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UNDERSTANDING THE IMPACT OF SYMBOLIC AND SUBSTANTIVE ENVIRONMENTAL ACTIONS ON ORGANIZATIONAL REPUTATION

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ABSTRACT

Research in corporate environmental practices has shown that stakeholders impose coercive and normative forces that drive firms to perform environmental protection actions. However, limited attention has been placed on how different constituents of stakeholders value the firm's environmental actions. By focusing on industry peers as a constituent of stakeholders, we examine how the firm's environmental actions impact its reputation. Based on institutional theory and signaling theory, we propose that symbolic environmental actions negatively affect reputation, whereas substantive actions improve firm's reputation among its peers. Building on the notion of signaling process, the authors also observe that a firm's reporting practices moderate positively the negative effect of symbolic actions. Data from a sample of 213 publicly traded firms operating in polluting industries from 2006 to 2013 support these results. The findings emphasize the danger of using symbolic actions to signal environmental commitment in a context of high-involvement information search and opportunistic behaviors.

Keywords: environmental practice, reputation, institutional theory, signaling theory, substantive actions, symbolic actions.

INTRODUCTION

Greater public scrutiny for environmental wrongdoing (Berrone, Fosfuri, Gelabert, & Gomez-Mejia, 2013) and growing stakeholder concerns about corporate environmental practices (de Villiers, Naiker, & van Staden, 2011; Harrison, Newholm, & Shaw, 2005) have exerted strong pressure on firms to conform to social expectations and environmental standards (Bansal & Roth, 2000; Dai, Chan, & Yee, 2018; Gilley, Worrell, Davidson, & El-Jelly, 2000). Scholars in the institutional literature argue that coercive and normative pressures from external constituencies as well as imitation of successful peers induce firms to adopt environmentally protective policies to demonstrate their commitment to protect the natural environment (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Hyatt & Berente, 2017). However, research has shown that because conformity often comes at a cost and conflicts with the challenge of maintaining organizational efficiency, firms may create the appearance of conformity through symbolic actions that are only loosely coupled with their regular activities (Elsbach, 2003; Elsbach & Sutton, 1992; Fiss & Zajac, 2006; Westphal & Zajac, 1998; Zajac & Westphal, 2004).

Although research provides valuable insights into how companies use symbolic actions to rationalize their responses to institutional pressures (e.g. Christmann & Taylor, 2006; Delmas & Montes-Sancho, 2010; Hyatt & Berente, 2017; Martín-de Castro, Amores-Salvadó, Navas-López, & Balarezo-Nuñez, 2017), this body of literature has an important shortcoming as it reveals that the effectiveness of symbolic actions seems to be restricted to low-involvement information environments. Such environments arise when diverse types of external stakeholders have neither the time nor the expertise to evaluate the organization's implementation of these actions (Pfeffer, 1981) and instead rely on readily observable symbols to reduce information asymmetries between the management and themselves (Aldrich & Fiol, 1994; Ko & McKelvie, 2018; Plummer, Allison, & Connelly, 2016; Zott & Huy, 2007). However, when the external stakeholders form a

homogenous audience (i.e., industry peers) which is sufficiently knowledgeable to evaluate the actions of the firm, symbolic actions alone are unconvincing to reflect the complying intention of the firm. In a competitive context characterized by high involvement and high economic stakes, peer evaluators actively seek reliable signals to form judgments (Bitektine, 2011). The environmental literature shows that in such context firms may voluntarily over-conform and exhibit proactive and substantive environmental actions, such as greater participation in collective corporate political strategies (Delmas & Montes-Sancho, 2010), implementation of ethics codes (Stevens, Steensma, Harrison, & Cochran, 2005), investment in environmental innovations (Berrone et al., 2013), and structural changes within the organization that lead to improved environmental performance (Buyse & Verbeke, 2003). In short, while symbolic environmental actions may influence perceptions of green compliance among audiences with limited involvement, they will probably not affect the perceptions of more involved audiences such as industry peers. The literature on corporate environmentalism has not yet examined the effectiveness of symbolic actions in high-involvement contexts.

The shortcoming discussed above reveals critical missing links in explaining organizations' environmental behaviors and how industry peers evaluate them. Hence, we seek to remedy these gaps in the literature by answering the following research question: *What is the impact of symbolic and substantive environmental actions on a firm's reputation among its peers?* We define the difference between symbolic and substantive actions based on the two commonly agreed characteristics of the degree of implementation (to what extent the announced environmental actions are integrated into the organization's daily activities) and goal alignment (to what extent the performance of the organization reflects its environmental goals) (Iatridis & Kesidou, 2018; Marquis, Toffel, & Zhou, 2016; Shabana & Ravlin, 2016). Mobilizing institutional view and signaling theory, we answer this question using longitudinal data on 213 publicly traded global companies operating in polluting industries from 2006 to 2013. Our results indicate that symbolic

environmental actions negatively affect organizational reputation, while substantive endeavors have a positive effect. However, we found that the reporting capabilities of firms help temper the deleterious effect of symbolic actions.

This paper is relevant both theoretically and practically. First, by introducing insights from signaling theory, we contribute to increasing the descriptive and predictive value of the symbolic management literature, which has traditionally overlooked the importance of the drawbacks of symbolic actions. Although symbolic management has been at the center of a growing body of theoretical literature (see Aguinis & Glavas, 2012), little is known about the limitations of this type of management (de Lange, Busch, & Delgado-Ceballos, 2012; Laplume, Sonpar, & Litz, 2008), and how its actions may affect reputation among the targeted audience (Westphal & Zajac, 1998). Second, environmental-friendly firms fail to reap the benefits of their sustainable actions partly because the opacity of the environmental field prevents the establishment of an efficient reward system for these organizations (Wijen, 2014). As signaling theory is concerned with mechanisms that increase the identification of true quality organizations (Connelly, Certo, Ireland, & Reutzel, 2011), we mobilize this theory to assess the reliable property of two types of environmental actions to a targeted audience. By exploring the impact of symbolic and substantive actions on organizational reputation in the context of corporate environmentalism¹, we show that the effect of symbolic actions in competitive contexts characterized by high-involvement information search is deleterious. In these settings, only substantive environmental actions are able to confer greater reputation. From a practical perspective, understanding which actions can modify the public image of a firm among its peers is of extreme strategic importance for companies and managers seeking to shape their corporate reputation. The critical role of peers in shaping a firm's

¹ It should be noted that our study is not about greenwashing, which is often defined as a set of practices at the intersection of green claims and poor environmental performance (Delmas & Cuere Burbano, 2011). Although we associate environmental symbolic actions with green claims, we do not hold any assumption about the poor environmental performance of the signaling firms.

reputation is well-documented in the literature. For instance, executives of competing firms are often used as referents by financial analysts to assess the reputation of a particular firm (Resnick, 2004). A firm's reputation is also intrinsically linked to that of its industry peers as damage to one's reputation will often lead to produce collaterals to other industry players (Chatterji & Toffel, 2010; Desai, 2011; King, Lenox, & Barnett, 2002). Though, a firm's reputation will suffer less damage from lower performance when other firms in the same industry also match its level of performance (Love & Kraatz, 2017). A study also found that firms with a strong reputation among peers tend to be more successful at attracting resources than those who are poorly evaluated (Padanyi & Gainer, 2003). Therefore, as a firm's reputation is often conferred by peers and protected by the industry's collective reputation (King et al., 2002), it is critical for every firm to build and sustain strong reputation among its peers.

THEORETICAL DEVELOPMENT AND HYPOTHESES

Corporate reputation can be viewed as the overall perception of a firm's appeal and relative standing that results from a firm's distinctiveness (Fombrun, 1996). From an economic perspective, the emphasis is on the firm's ability to deliver value that is superior to the value offered by its competitors (Rindova, Williamson, Petkova, & Sever, 2005). The management literature often views corporate reputation as an intangible strategic asset with a critical potential for value creation and as a barrier to replication by competitors (Roberts & Dowling, 2002), which thus contributes to firm performance and survival (Deephouse, 2000; Fombrun, 1996).

In the context of corporate environmentalism, several considerations support the view that reputation is a relevant outcome measure (Caplan, 2003; Czinkota, Kaufmann, & Basile, 2014; Gangadharan, 2006; Singh, Jain, & Sharma, 2015). First, the lack of universal, internationally applicable regulations and norms to incentivize responsible environmental behavior and to

sanction misconduct has left much room for opportunistic behaviors such as greenwashing and window-dressing (Delmas & Cuerel Burbano, 2011; Lyon & Maxwell, 2011). Moreover, in the event of wrongdoing, the economic losses can be substantial for both the focal firm and its stakeholders, as evidenced by the recent British Petroleum oil spill in the Atlantic Sea, which cost the company more than \$65 billion. Consequently, some scholars have observed that firms are now under stronger surveillance for environmental misconduct (Berrone et al., 2013; Short & Toffel, 2010). Taken altogether, these factors are strong arguments to support reputation as a likely form of social judgment that reflects the unique and distinctive effect of symbolic and substantive actions rather than merely reflecting a general conformance. However, research linking corporate environmental actions and reputation-building strategy is underdeveloped. For instance, Cho, Guidry, Hageman, and Patten (2012) found that environmental disclosure mediates the negative impact of environmental performance on environmental reputation using Newsweek's green ranking. Newsweek's green ranking has been extensively used in previous studies as a measure of reputation: For example, Toms (2002) and Hasseldine et al. (2005) found that environmental disclosure increases environmental reputation, Dangelico (2015) suggested that employee green teams also positively affect environmental reputation, and Tang et al. (2012) proposed that environmental governance improves environmental reputation. Though, Cho et al. (2012) acknowledged that Newsweek's sample captures a much broader group than the Fortune Magazine's "most admired companies" (the one we use in this study), and thus, may be more prone to low-involvement evaluations. Zou et al. (2015) indicated that environmental violation events harm reputation using media favorability as a proxy for reputation, which again tends to lay the ground for a low-involvement information environment given the potential lack of expertise of mainstream journalists in the close monitoring of corporate green actions. Durand and Philippe (2011) revealed that conforming behaviors of greening firms improve their reputation, but their study was mostly concerned with procedural conformance rather than environmental actions *per*

se. Kim et al. (2007) examined the communication of greening organizations in media outlets to predict reputation but assumed that all communications in the media were symbolic in nature. In conclusion, the few studies mentioned above have not yet defined the symbolic or substantive nature of the environmental actions they investigate. Therefore, the question of how these two types of actions affect an organization's reputation, independently or in concert, remains unanswered. This research fills the gap by looking at how the two types of actions in concert impact organizational reputation in a single and robust study.

Symbolic and Substantive Actions

In their quest for positive social judgments, institutional studies suggest that firms respond to external pressures with either symbolic and/or substantive actions (Ashforth & Gibbs, 1990; Meyer & Rowan, 1977; Oliver, 1991). In the environmental literature, symbolic and substantive actions generally differ on the two interrelated characteristics of the degree of implementation and goal alignment (Iatridis & Kesidou, 2018; Marquis et al., 2016; Shabana & Ravlin, 2016). Symbolic actions are intended to manage stakeholder impressions with little implementation, that is, both the daily activities and the strategic goals of the organization remain unchanged by the symbolic actions. Substantive actions, on the opposite, induce changes in the daily activities of an organization to lower its environmental footprint and realign its strategic goals to the new environmental commitment. In short, environmental actions are substantive when they are incorporated into the performance indicators of the organization (Dahlmann, Branicki, & Brammer, 2019). We further explain the difference in the following sections.

Symbolic actions convey subjective social meanings to project the appearance of conformity with social expectations (Zott & Huy, 2007), and these actions can be solely rhetorical with little actual implementation (Westphal & Zajac, 1998). These actions are intended to shape

stakeholder perceptions to ensure that the firm appears to conform to social expectations (Westphal & Graebner, 2010). Therefore, firms can respond to external pressures with ceremonial actions that require little actual implementation to decouple this obligation to conform from their regular business routines (Meyer & Rowan, 1977). Some organizations, not surprisingly, tend to rely on symbolic actions to address environmental issues. For example, a number of firms disclose selected environmental information as a strategy to show compliance while providing little, if any, information on the firm's negative impacts (Lyon & Maxwell, 2011). Additionally, firms with lower environmental performance are more likely to obtain certification to improve their conformance (King, Lenox, & Terlaak, 2005). A previous study found that managers in the Spanish metal industry used environmental certifications such as ISO 14001 and EMAS (Eco-Management and Audit Scheme) to respond to legal and social pressures while dedicating minimal resources to implementation (Martín-de Castro et al., 2017). As ISO 14001 implementation suffers from lack of monitoring by external audits (Ferrón-Vílchez, 2016), many organizations have found to resort to this certification for influencing external audiences' impression of their environmental commitment (Iatridis & Kesidou, 2018; Testa, Boiral, & Iraldo, 2018). A last example is that of environmental governance mechanisms such as environmental board committees, which often tend to serve as symbolic measures to shelter an organization from reputational or regulatory harm rather than an actual instrument for improving its environmental performance (Rodrigue, Magnan, & Cho, 2013). A relative consensus in the literature is that symbolic environmental actions are effective at building some positive impression of a firm's green commitment (Martín-de Castro et al., 2017; Neu, Warsame, & Pedwell, 1998) and help mitigate the negative impact of stakeholder scrutiny (Luft Mobus, 2005; Marquis et al., 2016). A specific example is that of voluntary environmental disclosure, which some firms use to convey selective information of their green actions and performance (Cormier, Magnan, & Van Velthoven, 2005). Although the disclosed information is selective and non-binding, such a strategy may suffice to appease stakeholder

pressures by sending signals of the firm's environmental compliance (Haque & Ntim, 2018; Marquis et al., 2016). However, symbolic environmental actions tend to be effective only when the context is characterized by a lack of sanctioning mechanisms (Delmas & Montes-Sancho, 2010), monitoring (Ferrón-Vílchez, 2016), and public scrutiny (Marquis et al., 2016). Consequently, symbolic actions can help a firm signal environmental conformance at a reasonable cost with little if no coercive pressures.

In contrast, substantive actions require more resources and more profound organizational changes to improve the firm's environmental performance, even at the cost of disrupting internal flexibility (Hawn & Ioannou, 2012). Whereas symbolic actions represent formal responses to external pressures without any connection to actual performance (Hyatt & Berente, 2017), substantive actions directly aim to minimize the firm's environmental impact (Berrone, Gelabert, & Fosfuri, 2009; Delmas & Cuerel Burbano, 2011; Hart, 1995; Hart & Dowell, 2010; Rodrigue et al., 2013). For instance, environmental innovations are suggested to be substantive actions as they are typically associated with costly research and development over a longer period to reduce the carbon footprint of new products (Berrone et al., 2013). Aguilera et al. (2007) propose that pollution reduction is best achieved when organizations are willing to change their methods of production to lower the environmental impact of their products. Delmas and Montes-Sancho (2010) found that early joiners in voluntary agreements programs tend to engage in substantive implementation of green policies to improve their environmental performance, thus showing a concrete link between substantive actions and performance.

Given the clearer link between substantive actions and performance outcomes, stakeholders tend to confer greater importance on firms that couple symbolic actions with substantive actions (Suchman, 1995). By contrast, decoupling symbolic actions from substantive actions (Lyon &

Maxwell, 2011) may increase the risk of adverse reactions from stakeholders who are opposed to symbolic management (Kim & Lyon, 2012).

Although the symbolic management literature has often espoused the benefits of ceremonial gestures in response to external pressures, some scholars have questioned the intentional or coordinated nature of this type of response as calculated deception (Crilly, Zollo, & Hansen, 2012). Additionally, those authors propose that some formal actions can require substantial resources and affect the firm's structures despite their opaque relationship with performance outcome, and the result is a gap between means and ends. Edelman and Petterson (1999) showed that the symbolic adoption of self-regulatory structures may help organizations achieve legal and normative goals. Similarly, firms are more likely to implement self-regulatory measures when regulatory surveillance is high and sanctions are absent (Short & Toffel, 2010), the supporting institutions are weak (Goedhuys & Sleuwaegen, 2013), and the existence of voluntary environmental programs that encourage over-compliance behaviors (Potoski & Prakash, 2013). In a series of interviews with managers, Crilly *et al.* (2012, p.1430) concluded that "decoupling does not necessarily involve intent on the part of managers. Rather, decoupling can be the outcome of organizational learning efforts that are fraught with complexity under conditions of inconsistent, and rapidly changing, stakeholder pressures."

The foregoing review of the literature reveals high levels of uncertainty about whether symbolic and substantive actions act as effective mechanisms to attain positive social judgments from stakeholders. As argued subsequently, relying on the signaling perspective (Spence, 1973), we propose that symbolic actions are bound to create greater information asymmetry between management and external stakeholders because the cost of these actions is low, allowing a large number of companies to adopt symbolic actions in response to institutional pressures. The widespread use of symbolic actions in environmental protection tends to introduce both tedium

and complexity into stakeholders' efforts to distinguish high-quality firms from low-quality firms. As a result, when deciding whether to grant positive social judgments to firms, stakeholders may rely more heavily on costlier signals (substantive actions) and become more skeptical of inexpensive signals (symbolic actions).

Environmental Actions, Reputation, and Signals

Stiglitz's (2002) work on information economics suggests that most markets operate under imperfect information. An important source of information asymmetry is when an observer is unsure about the intent of the signaler (Connelly et al., 2011). Past studies suggest that corporate environmentalism tends to be an opaque field with severe information asymmetry (Wijen, 2014) and environmental actions can be decoupled from the actual intent of the signaling firm (Aravind & Christmann, 2011; Bromley & Powell, 2012; Crilly et al., 2012). Information asymmetry also varies across stakeholder groups as some groups of individuals may have different access to information about a firm (Stiglitz, 2002). As an example, employees and shareholders may have access to some private information about the actual intent of their firm, while customers and media outlets tend to rely on public information, which implies that the former group will be less affected by information asymmetry than the latter group. The context of our study concerns industry peers who represent a stakeholder group that often evaluates competitors based on public information but have a strong willingness to monitor and cross-check this information. Therefore, although they tend to be more knowledgeable about their own industry's processes, standards and norms, peers rarely have access to a competitor's real intent. Such uncertainty about intent lays the ground for potentially important information asymmetry in the field of corporate environmentalism.

The perceptual nature of reputation implies that it can be influenced by companies' actions and communication about those actions (Highhouse, Brooks, & Gregarus, 2009). Since reputation is a well-established industry level judgment, the stakeholders who form this judgment about a

firm are the peers (e.g., competitors, suppliers, industry experts, etc.) who have decent knowledge to evaluate the firm's actions and outcomes. Such stakeholders judge an organization's reputation as they observe its strategic choices and behaviors to make inferences about its capabilities and future behavior (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006). Therefore, reputation as a social judgment is particularly sensitive to a firm's signaling strategy. According to signaling theory (Spence, 1973), the actions and announcements of a firm constitute signals that convey information about its intentions and abilities (Ko & McKelvie, 2018; Plummer et al., 2016; Porter, 1980). Through interpretations of a firm's signals, peers make inferences about the firm's behavior and build reputational beliefs about its relatively enduring characteristics (Prabhu & Stewart, 2001). Following this logic, we adopt a signaling approach and consider environmental actions as signals that convey a firm's intentions and abilities to protect the natural environment.

A central tenet of signaling theory is signal reliability. A reliable signal is an accurate indicator of quality in most instances (Arthurs, Busenitz, Hoskisson, & Johnson, 2009). Signal reliability is often a function of cost such that higher cost is associated with greater reliability. Costly signals have two interrelated properties: 1) they guarantee that only signalers who possess the actual quality can afford the cost of sending a particular signal (Zahavi, 1975), and 2) cost is inversely related to capabilities such that the cost of communicating a particular quality is lower for an honest signaler than for a less capable counterpart that attempts to deceive observers. One popular example of a costly signal is mentioned in the work of Spence (1973), who suggested that higher-quality job candidates use degrees from prestigious higher-education institutions as signals of superior capabilities, as lower-quality candidates are unlikely to possess the necessary capabilities to obtain similar degrees.

In contrast, a signal is unreliable when the cost is insufficiently high to separate high-quality from low-quality signalers. Firms are tempted to engage in opportunistic behavior when

the cost of sending a dishonest signal is lower than the benefits to be gained (Kirmani & Rao, 2000). For instance, the lack of legal regulation and vague norms regarding the term “green” has led to popular greenwashing behavior among firms that tend to label products as green even in the absence of environmental benefits (Delmas & Cuerel Burbano, 2011). In such a context, a green label is an unreliable signal because consumers are unable to distinguish products with actual environment-friendly benefits from those with false claims. The result is greater information asymmetry between sellers and buyers of these products, with the main beneficiaries being low-quality firms, as the cost of using “green” as a signal of environmental benefit is far lower than the cost of the potential adverse selection that it generates. Delmas and Lessem (2017) proposed that green labels may reduce information asymmetry only when they are sanctioned by a third-party environmental certification body.

Corporate environmental policies constitute another example of unreliable signals. Firms may have incentives to publish environmental policy statements because such signals might be inexpensive and can influence public opinion about their environmental commitment (Ramus & Montiel, 2005; Rodrigue et al., 2013). A consequence of this practice is that a large number of firms have adopted environmental policy statements to demonstrate conformity. Although the level of implementation of these policies tends to vary across industries, it is generally low, and the rhetorical nature of environmental policies is likely to make them a mere symbolic response to stakeholder pressure. Therefore, stakeholders are unable to rely on corporate environmental policies to evaluate a firm’s commitment to protect the environment.

Consequently, we posit that symbolic environmental actions are unreliable signals of a firm’s future behaviors for two interrelated reasons. First, because corporate environmentalism is prone to opportunistic behaviors, stakeholders tend to view firms’ actions in this area with skepticism. In this context of generalized skepticism, symbolic actions are likely to be particularly

associated with opportunistic behaviors, leading stakeholders to consider these statements as negative cues of the firm's intention. In impression formation research (Gardner & Martinko, 1988), negative cues are considered to be highly diagnostic of a target's behavioral tendencies (Skowronski & Carlston, 1989). That is, such cues are considered to be more salient indicators of deviation from the norm and more revealing of the true underlying character (and behavioral tendencies) of the target being evaluated (Mishina, Block, & Mannor, 2012). Consequently, in the absence of reliable information to distinguish responsible from irresponsible firms, the use of symbolic environmental actions as signals of commitment can potentially damage stakeholders' impression of a firm's environmental intentions. Second, the unreliable characteristic of symbolic actions generates greater information asymmetry between firms and stakeholders (Perez-Batres, Doh, Miller, & Pisani, 2012), which conflicts with stakeholders' objective of avoiding adverse selection. Because stakeholders have limited resources for information acquisition, they are likely to penalize the use of symbolic actions because these actions contribute to increasing both the risk of adverse selection and the cost of information. Therefore, we hypothesize that the use of symbolic environmental actions as signals of environmental commitment will lead to a reputation loss. Formally,

Hypothesis 1 (H1): Symbolic environmental actions have a negative effect on reputation.

If symbolic environmental actions are unreliable in predicting a firm's future environmental behaviors (as per H1), then a corresponding question involves what types of actions constitute reliable signals. The main mechanism by which high-quality firms can reduce information asymmetry and the associated adverse selection is to increase the cost of signaling for low-quality firms (Sorescu, Shankar, & Kushwaha, 2007). Because the cost of signaling is inversely related to firm quality, high-quality firms have strong incentives to invest in costly signals to discourage replication by their low-quality competitors (Arthurs et al., 2009). For

example, a firm with superior environmental performance can report low emissions much more easily than one with inferior performance, simply because the former possesses the actual performance, whereas the latter needs to allocate substantial resources to appear similar. The resulting effect is that, given the high cost of reproducing the same signal, firms with inferior environmental performance have less incentive to imitate their superior competitors. Thus, higher signaling costs create a separating equilibrium that distinguishes high-quality firms from their low-quality counterparts.

Substantive environmental actions such as actual reductions in emissions, waste management, recycling practices, and the commercialization of environmentally friendly products can be considered costly signals because they result from a long-term investment plan that leads to more effective pollution prevention activities over time (Delmas & Montes-Sancho, 2010). Therefore, this type of action is far more reliable than symbolic action in signaling environmental conformity and stewardship. We hypothesize that stakeholders will prefer substantive environmental actions over symbolic actions in evaluating a firm's enduring characteristics and future behavior and that firms demonstrating such actions will be rewarded with reputational gain. Thus,

Hypothesis 2 (H2): Substantive environmental actions have a positive effect on reputation.

Quality of Signaling Process. In signaling theory, improving the quality of the signaling process is effective in reducing information asymmetry (Connelly et al., 2011; Prabhu & Stewart, 2001). For example, Philippe and Durand's (2011) study of corporate environmental disclosures found that high procedural commitment increases the perceived coherence of the firm's environmental claims and the expected behavior from stakeholders. Furthermore, external observers do not systematically understand all the underlying meanings of a particular signal when it first occurs. Therefore, when signals are repeated over time, they convey transparency and facilitate observers'

interpretation of these signals (Sorescu et al., 2007). Accounting research has found that increasing the frequency of financial disclosures effectively reduces information asymmetry as measured by the price impact (Fu, Kraft, & Zhang, 2012). Similar results have been observed with new product preannouncements, whereby more frequent updates of a preannouncement yield long-term abnormal returns (Sorescu et al., 2007). Nevertheless, the question remains as to whether the moderating effect of reporting practices is similar for both symbolic and substantive actions.

Although symbolic environmental actions may not be reliable, we suggest that improving the practices of how these actions are reported to stakeholders may facilitate their cognitive interpretation of this type of action. We draw on the findings above to propose that reporting practices can influence stakeholders' perception of signal credibility. In those instances, demonstrating improved reporting practices can mitigate the skepticism directed toward symbolic actions because stakeholders may perceive stronger willingness on the part of the reporting firm to insist on the trustworthiness of its intentions. Although improved reporting practices may not fully offset the negative perceptions of symbolic actions, they may attenuate skepticism and suspicion toward the firm, especially when stakeholders believe that the firm is attempting to muddle through the greening process despite a potential gap between means and ends (Crilly et al., 2012). Similarly, we expect superior reporting practices to amplify the positive effect of substantive actions. As substantive actions are perceived to be reliable signals, improving reporting practices should ensure that external observers fully capture the message and should increase confidence in the green firm. In both cases, the perceived transparency of reporting firms should lead to more favorable reputation than is achieved by their seemingly less transparent counterparts. Therefore, we predict the following:

Hypothesis 3a (H3a): The negative effect of symbolic actions on reputation is weaker for firms with improved reporting practices.

Hypothesis 3b (H3b): The positive effect of substantive actions on reputation is stronger for firms with improved reporting practices.

METHOD

Sample and Data

We build our sample from the companies whose environmental actions are reported in MSCI's Intangible Value Assessment (IVA) database. The IVA database was created in 2012 by MSCI by consolidating the Kinder-Lindenberg-Domini (KLD) Index and the Innovest Sustainability Index, both of which have been extensively used in assessing companies' environmental and social performance (Barnett & Salomon, 2012; Bermiss, Zajac, & King, 2014; Hull & Rothenberg, 2008; McWilliams & Siegel, 2000; Turban & Greening, 1997; Waddock & Graves, 1997). To collect the data of our dependent variable, we crossed the IVA data with *Fortune Magazine's* reputation scores for the "World's Most Admired Companies" from 2006 to 2013. *Fortune's* ranking of companies has often been used in reputation studies in the strategy literature (Basdeo et al., 2006; Fombrun & Shanley, 1990; Love & Kraatz, 2009; Roberts & Dowling, 2002). To construct the financial performance and firm demographic data, we collected firm-specific data from Compustat.

Our environmental actions data includes 213 firms in 21 industries (see Appendix 1) that were rated consistently during 8 years between 2006 until 2013 (1704 firm-year observations). We crossed this dataset with reputation data and financial data on these companies. However, the reputation data are not as complete as environmental actions data. Some firms were not present in particular years in the ranking of *Fortune's* most admired companies since their revenue in those years was below \$10 billion (e.g., Japan Tobacco or Alcatel-Lucent). This reduces the size of our sample to 1647 firm-year. For the transformation of our variable of reputation and robustness checks, we gathered financial data since 2003. We also detected the first-order autocorrelation by

xtserial command of Stata before performing the regression analysis. This was not unexpected because for some firms, the values of our independent variable did not change from one year to another. Thus, we apply the *xtregar* command, which also performs transformation in the data to correct the effect of first-order autoregressive disturbance. The final dataset consisted of a balanced panel of 1,405 firm-year observations. Since our model controls for the lag of the dependent variable, the final sample size in the regression model is reduced to 1192 firm-year (1405-213).

Dependent variable. Scores for *Fortune*'s most admired companies were computed on the basis of a large-scale survey of companies listed in the Fortune 1000 and Global 500 as well as other top foreign companies operating in the United States. More than 15,000 executives and directors rated approximately 600–700 companies (depending on the year) from 32 countries, covering 58 industries, on nine attributes: the ability to attract and retain talented people, the quality of management, social responsibility to the community and the environment, innovativeness, product or service quality, the wise use of corporate assets, financial soundness, long-term investment value, and effectiveness in conducting business globally. Past research has extensively used the magazine's ranking of the most admired companies as a measure of corporate reputation (Fombrun & Shanley, 1990; King, 2008; Philippe & Durand, 2011; Roberts & Dowling, 2002; Staw & Epstein, 2000).

We used the overall raw scores for the nine attributes as a measure of the firms' reputation. However, the raw score only partially represents the effects of the firms' intentional actions that contribute to reputation building. Although research shows that reputation ranking is traditionally influenced by firms' financial performance (Bermiss et al., 2014), recent studies show that financial indicators are no longer the sole determinants of corporate reputation. From an

institutional perspective, recent evidence shows that firms' social and environmental actions can impress those who evaluate a firm's reputation (Bermiss et al., 2014).

Because we study the effect of a firm's environmental actions on reputation, an essential consideration is the sizeable effect of financial performance on reputation scores. This effect has been coined as the "Halo effect" of financial performance by Brown and Perry (Brown & Perry, 1994). Accordingly, we decomposed the effect of prior financial performance on reputation from the effect of reputation-building activities to obtain a measure of reputation that is not based on financial performance (Brown & Perry, 1994; Roberts & Dowling, 2002; Surroca, Tribó, & Waddock, 2010). Following Surroca et al. (2010), we used Tobin's Q as a measure of firm financial performance. As a long-term market-based measure of financial performance, Tobin's Q is obtained by dividing the total year-end market value of a firm's stock by the book value of its assets (Henderson, Raynor, & Ahmed, 2012). We regressed the reputation scores of firms on their lags of Tobin's Q until we observed no further significant improvement in R^2 . Our sample did not show significant increases in R^2 beyond three previous financial performances. We thus estimated reputation on the basis of the firms' financial performance over the last three years, and we used the residual of this estimation as the outcome of reputation-building effort².

Independent variables. We used the MSCI IVA index to derive our set of symbolic and substantive actions. The IVA provides ratings on 32 environmental and social attributes for approximately 5,000 global firms. Because the IVA consolidates the KLD and Innovest Sustainability Indices, both of which are widely used in the strategy and organizational literature (Etzion, 2007), it can be considered a relatively strong measure of corporate environmental and

² We estimate overall reputation with the following model:

$$\text{Overall Reputation} = \beta_0 + \beta_1 \text{Tobin's } Q_{t-1} + \beta_2 \text{Tobin's } Q_{t-2} + \beta_3 \text{Tobin's } Q_{t-3} + \epsilon$$

Where ϵ reflects the part of variation in overall reputation which is not explained by Tobin's Q of the last three years (i.e. Tobin's Q_{t-1} , Tobin's Q_{t-2} and Tobin's Q_{t-1}). Put differently, this residual represents all the factors that are not related to the financial performance of the firm during last three years but they influence overall reputation

social performance. For environmental performance, the IVA rates each company on 15 attributes: historical liabilities, operating risk, leading/sustainability, industry-specific risk, environmental strategy, corporate governance, environmental management systems, audit, environmental accounting/reporting, environmental training and development, certification, products and materials, strategic competence, environmental opportunity, and performance. Each attribute is a summary of several sub-attributes and is rated on a 0-10 scale. We analyzed the descriptions of the 15 attributes to classify them as either symbolic or substantive actions.

We used the conceptual definition of each type of action to classify the attributes. Institutional studies have used the degree of implementation to distinguish symbolic and substantive practices (Westphal & Zajac, 1993, 1998, 2001). However, the actual implementation of a particular policy is often difficult for external observers to verify owing to information asymmetry (Christmann & Taylor, 2006), and implementation is not necessarily correlated with performance (Bromley & Powell, 2012). From a purely communication perspective, a previous study have also suggested that external observers react more positively to green product-driven initiatives rather than process-driven initiatives (Gilley et al., 2000), thus confirming that tangible outcomes lead to more favorable judgments. A recent development in the environmental literature points to the soft and hard aspects of environmental reporting (Dahlmann et al., 2019), which purports that symbolic actions are qualitative reporting about the green practices of an organization while substantive actions are quantitative reporting of its actual and measurable environmental performance. As a consequence, we went beyond the notion of implementation and chose environmental performance as a reference point for distinguishing symbolic from substantive actions based on the conceptual link between these two types of actions and environmental outcomes (Delmas & Cuerel Burbano, 2011; Delmas & Montes-Sancho, 2010). We detail this approach below.

Symbolic actions are primarily based on guidance or policy principles without standardized (vs. firm-specific) performance indicators that suggest actual implementation. A firm can claim a commitment to a particular action, but its reporting is often discretionary and void of standardized performance indicators simply because symbolic actions are intended to be rationalized responses without strict expectations of actual outcomes. Therefore, participation in voluntary programs, community communication, environmentally dedicated boards, and internal policies often aim to influence stakeholder impressions. By contrast, an action is classified as substantive when the company reports a set of standardized indicators to show evidence of performance in pollution prevention (e.g. CO₂ emissions) or when the company delivers beneficial products (percentage of green products), indicates third-party certification by a recognized international organization (ISO), or reports results of a performance evaluation from independent auditors. The presence of standardized indicators allows observers to compare the firms using the same standards, and ultimately to link an outcome (i.e., indicators) to a particular action (environmental). In contrast, the absence of standardized indicators forces observers to rely on varying, sometimes ambiguous, or simply incomparable information about a firm's environmental actions. In summary, while the link between performance indicators and actual environmental performance can be easily established in the mind of stakeholders, it might not be the case for the link between policy-guided indicators and actual environmental performance.

One difficulty that we encountered involved certifications, as the link between environmental performance and certifications is inconclusive (Christmann & Taylor, 2006). Our review of the literature also indicates that many firms may use certifications symbolically to appear green. However, we believe that in most instances, the presence of high-quality certifications is associated with a strong commitment to incorporate changes leading to improved performance (see Lannelongue & González-Benito, 2012). Therefore, we worked with an internal IVA consultant to evaluate the certifications item in the guide. Our conclusion leaned toward

classifying certifications as substantive for at least three reasons. First, while some certifications such as ISO 14001 might have led to symbolic use by some firms given the lack of performance auditing (Heras-Saizarbitoria, Dogui, & Boiral, 2013), others have been considered to be credible of green commitment such as eco-labels in the wine market (Delmas & Lessem, 2017) or green energy labels (Brounen & Kok, 2011). Second, the IVA guide includes an extensive list of certifications beyond the popular ISO 14001 standards, many of which are found to be granted by credible independent third-party bodies (e.g. green energy labels and carbon emissions). Third, the continuous improvement of ISO auditing may induce more organizations to couple their internal practices to the standards (Heras-Saizarbitoria et al., 2013). Although these three reasons motivated our substantive classification of certification as substantive, we may be unable to generalize this assumption to all certifications.

Finally, we used the IVA guide and engaged in several conversations with the MSCI IVA team to verify our final classification. We excluded from the dataset any attribute that either did not fall clearly into one or both categories of actions or did not load on one of the two factors in the confirmatory factor analysis (CFA). We then conducted the CFA again to ensure that the eight remaining attributes emerged as two factors. Both types of actions emerged as expected. We ultimately retained eight of the initial set of 15 attributes, of which three were symbolic (Cronbach $\alpha=.74$), and five were substantive (Cronbach $\alpha=.70$). A summary description of the attributes is provided in Appendix A.

Moderating variables. The “Reporting practices” variable was measured using the environmental accounting/reporting attribute in the IVA database. This attribute rates the quality and quantity of the information disclosed by a firm in its reports, including procedural commitment: Does the firm publish standalone sustainability reports, and if so does the report conform to national and international standards of information disclosure about environmental activities; the depth and

relevance of information: Does the report disclose performance indicators? Are the disclosed performance indicators presented in a clear manner, and how do they match against average industry standards?; frequency of communication: How many times a year is the report published?

This variable

Control variables. Following King (2008), we used the variable “organizational visibility” by measuring the media attention given to the firm. We used a unique source for each continent to gain a more accurate media representation of each firm according to their headquarters base: the Wall Street Journal for America, the Japan Times for Japan, the Financial Times for Europe, and the South China Morning Post for South-East Asia. Because we are concerned with the overall visibility of the firms, we counted the total number of press articles that mentioned the name of each firm in each year. We excluded press releases to avoid duplicates with firm disclosure activities. To avoid skewness in the distribution of this variable, we used the value of the natural logarithm of the variable.

Because of our focus on changes in reputation, we followed previous studies (Love & Kraatz, 2009; Philippe & Durand, 2011) and controlled for the one-year-lagged value of firm reputation. We included year dummies to control for inter-year variability (Ioannou & Serafeim, 2015) but not for industry nor for country sensitivity, as we used fixed-effect models. We used age and size as controls because they also influence an organization’s perceived prestige (Fombrun, 1996). Therefore, we retrieved Compustat data on firm size and age using the natural logarithm value of total assets and age to avoid the problem of over-skewed data. Table 1 presents descriptive statistics on the variables considered in this research.

Estimation Methods

We employed a standard econometric model for panel data to test the hypotheses with firms as data groups. During the time frame of our sample, some of the firms in our sample were

not scored in the Fortune ranking; thus, our panel data are not balanced. An OLS regression was not suitable for our analysis because the output of OLS in an unbalanced panel does not consider unobserved heterogeneity (Kennedy, 2008, p. 290). Because our study concerns how the actions within an individual firm cause reputation changes over time, fixed-effect models were deemed suitable for our analysis. Besides, fixed-effects models incorporate superior controls for unobserved heterogeneity relative to those used in random-effects models (Mundlak, 1978). This point is essential in our study because, as our panel data is unbalanced, reputation, symbolic and substantive actions could be correlated with some unobserved firm-specific factors that vary across firms (Verbeek & Nijman, 1992). To validate this point, we used Hausman's (1978) specification. The significant result of Hausman's test ($Prob > chi2 = .023$) refers to the existence of a correlation between the fixed effect and independent variables. Therefore, we used a fixed-effect estimation method for our models, which examine how the independent variables explain within-firm variation in firm reputation over time. Because the time has been argued as one of the crucial considerations in corporate environmentalism and CSR (Bansal & DesJardine, 2014; Bansal & Knox-Hayes, 2013) and our panel dataset has relatively few periods, we also included *Year* dummies in the models to control for unobserved time effects and for the presence of contemporaneous correlation. We ran all models with and without year dummies and found no considerable change in signs, p-values and confidence intervals for our coefficients (Certo & Semadeni, 2006). This result implies that the contemporaneous correlation was not an issue in our estimations.

We regressed the reputation variable on the independent variables using the following specification:

Equation (1):

Non – Financial Reputation $_{it}$

$$\begin{aligned}
 &= \alpha_{it} + \beta_1 \text{Symbolic}_{it} + \beta_2 \text{Substantive}_{it} + \beta_3 \text{Reporting practices}_{it} \\
 &+ \beta_4 \text{Symbolic}_{it} \times \text{reporting practices}_{it} + \beta_5 \text{Substantive}_{it} \\
 &\times \text{reporting practices}_{it} + \beta_6 \text{Reputation}_{it-1} + \beta_7 \text{Visibility}_{it} + \beta_8 \text{Size} \\
 &+ \beta_9 \text{Age} + \mu_{it}
 \end{aligned}$$

The error term μ_{it} in Equation (1) is decomposed into three components ($u_{it} = \eta_i + \lambda_t + \varepsilon_{it}$). The component $\eta_i \sim IID(0, \sigma^2_\eta)$ represents time-invariant firm effects that capture unobserved individual heterogeneity across firms, and that can be treated as either fixed or random. The term $\lambda_t \sim IID(0, \sigma^2_\lambda)$ captures the time fixed effects and macroeconomic trends that are common to all companies, and that lead to yearly variations of data. $\varepsilon_{it} \sim IID(0, \sigma^2_\varepsilon)$ is the individual disturbance. Only the control variables are included in the first model to generate a baseline estimation, and we followed a hierarchical approach to introduce the independent variables and the moderators subsequently. However, hypothesis testing is based on the full models.

Two considerations prompted a check for the presence of multicollinearity in our study. First, in the correlation table, we observed high correlation values between substantive and symbolic actions. This correlation between the two types of actions is not uncommon in corporate social responsibility research, as firms tend to do both in their strategy (Hawn & Ioannou, 2016). Second, the inclusion of two interaction terms in the final model created potential multicollinearity issues. We addressed this concern by calculating variance inflation factor (VIF) values under linear conditions. The VIF values were reasonably low (Max VIF=2.37), which means that the amount of variation in an independent variable is not substantially explained by other independent variables.

As said earlier, we detected first-order autocorrelation using the *xtserial* command. In addition, as Hsiao (2014) noted, including the lag of the dependent variable in a panel data model as a control variable increases the probability of an autocorrelation problem. Therefore, we used a

cross-sectional time-series regression model that accounts for a first-order autoregressive disturbance term according to the procedure developed by Baltagi and Wu (1999) (xtregar, fe in Stata). This data transformation and control for prior reputation (lag) in the regression models reduced the size of our sample by 213 observations.

RESULTS

For reporting our results, we follow the recent call of scientific as well as statistical communities to avoid hypothesis testing merely on small p -value (i.e. $p < 0.05$) (Amrhein, Greenland, & McShane, 2019; Wasserstein & Lazar, 2016; Wasserstein, Schirm, & Lazar, 2019). To do so, we not only report the p -value of each coefficient directly, but we also indicate the confidence interval for the variables of interest. We also discuss the practical significance of our findings by effect size analysis. Table 2 provides the results of the regression analyses. Models 1 to 5 show the effects of the independent variables on non-financial reputation. The results for the control variables show that total assets (representing firm size) has a positive effect on reputation in all models, which is consistent with past research (Fombrun & Shanley, 1990). As mentioned earlier, some research on reputation suggests that the reputational status of a firm in a given year can be influenced by the status of the firm in the past (Love & Kraatz, 2009; Philippe & Durand, 2011). Thus, following previous studies, we controlled for such effect by inserting the lag of our dependent variable (non-financial reputation) as an independent variable in our model. However, we did not find any significant effect of last year's reputation on the reputation of the current year. This finding implies that non-financial reputation is mainly the result of the current year's reputation-building efforts rather than the result of the reputation-based status of the previous year. Figures 2 and 3 present the confidence intervals of our main variables. We made the decision to accept or reject a hypothesis by comparing the p -value and the confidence interval of the coefficient. Our results do not show a significant effect of firm visibility or firm's age on

reputation. However, figure 3 shows an over-dispersion of the confidence interval for the variable age. This implies that for having a conclusive statement about the age of firm, the sample size should be larger, even when the p-value is greater than 0.05. Future studies should consider this point to increase statistical efficiency (Greenland et al., 2016). The effect of symbolic actions on reputation is negative in all models, and its coefficient in model 3 is $-.179$ (p-value=.001). Given that the confidence interval of the coefficient does not include the value of zero, the results confirm H1. We also calculate the effect size using the exponential function of the coefficient (in model 3 at table 2) minus 1³. The result shows a 16.4% decrease in non-financial reputation associated with an increase in symbolic actions. Our results also show that substantive actions have a positive effect on reputation, thus confirming H2 (p-value=.014). In other words, we observe that substantive environmental actions strengthen non-financial reputation by 14%. This implies that in our sample, a reduction of one standard deviation in a firm's symbolic actions and an increase of one standard deviation in its substantive actions may increase the reputation by 30.4%

As illustrated in model 3, reporting practices positively moderate the negative effect of symbolic actions on reputation. As the confidence interval of the interaction coefficient does not include zero, the results confirm H3a (coefficient=.022; p-value=.007). To illustrate the practical significance of this moderation, we compare the effect of symbolic environmental actions on reputation at different levels of reporting quality. The mean value for reporting is 5.96 and its standard deviation is 2.08. At the mean value of reporting, symbolic actions reduce reputation by 5% ($e^{[-.179+(.022*5.96)]}-1*100\%=-5$). Put simply, at the mean level of *reporting*, symbolic actions only reduce the reputation by 5% and not 16.4% as found in the main effect. At one standard deviation above the mean of reporting, symbolic actions are associated with only a 1% decline in reputation ($e^{[-.179+(.022*(5.96+2.08))]}-1*100\%=-1$). Finally, at one standard deviation below the mean of reporting,

³ $(EXP(\beta))-1*100\%$

this decline in reputation is 9% ($e^{[-.179+(.022*(5.96-2.08))]}-1*100\%=-9$). These results show that an enhanced reporting practice can almost offset the negative effect of symbolic actions on the reputation.

The interactive effect of reporting practices and substantive actions becomes negative in the full model, which contradicts H3b. However, because the p-value of this interaction term is not small (p-value=.09), we rely on the confidence interval of the coefficient of this interaction term. As shown, the confidence interval of this interaction term does not exclude zero. Therefore, we conclude that the result of the interaction between substantive actions and reporting practice is not statistically significant, and we cannot confirm H3b.

Since we are interested in the effect of a given firm actions on its consequent reputation in our panel, the preference is given to within-group R^2 rather than overall R^2 to consider the explanative power of our regression models. Therefore, we included within-group R^2 alongside overall R^2 . The within-group R^2 values in models of Table 2 reflect the considerable increase in the explanative power of the full model (model 3) compared to base model (model 1). However, the difference of R^2 between alternative models (model 4 and 5) and the full model is not substantial.

Robustness check

We performed a series of alternative tests to check the robustness of our results. We added Tobin's Q of each firm's year of observation to check the potential effect of current period performance on reputation (model 4), but found no considerable changes in either the signs or significance. Alternatively, we also included another variable of performance by calculating the average ROA of the last two years. Again, no considerable changes were observed (model-5). Moreover, we replaced our reputation measure with overall reputation scores in all models, as overall reputation score has been extensively used in strategy research (Love & Kraatz, 2009;

Philippe & Durand, 2011). Using overall scores as the dependent variable allows us to check our findings in another setting in which the reputation variable has undergone no transformation. The comparison did not show any considerable differences in the signs, p-values, or confidence intervals of our independent variables and interaction terms. Finally, we determined the results when no control variables were included in the model, but no considerable changes were observed.

DISCUSSION AND CONCLUSION

In this study, we investigated the reliable property of symbolic and substantive environmental actions as signals of a firm's environmental commitment and their impact on organizational reputation. We found that a firm's reputation wanes when the firm increases its use of symbolic actions to signal environmental commitment, as this type of action is associated with opportunistic behaviors and ultimately increases the information asymmetry between firms and stakeholders. This finding supports the notion that symbolic actions are counter-productive from the eye of the industry peers. In contrast to the effects of symbolic actions, we found that substantive actions enhance the firm's reputation vis-à-vis its peers. Because the cost of signaling is inversely related to firm capabilities, the higher cost of substantive actions prevents replication by lower-quality firms, which would need to allocate considerable resources to mimic these costly signals. This limitation increases the reliability of substantive actions and contributes to reducing information asymmetry between firms and peers. As those who assess reputation can rely on these signals to evaluate firms, they tend to reward such firms with more favorable judgments.

We also found that a firm can mitigate the negative impact of symbolic actions on its reputation by improving its reporting practices. However, we did not find that reporting practices reinforce the impact of substantive actions on reputation. We expected that an improved signaling process would reinforce the message of a costly signal, thus amplifying the positive effect of

substantive environmental actions on reputation. The non-significant result in our study may point to the specific context of corporate environmentalism whereby substantive actions alone are sufficient to improve a firm's reputation. A plausible explanation for this finding may be drawn from our assumption that the current context of corporate environmentalism favors skepticism on the part of competitors when they evaluate corporate sustainability practices. As a consequence, although competing peers can temper their negative judgments of a firm's symbolic gestures if they detect goodwill in proper reporting practices, they may not recognize the need to give additional credit to reporting practices when the firm already exhibits credible signals of sustainability. In short, the nature of substantive actions implies that the signals should speak for themselves and that improving the quality of reporting may not contribute further to the initial positive evaluation, which tends to remain unchanged independently of reporting quality.

This research makes several contributions to the literature. First, the symbolic management literature has argued that formal responses that are decoupled from routine activities can appease stakeholder expectations (Fiss & Zajac, 2006; Oliver, 1991; Westphal & Zajac, 1998, 2001; Zajac & Westphal, 2004; Zott & Huy, 2007). Thus far, little research has attempted to determine the boundary conditions for these findings. While symbolic actions may be a sufficient response to external pressures when stakeholders have little incentives to monitor the focal firm (Delmas & Montes-Sancho, 2010), we did not know how this type of actions were perceived by stakeholders who have more incentives to cross-check the actual implementation of these actions. In this study, we argued that symbolic actions backfire when industry peers have more incentives to monitor and sanction the misconduct of a peer-firm. As reputation judgment requires competitors to allocate considerably more time and effort to investigate an organization's past and current actions to predict its likely future behavior, they are less inclined to buy into symbolic gestures. Accordingly, our findings indicate that the use of symbolic actions as signals of environmental commitment leads to reputation loss. In sum, we have attempted to answer the question of whether symbolic

actions have "real and measurable impact, and who are the stakeholders whose opinions are to be considered?" (Westphal & Zajac, 1998, p. 128): Our findings point to the affirmative; that is, this type of actions leads to reputation loss among industry peers.

Second, by using reputation as an outcome of environmental actions, we challenge the view that firms must respond similarly to institutional pressures. The environmental literature has often regarded legitimacy as an outcome of firms' environmental actions (Bansal & Clelland, 2004; Deegan, 2002; Patten, 1992), but it is a consequence of organizational isomorphism (Deephouse, 1996; Deephouse & Carter, 2005). By contrast, reputation focuses on differences and comparisons among peer organizations (Bitektine, 2011; Deephouse & Carter, 2005) and is thus a more powerful predictor of firm performance heterogeneity. While legitimacy is appropriate in the study of conforming behaviors, reputation allows us to explore the reasons that some organizations exceed minimum requirements (i.e., over-conform) and are particularly proactive in their environmental commitment. Our findings suggest that firms achieve a stronger reputation when they invest in substantive environmental activities.

Third, we extend the boundaries of the corporate environmental management literature by building on signaling theory as the main theoretical framework for exploring the consequences of corporate environmental actions. The environmental literature has been largely dominated by institutional logics taking the perspective that firms elaborate formal responses to external pressures to achieve legitimacy. However, if legitimacy flows from symbols and reputation from signals (Rao, 1994), then signaling theory is a more appropriate framework for explaining reputational outcomes. As noted by Zhang and Wiersema (2009), a signal is an observable attribute that stakeholders use to make inferences about a difficult-to-verify reality, whereas a symbol does not make assumptions about such a reality.

Our view is that the reality of corporate environmentalism is opaque for external stakeholders (Wijen, 2014) and renders the impact of environmental actions difficult to verify, as evidenced by accounts of misconducts and misleading behaviors by apparently legitimate companies (Delmas & Cuerel Burbano, 2011; Lyon & Maxwell, 2011). For example, British Petroleum was advertised and sometimes mediatized as green company before it was discovered that it neglected some of their security procedures in the Gulf of Mexico oil spill. Similarly, Volkswagen was rated as one of the most reliable companies in Europe before it admitted a massive fraud on emission levels of its vehicles. Therefore, when evaluating a firm's reputation, industry peers (as one of the constituents of stakeholders) tend to look beyond the symbolic façade to reward reliable signals of commitment. Furthermore, signaling theory is particularly appropriate in the study of corporate proactive behaviors because one of its central tenets is signaling costs. Because cost is inversely related to capabilities, the cost of sending a substantive signal is much lower for a higher-quality firm than for its lower-quality competitors. As a result, to prevent replication, high-quality firms send industry peers the signals that are costly and thus difficult to imitate. Costly signals create a separating equilibrium that distinguishes high-quality from low-quality firms (Akerlof & Kranton, 2005). In our study, costly signals are represented by substantive actions, which lead to reputational gain, whereas non-costly symbolic actions produce the opposite effect. The notion of quality of the signaling process has also been used to test the moderating effect of reporting practices on the environmental actions-reputation relationship. We found that the negative effect of symbolic actions can be mitigated by improved transparency through better reporting practices.

However, although reporting practices attenuate the negative effect of symbolic environmental actions on reputation, they do not reinforce the positive impact of substantive actions. This particular finding should draw the attention of both practitioners and policy-makers. Managers should be cautious in their reliance on reporting capabilities. Our results suggest that

managers can restore the reputational loss associated with symbolic environmental actions by improving their firm's reporting capabilities; however, as soon as they engage in more substantive responses to the prescriptions of those conferring reputation, the simple communication of these responses should be sufficient for reputational gain. Moreover, managers should realize that only genuinely green credentials are effective in building reputation. Policy-makers should also be somehow satisfied with this finding because firms can only temper the negative effect of symbolic actions and are still required to go beyond symbolic compliance to gain reputation. In that sense, policy makers may encourage firms to engage in substantive practices rather than relying on reporting as a mere compliance strategy.

Moreover, the method that we used to separate symbolic from substantive actions does more than simply distinguishing between words and actions. Symbolic actions have often been characterized as rhetorical and operationalized as announcements or intentions to perform a future action (Aldrich & Fiol, 1994; Westphal & Zajac, 1998; Zott & Huy, 2007). Our assumption is that symbolic actions may not only be rhetorical but also involve some degree of implementation (Bromley & Powell, 2012). For instance, adopting an environmental management system requires a company to articulate a program and document its respective management procedures, and such an action thus goes beyond the simple announcement of such a step. As such, symbolic actions do not necessarily involve decoupling intentions or deception. However, despite the potential for using such a program, we considered the link between the adoption of an environmental management system and its performance outcome to be sufficiently opaque to warrant skepticism about the substantive nature of this type of action. It is the potential skepticism that could be the source of negative reputational outcomes. Overall, our study supports the notion that performance outcome is a viable alternative reference point for the degree of implementation in distinguishing symbolic from substantive actions, and encourage both practitioners and policy-makers to focus on this notion to delineate appropriate behaviors.

Limitations and Future Research

Although our study offers numerous contributions, it is not exempt from limitations. The first is related to the use of *Fortune's* most admired companies as a proxy for organizational reputation. Although the ranking has been widely used in management research, we acknowledge that alternative measures of reputation exist. A potential bias of *Fortune's* ranking lies in the higher visibility (Chiu & Sharfman, 2009) and larger size of the firms, as the magazine's objective is to identify the most admired firms in a particular industry. A second limitation is our focus on organizations' overall *non-financial reputation* rather than a more specific and objective dimension that relates to the environment. Our lack of evidence that the tested relationships apply equally to environmental reputation suggests an interesting avenue for follow-up research on more specific dimensions of organizational reputation. Third, future research can make further contributions by including tangible measures of performance as dependent variables. One specific recommendation would be to study how intangible assets mediate the impact of environmental actions on firm performance. Finally, we acknowledge the endogeneity is a challenging bias in CSR and corporate environmentalism research. Despite all the considerations in the design of our study, we cannot rule out completely the potential existence of bias in our results. To amend this issue, we followed recent studies and discussions and avoided causal claims (Bettis, Gambardella, Helfat, & Mitchell, 2014; Hawn & Ioannou, 2016). Future studies need to apply experimental designs (experiment or natural experiment) to control more effectively for endogeneity.

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TABLE 1

Descriptive statistics and correlations

	Variables	Mean	Std. Deviation	N	1	2	3	4	5	6	7	8	9	10
1	Symbolic	6.31	1.66	1704	1									
2	Substantive	5.42	1.49	1704	.72**	1								
3	Reporting	5.96	2.08	1701	.72**	.68**	1							
4	Visibility	3.54	2.52	2343	.09**	.14**	.09**	1						
5	Performance (Tobin's Q)	.90	.34	2341	-.02	.08**	.00	-.03	1					
6	Age	3.92	.79	1703	.21**	.18**	.19**	.04	-.03	1				
7	Total Assets	10.86	1.29	2341	.02	-.04	.03	.38**	-.23**	.03	1			
8	Overall Reputation	6.09	.97	1633	-.01	.12**	.05*	.22**	.16**	.04	.08**	1		
9	Mean of ROA (t-1 & t-2)	5.98	4.49	1917	.02	.12**	.03	.08**	.30**	-.09**	-.05*	.28**	1	
10	Non-financial Reputation	-3.51E-10	.90	1633	-.02	.06**	.04	.18**	-.04	.05*	.20**	.92**	.08**	1

* P < .05 (2-tailed)

** P < .01 (2-tailed)

TABLE 2

Fixed-effect regression models of environmental action effects on reputation

	1	2	3	4	5	6	7	8
	Non-Financial Reputation					Overall Reputation		
Symbolic		-.05	-.17	-.18	-.17	-.17	-.17	-.16
		(.01)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
		.02	.05	.05	.05	.05	.05	.05
Substantive		.04	.13	.13	.13	.14	.15	.14
		(.03)	(.01)	(.01)	(.01)	(.00)	(.00)	(.01)
		.02	.05	.05	.05	.05	.05	.05
Reporting		.01	-.05	-.05	-.05	-.05	-.05	-.05
		(.52)	(.13)	(.12)	(.13)	(.13)	(.13)	(.13)
		.01	.03	.03	.03	.03	.03	.03
Symbolic*Reporting			.02	.02	.02	.02	.02	.02
			(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
			.00	.00	.00	.00	.00	.00
Substantive*Reporting			-.01	-.01	-.01	-.01	-.01	-.01
			(.09)	(.08)	(.09)	(.07)	(.06)	(.08)
			.00	.00	.00	.00	.00	.00
Performance (Tobin's Q)				-.03			-.03	
				(.46)			(.47)	
				.04			.04	

Performance (2-year average ROA)					.00 (.28)			.01 (.03)
					.00			.00
Prior Reputation	-.03 (.26)	-.01 (.61)	-.01 (.61)	-.01 (.62)	-.00 (.80)	-.02 (.47)	-.02 (.46)	-.00 (.90)
	.03	.03	.03	.03	.03	.03	.03	.03
Visibility (ln)	.01 (.59)	.01 (.67)	.01 (.63)	.01 (.62)	.01 (.67)	.01 (.68)	.01 (.66)	.01 (.75)
	.03	.03	.03	.03	.03	.03	.03	.03
Total Assets (ln)	.30 (.01)	.29 (.01)	.29 (.01)	.27 (.02)	.29 (.01)	.18 (.11)	.16 (.17)	.17 (.12)
	.11	.11	.11	.12	.11	.11	.11	.11
Age (ln)	.17 (.72)	.46 (.35)	.45 (.36)	.47 (.33)	.46 (.34)	.25 (.61)	.27 (.58)	.27 (.57)
	.48	.49	.49	.50	.49	.49	.49	.49
Constant	.30 (.52)	.36 (.48)	.43 (.41)	.42 (.41)	.39 (.46)	.55 (.28)	.54 (.28)	.49 (.36)
	.48	.52	.52	.52	.53	.51	.51	.55
With-in group R ²	0.0193	0.0276	0.0354	0.0360	0.0369	0.1097	0.1104	0.1103
Wald χ^2	1.91**	2.96**	3.84**	0.53	1.14	3.34***	0.50	4.51**
Overall R2	0.0037	0.0032	0.0032	0.0032	0.0032	0.0133	.0132	.0132

Since we interpret effect sizes, we present p-values (in parentheses) and standard errors below each coefficient. N=213. Year Dummy included in all

models.

FIGURE 1

Effect sizes of the main independent variables and interaction terms

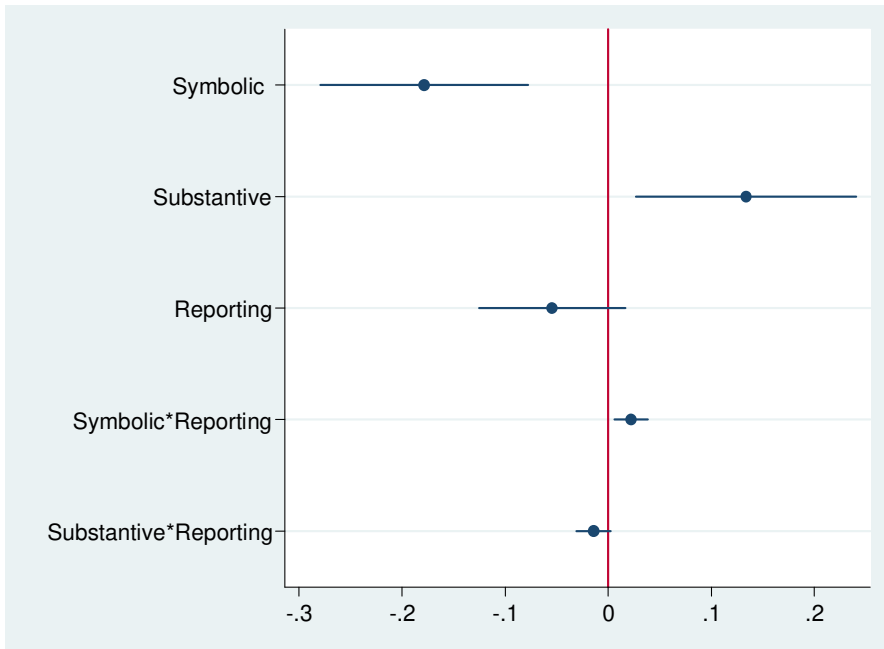
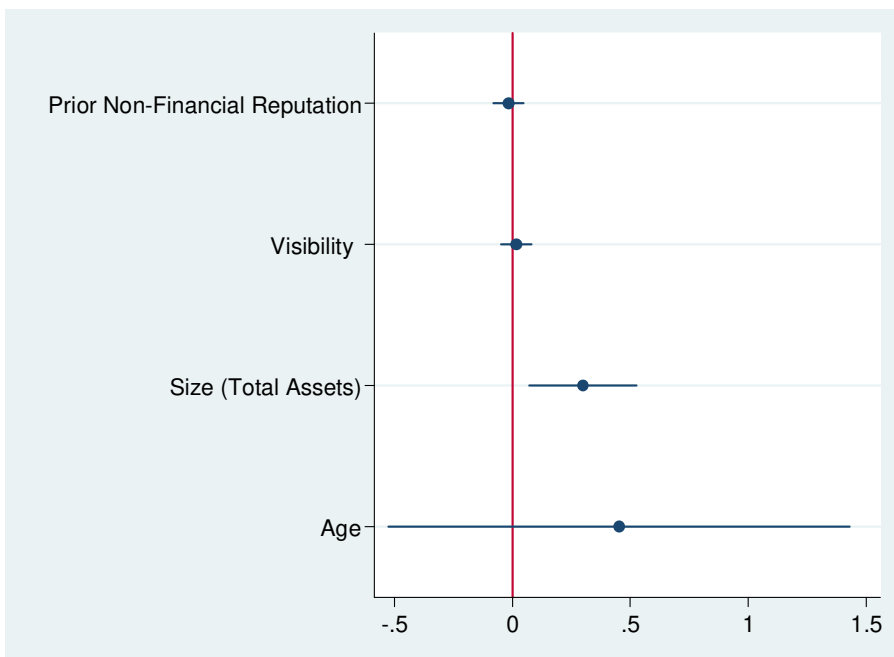


FIGURE 2

Effect sizes of the control variables (except year dummies)



APPENDIX

Symbolic actions ($\alpha=.74$)

Environmental strategy: The quality of the company's policies in terms of integrating environmental considerations into its strategies, along with its compliance with regulations and past environmental controversies.

Corporate governance: The governance structure regarding environmental issues and the extent to which these issues are considered by the board of directors.

Environmental management system: Establishment and monitoring of environmental targets, the presence of environmental training, and stakeholder engagement.

Substantive actions ($\alpha=.70$)

Sustainability risk indicators: Carbon emissions, product carbon footprint, mitigation of climate change risk, and energy efficiency, provided as absolute and normalized emissions output.

Certification: Certification by ISO or other industry- and country-specific third-party auditors.

Audit: External independent audits of environmental performance.

Products/materials: End-of-life product management, controversies related to the environmental impact of products and services.

Performance: Percentage of revenue represented by products and services identified as beneficial.

Moderating variable

Reporting quality: Frequency of reports, formats of reports, content of reports.

APPENDIX 1: Distribution of the sample across the 21 industries

	Industry	n
1	Aerospace & Defense	12
2	Air Freight & Logistics	2
3	Transport	6
4	Car manufacturing sector	16
5	Banking and investment	11
6	Food industry	16
7	Chemicals and biotechnology	1
8	Health (pharmaceutical, healthcare and medical devices)	15
9	Motion Picture and Broadcasting	6
10	Chemicals	6
11	Computer Industries	11
12	Telecommunications	15
13	Construction Industries	13
14	Energy	15
15	Electrical and Electronic Equipment and products	14
16	Household & Personal Products	9
17	Industrial Conglomerates	3
18	Multi-Utilities & Unregulated Power	5
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