How Firm Innovation Orientation Impacts Environmental Disclosure and Actions

Expectations for company disclosure and action related to environmental factors that impact their business and their stakeholders has steadily increased over time (G&A, 2021). Companies address this expectation of transparency by publishing sustainability reports or participating in voluntary disclosure in accordance with non-governmental organization (NGO) guidelines or frameworks. CDP, a nonprofit that request disclosure of environmental risks and impact from large global companies, reports a 137% increase in companies reporting on environmental impact through CDP from 2015 to 2021(CDP, 2021). In addition, companies' environmental risks and actions are rated by environmental, social and governance (ESG) rating agencies, with a large input to these ratings being companies' voluntary sustainability reporting and disclosure (MSCI, 2023). The voluntary nature of this reporting, however, raises two important questions: why do some companies choose to disclose information on their environmental risks and actions, and how does the voluntary nature of disclosure affect the quality of this disclosure and actions?

Researchers have identified several factors that are associated with disclosure, disclosure quality, and performance on environmental actions. These studies find that companies disclose or take actions in order to respond to stakeholder and other external pressure, or to signal to the market in order to gain legitimacy or other benefits. Disclosure is also undertaken by companies to signal ethical behavior to the market (Zerbini, 2017). While empirical studies support that stakeholder pressure or a desire to signal to the market has an impact on companies' disclosure, studies find that this impact can be substantive or symbolic. For example, stakeholder pressure in the form of shareholder activism has been found to increase substantive disclosure of the targeted company as well as industry peers (Reid & Toffel, 2009; Flammer, Toffel & Viswanathan, 2021) Other evidence, however, shows that pressure from external stakeholders such as environmental NGOs, consumer groups, trade associations and the media increases symbolic commitments to environmental action (Hyatt & Berente, 2017). Sustainability disclosure may be selective in which a company reveals positive information but hides unfavorable information (Marquis, Toffel, & Zhou, 2016). Additionally, some companies may leverage the signal of a good reputation firms by disclosing while hiding poor performance on sustainability matters (Zerbini, 2017). A lack of unified sustainability measures and inconsistency in ESG ratings makes it difficult to ascertain the quality of a company's reported information to compare company performance (Whelan, 2020; Berg, Koelbel & Rigobon, 2022), while making it easier for companies to "game" the ratings by taking actions that improve ratings without impacting outcomes for stakeholders or the environment (Clementino & Perkins, 2020). Therefore, while previous research elucidates reasons companies disclose, there is still uncertainty about the conditions under which a specific company's disclosure is symbolic to achieve legitimacy and other benefits, or if it is representative of substantive effort by the company to measure and report their environmental risks and actions. With all companies having potential incentives and opportunities to signal to stakeholders or gain legitimacy related to sustainability and ESG without substantive actions, what characterizes companies that take action to achieve real outcomes that are reflected in quality sustainability disclosure versus those that report symbolic efforts without real action?

One factor contributing to a firm's quantity and quality of sustainability reporting and action that has not been given much attention by researchers is intangible organizational characteristics. These characteristics or "orientations" are defined as the philosophy of an organization that directs the scope of internal and external activities. (Mariadoss, Chi, Tansuhaj & Pomirleanu, 2016). In this paper, I consider Innovation Orientation as a potential characteristic that impacts a firm's environmental disclosure and the quality of their disclosure and actions. Innovation Orientation refers to "an organization's openness to new ideas and propensity to change through adopting new technologies, resources, skills, and administrative systems" (Hurley and Hult, 1998, as cited in Norris & Ciesielska, 2019, p. 6). Using the behavioral theory of the firm as theoretical support, I propose that companies with higher Innovation Orientation address the challenge of environmental disclosure and action with higher quality disclosure and action. Studies have shown a link between innovation and environmental action (Blanco, Guillamón-Saorín, & Guiral, 2013; Jafari, Ghaderi, Malik, & Bernardes, 2022; Jakhar, Bhattacharya, Rathore, & Mangla, 2020; Surroca, Tribó & Waddock, 2010), however those studies rely on either self-reported statements of innovativeness which are subject to social desirability bias, or proxies such as patents and R&D spend, that do not capture process innovations (Damanpour & Aravind 2011; Damanpour, 2014; Kleinknecht et al., 2002). To address the limitations of previous measures, I propose a novel measure of Innovation Orientation that has the potential to capture a company's propensity to implement technological, non-technological, product, service, operational, and process innovations that lead to sustainability disclosure and actions.

This paper does three things. First, I use textual analysis and a semi-supervised machine learning method to measure Innovation Orientation from quarterly earnings calls of one hundred companies over a four year period. This extends a previous study by using a larger and more balanced sample. This Innovation Orientation measure is validated via a correlation with R&D spend. Second, I explore the relationship of Innovation Orientation to likelihood to disclose to CDP. I show that Innovation Orientation has a positive and significant relationship to disclosure to CDP, supporting my hypothesis that companies with a higher innovation Orientation are more likely to disclose environmental information. Third, I demonstrate that, of companies that disclose, those with higher Innovation Orientation have more complete and transparent disclosure. This is done by relating Innovation Orientation to the CDP ratings. CDP ratings provide a view into the quantity and quality of environmental disclosure and differentiate those firms putting in minimal, often symbolic effort from climate leaders (CDP, 2022). I show that that on average, companies with higher ratings for climate disclosure and action have higher Innovation Orientation scores than companies with lower ratings for climate disclosure and action.

This paper contributes to the understanding of how a firm characteristic impacts the choice of symbolic or substantive environmental disclosure and action. This study identifies a condition under which a company may respond to stakeholder pressure and potential benefits with substantive or symbolic environmental actions. While previous research has provided empirical evidence to support stakeholder theory, signaling theory and legitimacy/institutional theory as potential theoretical support for disclosure, these theories do not explain why one company may respond to stakeholder pressure or opportunity to signal with substantive environmental disclosure and action while another will respond with symbolic disclosure and environmental action. Using the behavioral theory of the firm as theoretical support, my results demonstrate that companies with higher Innovation Orientation address the challenge of environmental disclosure and action more completely and with higher quality disclosure and action.

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