Järlström, Saru, and Vanhala 2018; Cho and Lee 2019). These decision-makers have different roles and backgrounds within a company and potentially different motives that may lead to conflicting perspectives and priorities when it comes to matters of sustainability (Fryxell and Lo 2003; Eberhardt-Toth and Wasieleski 2013; Faller and Knyphausen-Afuseb 2018). To date, few studies have explored the role of decision-makers within companies in the sustainability prioritization process (Siegel 2014).

We focus on sustainability reporting models because a large proportion of companies use these reporting models to guide them through the prioritization and reporting process (KPMG 2017). These models differ with respect to which stakeholder groups' interests they suggest be

¹ The Sustainability Accounting Standards Board defines the industries within the resource transformation sector as the Chemicals, Aerospace & Defense, Electrical/Electronic Equipment, Industrial Machinery & Goods, and Containers & Packaging industries.

prioritized in matters of sustainability which can affect how managers allocate capital to sustainability issues (Johnson 2019). Thus, model selection and use may influence stakeholder communications.

Accordingly, we also examine stakeholder communication because prior research suggests engagement with stakeholders is influential on sustainability practices (Morsing and Schultz 2006; Greenwood 2007; O’Riordan and Fairbrass 2014; Høvring, Andersen, and Nielsen 2018). In particular, the influence of all relevant stakeholder groups on company values, beliefs, and decisions is on the rise (Scholes and James 1997; Scholes and Clutterbuck 1998). However, even though many companies do communicate with stakeholders about sustainability (KPMG 2015), there is a lack of empirical studies on stakeholder communication (Habisch, Patelli, Pedrini, and Schwartz 2011) and it is unclear whether communication with stakeholders influences company behavior (Epstein and Roy 2003). Some studies suggest that the outcome of stakeholder communication may influence companies’ strategies and decisions (Girard and Sobczak 2012; Herremans, Nazari, and Mahmoudian 2016), while other studies do not find evidence indicating that stakeholder involvement is integrated into company decision-making (Hetze, Bögel, Emde, Bekmeier-Feuerhahn, and Glock 2019).

Further, research indicates that stakeholder groups have specific preferences for sustainability (Järlström et al. 2018) which may conflict and lead to competing sustainability priorities (Cho and Lee 2019), and that different stakeholder groups are more salient to management and therefore potentially more influential on the sustainability prioritization process (Mitchell, Agle, and Wood 1997; Ehr Gott et al. 2011). Thus, exploring stakeholder communication as part of the sustainability prioritization process should yield important and interesting insights.

This study contributes to the growing body of research on corporate sustainability by shining a light on companies' sustainability prioritization process. Because of the endogenous nature of companies' sustainability prioritization process, this process has been somewhat of an empirical black box for researchers and there remain gaps in our understanding of this process waiting to be bridged (Lindgreen, Swaen and Johnston 2009; Tollin and Christensen 2019). Our survey strives to peek into this black box by surveying managers who are involved with or knowledgeable about this prioritization process, and to provide insight about three important factors that are influential on the outcome of this process.

The outcome of the sustainability prioritization process has broad implications because these issues can have a significant impact on the welfare of stakeholders and the environment. In addition, companies have an important role to play in achieving the goals of sustainable development (GRI 2016, 3), as they are the primary contributors to many sustainability problems and have substantial resources at their disposal to address those problems (Arnold and Valentin 2013). Prior studies also provide evidence that sustainability issues can have differential impacts on company value. That is, addressing some sustainability issues can enhance company value (Khan et al. 2016), while addressing others can actually diminish company value (Grewal, Serafeim and Yoon 2016). Thus, the factors that influence companies' sustainability priorities should be of great interest to board members, stakeholders, and academics.

We structure the remainder of our paper as follows. We first present a review of the literature and our theoretical framework. Next, we outline our survey methodology and then present the results of our survey. Finally, we discuss the practical and theoretical implications of our study.

II. LITERATURE REVIEW AND THEORY DEVELOPMENT

Individual decision-makers select the sustainability issues that are prioritized (Cho and Lee 2019; Järlström et al. 2018). These decision-makers use sustainability reporting models to guide them through the process, and they are accountable to a variety of stakeholder groups who have preferences that managers must navigate to determine which sustainability issues to prioritize (Levy and Rothenberg 2002). In this section, we review the literature on sustainability decision-makers, reporting models, and stakeholder communication. We then lay out the theoretical lenses through which we view our survey results.

Literature Review: Decision-makers

Prior research suggests that the individual characteristics and job titles of decision-makers are impactful on the roles they play in the sustainability prioritization process. For instance, Fryxell and Lo (2003) report that the knowledge and values of managers in China influence their environmental behaviors. Similarly, Thomas and Simerly (1994) indicate there is a relationship between the professional background of top managers and their company's sustainability performance, and Quazi (2003) identifies an association between manager demographics and company sustainability. Rego, Cunha and Polónia (2015) report that managers' leadership characteristics are a key determinant of company sustainability practices. Cho and Lee (2019) report decision-makers who are more efficient (i.e., better able to use company resources to produce positive financial outcomes) focus more on product-related sustainability issues than environmental-related issues. In addition, decision-makers' personal interests, such as boosting their reputation or credibility in the eyes of specific stakeholders, may influence their decisions during the sustainability prioritization process (Faller and Knyphausen-Afuseb 2018).

In a similar vein, prior research also examines the specific roles of decision-makers within companies—namely chief executive officers (CEOs), chief financial officers (CFOs), and chief sustainability officers (CSOs)—and how those roles are related to sustainability prioritization. CEOs are likely to be highly influential because they have the greatest degree of control over resource allocation within a company (Cho and Lee 2019) and have greater power than other decision-makers to prioritize the sustainability issues they deem to be most important (Walls and Berrone 2017). However, Walls and Berrone (2017) provide evidence that CEOs' influence on sustainability practices is moderated by both shareholder activism and their relationship with the board of directors.

CFOs are also often involved in sustainability prioritization (Howell 2006) and survey evidence highlights that CFOs view sustainability issues as opportunities to boost the financial value of the company (McKinsey and Company 2009). This survey result may intuitively lead to the conclusion that CFOs and other decision-makers who are largely responsible for their company's financial performance might have a strong preference to prioritize sustainability issues that boost short-term company profits (Faller and Knyphausen-Afuseb 2018). However, this is not necessarily the case as Eberhardt-Toth and Wasieleski (2013) provide survey evidence that financial managers in France have a stronger sustainability orientation than non-financial managers. Further, Stilwell (2009) argues that the data, analysis, and discipline CFOs bring to the table makes them ideal candidates to direct the sustainability efforts within companies.

CSOs are the designated decision-makers within companies with the primary responsibility for sustainability. The CSO position is relatively new and becoming more commonplace, but it is an evolving role that may differ from company to company (Miller and Serafeim 2014). Consequently, we still have much to learn about the role and influence of CSOs

(Kanashiro and Rivera 2017). While some suggest that appointing a CSO may produce positive results for a company (Wiengarten, Lo and Lam 2017), there is ambiguous evidence about the impact of CSOs on companies' sustainability. For instance, in a study focusing on the impact of CSOs in pollutive industries, Kanashiro and Rivera (2017) report that CSOs have a positive influence on companies' sustainability, but only when strict environmental regulations exist. Otherwise, they find the presence of CSOs actually diminishes sustainability performance. Although, Kanashiro and Rivero (2017) also assert that the presence of CSOs make companies more likely to engage in sustainability discussions.

We contribute to this literature in a number of ways. First, prior research has primarily focused on the involvement of CEOs, CFOs, and CSOs on sustainability practices. Our survey examines whether other decision-makers are also involved and whether sustainability prioritization typically involves one decision-maker or many. Second, if multiple decision-makers are involved, we seek to provide evidence about which decision-makers are the most influential on companies' sustainability prioritization. Finally, to the extent that companies have a CSO, we investigate the CSOs role to better understanding how autonomous they are with respect to sustainability prioritization.

Literature Review: Sustainability Reporting Models

Company decision-makers often rely on the guidance of sustainability reporting models to aid the sustainability prioritization process. Because regulators generally have not yet developed a sustainability reporting model, companies often rely on one of the many models developed by private standard setters (KPMG, GRI, UNEP and Centre for Corporate Governance in Africa 2016). Three of the most commonly used models are produced by the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the Sustainability

Accounting Standards Board (SASB) (Serafeim 2013; Littan 2014). Each of these organizations are actively marketing their models, seeking adoption by both firms and regulators in their respective target markets.

While there are many similarities across the sustainability models available for companies to use, there are also key differences. For instance, some models (e.g., the GRI model) emphasize that companies meet with a broad group of stakeholders and incorporate their feedback into sustainability priorities. In contrast, other models (e.g., the IIRC and SASB models) focus on the sustainability issues that enhance company value and that are more pertinent to capital providers. Limited research exists about the impact of sustainability reporting models on decision-makers, but there is some evidence that the differences across sustainability models have important implications for the sustainability prioritization process.² For example, Johnson (2019) provides evidence that when a sustainability model emphasizes addressing disclosures to a specific stakeholder audience, millennial managers allocate more capital to sustainability projects that cater to the preferences of that stakeholder audience. Specifically, when millennial managers must decide how much capital to allocate between a sustainability project that provides greater environmental benefits versus one that provides the company greater financial benefits, these managers allocate more capital to the project with superior environmental (financial) benefits when the reporting model emphasizes the importance of all stakeholders (capital providers). Nevertheless, we still know very little about how sustainability reporting models affect a firm's sustainability strategy and therefore more research on this matter will be informative (Perez-Bates, Miller and Pisani 2010).

² While companies may select a sustainability reporting model to use based on a specific company strategy, this selection is sticky because switching reporting models is a costly endeavor. Consequently, these models and their accompanying guidelines have staying power and can affect how decision-makers prioritize sustainability issues.

While prior surveys provide evidence about the reporting models companies are using, we seek to contribute to this literature by examining whether companies typically use one reporting model or many. We also seek to provide evidence regarding whether certain models are more influential on the sustainability prioritization process than others are.

Literature Review: Stakeholder Communication

Stakeholders can also influence the sustainability prioritization process via dialogue and communication with companies (Faller and Knyphausen-Afuseb 2018; Brulhart et al. 2019). Stakeholders are groups or individuals who can influence or are influenced by the operations of a company (Freeman 1984). Communication with stakeholders is the responsibility of company management (Jackson and Schuler 2003) and requires a significant level of management involvement to be effective (Habisch et al. 2011). This communication goes beyond the traditional annual and sustainability reports, involving other opportunities and channels through which companies and stakeholders can share and receive feedback, including letters, meetings, surveys, and discussion groups (Klettner et al. 2014).

We currently have little empirical data on stakeholder communications. To address this gap, in a survey of public disclosures, Habisch et al. (2011) provide insight into companies' efforts to communicate with stakeholders about sustainability matters. Among 22 U.S. companies that provide public disclosures about their stakeholder communications, they find that stakeholder communication efforts primarily focus on communities (31 percent) and employees (35 percent). When stakeholder communication occurs, it typically comes in the form of conferences (43 percent), surveys (23 percent), and formal channels accessible to stakeholders (13 percent). While this evidence is informative, it is likely that not all firms who engage in stakeholder communications publicly disclose those communications. Therefore, we can

complement these findings using a survey to explicitly ask companies about their stakeholder communications without having to rely on public disclosures.

Prior research suggests that stakeholder communication can benefit companies in a variety of ways, making stakeholder communication a strategically important business practice (Dowell and Muthulingham 2017; Malik 2015). For example, when a company creates relationships with stakeholders through, among other things, communication beyond traditional levels, the sustainability activities companies engage in can improve profitability and produce competitive advantages (Fombrun and Shanley 1990; Barney and Hansen 1994; Mishra and Suar 2010; Brulhart et al. 2019). Other benefits of stakeholder communication for companies include the provision of fresh perspectives (Payne and Calton 2002), an increased capacity to identify and manage potential risks (Frooman 1999; Burchell and Cook 2006a), and the establishment and strengthening of trust with stakeholders (Swift 2001; Lawrence 2002; McLaren 2004; Burchell and Cook 2006b). However, it is unclear whether management's engagement with stakeholders impacts companies' strategies and decisions or leads companies to operate more sustainably (Greenwood 2007). Studies addressing this question provide inconclusive evidence. For example, using different qualitative research methods (e.g., observation and interviews), Herremans et al. (2016) confirm that some companies, at the highest level of engagement, empower their stakeholders, for example through discussion forums and joint decision-making, to meet their expectations and change organizational behavior if necessary. However, Hetze et al. (2019) analyze CSR communication posted on the websites of 70 companies listed on the main stock markets in Germany, Austria, and Switzerland and do not find evidence of stakeholder involvement in corporate decision processes.

Theory Development

Economic theory generally assumes profit-maximizing entities operate in competitive product and capital markets (e.g., Teece 1982). The aim of profit maximization is that companies, first and foremost, strive to reduce costs and/or to increase revenue. According to this view, as Friedman (1970, 6) states, “there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it...engages in open and free competition without deception or fraud.” A well-known approach to managing companies and to measuring their success, which closely relates to economic theory, is the shareholder value approach. Under the shareholder value approach, the overarching criterion to evaluate corporate activities, including sustainability investment decisions, is whether a given activity increases shareholder value (Rappaport 1986; Windsor 2001; Garriga and Melé 2004). Not all sustainability activities provide favorable *financial* outcomes for companies (Griffin and Mahon 1997; Waddock and Graves 1997; Matten 2006), and the market pressures on companies to meet financial benchmarks are substantial (Habisch et al. 2011). Consequently, the shareholder value approach suggests that a company’s motivation to invest in sustainability activities can be limited, and that unprofitable endeavors are best left to not-for-profit organizations and governments (Parnell et al. 2013). More precisely, companies who apply the shareholder value approach try to identify and invest in only those sustainability activities that clearly contribute to maximizing shareholder value.

In contrast, stakeholder theory (Ansoff 1965; Freeman 1984; Ullmann 1985) posits that a company is not managed in the interests of shareholders alone, but that diverse stakeholder groups have a legitimate interest in the company (Matten 2006). Consequently, the major objective of a company is to balance the potentially conflicting demands of the company’s stakeholders (Ansoff 1965; Chan, Watson and Woodliff 2014). The rationale behind this claim is

that organizations are dependent on their stakeholders for resources (e.g., labor, commodities, capital, license-to-operate), which “gives stakeholders power over the organization and the organization’s behavior” (Chan et al. 2014, 61). In other words, without the ongoing support of its stakeholders, a company will have difficulty surviving as a going concern (Clarkson 1995). Stakeholder management therefore represents managers’ endeavor to integrate stakeholders into managerial decision-making. A pragmatic approach to stakeholder management would thereby not assume that managers consider all stakeholders’ interests, but only interests of stakeholders who control resources that are critical to a company’s operations (Freeman 1999; Chan et al. 2014). Stakeholder dialogue is an instrument that can help companies to address the question of responsiveness to the often-unclear signals received from stakeholders with potentially heterogeneous interests (Garriga and Melé 2004).

Even though the motives innate to the shareholder value approach and stakeholder theory appear to be in conflict, their incompatibility is being increasingly questioned (Parnell et al. 2013). That is, despite the conflicting preferences in matters of sustainability among stakeholders, concerns for profit and a focus on shareholder interests should not necessarily exclude considering interests of others who have a stake in the company such as customers, communities, employees, and non-governmental organizations (Klettner et al. 2014; Cho and Lee 2019). Rather, under certain conditions, the satisfaction of stakeholder interests may actually contribute to the maximization of shareholder value (Mitchell et al. 1997; Ogden and Watson 1999; Garriga and Melé 2004; Harjoto and Laksmana 2018). This can occur, for instance, when companies perceived as being socially responsible are rewarded with additional customers and/or more satisfied customers, or when qualified and dedicated employees are attracted to socially responsible employers (Matten 2006). There is also increasing pressure on large institutional

investors and fund managers to place greater weight on companies' corporate social responsibility in making investment decisions (Flammer 2013; Sorkin 2018).³ Consequently, satisfying a broader range of stakeholder interests may be compatible with shareholder value maximization, a view which Jensen (2001) calls "enlightened stakeholder theory."

We examine decision-makers, sustainability reporting models, and stakeholder communication in the context of the sustainability prioritization process through the lenses of the shareholder value approach, stakeholder theory, and enlightened stakeholder theory. That is, we expect that the extent to which a company adheres to the shareholder value approach, stakeholder theory, or enlightened stakeholder theory when prioritizing sustainability issues will manifest in the decision-makers that are involved, the reporting model(s) used, and the extent and nature of stakeholder communications.

III. RESEARCH METHOD

Because we are interested in understanding companies' internal sustainability processes, acquiring access to managers who deal with or are familiar with these processes is vital to the validity of our research. To do this we used a private survey company specializing in solicitation of managers on a national level.⁴ Survey companies have been used to recruit high-level business managers for a number of prior research studies (Arnold, Bedard, Phillips, and Sutton 2011, 2012; Arnold, Benford, Hampton, and Sutton 2010, 2014; Zhang and Helo 2016; see also Brandon, Long, Loraas, Mueller-Phillips, and Vansant 2014).

³ For example, in early 2018 the CEO of the largest investment firm in the world (BlackRock) announced that companies needed to do more than make profits and in the future the firm would be looking at how companies contributed to society as a key factor in their willingness to invest in those companies (Sorkin 2018).

⁴ The survey company is EMpanel Online (see <https://empanelonline.com/panels/>) and is located in Flowery Branch, Georgia. Data from our survey through EMpanel Online are available upon request. All procedures performed in this study involving human participants were in accordance with the ethical standards of the Institutional Review Board at the university of the first author and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

We specified to the survey company that we wanted to recruit business managers working for companies in the United States (U.S.) who were involved in or knowledgeable about their company's sustainability decision-making processes to take our online survey.⁵ We focus on the U.S. to eliminate potential differences between U.S. and non-U.S. companies with respect to shareholder versus stakeholder approaches and to examine a region where there is arguably the greatest tension between economic and stakeholder pressures.

The extent to which a company's activities affect society and the environment also depends on the company's business environment, including the company's business sector. For example, although a bank clearly faces sustainability challenges, the potential impacts of a chemical plant on the environment can be more consequential. Hence, to (1) minimize variation that may exist across business sectors with respect to sustainability issues, and (2) to increase the likelihood that sustainability is reasonably important to companies, we specified that our respondent pool be limited to managers of companies in the resource transformation sector. We follow the Sustainability Accounting Standards Board's sustainable industry classification system and identify industries within the resource transformation sector as the Chemicals, Aerospace & Defense, Electrical/Electronic Equipment, Industrial Machinery & Goods, and Containers & Packaging industries.

The survey company emailed an invitation to managers who they believed met our criteria. The email included a link to our online survey administered by Qualtrics. To ensure that email recipients met our criteria, they had to pass several screening questions. The first question asked if their company takes action to address sustainability issues. The second question asked if

⁵ In regard to prioritizing sustainability issues, we acknowledge that there may be differences between issues that companies say are important and those that companies act on. As such, we adopt the view that sustainability issues that companies act upon are important issues and structure our survey accordingly.

they were involved in or knowledgeable about their company's process of selecting sustainability issues to act on. Next, we asked if their company communicates with external stakeholders about sustainability issues and, if so, if they are involved in or knowledgeable about these communications. Finally, they indicated the industry to which their company belongs. To complete the survey, respondents had to be from one of the industries in the resource transformation sector and provide an affirmative answer to each of the screening questions.

In total, 312 managers entered our survey. We carefully screened respondents to focus on those having an active role in the sustainability processes of the organization. Of the 312 responses, 114 did not pass the screening questions. Furthermore, to ensure the managers who met our criteria attended to the survey questions, we inserted two attention-check questions which 84 respondents failed to answer correctly. Finally, we eliminated 10 managers who provided answers to a free response question that indicated they were not sufficiently attentive to the survey. Thus, our final sample consists of responses from 104 managers who took on average 18 minutes to complete the survey. We paid the survey company \$28 per completed survey, a portion of which the survey company paid to the participating managers.

IV. RESULTS

Respondent Characteristics

Table 1a provides demographic information for our final sample of 104 survey respondents. Eighty-nine (85) percent of respondents report that they are involved in the process of selecting sustainability issues to act on (communicating with external stakeholders about sustainability issues) while the remainder indicate they are knowledgeable about these processes. In their position, 66 percent of respondents collect and provide sustainability information for

other decision-makers, 55 percent are decision-makers, 48 percent interact with company stakeholders, 42 percent help determine which sustainability issues to act on, and 33 percent are involved in the sustainability disclosure process. On average, respondents spend approximately 40-50 percent of their work time on sustainability matters. They report their primary roles within their company as follows (multiple responses possible): accounting (6 percent), engineering (13 percent), finance (17 percent), human resources (14 percent), operations (33 percent), management (40 percent), marketing (8 percent), risk management (11 percent), and strategy (20 percent). Sixty-eight percent of respondents have been with their current company for more than five years, with just under 40 percent being in their current role for more than five years.

[Insert Table 1a here]

More generally, as reported in Table 1b, survey respondents are between 30-39 years old on average, and 51 percent are female. Eighty-nine percent of respondents have a college degree and 35 percent received a graduate degree. Survey respondents report having an average of 16 years of work experience.⁶ Based on the respondent characteristics just outlined, we conclude that we gained access to highly experienced managers with the requisite knowledge to address our research questions.

[Insert Table 1b here]

In Table 1c, we summarize our respondents' reported compensation information. Eighty-nine percent of our respondents report receiving an annual fixed salary (with a median of USD \$100-149K), variable pay is part of 62 percent of respondents' compensation package. For those with variable pay, the median of the proportion of the annual take home pay that is variable is 50

⁶ The average work experience excludes one respondent who reported 111 years of work experience, which we believe to be a typo as none of this respondent's other responses seem unusual.

percent. Organizational strategy literature suggests that one important aspect that helps to ensure successful implementation of a company's strategy, including a sustainability strategy, is a strong link between corporate strategy and the compensation system (Lawless 1987; Porter 1980; Galbraith and Schendel 1983; Balkin and Gomez-Mejia 1990). Consistent with this principle, variable compensation linked to achieving sustainability goals seems to be common in the resource transformation sector, as 72 percent of all respondents (not only those that receive variable compensation) indicate that other employees in their company receive such compensation. We also asked respondents who indicated that they or others in their company receive variable compensation linked to achieving sustainability goals whether the financial incentives provided are sufficiently motivating to achieve those goals. Ninety-seven percent of those respondents somewhat to strongly agreed that this is the case.

[Insert Table 1c here]

Company Characteristics

Within the resource transformation sector, our respondents work in the chemicals industry (17 percent), the industrial machinery and goods industry (29 percent), the aerospace and defense industry (13 percent), the containers and packaging industry (18 percent), and the electrical and electronic equipment industry (22 percent) (see Table 2 for a summary of company characteristics).⁷ Respondents report that the median number of employees in their companies lies between 1,000 and 1,500. Sixty-three percent of the respondents work for public companies, and the average approximate annual revenues for the most recent financial year is between USD

⁷ To ensure anonymity, we are not able to identify the specific company a respondent works for based on the company characteristics. Hence, we acknowledge that it is possible that two or more respondents work for the same company. However, we carefully analyzed responses with regard to company characteristics and did not identify obvious duplicates.

\$225 to 325 million. Finally, we ask survey respondents if their company has a formal prioritization process in place to determine which sustainability issues to act on. Eighty-nine percent of respondents indicate that they have such a process.

[Insert Table 2 here]

Results: Decision-makers

We asked respondents which decision-makers are involved in the process of selecting sustainability issues to act on. Respondents could select up to thirteen options: chief executive officers (CEOs), chief sustainability officers or equivalent (CSOs), chief operating officers (COOs), chief information officers (CIOs), chief financial officers (CFOs), divisional managers, legal advisors, local managers, accounting, investor relations, marketing, other, and no basis to answer. Table 3a provides descriptive results for respondent answers. The most commonly involved decision-makers are the CEO (45 percent), the CSO (42 percent), and the COO (39 percent), with divisional managers (30 percent) being the most common decision-maker outside of the C-suite. Untabulated results indicate that 92 percent of respondents selected at least one C-suite executive as being involved with prioritizing sustainability issues. Thus, it appears that a wide range of decision-makers is involved in the sustainability prioritization process.

In untabulated analyses, we next examine the number of decision-makers involved in the prioritization process and find that, on average, respondents selected just under three of the decision-makers from the options we provide (mean = 2.92, standard deviation = 2.12). We also find that in 63 percent of respondent answers, at least two decision-makers are involved in the prioritization process. In the 37 percent of responses involving only a single decision-maker, unsurprisingly, this decision-maker is from the C-suite 92 percent of the time, but who the C-suite decision-maker is varies. That is, respondents report the lone decision-maker is the CEO 23

percent of the time, the CSO 21 percent of the time, the COO 15 percent of the time, the CIO 20 percent of the time, and the CFO 13 percent of the time.

[Insert Table 3a here]

We also asked respondents which personnel are involved in the process of communicating with stakeholders about sustainability issues. Again, respondents could choose up to twelve personnel options. Table 3a provides descriptive results for respondent answers. The most commonly involved personnel are the CEO (38 percent), the CIO (35 percent), the CFO (34 percent), and the CSO (32 percent). Further, untabulated results indicate that 90 percent of respondents selected at least one C-level executive as being involved in the process of communicating with stakeholders about sustainability issues. As can be seen in Table 3a, respondents' responses regarding who participates in the processes of prioritizing versus communicating sustainability issues provide a very comparable picture. However, C-suite involvement in the communication process seems to be slightly less common.

Given the recent emergence of the CSO position, we also examine the cases in which a CSO is and is not involved in the sustainability prioritization process. In untabulated analyses, we find that there are 44 cases in which a CSO is involved. When the CSO is involved, the average number of decision-makers increases to just under four (mean = 3.91, standard deviation = 2.28), indicating that the CSO's involvement is associated with a broader group of decision-makers. In only eight (18 percent) of the forty-four cases is the CSO the only C-suite decision-maker involved, meaning that at least one other C-suite decision-maker shares the responsibility of prioritization with the CSO over 80 percent of the time. In most cases, the other C-suite member is the CEO (57 percent), but it is not uncommon for the COO (43 percent), the CIO (36 percent), and the CFO (25 percent) to work with the CSO.

Interestingly, when the CSO is not involved in the sustainability prioritization process, the average number of decision-makers involved drops to slightly more than two (mean = 2.20, standard deviation = 1.69). Further, without the involvement of a CSO, the number of cases in which a single C-suite decision-maker increases from 18.2 percent to 51.7 percent. Finally, in the absence of a CSO, when a single C-suite decision-maker is involved, one particular officer does not dominate this responsibility. Rather, it falls to the CEO 37 percent of the time, the COO 35 percent of the time, the CIO 30 percent of the time, or the CFO 28 percent of the time.

Results: Reporting Models

To understand the role of the reporting models companies use as part of their sustainability prioritization process, we asked respondents which sustainability reporting models their companies use to select sustainability issues on which to act. As reported in Table 3b, respondents could select up to 12 reporting model options. Responses indicate the SASB (48 percent), IIRC (35 percent), and GRI (31 percent) are the most commonly used models, respectively. We also find that 80 percent (untabulated) of companies used at least one of the models produced by the SASB, GRI, and IIRC models. The next most commonly used models are the CDP (25 percent), the OECD Guidelines (22 percent), and the United Nation's COP (20 percent).

[Insert Table 3b here]

We also examined whether companies use more than one model in the sustainability prioritization process. Our untabulated results reveal that, on average, companies use approximately two reporting models (mean = 2.24, standard deviation = 1.39), the number of models used ranges from zero to eight, and 64 percent of companies use two or more reporting models. Honing in on the three most commonly used models in our results, we find that among

the 35 companies who just use a single reporting model, 40 percent use the SASB model, 6 percent use the GRI model, and 11 percent use the IIRC model.⁸ The prevalent use of the SASB model both on its own and with other models could be attributable to the SASB having completed an assessment for sustainability issues relevant to shareholders for each business sector. Thus, using the SASB model is an attractive option because it provides companies a cost-efficient way to prioritize sustainability issues that are relevant to company value and to a key stakeholder group.

Finally, we asked respondents which reporting models their company uses to disclose sustainability information to stakeholders. As reported in Table 3b, the SASB (53 percent), GRI (49 percent), and IIRC (26 percent) are the most commonly used models, respectively. Furthermore, it appears that the use of these reporting models differs across companies with respect to sustainability prioritization and stakeholder communication via disclosure. The most notable difference in use pertains to the IIRC model, which companies use more frequently for prioritization than communication, and the GRI model, which companies use more frequently for communication than prioritization. Our findings support the notion that it can be challenging for companies to provide an integrated report in line with the IIRC model due to its abstract nature (Reuter and Messner 2015; Dumay, Guthrie, and La Torre 2017; McNally, Cerbone, and Maroun 2017). Correspondingly, it can be difficult for users to digest integrated reports (Du Toit 2017). Furthermore, previous studies argue that, despite being promoted as a sustainability reporting framework, the utilization of the IIRC model is linked with company strategy and internal changes (Guthrie, Manes-Rossi, and Orelli 2017; Dumay and Dai 2017). Hence, in line with

⁸ Among companies that use a single reporting model, the next most frequently used models are a private, internally developed model (14 percent) and the UN's COP (11 percent).

prior research, our results suggest that the IIRC model's value for disclosing purposes might be lower than for prioritizing purposes. The opposite is the case for the GRI model, which has been described as complementary to the IIRC model (Macias and Farfan-Lievano 2017; Villiers, Hsiao, and Maroun 2017), not least because it provides comprehensive and detailed reporting guidelines, including specific contents and metrics (e.g., GRI 2016).

Results: Stakeholder Communications

Companies can communicate sustainability information with external stakeholders using forums that allow for two-way communication (e.g., face-to-face meetings or conference calls) or using forums that only allow for one-way communication (e.g., formal letters or communication via third-party representation). While some have expressed uncertainty about the extent to which stakeholder communication is occurring (e.g., Unerman 2007), a large proportion of respondents report that their company does engage in two-way communications with multiple stakeholder groups. More specifically, as reported in Table 4, we find that 64 percent of companies engage with employees, 57 percent engage with consumers, 54 percent engage with investors, 47 percent engage with regulators, 44 percent with communities, and 43 percent engage with suppliers. Interestingly, direct engagement with governments (37 percent) and creditors (21 percent) is less common, as is the overall level of one-way communication with all stakeholder groups.

[Insert Table 4 here]

We also asked respondents how frequently their company engages with the different stakeholder groups using any form of communication. Responses summarized in Table 5 indicate that engagement with stakeholder groups at least once a year is very common (ranging from 60 percent of companies engaging at least once a year with communities and governments

to 74 percent of companies engaging at least once a year with employees). Further, many companies engage with stakeholders multiple times a year, ranging from 30 percent of companies engaging with governments to 50 percent engaging with employees. While meeting with stakeholder groups can facilitate communication between stakeholders and companies, the purpose of the meetings can vary and affect the influence stakeholders' views have on companies' sustainability practices. Accordingly, we asked respondents whether a goal in meeting with stakeholders is to understand what sustainability issues are important to each stakeholder group (as opposed companies simply telling stakeholders what they believe is important). Eighty-nine percent of survey respondents indicate that this is indeed one of the goals of the meeting (untabulated). Further, 90 percent of respondents indicate that when their company meets with stakeholder groups, there is a process in place to discuss how the sustainability actions their company takes aligns with the sustainability issues that are important to stakeholders (untabulated). This is important because it suggests that the communication between companies is two-way in form and in substance, which provides stakeholders with opportunities to not only be informed about what companies are doing but also to provide feedback to help inform companies about what matters to them. This relates to the Ayuso, Rodríguez, García-Castro, and Ariño (2011) finding that knowledge sourced from engagement with stakeholders contributes to a company's sustainable innovation orientation. Relatedly, Gao and Zhang (2006) argue that engaging with stakeholders could help build trust, identify commitment to sustainability, and promote cooperation amongst stakeholders and companies. Thus, stakeholder engagement has been described as a fundamental step of (sustainability) reporting in prior literature (Manetti 2011; Svedsen 1998; Waddock 2002; Clarkson 1995).

[Insert Table 5 here]

Stakeholders' interests are far from homogeneous, and stakeholders are likely to have different objectives when it comes to the prioritization of sustainability issues (Reed 2008; Luyet, Schlaepfer, Parange, and Buttler 2012). For example, the sustainability issues that are important to investors are likely to be different from those that are important to communities. To examine the extent to which the priorities of different stakeholder groups matter to companies, we asked respondents whether the prioritization of specific stakeholder groups is a formal part of the sustainability prioritization process. In response, 86 percent of our survey respondents indicate that it is. To understand which stakeholder groups they think their company prioritizes when selecting sustainability issues to act on, we ask respondents to provide a weighted ranking to the following stakeholder groups: communities, consumers, creditors, employees, governments, investors, regulators, and suppliers.⁹ Our results outlined in Table 6 indicate that, consistent with Habisch et al. (2011), communities' and employees' interests are of paramount relevance for companies. For the full sample, as well as for companies using the GRI and IIRC model for identifying sustainability issues to act on, employees rank second, and investors rank third and fourth respectively. Interestingly, investors move up to the second rank for companies using the SASB standards. Consumers rank between 3 (for companies using the SASB standards) and 5 (for companies using the GRI model). Of least importance are in general governments (rank between 4 and 6), regulators (ranks between 4 and 7), suppliers (rank between 6 and 7) and creditors (rank between 6 and 8). More specifically, we find that regulators' interests are of greater importance for companies using the SASB standards than for

⁹ Respondents provide weighted rankings using a magnitude measurement scale. That is, we asked respondents to evaluate each of the stakeholder groups based on its relative importance in comparison with the "communities" stakeholder group. Thereby, the "communities" stakeholder group had been arbitrarily assigned a score of "100". If another group is perceived as, for example, three times as important, a score of 300 (3x100) would have to be assigned to that group. The communities' stakeholder group ranks number one regarding stakeholder groups' interests prioritized by companies. While this might very well suggest that communities' interests are of paramount relevance for companies, it is possible that this outcome is a result of communities being the reference group in the question.

other companies. Furthermore, it might be surprising that creditors' interests play the least important role when companies prioritize sustainability issues. Summarizing, the rank order for stakeholder groups that companies prioritize when selecting sustainability issues to act on seems to depend on the utilized sustainability model, and these differences in rank orders apparently reflect key differences between models. Specifically, the SASB model focuses on the sustainability issues that enhance company value and that are more pertinent to shareholders, and is explicitly designed for the inclusion in the mandatory financial reporting in the U.S. (SASB 2019), which helps to explain the higher relevance of investors and regulators in the prioritization process for companies using the SASB model, compared to companies that use other models.

[Insert Table 6 here]

We also asked respondents to what extent the processes of prioritizing sustainability issues and communicating with stakeholders are independent or integrated. In untabulated analyses, more than 70 percent of respondents report that these processes are somewhat to completely integrated. Supporting this assertion, more than 88 percent of respondents indicate that there is some degree of overlap in the personnel involved with these processes. Integration of these processes at some level does indeed suggest that stakeholder communication can influence which sustainability issues companies prioritize, which is one desired intent of this communication (IIRC 2013, 2; GRI 2016; Klettner et al. 2014).

An alternative explanation is that companies prioritize sustainability issues and then attempt to convince stakeholders that those issues are the ones that matter. To provide insight about this alternative explanation, we ask respondents whether stakeholder communications influence sustainability issue prioritization in their companies. One respondent indicated they

had no basis to answer this question. The other 103 respondents answered this question on a fully labeled 7-point scale, ranging from “has no influence” to “completely determines” the prioritization process. Only 2 percent of respondents indicated that communicating with stakeholders has no influence on the prioritization process, and the mean response indicates that stakeholder communications are moderately to considerably influential on issue prioritization. Yet, in a separate question, more than 90 percent of respondents affirm that their company seeks to communicate to stakeholders how the sustainability issues they prioritize align with the issues that are important to stakeholders. Thus, it seems that companies believe they are listening to stakeholders, incorporating their feedback into the prioritization process, and then communicating with stakeholders about how the issues companies prioritize align with stakeholders’ priorities. This interpretation is further supported by 89 percent of respondents who indicate that a goal in meeting with stakeholders is to understand what issues are important to them.

Our survey responses provide evidence that companies believe they are listening to stakeholders and that stakeholders’ priorities are influencing the sustainability issues companies prioritize. However, it is unclear how much weight companies place on stakeholders’ priorities. To investigate this, we asked respondents to allocate the proportional weight they believe their company places on the importance of a sustainability issue to 1) stakeholders, 2) company value or strategic goals, and 3) other considerations in the prioritization process. Allocations could range from 0 percent to 100 percent, and the three allocations had to sum to 100 percent. Untabulated results indicate that respondents believe their company places slightly more weight on issues important to stakeholders (41 percent) than on company value or strategic goals (38 percent) or on other considerations (22 percent).

Results: Motives for Prioritizing Sustainability Issues

To provide additional insight into the roles of decision-makers, reporting models, and stakeholder communications in the sustainability prioritization process, we examine the relationship between these three factors and companies' self-reported motives for prioritizing sustainability issues. In addition to there being a broad range of sustainability issues that companies must prioritize, there is also a host of motives that might influence which of those issues companies prioritize. For example, some companies may choose to prioritize issues that have the greatest influence on society or the environment while others may choose to prioritize issues that create company value. In order to understand why companies prioritize certain sustainability issues over others, we asked respondents the extent to which they agreed with 17 separate statements pertaining to sustainability's importance to stakeholders, company value, operational efficiency, etc. Responses were given on a fully labeled 7-point Likert scale, with endpoints labeled "Strongly disagree" (1) and "Strongly agree" (7) and "Neither agree nor disagree" (4) as the midpoint. As reported in Table 7, mean responses to each of these statements fall between 5 and 6 on the scale, indicating that, on average, respondents believe that each of these motives influence which sustainability issues companies prioritize.¹⁰

[Insert Table 7 here]

Because we ask respondents about a large number of motives, and because some of these motives are likely related, we simplify our analysis by conducting an exploratory factor analysis on these 17 motives using a Promax rotation to identify factor groupings in respondent

¹⁰ All respondents answered these questions, regardless of whether or not the company they work for has a formal prioritization process in place to determine which sustainability issue to act on. To avoid a potential social desirability bias, we included a similar question asking about what motives respondents think motivate *other* companies when prioritizing certain sustainability issues over others and derive consistent results.

responses. As reported in Table 8, this factor analysis produces four factors that have an Eigenvalue greater than one and that collectively explain 69 percent of the variance.¹¹ The motives that load on Factor 1 are those that enhance company value, respond to short-term company risks, are important to key company decision-makers, are the right thing to do, generate positive externalities, mitigate negative externalities, and respond to regulators and governmental authorities. Thus, the motives that load on Factor 1 appear to capture a shared value focus that prioritizes sustainability issues that are important to both companies and society. The motives that load on Factor 2 pertain to operational efficiency, addressing long-term risks, and promoting company legitimacy. Factor 2, therefore, appears to capture a strategically motivated sustainability agenda that generally benefits companies. Factor 3 reflects a motivation to respond to influential stakeholders, the broadest range of stakeholders, and the most vulnerable stakeholders. Accordingly, Factor 3 highlights a stakeholder-driven sustainability agenda. Finally, only the motives of boosting short- and long-term income load on Factor 4, which therefore reflects a focus on sustainability issues that primarily boost company profits.

[Insert Table 8 here]

We expect that the motives that drive companies' sustainability prioritization process are influenced by company decision-makers, reporting models used, and stakeholder communications. We therefore examine correlations between the four factors produced in our exploratory factor analysis and decision-makers, reporting models, and stakeholder communications (see Table 9). First, with respect to the involvement of decision-makers, we find that as the number of C-suite executives that are involved with sustainability prioritization

¹¹ We find that respondent answers to the statements about meeting society's expectations and about having the greatest impact on society and the environment do not load on any factor (all factor loadings < 0.500). Therefore, we exclude responses to these two statements from our factor analysis.

increases, the issues prioritized are more likely to be those that benefit the operational (Factor 2, $p = 0.046$) and financial (Factor 4, $p = 0.076$) performance of the company.¹² However, when one of the C-suite executives involved is a CSO, there is an increased likelihood that companies exhibit both a shared value focus (Factor 1, $p = 0.049$) and a strategic focus (Factor 2, $p = 0.010$). Further, when the CSO is the only C-suite decision-maker involved, the likelihood of exhibiting a shared value focus increases (Factor 1, $p = 0.019$) while the likelihood of a strategic focus significantly diminishes (Factor 2, $p = 0.434$). Further noteworthy relationships among the C-suite decision-makers are that the involvement of the COO is positively associated with a profit focus (Factor 4, $p = 0.025$) while the involvement of the CIO is negatively correlated with the shared value focus (Factor 1, $p = 0.088$). Outside of the C-suite, the only significant correlation we observe among decision-makers occurs when legal advisors are involved in the prioritization process. Interestingly, involving legal advisors is negatively correlated with a strategic (Factor 2, $p = 0.087$) and a stakeholder focus (Factor 3, $p = 0.029$). One possible interpretation of these results is that legal advisors are simply averse to engaging in non-operational activities, even if such engagement might provide some benefit to the company. This aversion may be due to uncertainties about how engagement with sustainability issues impact investor perceptions as well as the overall risk position of the firm (e.g., Graafland 2018; Rangan, Chase, and Karim 2015).¹³

¹² All reported p-values are two-tailed.

¹³ While many studies suggest that firms and their shareholders generally benefit from sustainability engagement, e.g. through insurance-like protection, improved risk management, market appeal to customers, or easier access to financial markets (Jo and Na 2012; Porter and Cramer 2002; Carroll 1998), some studies point out that sustainability actions can also increase company risk. For example, Graafland (2018) argues that sustainability initiatives may put firm reputation at risk by making the firm a more attractive target for activists' campaigns. Furthermore, Rangan, Chase, and Karim (2015) find that firms' sustainability programs are often hampered by poor coordination and a lack of logic connecting the various initiatives, which reduces the likelihood that these programs have a positive impact on business risk, reputation, or results.

[Insert Table 9 here]

In addition to highlighting significant correlations we observe in Table 9, it is perhaps equally interesting to consider insignificant correlations we might expect to be significant. Namely, we do not find significant correlations between any of the four factors and the involvement of the CEO or the CFO. A CEO is the strategic leader of a company, has the greatest decision-making power within the company (Walls and Berrone 2017), and has the greatest control over company resources (Cho and Lee 2019). Further, as we discuss earlier, our survey respondents indicate that the CEO is the most commonly involved decision-maker on sustainability issues and is often the lone C-suite decision-maker on sustainability issues. Given the degree of influence the CEO can potentially have on sustainability within the company, it is therefore surprising that CEO involvement is not associated with a specific sustainability focus, particularly when compared with other decision-makers such as the CSO. This contrast between the CEO and CSO may be indicative of CEOs' relative unfamiliarity with sustainability issues and their consequences compared to CSOs' familiarity. A similar argument can be made for the insignificant correlations between the CFO involvement and a particular sustainability focus. We might have expected to at least observe CFOs involvement to be positively correlated with a strategic focus (Factor 2) and/or a profit focus (Factor 4) which both align with the financial focus CFOs have within the company (McKinsey and Company 2009; Faller and Knyphausen-Afuseb 2018).

Second, with respect to the reporting models used in the sustainability prioritization process, we find that the use of the GRI model is positively correlated with a shared value focus (Factor 1, $p = 0.010$) and a stakeholder focus (Factor 3, $p = 0.010$), which reflects the GRI model's broad stakeholder orientation (e.g., GRI 2016, 4). Similarly, the positive correlation

between the use of the CDP model and a profit focus (Factor 4, $p = 0.025$) is in line with the CDP model's investor orientation. Against this backdrop, it is noteworthy that neither the IIRC nor the SASB model, which are both also investor-oriented, are significantly associated with a specific sustainability focus in our data. As reported earlier, this curious result may be due to the fact that the majority of companies in our sample use more than one reporting model to help prioritize sustainability issues (only 13% of our respondents indicate they only use the SASB model and only 4% indicate they only use the IIRC model). Consequently, the positive correlation with an investor-focus that we might expect to observe may be diluted by the relatively broader stakeholder focus introduced by the other models used.

Finally, with respect to stakeholder communications, we generally find that the self-reported influence of stakeholder communications on the prioritization of sustainability issues is positively correlated with a shared value focus, a strategic focus, and a stakeholder focus (Factor 1, $p = 0.001$; Factor 2, $p = 0.012$; Factor 3, $p < 0.001$), but not a profit focus (Factor 4, $p > 0.100$). These relationships suggest companies have good self-insight into how influential stakeholder communications are on the types of sustainability issues prioritized. We further find an association between companies' sustainability prioritization focus and meeting frequency with governments, regulators, suppliers, and investors. First, the more companies meet with governments, the more they seem to adopt a shared value focus (Factor 1, $p = 0.028$). Second, the more companies meet with regulators, the more they seem to adopt a shared value focus (Factor 1, $p < 0.001$) as well as a stakeholder focus (Factor 3, $p = 0.004$). Third, there is also a positive association between companies' meeting frequency with suppliers and a stakeholder focus (Factor 3, $p = 0.014$). Fourth, the meeting frequency with investors is negatively correlated

with the shared value focus (Factor 1, $p = 0.091$), which may reflect investors' desire to be the primary beneficiaries of company actions, including sustainability actions.

We do not, however, find a positive correlation between meeting frequency with investors or creditors and a profit focus (Factor 4), or a strategic focus (Factor 2). The insignificant correlations between meeting frequency with investors and creditors on profit-focused and strategic-focused sustainability issues may reflect an increased concern by capital providers for sustainability issues as suggested by the relatively recent surge in sustainability investing (Fonda 2019; The Asset 2020). In addition, to our surprise, meeting frequency with communities, employees, and consumers is not significantly correlated with a specific sustainability focus, despite those stakeholder groups' interests being of greatest relevance for firms when prioritizing sustainability issues to act on (see ranks of those stakeholder groups in Table 6). These insignificant correlations do not necessarily mean that communities, employees, and consumers do not influence sustainability priorities. Rather, they may be more indicative of a ceiling effect of meeting with these stakeholder groups, such that meeting more frequently does not persuade companies to be more sensitive to stakeholder groups to whom they are already extremely sensitive.

V. DISCUSSION

Our results shed light on who is involved with sustainability issue prioritization within companies. Specifically, we find that a diverse group of decision-makers provide input to the prioritization process, including accounting, legal, and local managers; however, upper-level managers and C-suite representatives are the most commonly involved decision-makers. The involvement of multiple decision-makers from different levels within companies that typically include high-level personnel suggests that companies view sustainability as strategically

important (KPMG 2017). Our results also provide useful insight about the role and influence of CSOs, who researchers and stakeholders know relatively little about due to the recent creation and adoption of the position (Miller and Serafeim 2014; Kanashiro and Rivera 2017). While less than half of our respondents indicate a CSO is involved in the sustainability prioritization process, our results suggest that when CSOs are involved they may be fairly influential on what kinds of issues companies prioritize. That is, without the involvement of a CSO, companies appear to adopt a shareholder value approach, focusing on sustainability issues that improve financial and operational performance. However, when a CSO is involved, the sustainability focus seems to shift to an enlightened stakeholder approach that is relatively more sensitive to the needs of stakeholders. This shift in focus suggests CSOs can bring a balanced perspective that recognizes the importance of prioritizing sustainability issues that meet the needs of stakeholders generally and boosts company performance. These results also suggest that individual characteristics of CSOs can influence companies' sustainability performance and practices (Thomas and Simerly 1994; Fryxell and Lo 2003; Quazi 2003; Rego et al. 2015; Faller and Knyphausen-Afuseb 2018; Cho and Lee 2019), and that the sustainability issues prioritized by companies may increasingly meet the needs of stakeholders as more companies adopt the CSO position. Interestingly, our results further suggest that the involvement of the CEO in prioritizing sustainability issues is not associated with a specific type of sustainability focus within firms, which is somewhat surprising because the CEO is the strategic leader of a company. The contrast between the influence exerted by the CEO and the CSO may be indicative of CEOs' relative unfamiliarity with sustainability issues and their consequences in contrast to CSOs' familiarity.

Consistent with prior research, we also find evidence that companies use a number of different reporting models to guide the sustainability issues they choose to prioritize and disclose, and that the most commonly used models are those developed by the GRI, SASB, and IIRC (Serafeim 2013; Litten 2014). Further, our survey results provide new information that most companies use one or many reporting models, in line with IIRC (2018). Because different reporting models focus companies on different stakeholder interests and different sustainability issues, one possible benefit to using multiple models is that doing so helps companies to appease different stakeholder groups, thereby increasing companies' perceived legitimacy in the eyes of stakeholders (Amran and Ooi 2014; ACCA 2016). Consistent with Johnson (2019), we also find some evidence that the use of different models is associated with a different theoretical focus within companies. That is, companies that use the GRI model appear to be more likely to prioritize sustainability issues that reflect enlightened stakeholder theory compared to companies that do not use the GRI model. Surprisingly, despite the SASB and IIRC models' focus on shareholders and on company value, we do not find any relation between the use of these models and adherence to the shareholder value approach with respect to sustainability issues. That is, we do not find an association between companies' use of the SASB and IIRC models and a focus on sustainability issues that prioritizes shareholders. As discussed in the results section, one possible explanation for this is that most companies in our survey report using more than one reporting model, including models that take a broader stakeholder view. As a result, the shareholder bias we may expect to see from companies using the SASB or IIRC models may be diluted by the use of these other models. An interesting implication of this is that, to the extent that firms use multiple reporting models to guide their sustainability prioritization, concerns about an investor-

focused approach (as advocated by the SASB and IIRC) blinding companies to other stakeholder interests may be alleviated.

Finally, respondents indicate that companies are meeting regularly with their various stakeholder groups to discuss sustainability and that these meetings provide companies the opportunity to listen to their stakeholders and to share with their stakeholders what they are doing to try to address stakeholders' concerns. This dialogue between companies and stakeholders is encouraging and consistent with stakeholder theory; although, an examination of the relationship between stakeholder meeting frequency and companies' sustainability focus indicates only a few stakeholders appear to influence companies' priorities. Namely, governments, regulators, and suppliers. One possible explanation for the influence of governments and regulators is that they have authority over companies which makes companies more sensitive to their requests/demands compared to the requests/demands of other stakeholder groups (ACCA 2016). Consequently, the governments' and regulators' requests/demands (which may be more aptly labeled as mandates) may carry significant costs for companies if companies are not responsive. Suppliers may similarly have a greater degree of influence on companies' sustainability focus than other stakeholder groups because companies view them as business partners (Buysee and Verbeke 2003; Mishra and Suar 2010). However, an alternative explanation is that companies that meet more regularly with suppliers about sustainability may be more committed to sustainability because they are not just addressing their direct impacts on society and the environment but are also addressing their indirect impacts throughout their value chain (Ciliberti, Pontrandolfo, and Scozzi 2008; Andersen and Skjoett-Larsen 2009; Blomgren 2011; Gielens, Geyskens, Deleersnyder, and Nohe 2018). Our results also suggest that meeting frequency with investors or creditors is not associated with a shift in companies' sustainability

priorities towards a profit or strategic focus. This may reflect an increased concern by capital providers for sustainability issues as suggested by the relatively recent surge in sustainability investing (Fonda 2019; The Asset 2020).

VI. CONCLUSIONS

Identifying and addressing sustainability issues has become a strategically important process for companies, but due to capital constraints, companies lack the resource availability to address every possible sustainability issue. Rather, they must prioritize these issues and allocate capital accordingly. Notwithstanding the importance of companies' sustainability prioritization processes, we have limited information about the factors that influence the ultimate outcome of the decision processes. This study peeks inside companies' prioritization processes by specifically examining the roles of the internal decision-makers, the sustainability reporting model(s) companies follow, and stakeholder communications. We examine those factors through the lenses of the shareholder value approach, stakeholder theory, and enlightened stakeholder theory by collecting survey evidence from 104 managers in the resource transformation sector who are involved or familiar with their company's prioritization process. Our findings suggest that companies typically use multiple decision-makers with different roles in the company, use multiple reporting models that prioritize different stakeholders, communicate regularly with multiple stakeholder groups, and prioritize sustainability issues that are important to the firm and beneficial to society. Thus, our overall results generally suggest that companies adhere to enlightened stakeholder theory (i.e., prioritizing issues that benefit society, the environment, and the company) in that companies' priorities reflect a balance between focusing on shareholder and other stakeholder interests.

Our results open several doors to future research. The current research focuses on exploring specific factors (i.e., key decision-makers, reporting models, and stakeholder communications) that affect decisions associated with sustainability activities. These factors can help archival researchers identify key variables to develop predictive models of sustainability investments and resulting outcomes. These insights can also assist research focused on financial reporting quality and the influential role of sustainability related activities and reporting. At the same time, the factors identified herein can be further explored by behavioral researchers to develop a better understanding of how they influence the outcomes of companies' sustainability prioritization process and other internal decision-making processes.

Future research can also consider the external aspects of the sustainability reporting environment. Both qualitative and experimental work could assist in understanding how various stakeholders view and embrace the sustainability choices made by companies. Do changes in reporting method or level of personnel involved in the sustainability prioritization process affect investment decisions? Do they influence stakeholder activism as related to company's sustainability behavior and choices? Certainly, additional work evaluating how investors and other stakeholders react to policies and decisions consistent with enlightened stakeholder theory is needed as we see greater interest in companies' sustainability activities by large institutional investors and their clients.

Finally, one limitation of the survey methodology is its susceptibility to self-selection bias. To minimize self-selection bias in our study, we used a national survey company which identified a potential pool of respondents; however, self-selection bias may still be present in our results. Future research can use field studies to identify and interview managers from different companies to corroborate and extend our findings.

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TABLES

TABLE 1a
Survey respondent role characteristics

Role Characteristics	Percent	Role Characteristics	Percent
Sustainability Process Familiarity		Tenure with Current Company	
Involved with selecting issues to act on	89.4	0-5 years	14.4
Involved with stakeholder communication	84.6	6-10 years	46.2
Knowledgeable about stakeholder communication	15.4	11-15 years	27.9
Knowledgeable about selecting issues	10.6	16-20 years	9.6
		> 20 years	1.9
Sustainability Responsibilities		Primary Roles with Company	
Provide information for decision-makers	66.3	Management	40.0
Make decisions	54.8	Operations	33.3
Interact with stakeholders	48.1	Strategy	20.0
Help determine issues to act on	42.3	Finance	17.1
Involved with public disclosure	32.7	Human Resources	14.3
		Engineering	13.3
		Marketing	7.6
		Accounting	5.7
		Other	2.9
Proportion of Time Spent on Sustainability		Time in Current Role	
< 10%	2.9	0-5 years	60.6
20%	13.5	6-10 years	33.6
30%	15.4	> 10 years	5.8
40%	18.3		
50%	9.6		
60%	12.5		
70%	12.5		
80%	8.7		
90%	2.9		
100%	3.8		

All percentages reported in Table 1a are based on our final sample of 104 survey respondents. Respondents could select more than one of the Sustainability Responsibilities options. They could also select more than one of the Primary Roles options.

TABLE 1b
Survey respondent demographics

Demographics	Percent	Demographics	Percent
Gender		Work Experience	
Female	51.0	0-5 years	10.6
Male	49.0	6-10 years	31.7
		11-15 years	16.4
		16-20 years	17.3
		> 20 years	24.0
Age		Education	
< 30	22.1	High school or equivalent	10.6
30-39	46.2	Associates degree	9.6
40-49	16.3	Bachelor's degree	45.2
50-59	9.6	Master's degree	29.8
≥ 60	5.7	Ph.D. or J.D.	4.8

All percentages reported in Table 1b are based on our final sample of 104 survey respondents with one exception: the work experience frequencies exclude one respondent who reported 111 years of work experience. Education refers to the highest degree the respondent earned.

TABLE 1c
Survey respondent compensation

Compensation Characteristics	Percent	Compensation Characteristics	Percent
Respondents Receiving an Annual Salary	89.4	Respondents Receiving Variable Compensation	61.5
Annual Salary Range		Proportion of Salary to Variable Compensation	
< \$50,000	1.1	10%:90%	0
\$50,000-99,999	24.7	20%:80%	15.6
\$100,000-149,999	31.2	30%:70%	17.2
\$150,000-199,999	23.7	40%:60%	12.5
\$200,000-249,999	12.9	50%:50%	15.6
\$250,000-299,999	4.3	60%:40%	7.8
> \$300,000	2.2	70%:30%	10.9
% of Companies Linking Variable Compensation to Sustainability Goals	72.1	80%:20%	14.1
		90%:10%	6.3
Is the Variable Compensation Linked to Sustainability Sufficiently Motivating?			
Strongly agree			42.7
Agree			48.0
Somewhat agree			6.7
Neither agree nor disagree			2.7

The percentages reported in Table 1c are based on our final sample of 104 survey respondents with three exceptions. First, the annual salary range data only includes the 93 respondents who indicated they received an annual salary. Second, the proportion of salary to variable compensation data only includes the 64 respondents who indicated they received variable compensation. Third, the question asking whether variable compensation linked to sustainability was sufficiently motivating was limited to the 75 respondents who indicated their company links variable compensation to sustainability goals.

TABLE 2
Company characteristics

Company Characteristics	Percent
Industry	
Industrial Machinery & Goods	28.8
Electrical & Electronic Equipment	22.1
Containers & Packaging	18.3
Chemicals	17.3
Aerospace & Defense	13.5
Number of Employees	
< 500	12.5
500 to 1,000	26.0
1,000 to 1,500	13.5
1,500 to 2,000	9.6
2,000 to 2,500	11.5
2,500 to 3,000	3.8
3,000 to 3,500	3.8
3,500 to 4,000	2.9
> 4,000	16.3
Public Company	
Public	63.5
Not public	36.5
Annual Revenues	
< 25 million	14.6
25 to 125 million	14.6
125 to 225 million	16.9
225 to 325 million	16.9
325 to 425 million	9.0
425 to 525 million	6.7
525 to 625 million	5.6
625 to 725 million	3.4
> 725 million	12.4
Sustainability prioritization process in place	89.4

All percentages reported in Table 2 are based on our final sample of 104 survey respondents with one exception. The percentages for Annual Revenues only reflect 89 survey responses because 15 respondents did not provide any information about their company's annual revenues.

TABLE 3a
Personnel involved in selecting sustainability issues and communicating with stakeholders

Personnel	Involved in Selection	Involved in Communication
	Percent	Percent
Chief executive officer (CEO)	45.2	37.5
Chief sustainability officer (CSO)	42.3	31.7
Chief operating officer (COO)	38.5	30.8
Chief information officer (CIO)	32.7	34.6
Chief financial officer (CFO)	26.9	33.7
Divisional managers	30.8	20.2
Legal advisors	22.1	19.2
Local managers	19.2	12.5
Accounting department	13.5	13.5
Public/investor relations department	13.5	11.5
Marketing department	7.7	9.6
No basis to answer	1.0	1.0
Other	N/A	N/A

TABLE 3b
Sustainability reporting models used to select vs communicate sustainability issues

Reporting Model	Used for Selection	Used for Communication
	Percent	Percent
Sustainability Accounting Standards Board's (SASB) Standards	48.1	52.9
International Integrated Reporting Council's (IIRC) Integrated Reporting Framework	34.6	26.0
Global Reporting Initiative's (GRI) Sustainability Reporting Guidelines	30.8	49.0
CDP (formerly known as the Carbon Disclosure Project)	25.0	27.9
OECD Guidelines	22.1	19.2
United Nations Global Compact's Communication on Progress (COP)	20.2	18.3
ISO 26000	15.4	18.3
Internally developed model	15.4	20.2
Greenhouse Gas Protocol Corporate Standard	11.5	15.4
No basis to answer	1.9	2.9
Other externally developed model	1.0	0.0
No model	N/A	N/A

All percentages reported in Tables 3a and 3b are based on our final sample of 104 survey respondents. For the models used for either disclosure or prioritizing sustainability issues in Table 3a, respondents indicate that companies considerably or completely adhere to the guidelines provided by those models.

TABLE 4
Company engagement with stakeholders regarding sustainability

Stakeholder Group	Two-Way Communication	One-Way Communication
	Percent	Percent
Employees	64.4	30.8
Consumers	56.7	47.1
Investors	53.8	23.1
Regulators	47.1	25.0
Communities	44.2	39.4
Suppliers	43.3	26.9
Governments	37.5	33.7
Creditors	21.2	28.8
No basis to answer	N/A	3.8

Table 4 reports the percentage of respondents who indicate their company directly, in a two-way manner (i.e., face-to-face meetings, conference calls, written communication), or indirectly, in a one-way manner (i.e., third-party representation, etc.), communicates with the stakeholder groups listed in the first column.

TABLE 5
Frequency of company engagement with stakeholder groups

Stakeholder Group	Frequency of Engagement							
	Multiple times each year	Once a year	Every other year	Every 3 years	Every 4-5 years	Every 6-10 years	Every 10+ years	No basis to answer
Employees	50.0%	24.0%	6.7%	6.7%	5.8%	2.9%	1.9%	1.9%
Consumers	44.2%	25.0%	10.6%	8.7%	5.8%	1.9%	2.9%	1.0%
Suppliers	43.3%	23.1%	11.5%	8.7%	3.8%	3.8%	0%	5.8%
Investors	40.4%	21.2%	14.4%	7.7%	6.7%	3.8%	2.9%	2.9%
Regulators	40.4%	26.0%	11.5%	3.8%	7.7%	5.8%	1.9%	2.9%
Communities	34.6%	25.0%	14.4%	10.6%	5.8%	3.8%	1.9%	3.8%
Creditors	31.7%	29.8%	12.5%	6.7%	5.8%	6.7%	0%	6.7%
Governments	29.8%	29.8%	15.4%	8.7%	4.8%	4.8%	1.9%	4.8%

Table 5 reports the percentage of respondents who indicate the frequency (in the top row) with which their company directly, in a two-way manner, or indirectly, in a one-way-manner, engages with the stakeholder groups listed.

TABLE 6
 Prioritization of stakeholder groups' interests regarding sustainability issues to act on

Stakeholder Group	Rank, Full Sample	Rank, when partitioning based on model used for identifying sustainability issues to act on		
		SASB	GRI	IIRC
Communities	1	1	1	1
Employees	2	5	2	2
Investors	3	2	3	4
Consumers	4	3	5	3
Regulators	5	4	7	7
Governments	6	6	4	6
Suppliers	7	7	8	5
Creditors	8	8	6	8

Table 6 reports the results of a weighted ranking respondents believed their company placed on stakeholder interests when prioritizing sustainability issues. Specifically, respondents were told to evaluate its stakeholder group based on its relative importance in comparison with its relative important to the “Communities” stakeholder group, which was arbitrarily assigned a score of 100. Respondents were also provided with an example stating that if they felt another stakeholder group is perceived as three times (half) as important as Communities, that they should assign that group a score of 300 (50).

TABLE 7
Company Motives to Prioritize Sustainability Issues

Company Motives to Prioritize Sustainability Issues			
Prioritized issues are those that...	Mean	S. D.	Rank
are the right thing to do	5.913	1.071	1
improve operational efficiency	5.913	0.946	1
are important to company value	5.904	0.990	2
are important to key decision-makers within the company	5.885	1.073	3
increase the legitimacy of the company to stakeholders	5.875	1.094	4
have the greatest impact on society and the environment	5.856	0.970	5
generate positive externalities	5.856	1.092	5
respond to long-term risks facing the company	5.779	1.106	6
meet society's expectations	5.760	1.110	7
respond to regulators and governmental authorities	5.750	1.147	8
boost long-term net income	5.721	1.092	9
are important to the most influential stakeholders	5.615	1.264	10
are important to the broadest range of stakeholders	5.577	1.180	11
respond to short-term risks facing the company	5.567	1.041	12
boost short-term net income	5.548	1.078	13
are important to the most vulnerable, non-financial stakeholders	5.317	1.423	14
mitigate negative externalities created by the company	5.317	1.395	14

Table 7 presents mean and standard deviation statistics for responses asking respondents to indicate the extent that they agreed with 17 separate statements. These statements were prefaced by “The sustainability issues my company prioritizes are those that...”. Responses were provided on a fully labeled 7-point scale anchored by “Strongly disagree” = 1 and “Strongly agree” = 7.

TABLE 8
Exploratory factor analysis results for company motives to prioritize sustainability issues

Company Motives to Prioritize Sustainability Issues	Factors and Factor Loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
...are important to company value	0.806	0.064	-0.004	-0.142
...respond to short-term risks facing the company	0.654	0.079	0.049	0.102
...are important to key decision-makers within the company	0.826	-0.015	-0.181	0.122
...are the right thing to do	0.806	-0.212	0.055	0.132
...generate positive externalities	0.625	0.404	-0.207	-0.020
...mitigate negative externalities created by the company	0.673	-0.086	0.283	-0.139
...respond to regulator initiatives or governmental authorities	0.534	0.166	0.175	0.021
...improve operational efficiency	0.208	0.714	0.069	-0.113
...respond to long-term risks facing the company	-0.150	0.816	0.129	0.129
...increase the legitimacy of the company	0.000	0.872	-0.063	-0.009
...are important to stakeholders that have the greatest influence on the company	-0.111	0.082	0.927	-0.107
...are important to the broadest range of stakeholders	0.125	-0.031	0.854	-0.034
...are important to the most vulnerable, non-financial stakeholders	0.038	-0.017	0.616	0.328
...boost short-term net income	0.113	-0.146	-0.061	0.930
...boost long-term net income	-0.087	0.236	0.029	0.830

Table 8 presents the results of an exploratory factor analysis using a Promax rotation on respondent answers to the questions described in Table 7. This factor analysis produced four factors with an Eigenvalue greater than one that collectively explain 69 percent of the variance. Respondent answers to the statements about meeting society's expectations and about having the greatest impact on society and the environment do not load on any factor (all factor loadings < 0.500). Therefore, we exclude responses to these two statements from our factor analysis. Factor 1 appears to capture a shared value focus that prioritizes sustainability issues that are important to both companies and society. Factor 2 appears to capture a strategically motivated sustainability agenda that generally benefits companies. Factor 3 reflects a stakeholder-driven sustainability agenda. Factor 4 reflects a profit-focused sustainability agenda.

TABLE 9

Correlations between exploratory factor analysis factors and decision-makers, reporting models, and stakeholder communications

	Factor 1	Factor 2	Factor 3	Factor 4
Number of executives involved with prioritization	0.066	0.196*	0.146	0.175
CEO is only executive involved with prioritization	0.025	-0.159	0.121	0.100
CSO is only executive involved with prioritization	0.229*	0.078	0.042	-0.099
COO is only executive involved with prioritization	0.026	0.074	-0.011	0.159
CIO is only executive involved with prioritization	-0.112	-0.034	0.074	-0.058
CFO is only executive involved with prioritization	-0.067	-0.027	-0.036	-0.113
CEO involved with prioritization	0.125	0.092	0.138	0.160
CSO involved with prioritization	0.193*	0.251*	0.102	0.054
COO involved with prioritization	0.037	0.156	0.106	0.219*
CIO involved with prioritization	-0.168	-0.023	0.061	-0.036
CFO involved with prioritization	-0.024	0.046	-0.019	0.073
Divisional managers involved with prioritization	0.105	0.90	0.024	0.014
Legal advisors involved with prioritization	-0.134	-0.169	-0.214*	0.012
Local managers involved with prioritization	0.060	-0.001	-0.115	-0.049
Accounting involved with prioritization	-0.066	-0.033	-0.051	0.003
Public/investor relations involved with prioritization	0.000	-0.030	0.015	-0.127
Marketing involved with prioritization	0.027	-0.011	0.054	0.080
SASB used to prioritize	0.035	-0.059	0.091	0.145
IIRC used to prioritize	0.081	0.109	0.032	0.042
GRI used to prioritize	0.252*	0.142	0.251*	0.040
CDP used to prioritize	-0.130	-0.128	0.022	0.220*
Influence of stakeholder communications on prioritization ^a	0.310*	0.247*	0.419*	0.155
Meeting frequency with communities	-0.085	0.087	0.000	0.064
Meeting frequency with employees	-0.087	0.056	0.020	0.094
Meeting frequency with investors	-0.169	-0.034	-0.045	0.159
Meeting frequency with consumers	-0.056	0.021	0.019	0.130
Meeting frequency with regulators	-0.352*	-0.108	-0.282*	0.079
Meeting frequency with governments	-0.221*	-0.139	-0.107	0.035
Meeting frequency with suppliers	-0.170	-0.116	-0.249*	-0.051
Meeting frequency with creditors	0.005	0.124	0.098	0.158

Table 9 presents correlation coefficients between the factors produced by our exploratory factor analysis (see Table 8) and decision-makers involved with sustainability prioritization, reporting models used for sustainability prioritization, and stakeholder communications. We characterize Factor 1 as capturing a shared value focus that prioritizes sustainability issues that are important to both companies and society, Factor 2 as capturing a strategically motivated sustainability agenda that generally benefits companies, Factor 3 as capturing a stakeholder-driven sustainability agenda, and Factor 4 as capturing a profit-focused sustainability agenda. Bolded coefficients indicate significant correlations at the 0.10 level, two-tailed. * indicates significant correlations at the 0.05 level, two-tailed.

^a Survey respondents were asked, “To what extent does the process of communicating with external stakeholders about sustainability issues influence the decision-making process of selecting sustainability issues to act on?” Responses were provided on a fully labeled, seven-point scale, anchored by “Has no influence” (1) and “Completely determines the decision-making process” (7).