

CSR Goal Disclosures and Regulatory Mandates: The Role of Investors' Perceptions of Greenwashing

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ABSTRACT

As stakeholder demand for CSR information continues to grow, regulators are considering ways to improve the consistency, comparability, and reliability of corporate CSR disclosures. Utilizing an experiment, we examine how disclosure of CSR goals influences investors' responses to subsequent CSR performance disclosures under different regulatory regimes. We find evidence that the type of CSR goal disclosure causes investors to react differently to identical CSR performance information, and that this effect is moderated by the regulatory reporting regime. Although high quantitative CSR goals are frequently encouraged to incent higher CSR performance, we find that investors' perceptions of greenwashing are higher, and in turn, their investment willingness is lower after viewing identical CSR performance information for a company that initially issues a relatively high quantitative goal compared to a relatively low quantitative goal or qualitative goal. We also find that the observed effects of quantitative CSR goals are magnified by mandatory (compared to voluntary) regulatory reporting regimes. Our findings have important implications for investors, managers, as well as to regulators who are currently considering changes to CSR disclosure requirements.

Keywords: Investor Judgment; Greenwashing; Attribution; CSR Disclosure Regulation; Goals

I. INTRODUCTION

The Corporate Social Responsibility (CSR) reporting environment lacks consistency in the type and form of CSR information that companies disclose (Morgan Stanley 2017). Over the past decade, investors have increasingly demanded more consistent, reliable, and transparent information about companies' risks, opportunities, and impacts arising from climate change, environmental, and social issues (SEC 2021). In response, regulators, with broad support from constituents, are considering ways to improve the consistency, comparability, and reliability of disclosed CSR information (e.g., SEC 2021; KPMG 2021; Deloitte & Touche 2021; Apple 2021; Tyson Foods 2021). This call for change is motivated, in part, by a widespread perception that lax CSR disclosure regulations enable "greenwashing", whereby companies attempt to manage stakeholder perceptions by portraying a green image while lacking meaningful commitment to CSR issues or failing to disclose subsequent CSR performance information (Katz 2008; Wong, Lia, Shang and Lu 2014; Seele and Gatti 2017). This practice places investors in the difficult position of trying to discern substantive CSR initiatives from superficial ones (Delmas and Burbano 2011). Currently, regulators recommend, but do not require, CSR goal disclosures, giving managers substantial discretion over whether and how to disclose CSR goals to investors (IFC 2012; IMP 2020; EPA 2021; SEC 2021). In this paper, we examine how different types of CSR goals influence investors' responses to identical CSR performance disclosures under different CSR regulatory frameworks.

We predict that companies will benefit more from initially disclosing a relatively lower quantitative CSR goal that they outperform compared to disclosing a relatively higher quantitative CSR goal that they underperform, holding CSR performance constant. Psychology theory suggests that effort spent on a task increases perceptions of an actor's intrinsic motives for

engaging in the activity (Weiner 1979, 1985). After disclosing CSR performance, the effort management put into the CSR initiative is evaluated by investors relative to the firm's stated goal. If the company beats its CSR goal, investors' perceptions of effort and intent may be positive, decreasing perceptions of greenwashing and increasing investment willingness, suggesting that companies will be rewarded for setting relatively low CSR goals. Conversely, missing a CSR goal could decrease perceived effort and signal weaker intent, increasing investors' perceptions of greenwashing and decreasing investment willingness. Even though identical CSR performance disclosures should ultimately result in similar investor reactions, we expect that initial corporate disclosures of lower quantitative CSR goals that are outperformed will decrease perceptions of greenwashing and increase investment willingness compared to higher quantitative CSR goal disclosures that are underperformed.

In contrast to quantitative goals, many companies disclose qualitative CSR goals by indicating an intention to engage in CSR activities without an explicit quantitative benchmark. We examine how investors' judgments for qualitative goals compare to quantitative goals and predict that qualitative CSR goal disclosures will result in benefits similar to those of disclosing relatively lower quantitative CSR goals, holding CSR performance constant. Compared to quantitative goals that lead investors to focus on explicit quantitative benchmarks, theory indicates that qualitative CSR goals will cause investors to consider a wider range of progress toward the goal as reasonable (Locke and Latham 2002; 1990). In this case, any reasonable positive progress on the CSR initiative signals positive effort and intent, decreasing investors' perceptions of greenwashing and increasing investment willingness. Thus, we expect that when investors view identical CSR performance information, qualitative CSR goal disclosures will cause investors' perceptions of greenwashing to be lower and investment willingness to be

higher than those where the firm misses a high quantitative goal, similar to those of a lower quantitative CSR goal.

As governing bodies continue to consider approaches to regulate corporate CSR disclosures (SEC 2021), we also examine whether a potential change in the regulatory environment (i.e., moving from a voluntary to a mandatory regime) impedes companies' ability to engage in corporate greenwashing by holding them more accountable for their CSR performance. Attribution theory indicates that investors are more likely to attribute a voluntary disclosure to management's decision, but a mandatory disclosure to the external reporting environment (Gilbert 1998; Jones and Davis 1965; Bhattachary and Ritter 1983; Koonce and Mercer 2005). This suggests that when a company misses a higher quantitative CSR goal in a voluntary reporting environment, investors are more likely to attribute the relatively negative information to management acting in a forthcoming manner, potentially mitigating negative judgments compared to when the disclosures are mandated. In contrast, when a company beats a lower quantitative CSR goal in a mandatory reporting environment, investors are more likely to attribute the relatively positive information to the reporting standard, potentially increasing positive judgments compared to when the disclosures are voluntary (Reimsbach and Hahn 2015). Thus, we predict that a mandatory reporting regime, compared to a voluntary one, will work to magnify the positive effects of beating lower quantitative CSR goals and exacerbate the negative effects of missing higher quantitative CSR goals.

To test our predictions, we conduct an experiment in which we manipulate the regulatory reporting requirement for CSR performance between-participants as either voluntary or mandatory and CSR goal type as a relatively high or relatively low quantitative goal, a qualitative goal, or no CSR goal. We provide participants with information about the CSR

regulatory reporting requirement and summary financial information, followed by a company press release where we manipulate the company's CSR goal type. After receiving the CSR press release, we capture participants' initial perceptions of greenwashing and investment willingness. Next, after assuming a year has passed, participants are presented with the company's CSR performance announcement that reports identical CSR performance in all conditions. Participants indicate investment willingness and perceived greenwashing a second time, and the experiment concludes with questions designed to capture manipulation checks, process measures, and demographic information.

Results of our experiment support predictions, showing that participants' investment willingness is higher when the company beats a lower quantitative CSR goal compared to when the company misses a higher quantitative CSR goal, given identical CSR performance results. We also find that, in response to the same CSR performance, investors' investment willingness is higher when the company issues a qualitative CSR goal compared to when the company misses a high quantitative CSR goal. In contrast, investors' willingness to invest is similar whether the company issues a qualitative goal or beats a low quantitative goal. Importantly, our results also indicate that differences in investment willingness across CSR goal type conditions are mediated by their perceptions of greenwashing. Specifically, investors perceive more greenwashing which results in less willingness to invest when participants miss a high quantitative CSR goal.

In addition, we find support for our prediction that a mandatory, compared to a voluntary, regulatory reporting requirement for CSR performance amplifies the positive effects of the company beating a low quantitative CSR goal and the negative effects of the company missing a high quantitative CSR goal. Again, and consistent with attribution theory, we find that these effects are mediated by changes in investors' perceptions of greenwashing.

Since companies often announce CSR performance results without disclosing a goal, we also include a condition in which participants do not view a CSR goal and only observe the CSR performance results in order to speak to this institutional setting and to serve as a baseline comparison. The pattern of results suggests that not providing a CSR goal can be detrimental to companies when compared to providing a qualitative goal or beating a low quantitative goal. Interestingly, we find no evidence that not providing a CSR goal is more beneficial than missing a high quantitative goal.

This study contributes to the CSR literature, directly from a reporting perspective, and indirectly from a strategic perspective when considering simultaneous firm objectives to maximize socially responsible activities as well as investors' beliefs about the firm's investment attractiveness. Considering that a key objective for companies, regulators, and society more broadly, is to facilitate an overall increase in CSR activity, ambitious goals that stretch and incentivize management would seem to be an important antecedent (Locke and Latham 1990, 2002, 2013). Yet, our results suggest that investors may ultimately reduce investment willingness in firms that set high quantitative goals and increase investment willingness in firms that set low quantitative or qualitative goals, independent of the actual level of CSR activity. Importantly, the mechanism for this difference in investment willingness is investors' perceptions of greenwashing. Our findings highlight a key tension for managers deciding whether and how to communicate CSR goals to investors while also being mindful of the overall benefits of increased CSR output. That is, with regard to investment willingness, managers may be better off to disclose more achievable, less ambitious goals than goals that are a stretch, or relatively more ambitious. Further, this potentially counterproductive incentive to disclose low CSR goals appears to be exacerbated by mandatory reporting, such that missing (making) a goal under a

mandatory reporting environment further reduces (increases) investment willingness. Overall, these results suggest that investor reactions to CSR goals may have the potential, across multiple firms and periods, to have a downward effect on CSR activity at large.

Our findings should be helpful to firms, regulators and researchers tasked with improving the conduct and transparency of CSR activity and disclosures. Firms need to consider the complex effect of CSR goals with regard to incentivizing behavior along with the greenwashing perceptions of investors. Given that investors' greenwashing perceptions drive their willingness to invest, future research should consider how these perceptions can be moderated while developing goal reporting strategies. Finally, regulators, attempting to reduce actual greenwashing and improve the information environment, need to understand how CSR disclosure mandates may alter investors' perceptions of greenwashing and should be considered holistically with other aspects of the CSR landscape to avoid unintentional restraints to CSR activity.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

CSR Disclosure Practices

Investments focused on corporate social responsibility are substantial with approximately \$17 trillion invested sustainably in the U.S. alone (USSIF 2020). Prior research suggests numerous capital market benefits for companies that choose to disclose CSR information. For example, CSR reporters tend to have better financial reporting credibility (Chakravarthy, de Hann, and Rajgopal 2014; Cui, Jo, and Na 2016; Kim, Park, and Wier 2012), lower cost of capital, and stronger ability to attract institutional investors and analyst coverage (Dhaliwal, Oliver, Tsang, and Yong 2011; Plumlee, Brown, Hayes, and Marshall 2015). Given the economic significance and corporate benefits, CSR reporting has become a standard practice for

public companies, with 96% of the world's largest companies issuing CSR reports on a regular basis (KPMG 2017, 2020).

Although CSR disclosures are common, the current CSR reporting environment enables a lack of consistency in the type and form of CSR information provided by companies (Morgan Stanley 2017). Further exacerbating the lack of consistency in CSR reporting practices, only 29% of S&P 500 companies obtained third-party assurance of their sustainability data in 2019 (CAQ 2021). Given all of the variability in the CSR reporting environment, investor demand for reliable and quantifiable CSR metrics that provide key sustainability information has grown rapidly in recent years (Morgan Stanley 2019; USSIF 2020).

In response, regulatory organizations have begun to consider ways to standardize, and even mandate, CSR disclosures. Currently, regulators do not mandate, but they do encourage, disclosure of CSR *goals* as a way for companies to provide transparency and a benchmark for evaluating sustainability *performance* (IFC 2012, IMP 2020). Other groups, such as the United States EPA, advocate for corporate disclosure of aggressive and quantifiable CSR goals (e.g., GHG emissions) (EPA 2021). A group of the world's top corporate sustainability reporting organizations (e.g., SASB, CDSB, World Economic Forum, Deloitte) recently proposed a climate-related standard that would require the disclosure of quantifiable CSR goal and performance metrics (IMP 2020). Corporate disclosure of both CSR goal *and* performance metrics can provide benefits to society and investors by allowing shareholders to hold companies accountable for the impact that companies have on society.¹ Despite these calls for CSR goal disclosures from investors and regulators, only 40% (67%) of S&P 500 companies' CSR reports

¹ Schaltegger and Burritt (2010) argue that "sustainability accounting" can be used to both provide information to stakeholders (similar to financial accounting) and to assist management with internal decision-making (similar to cost or managerial accounting). Relatedly, CSR goals may be used internally to improve sustainability performance and reported externally as a signal to stakeholders.

include time-bound social (environmental) goals, even though 86% (95%) of these companies disclose social (environmental) performance measures (IRRCI 2018).

Greenwashing

The current CSR disclosure landscape provides companies the potential to use CSR disclosures opportunistically, creating widespread concern among investors that they may be used to signal a potentially false “green image” (i.e., greenwashing) (Katz 2008; Wong, Lia, Shang and Lu 2014; Seele and Gatti 2017). By disclosing planned CSR initiatives or goals, companies could potentially build a positive image with little regulatory consequence if they later fail to pursue the activities and/or fail to disclose the associated CSR performance.

The term “greenwashing” was first coined in 1986 as criticism of the hotel industry’s practice of portraying a green image by promoting the reuse of towels while neglecting larger environmental issues in other aspects of its business (Pearson 2010). Prior greenwashing research across numerous fields has led to fragmented definitions and various potential measures of the phenomenon (Seele and Gatti 2017; Carlson, Grove and Kangun 1993; Schaltegger and Burrit 2010). However, these definitions converge around the idea that corporate greenwashing occurs when “an organization intentionally communicates false or misleading green claims” (Seele and Gatti 2017, p 245).²

Prior research finds evidence consistent with the practice of corporate greenwashing, which has been shown to harm corporate legitimacy, firm reputations, and firm value (Walker and Wan 2012; Du 2015). One common form of greenwashing documented in prior research is a pattern where public companies announce GHG reduction goals, and then engage in practices

² Since accounting is fundamentally concerned with reducing this information asymmetry, we draw on prior research to develop a measure of perceived greenwashing for environmental, social, and governance factors within this context.

that cause GHG emissions to increase (CDP 2015). Prior research also suggests that poor environmental performers tend to use more optimistic and uncertain tones in their environmental disclosures (Cho, Roberts, and Patten 2010). The practice of corporate greenwashing has become so widespread that even hedge funds have developed trading strategies to detect and short companies suspected of engaging in the practice (Reuters 2019). Regulators and legal experts argue that corporations and their directors could be liable for greenwashing when disclosing green goals without credible plans to achieve them and/or by selectively disclosing CSR performance metrics (FTC 2013; FCA 2018; Roddan 2021).

As the practice of corporate greenwashing grows investors are placed in the position to distinguish between substantive and inconsequential CSR initiatives (Delmas and Burbano 2011). Pervasive perceptions of corporate greenwashing among investors may initially temper their reactions to disclosures of CSR initiatives until companies later demonstrate effort and positive performance on the initiative (Parguel, Benoit-Moreau, and Larceneux 2011).³

CSR Goal Types

Corporate CSR goal disclosures can take various different forms, and there is considerable variation in the types of CSR goals that companies disclose. While some CSR goal disclosures include specific *quantitative* goal metrics (e.g., 5,000 volunteer hours), others include more ambiguous *qualitative* goals in the form of general directional statements (e.g., reduce GHG emissions), and a single company may issue multiple goals in different forms. For example, Wells Fargo's 2018 CSR report includes a list of CSR goals to be completed by 2020 that include quantitative goals like reducing energy consumption by 40% as well as qualitative goals like enhancing human rights risk management. Additionally, they provide performance

³ While our study focuses on investor reactions to CSR goal disclosures after the associated performance is disclosed, we analyze reactions to the initial goal disclosure in supplemental analyses.

disclosures for some of the reported CSR goals as well as performance disclosures for CSR issues in which they did not disclose a goal (Wells Fargo 2018).

The issuance of a CSR goal disclosure sets an explicit expectation that the company will engage in actions to achieve its stated objective, and investors frequently use company goal disclosures as benchmarks when evaluating performance (e.g., Krische 2005). Achieving a high level of CSR performance is generally under management's control because it simply requires putting in a sufficient amount of effort. For example, the majority of public companies disclose CSR goals to mitigate the harmful environmental effects of greenhouse gas emissions, and they can achieve this goal by using alternative energy sources, purchasing carbon offsets, or simply planting trees (KPMG 2020).⁴

Quantitative CSR Goals

Prior research shows that goals can most effectively increase performance when they are both specific and challenging (Locke and Latham 1990; 2006). Specific quantitative CSR goals provide an unambiguous benchmark that investors can easily compare to CSR results when evaluating performance. While more aggressive and challenging quantitative goals can provide performance benefits, companies are more likely to underperform a more challenging high quantitative goal compared to a less challenging low quantitative goal, which could affect investors' perceptions of CSR performance. This suggests that the exact same CSR performance results may be viewed differently depending on whether the initial goal was relatively lower or relatively higher.

Attribution theory indicates that the amount of effort expended on a task increases perceptions of intrinsic motives because effort requires willingness (Weiner 1979). At the time a

⁴ In contrast, meeting *financial* goals or expectations often entails more risk and requires more complex and creative solutions to issues that are often outside of managements' control.

CSR goal is issued, lower goals may signal less *intended* effort, potentially increasing perceived greenwashing compared to when a relatively high goal is issued. However, once CSR performance is disclosed, investors can observe the *actual* level of effort management devoted to the CSR activity relative to its goal. Outperforming a CSR goal signals more effort and stronger intent, potentially decreasing perceived greenwashing and increasing investment willingness, while underperforming a CSR goal signals less effort and weaker intent, potentially increasing perceptions of greenwashing and decreasing investment willingness. For example, both Nestle and P&G made goals for “zero-deforestation” by 2020. Although both companies made great strides towards zero-deforestation (nearly 90%), an announcement that they would underperform their quantitative goal resulted in negative backlash from the media and various advocacy groups, resulting in accusations of greenwashing (Reuters 2019; The Business Times 2019).

In the presence of a higher goal to plant 100,000 trees, the announcement of 80,000 planted trees may be viewed negatively. However, with a lower explicit goal to plant 60,000 trees, the announcement of the same 80,000 planted trees may be viewed positively. Thus, when identical CSR performance is announced, we expect a lower CSR goal to result in lower perceptions of greenwashing and higher investment willingness compared to a higher CSR goal. Although higher quantitative CSR goals are more likely to benefit investors by improving performance, this suggests that investors will reward companies more for issuing a relatively lower quantitative CSR goal than a relatively higher CSR goal, holding performance constant.

We formally state our predictions as hypotheses 1a and 1b below.

H1a: Given identical performance outcomes, investment willingness will be higher when a lower quantitative CSR goal is disclosed compared to when a higher quantitative CSR goal is disclosed.

H1b: The effect of a higher versus a lower quantitative CSR goal on investment willingness will be mediated by investors' perceptions of greenwashing.

Qualitative CSR Goals

In contrast to quantitative goals, many companies provide qualitative CSR goal disclosures in which they indicate their intent to engage in CSR activities without explicitly providing a quantitative benchmark. Qualitative goals create a focus on directional progress of the CSR initiative, where any reasonably positive performance is generally consistent with the goal rather than being evaluated relative to a specific benchmark (Locke and Latham 2002; 1990). Since any CSR activity that a company engages in will have a positive impact on society, a qualitative goal will shift investors' focus and cause a wider range of progress towards the goal to be considered as reasonable. Positive performance toward the goal signals positive effort and intent, potentially decreasing perceived greenwashing and increasing investment willingness. Thus, we expect investors' responses to identical CSR performance disclosures after a qualitative goal to be more positive than their responses after a higher quantitative goal, similar to a lower quantitative goal.

H2a: Given identical performance outcomes, investment willingness will be higher when a qualitative CSR goal is disclosed compared to when a higher quantitative CSR goal is disclosed.

H2b: The effect of a qualitative versus higher quantitative CSR goal on investment willingness will be mediated by investors' perceptions of greenwashing.

Regulation of CSR disclosures

In the midst of ongoing discussions to regulate CSR reporting in the United States, it is important to understand the potential consequences of a reporting mandate on investor behavior.⁵ Currently, many non-U.S. jurisdictions (e.g., Sweden, Norway, France, and Australia) have some form of a mandatory CSR disclosure requirement. The European Parliament also recently

⁵ Christensen et. al (2019) note that there is a limited amount of research on mandated CSR reporting, most of which generally focuses on CSR activities rather than CSR reporting and is often tainted by important selection issues.

implemented a directive which requires companies in all member-states of the EU to disclose certain CSR performance metrics (EU 2019/2088). While CSR disclosures are currently voluntary in the U.S., it is expected that U.S. companies will be required to disclose certain CSR information in the near future (Rohmer 2007, Mace 2019, SEC 2020, Marsh 2021). Although a large body of research has analyzed *why* firms voluntarily disclose information and the impact of voluntary versus mandatory disclosures on markets (e.g., Chen, Hung, and Wang 2018), little research has analyzed *how* investors perceive voluntary versus mandatory disclosures of the same underlying information.

Many investors and regulators believe that a CSR reporting mandate could be an effective approach to protect shareholders by mitigating corporate greenwashing (T. Rowe Price 2021). Consistent with this notion, research shows that socially *irresponsible* companies use voluntary CSR disclosures to influence public perceptions by marketing socially responsible programs, then disclosing trivial and vague performance metrics (Deegan 2002; O'Donovan 2002). When the disclosure of more precise and comparable CSR performance metrics are mandatory, companies can be held responsible for their CSR performance, potentially mitigating the ability of companies to engage in corporate greenwashing.

However, a requirement to disclose CSR performance information could also change investors' attributions about the CSR information. Correspondent inference theory in psychology (a subset of attribution theory) suggests that voluntary, relative to mandatory, actions are more attributable to the individual than to the external situation and can provide additional information beyond what is included in the disclosure (Gilbert 1998; Jones and Davis 1965; Bhattachary and Ritter 1983; Koonce and Mercer 2005). As such, managements' voluntary decision to disclose CSR performance information is more likely to be attributed to management (i.e., the

individuals), while a mandatory requirement to disclose CSR performance information is more likely to be attributed to the reporting requirement (i.e., the external situation). This suggests that investors will view negative information more favorably when its disclosure is voluntary than when it is mandatory, and positive information more favorably when its disclosure is mandatory than when it is voluntary (e.g., Reimsbach and Hahn 2015). Thus, investors' unfavorable responses to negative information and favorable responses to positive information are magnified by a mandatory (compared to voluntary) reporting requirement.

Our theory indicates that a voluntary reporting regime will cause investors to attribute the decision to disclose negative CSR information to management acting in a forthcoming manner, implying intrinsic motives to management, while a mandatory reporting regime will cause investors to attribute the otherwise same negative disclosure to the reporting requirement, implying extrinsic motivations to management. As such, the decision to voluntarily report the underperformance of a CSR goal is expected to decrease perceived greenwashing and increase investment willingness compared to when the same disclosure is mandated. In contrast, when a company outperforms CSR goals, a voluntary reporting regime highlights managements' extrinsic motives for disclosing the positive CSR information, potentially increasing perceptions of greenwashing and decreasing investment willingness compared to when reporting the same positive information is mandated. When CSR performance disclosures lack a quantitative benchmark (i.e., qualitative CSR goals), investment willingness is less likely to be affected by the reporting environment because explicit performance benchmarks are unavailable.

Taken together, when companies underperform quantitative CSR goals (i.e., negative CSR information), mandatory reporting of the performance information is expected to decrease investment willingness more than voluntary reporting due to an increase in perceived

greenwashing. When companies outperform quantitative CSR goals (i.e., positive CSR information), mandatory reporting of the performance information is expected to increase investment willingness more than voluntary reporting due to a decrease in perceived greenwashing. Thus, compared to voluntary reporting, mandatory reporting is expected to magnify the positive effects of outperforming CSR goals and exacerbate the negative effects of underperforming CSR goals.

H3a: Investment willingness in firms that outperform lower CSR goals will increase more when disclosure is mandated compared to voluntary, and investment willingness in firms that underperform higher CSR goals will decrease more when disclosure is mandated compared to voluntary.

H3b: The joint effects of quantitative CSR goal type and CSR reporting requirement on changes in investment willingness will be mediated by changes in perceived greenwashing.

III. RESEARCH METHOD

Experimental Design

We employ a 2×4 between-participants experiment in which we manipulate *CSR Reporting Requirement* as voluntary or mandatory and *CSR Goal Type* as low quantitative goal, high quantitative goal, qualitative goal, or no goal. Our main dependent variable is participants' willingness to invest in the company (e.g., Elliott, Rennekamp, and White 2015), and we capture participants' perceptions of greenwashing as the predicted mediator.

Participants

We recruited 322 participants through Amazon Mechanical Turk (AMT) and administer our study using Qualtrics software.⁶ On average, participants are 39.2 years old, 35% are female (65% male), and 70.2% have obtained a bachelor's degree or higher.⁷ Similar to the demographic

⁶ IRB consent was obtained at the institution where the study took place.

⁷ We pay participants \$2.50 to complete the task which took an average of 16.9 minutes. In order to participate, we require that participants are located in the United States, have completed over 100 approved HITs with a 95% or higher approval rating, and speak English as their first language. Additionally, we use TurkPrime (Cloud Research)

information reported in prior accounting research that uses MTurk participants as proxies for nonprofessional investors (e.g., Rennekamp 2012; Asay and Hales 2018; Bucaro, Jackson, and Lill 2019), participants have an average of 17.08 years of full-time work experience, 9.03 years of investment experience, and they have completed 1.88 accounting courses, 1.75 finance courses, and 1.85 economics courses. Finally, 89.8% of our participants have previously invested in individual company stock and 92.2% plan to do so within the next five years.

Procedure

Participants begin the study by reading background information about the fictitious company, MicroTech Corporation, which operates in the software, services, and supplies industry. The information indicates that MicroTech is an established firm with a healthy market share that provides computing services and equipment for commercial enterprises. Participants are then provided with information about the current CSR reporting environment in which we manipulate the regulatory reporting requirement for CSR performance. Following the CSR reporting requirement manipulation, participants answer attention check questions and view summary financial information from MicroTech's financial statements. Next, participants are provided with a corporate press release in which MicroTech announces a 1 year goal to offset greenhouse gas emissions by planting trees. Our CSR goal type manipulation for participants in the qualitative and quantitative goal conditions take place within this press release, and participants in the "no goal" condition are not provided with a press release. After viewing the CSR goal press release, participants indicate their investment willingness and perceptions of greenwashing, then they are told to assume a year has passed before viewing MicroTech's CSR performance announcement.

screening features to block duplicate IP addresses, block suspicious geocode locations, verify worker country location, and limit the sample to individuals who personally invest in the stock market.

The information provided in the CSR performance announcement is the same across our manipulations, indicating that MicroTech planted 50,000 trees in all conditions. Thus, we hold CSR performance constant, and the preceding manipulated goal announcement dictates how the firm's CSR performance is viewed *relative* to the goal.⁸ Following the CSR performance announcement, participants answer the same investment willingness and greenwashing questions that they previously answered a second time before proceeding to the PEQ where we capture manipulation checks, process measures, and demographic information.⁹

Independent Variables

CSR Reporting Requirement

We manipulate the regulatory requirement for CSR performance reporting by telling participants that the requirement for disclosing CSR performance is either voluntary or mandatory. Specifically, participants in the voluntary reporting condition are told that the current regulations allow company management to choose whether or not they disclose the performance of any CSR activities that they chooses to engages in. In contrast, participants in the mandatory reporting condition are told that the current regulations require company management to disclose the performance of any CSR activities that they choose to engage in.

CSR Goal Type

We manipulate CSR goal type at four levels using a company press release that announces a 1 year CSR goal to help offset greenhouse gas emissions by planting trees.

⁸ While market reactions to CSR disclosures have been explored using archival data, one key challenge has been disentangling the reporting effects from the effects of the underlying CSR activities (Christensen, Hail, and Luez 2019). This design allows us to hold economic outcomes constant and isolate the effects CSR goal disclosures on investors' behavior. Thus, any observed differences in investors' judgments and decisions across manipulations are attributable to the CSR goal disclosure instead of the firm's performance.

⁹ While all of our manipulations are between-participants and occur before participants answer any of our dependent variable measures, we capture participants' investment willingness both before and after the company's CSR performance announcement in order to assess how investment willingness changes once investors are aware of the firm's performance relative the preceding CSR goal announcement within the different reporting regimes.

Specifically, we manipulate whether the company announces a relatively high or relatively low quantitative goal that includes a specific number of trees, a qualitative goal with no specific number of trees, or no CSR goal. While our hypotheses focus on the relative effects of the quantitative and qualitative goal conditions (H1a, H1b) and CSR regulation (H2a, H2b), we analyze the no CSR goal condition in our supplemental analyses. In each condition that announces a CSR goal, the press release discusses the importance of trees to the environmental health of communities and indicates that the goal will be achieved by partnering with non-profits and providing incentives for employees to volunteer for the cause. In the relatively high quantitative goal condition, Microtech states a goal to plant 80,000 trees, and in the relatively low quantitative goal condition, Microtech states a goal to plant 20,000 trees. Thus, the performance of 50,000 planted trees results in underperformance for the high quantitative goal condition and outperformance for the low quantitative goal condition. In the qualitative goal condition, the company sets a goal to plant trees, but a specific number of trees is not disclosed.

Greenwashing Measure

Our greenwashing measure is designed to capture participants' perceptions of corporate greenwashing. Prior research has identified multiple dimensions by which perceived greenwashing may occur. For example, Parguel, Benoit-Moreau, and Larceneux (2011) compliment many consumer research studies (e.g., Foreh and Grier 2003; Becker-Olsen, Cudmore, and Hill 2006; Ellen, Webb, and Mohr 2006) by documenting the importance of considering perceptions of managements' intrinsic and extrinsic motives for engaging in CSR activities. They find that management *effort* leads to higher perceived *intrinsic* motivations and positively impacts consumers' corporate brand evaluations (see also Vries, Terwel, Ellemers, and Daamen 2015). Locke and Seele (2017) analyze greenwashing by developing and validating a

scale for the perceived credibility of CSR communications using the sub-dimensions of truthfulness, sincerity, appropriateness, and understandability. They find that each sub dimension is important to perceptions of CSR credibility except for understandability (see also Zahller, Arnold, and Roberts 2015; Spack, Board, Crighton, Kostka, and Ivory 2012).

Drawing from prior research, we identify six potential dimensions of perceived greenwashing and design statements to capture perceptions of reliability, appropriateness, sincerity, effort, managements' intrinsic motives, and managements' extrinsic motives. Table 1, Panel A provides each statement. Participants indicate their level of agreement with each statement on a scale from 1 (completely disagree) to 8 (completely agree) after the company's CSR performance is reported. Factor analysis reveals that the first five statements load on one factor with an eigenvalue of 3.30.¹⁰ Table 1, Panels B provides factor analysis results and Panel C presents mean responses for *Perceived Greenwashing* by experimental condition. The five items accounts for 61.52% of the total variance, a first-to-second-component-eigenvalue ratio of 4.51, and a high internal consistency rating (Cronbach's alpha = 0.84), suggesting that these five items reliably capture the construct of perceived greenwashing (Slocum-Gori and Zumbo 2011). To form our measure of *Perceived Greenwashing*, we average participants' responses to the five greenwashing questions and reverse code the measure so a larger (smaller) number indicates higher (lower) perceptions of greenwashing.

[INSERT TABLE 1 HERE]

¹⁰ Results also reveal a second factor with an Eigenvalue of 1.04. We perform a varimax rotation and find that the first five items clearly load on factor 1 and that item six clearly loads on factor 2. Item six captures participants' perceptions of managements' extrinsic motives, and consistent with prior research (e.g., Parguel et al. 2011; Vries et al. 2015), our results indicate that perceptions of managements' extrinsic motives for engaging in CSR activities captures a construct distinct from perceived greenwashing. Further, prior research that has identified perceived extrinsic motives to be important largely analyze consumer behavior. In contrast to consumers, investors may financially benefit from management engaging in CSR activities for extrinsically-motivated reasons. Thus, we exclude item six from our measure of perceived greenwashing. All inferences remain the same whether item six is included or excluded from the analyses.

Dependent Variables

We capture our main dependent variable, *Investment Willingness*, by asking participants to rate the attractiveness of an investment in the company on a scale from 0 (very unattractive) to 10 (very attractive) and the likelihood that they would invest in the company on a scale from 0 (very unlikely) to 10 (very likely). Both measures reliably capture the same construct (Cronbach's alpha = 0.94). Following prior research, we average the responses to these two questions to form our dependent variable of *Investment Willingness* (e.g., Elliott et al. 2015). Additionally, in order to test H2a and H2b, we compute participants' *Change in Investment Willingness (Change in Perceived Greenwashing)* by subtracting participants' *Investment Willingness (Perceived Greenwashing)* after the CSR goal announcement from their *Investment Willingness (Perceived Greenwashing)* after the CSR performance announcement.

IV. RESULTS

Manipulation Checks

We test the efficacy of our CSR goal type manipulation by asking participants to select the type of goal announced by the company, and we provide them with the following options: 1) a goal to plant 20,000 trees, 2) a goal to plant 80,000 trees, 3) the company announced a goal but did not state the number of trees, and 4) the company did not announce a goal to plant trees. This question is answered correctly by 98.7% of participants in the low quantitative goal condition, 95.4% in the high quantitative goal condition, 87.5% in the qualitative goal condition, and 57.9% in the no goal baseline condition. To test our CSR regulation manipulation, we ask participants to indicate whether the reporting of CSR performance is voluntary or mandatory. Participants in the voluntary (mandatory) reporting condition answer this manipulation check question correctly

95.9% (89.2%) of the time.¹¹

Tests of Quantitative CSR Goal Hypotheses

H1a predicts that, given identical CSR performance results, investors will be more willing to invest in a company that outperforms a lower quantitative CSR goal compared to a company that underperforms a higher quantitative CSR goal. Figure 1 plots mean *Investment Willingness* by experimental condition, Table 2, Panel A presents descriptive statistics, and Panel B presents two-way ANOVA results. Consistent with expectations, two-way ANOVA reveals a main effect of CSR Goal Type ($F = 6.03, p < 0.001$).¹² Table 2, Panel C presents the simple effect tests for H1a. As predicted, the low quantitative goal elicits higher *Investment Willingness* than the high quantitative goal whether the CSR performance reporting regulation is voluntary (means = 7.46 versus 6.57, $t = 2.14, p = 0.017$) or mandatory (means = 7.65 versus 6.29, $t = 2.69, p = 0.004$), providing support for H1a.

[INSERT TABLE 2 AND FIGURE 1]

H1b predicts that the effects of high versus low quantitative CSR goal on *Investment Willingness* will be mediated by investors' perceptions of greenwashing. Figure 2 presents these mediation results. We use the PROCESS macro (Hayes 2018) to test for mediation using 10,000 bootstrap samples and a 90% confidence interval. We input high versus low quantitative goal as the independent variable, *Perceived Greenwashing* as the mediator, and *Investment Willingness* as the dependent variable. We observe a significant effect of high versus low quantitative CSR goal on *Perceived Greenwashing* ($t = 3.62, p < 0.001$), a significant effect of *Perceived Greenwashing* on *Investment Willingness* ($t = 9.38, p < 0.001$), and an insignificant direct effect

¹¹ Inferences remain the same when those who answered the manipulation check questions incorrectly are removed. Thus, our analyses use the full sample.

¹² Due to the directional nature of our hypothesis tests, all p-values are one-tailed unless otherwise noted.

of quantitative CSR goal type on *Investment Willingness* when controlling for *Perceived Greenwashing* ($t = 1.47$, $p = 0.143$, two-tailed). As expected, the confidence interval of the indirect effect excludes zero (CI: 0.37, 1.03). Taken together, this indicates that investors' perceptions of greenwashing fully mediates the effect of high versus low quantitative goals on their willingness to invest in the company. These results support H1b.

[INSERT FIGURE 2]

Tests of Qualitative CSR Goal Hypotheses

H2a predicts that, holding performance results constant, investors will be more willing to invest in a company that issues a qualitative CSR goal compared to a company that issues and underperforms a high quantitative CSR goal. Table 2, Panel C presents the simple effect tests for H2a. We compare the qualitative goal condition to the high quantitative goal condition and find that *Investment Willingness* is higher when the company initially issues a qualitative goal compared to a high quantitative goal when the reporting regulation is voluntary (means = 7.63 versus 6.57, $t = 2.27$, $p = 0.012$) and when the reporting regulation is mandatory (means = 7.37 versus 6.29, $t = 2.30$, $p = 0.011$).¹³ These results provide support for H2a.

To test our mediation prediction in H2b, we input high quantitative goal versus qualitative goal as the independent variable, *Perceived Greenwashing* as the mediator, and *Investment Willingness* as the dependent variable. Figure 3 presents the mediation results and shows a significant effect of the independent variable on *Perceived Greenwashing* ($t = 2.54$, $p = 0.006$), a significant effect of *Perceived Greenwashing* on *Investment Willingness* ($t = 9.05$, $p < 0.001$), and a direct effect of *CSR Goal Type* on *Investment Willingness* ($t = 2.00$, $p = 0.047$, two-

¹³ We observe no difference between the low quantitative goal condition and qualitative goal condition whether CSR performance reporting is voluntary (means = 7.46 versus 7.63, $t = 0.36$, $p = 0.716$, two-tailed) or mandatory (means = 7.65 versus 7.37, $t = 0.55$, $p = 0.580$, two-tailed).

tailed). Importantly, the bootstrap estimate of the indirect effect through *Perceived Greenwashing* excludes zero (CI: -0.84, -0.18), providing support for H2b. Taken together, our results indicate that the observed differences in investors' willingness to invest across CSR goal type conditions are mediated by their perceptions of greenwashing.

[INSERT FIGURE 3]

Tests of CSR Regulation Hypotheses

H3a predicts that mandatory (compared to voluntary) CSR performance reporting will cause *Investment Willingness* to increase more when a low CSR goal is outperformed and decrease more when a high CSR goal is underperformed. Since this hypothesis is concerned with the magnitude by which *Investment Willingness* will increase or decrease within different CSR regulation conditions, we use investors' *Change in Investment Willingness* as our dependent variable (see Dependent Variables in the Method section). Table 3, Panel A provides descriptive statistics for participants' *Change in Investment Willingness* by experimental condition, Panel B shows the two-way ANOVA results, and Figure 4 plots the means by experimental condition. Consistent with our hypothesis, ANOVA results show a significant interaction of *CSR Goal Type* and *CSR Regulation* ($F = 2.81, p = 0.020$).

Given our prediction of a specific ordinal interaction in which mandatory reporting will magnify the positive effects of outperforming lower CSR goals and exacerbate the negative effects of underperforming higher CSR goals, we conduct a planned contrast test by assigning +2 to the low goal/mandatory reporting condition, +1 to the low goal/voluntary reporting condition, -1 to the high goal/voluntary reporting condition, and -2 to the high goal/mandatory reporting condition (Guggenmos, Piercey, and Agoglia 2018). Table 3, Panel C provides our contrast results and Panel D shows the results of our simple effect tests. Cell means have good visual fit

with our predicted contrast pattern (see Figure 4), and the contrast is significant ($F = 35.93$, $p < 0.001$). The residual between-cells variance is insignificant ($F = 0.826$, $p = 0.551$, two-tailed), and the between-cells variance that is unexplained by our contrast weights is small ($q^2 = 3.41\%$). Follow-up simple effect tests confirm our predicted pattern of results by showing that participants' *Change in Investment Willingness* in a company that issues a lower CSR goal is positive and significantly higher when CSR performance reporting is mandated compared to voluntary (means = 0.95 versus 0.31, $t = 2.53$, $p = 0.006$), and investors' willingness to invest in a company with a higher CSR goal decreases more when reporting is mandated compared to voluntary (means = -0.57 versus -0.19, $t = -1.15$, $p = 0.066$).¹⁴ These results support H3a.

[INSERT TABLE 3 AND FIGURE 4]

H3b predicts that the effects of CSR regulation on investors' change in investment willingness for high and low quantitative goals will be mediated by changes to their perceptions of greenwashing. Results for H3b are presented in Figure 5.¹⁵ Consistent with our prediction, we find that investors' *Change in Perceived Greenwashing* is significantly affected by quantitative CSR goal type ($t = 3.74$, $p < 0.001$), CSR regulation ($t = 1.83$, $p = 0.035$), and the interaction ($t = 1.87$, $p = 0.031$). Next, *Change in Perceived Greenwashing* significantly affects participants' *Change in Investment Willingness* ($t = 9.93$, $p < 0.001$), and the direct effect when controlling for our predicted mediator becomes insignificant ($t = 0.39$, $p = 0.700$). Finally, bootstrap sample estimates show that the indirect effect of quantitative CSR goal type is significant for the

¹⁴ Consistent with H1a, the lower CSR goal elicits a more positive *Change in Investment Willingness* than the higher CSR goal whether CSR performance reporting is voluntary (means = 0.31 versus -0.19, $t = 2.23$, $p = 0.013$, untabulated) or mandatory (means = 0.95 versus -0.57, $t = 5.57$, $p < 0.001$, untabulated).

¹⁵ Since our hypothesis predicts mediation of the interaction of quantitative CSR goal type and CSR regulation on changes in investors' willingness to invest, we test H3b using the PROCESS moderated-mediation model number 7 by assigning the high versus low quantitative goal conditions as the independent variable (X), mandatory versus voluntary CSR regulation as the moderating independent variable (W), *Change in Greenwashing Perceptions* as the mediator (M), and *Change in Investment Willingness* as the dependent variable (Y).

mandatory reporting condition (CI: 0.75, 1.51), the voluntary reporting condition (CI: 0.35, 0.96), and the difference between conditional indirect effects (CI: -0.91, -0.08). These results support for H3b.

[INSERT FIGURE 5]

Supplemental Analyses

CSR Goal Announcement Results

Our design allows us to analyze whether participants' willingness to invest after CSR performance results are disclosed is affected by their initial reactions to the CSR goal disclosure. We perform a two-way ANOVA on *Investment Willingness* (untabulated) at the time the goal was announced and before the performance was announced, and find no differences for *CSR Goal Type* ($F_{3,322} = 1.00$, $p = 0.392$, two-tailed), *CSR Regulation* ($F_{1,322} = 1.08$, $p = 0.299$, two-tailed), or the interaction ($F_{3,322} = 0.30$, $p = 0.826$, two-tailed). Consistent with theory, investors' reactions to CSR goals appear to be driven by the performance announcement rather than the goal announcement itself.

Next, we analyze investors' greenwashing perceptions at the time the CSR goal is announced. ANOVA results (untabulated) show a marginally significant main effect of *CSR Goal Type* ($F_{2,236} = 2.04$, $p = 0.066$) and insignificant effects of both *CSR Regulation* ($F_{1,236} < 0.01$, $p = 0.982$, two-tailed) and the interaction ($F_{2,236} = 0.33$, $p = 0.720$, two-tailed). Untabulated planned contrast tests show that investors' perceived greenwashing is higher for the qualitative goal than the high quantitative goal (means = 3.04 versus 2.68, $t_{1,236} = 2.02$, $p = 0.022$). No differences are observed for comparisons to the low quantitative goal (mean = 2.86, all p 's > 0.100 , two-tailed). We also compare *Change in Perceived Greenwashing* from the goal announcement to the performance announcement to 0 (no change) and find that, consistent with

theory, the performance announcement decreases *Perceived Greenwashing* for the qualitative goal (mean = -0.49, $t_{1,74} = -6.02$, $p < 0.001$) and the low quantitative goal condition (mean = -0.49, $t_{1,84} = -5.77$, $p < 0.001$), and it increases *Perceived Greenwashing* for the high quantitative goal condition (mean = 0.35, $t_{1,81} = 3.69$, $p < 0.001$).

No Goal Condition

Since companies often announce CSR performance results without an accompanying goal, we include a condition in which no CSR goal is announced and analyze investors' reactions to the performance announcement. Results indicate that *Investment Willingness* after the CSR performance results are announced is lower for the no goal condition (mean = 6.68) compared to both the qualitative goal (mean = 7.50, $t_{1,314} = 2.46$, $p = 0.014$, two-tailed) and the low quantitative goal (mean = 7.56, $t_{1,314} = 2.66$, $p = 0.008$, two-tailed). However not announcing a CSR goal elicits similar investment willingness compared to underperforming a high quantitative CSR goal (means = 6.68 versus 6.43, $t_{1,314} = 0.77$, $p = 0.443$, two-tailed).¹⁶ Taken together, these results suggests that disclosing a CSR goal in some form is unlikely to harm firm value and may provide incremental benefits to the firm once performance is subsequently disclosed.

V. CONCLUSION

With the ongoing discussion of changes to CSR disclosure requirements (SEC 2021), our study provides important insights to companies, investors, and regulators, and our experimental design allows us to test potential consequences of moving from a voluntary to a mandatory regulatory environment. We provide evidence that requiring CSR performance disclosures can make investors more sensitive to companies' CSR goals by exacerbating the negative effects of missing a higher CSR goal and magnifying the positive effects of beating a lower CSR goal.

¹⁶ Inferences remain the same when comparisons are made separately within each CSR regulation condition.

Investors' investment judgments are driven by their perceptions of greenwashing, suggesting this mediating variable is key to understanding and affecting future changes to disclosure requirements as well as manager's choices regarding goal setting. Our findings are informative to regulators contemplating ways to improve the CSR disclosure environment, highlighting potential unintended consequences associated with requiring CSR performance disclosures.

Our study identifies the relative benefits to a company of disclosing different types of CSR goals, holding performance constant. Specifically, we find that choosing not to issue a CSR goal is not beneficial to a company relative to choosing to issue a CSR goal; and, disclosing a low, relative to a high, CSR goal is has similar benefit to disclosing a qualitative goal. Collectively, our pattern of results suggests disclosing low or qualitative CSR goals may be attractive to managers because they can enjoy the benefits of more positive investor responses to CSR performance. Yet, prior research shows that goals can most effectively increase performance when they are both specific and challenging (Locke and Latham 1990; 2006). Thus, specific and challenging (i.e., higher) CSR goals may ultimately motivate better CSR performance, yet the benefits of low CSR goals we document reveals tension for managers tasked with communicating CSR goals to investors while delivering actual CSR activity. Given the importance of greenwashing perceptions, future research will need to examine how to determine and communicate optimal goals (e.g., to maximize performance) while limiting the greenwashing perceptions of investors. In addition, future research could test other possible CSR disclosure strategies that a company could employ that we do not examine here. For example, CSR goal disclosures, such as quantitative goals expressed in a range or coupled with data visualizations could be fruitful areas to explore.

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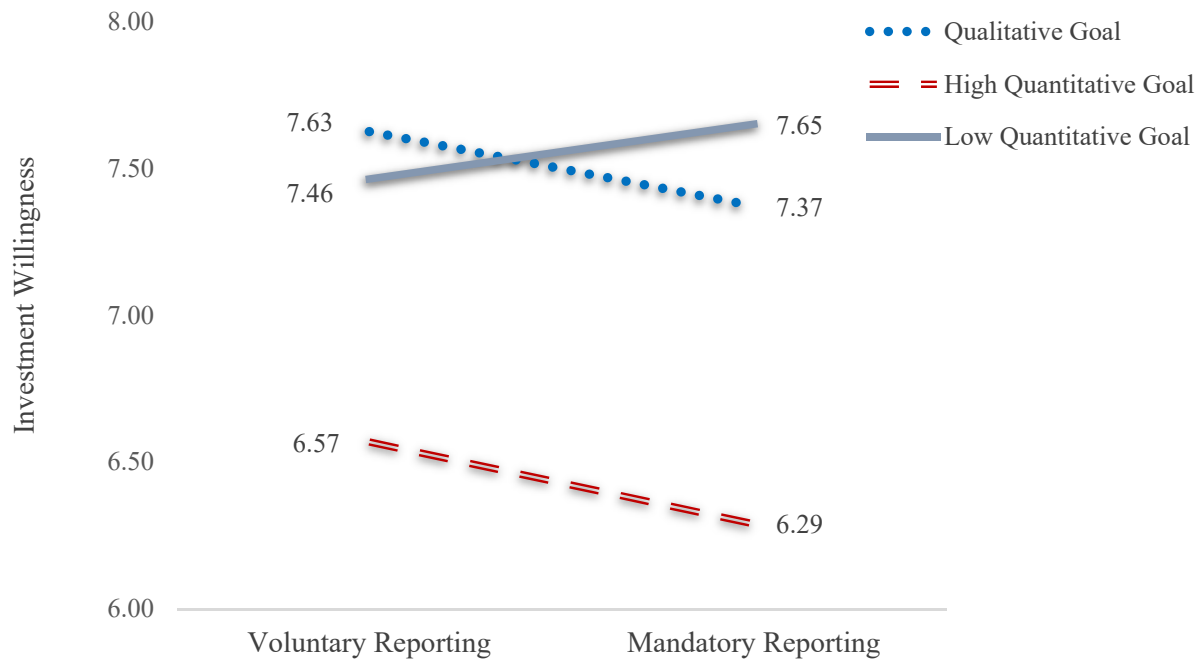
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FIGURE 1
Investment Willingness Results



Investment Willingness is the average of participants' investment attractiveness and investment likelihood ratings. Investment attractiveness is captured on a scale from 0 = "very unattractive" to 10 = "very attractive", and investment likelihood is captured on a scale from 0 = "very unlikely" to = 10 "very likely".

Qualitative Goal indicates that participants view a non-specific goal.

High Quantitative Goal indicates that participants view a specific high goal that was subsequently underperformed.

Low Quantitative Goal indicates that participants view a specific low goal that was subsequently outperformed.

Voluntary Reporting indicates that reporting regulations do not require companies to disclose CSR performance.

Mandatory Reporting indicates that reporting regulations require companies to disclose CSR performance.

FIGURE 2
Mediation Results for H1b

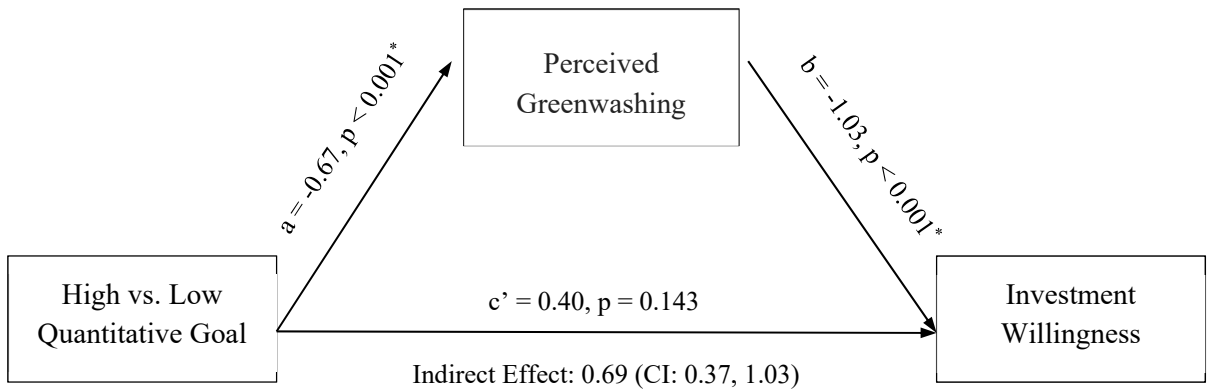


Figure 2 presents our mediation model with high quantitative CSR goal versus low quantitative CSR goal as the independent variable, *Perceived Greenwashing* as the mediator, and *Investment Willingness* as the dependent variable. We use Model 4 of the PROCESS macro (Hayes 2018) to estimate the path coefficients and the indirect effect via 10,000 bootstrapped samples and a 90% confidence interval.

* One-tailed given directional predictions

FIGURE 3
Mediation Results for H2b

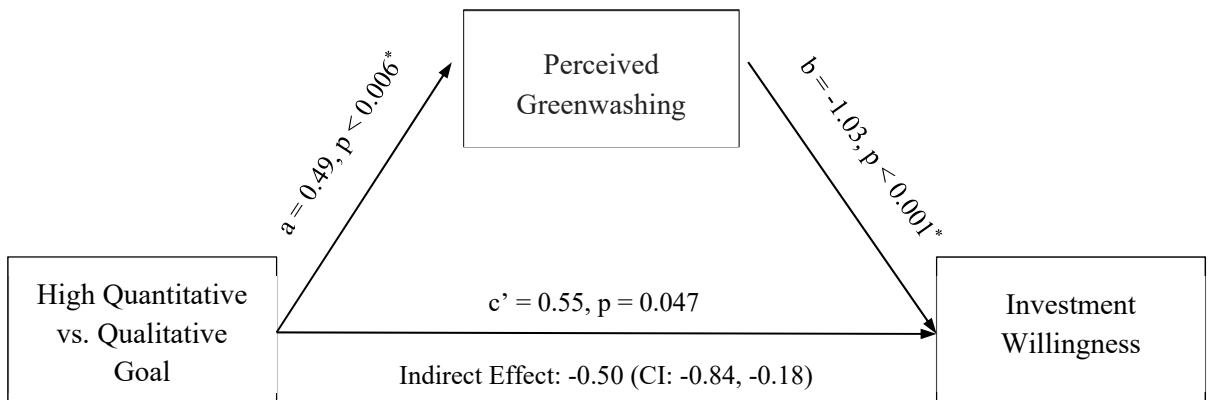
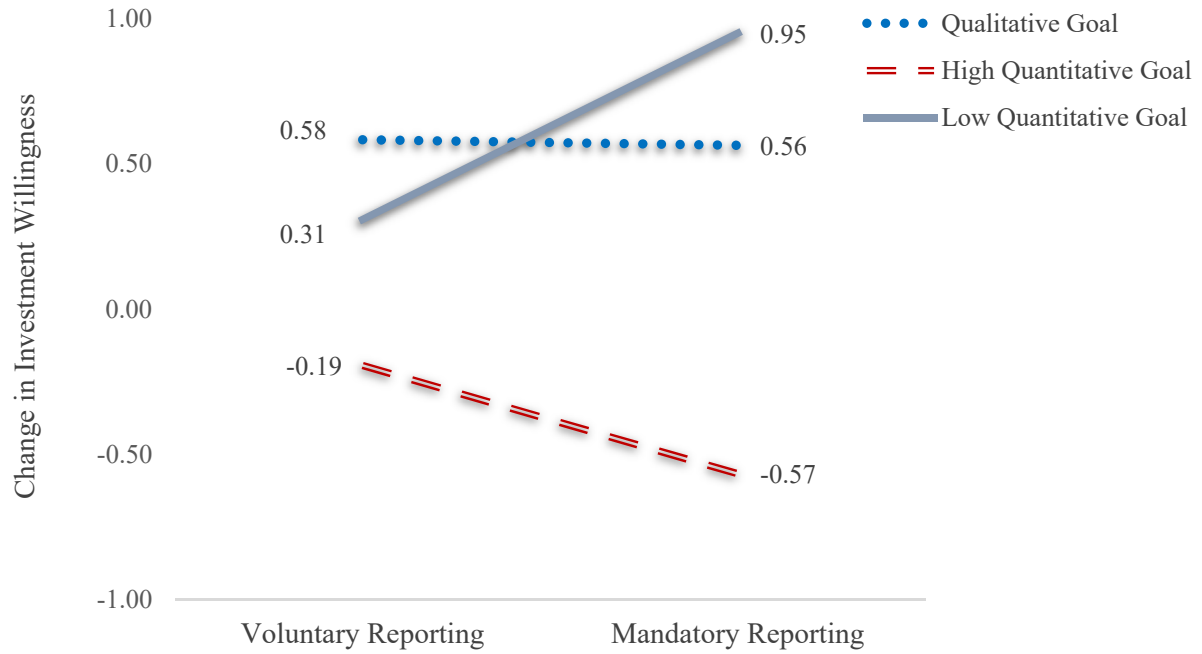


Figure 3 presents our mediation model with high quantitative CSR goal versus qualitative CSR goal as the independent variable, *Perceived Greenwashing* as the mediator, and *Investment Willingness* as the dependent variable. We use Model 4 of the PROCESS macro (Hayes 2018) to estimate the path coefficients and the indirect effect via 10,000 bootstrapped samples and a 90% confidence interval.

* One-tailed given directional predictions

FIGURE 4
Change in Investment Willingness Results



Change in Investment Willingness is computed by subtracting participants' *Investment Willingness* after the CSR goal disclosure from participants' *Investment Willingness* after the CSR performance disclosure.

Qualitative Goal indicates that participants view a non-specific, directional goal.

High Quantitative Goal indicates that participants view a specific high goal that was subsequently underperformed.

Low Quantitative Goal indicates that participants view a specific low goal that was subsequently outperformed.

Voluntary Reporting indicates that reporting regulations do not require companies to disclose CSR performance.

Mandatory Reporting indicates that reporting regulations require companies to disclose CSR performance.

FIGURE 5
Mediation Results for H3b

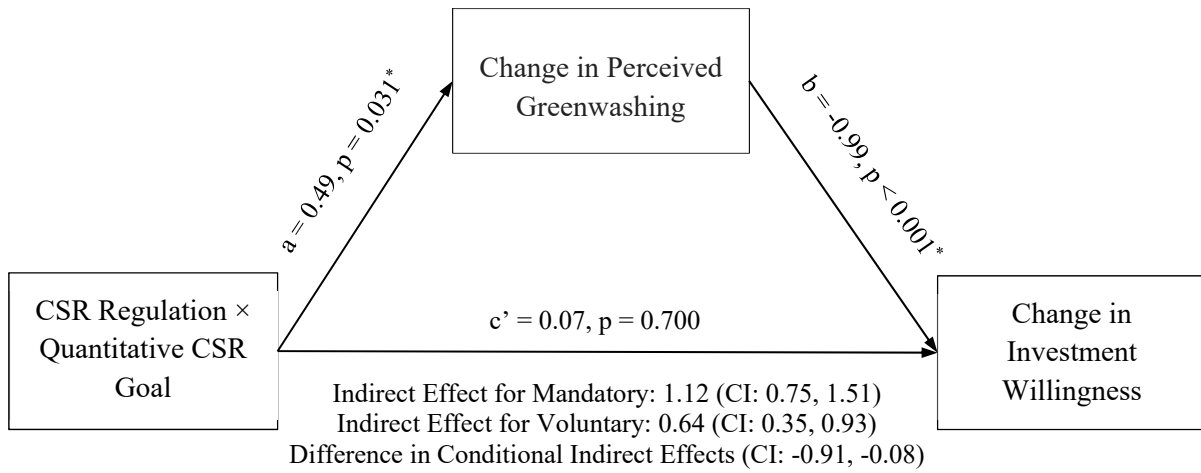


Figure 5 presents our moderated mediation model with CSR Regulation (mandatory vs. voluntary) and Quantitative CSR goal (high vs. low) as the independent variables, *Perceived Greenwashing* as the mediator, and *Investment Willingness* as the dependent variable. We use Model 7 of the PROCESS macro (Hayes 2018) to estimate the path coefficients and the indirect effect via 10,000 bootstrapped samples and a 90% confidence interval.

* One-tailed given directional predictions

TABLE 1
Perceived Greenwashing Measure

Panel A: Perceived Greenwashing Statements^a

Item	Dimension	Statement
1	Reliability	The statements in MicroTech’s press release are accurate.
2	Appropriate	It is appropriate for MicroTech to engage in the initiative stated in the press release.
3	Sincerity	The press release reflects the genuine intentions of MicroTech’s management team.
4	Effort	MicroTech’s management team did their best to accomplish the tree planting initiative.
5	Intrinsic Motive	MicroTech’s management team is primarily motivated to engage in this initiative because they want to have a positive impact on society (e.g., improve the natural environment).
6	Extrinsic Motive	MicroTech’s management team is primarily motivated to engage in this initiative because they want to have a positive impact on their company (e.g., improve the company’s image, increase profits).

Panel B: Factor Analysis Results^b

Item	Initial Factor Loadings		Final Factor Loadings
	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 1</i>
1	0.788	-0.118	0.766
2	0.755	-0.165	0.680
3	0.897	0.056	0.864
4	0.815	0.123	0.809
5	0.798	0.184	0.790
6	-0.081	0.973	Excluded
Eigenvalue	3.30	1.04	3.08
% of Variance Explained	55.05%	17.33%	61.52%

Panel C: Descriptive Statistics—Mean (Standard Deviation), n = Sample Size

	No Goal	Qualitative Goal	Low Quantitative Goal	High Quantitative Goal	Total
Voluntary Reporting	2.91 (1.200) n = 41	2.41 (1.036) n = 36	2.46 (1.139) n = 55	3.01 (1.240) n = 44	2.70 (1.180) n = 176
Mandatory Reporting	2.84 (1.267) n = 39	2.69 (1.060) n = 39	2.19 (0.949) n = 30	3.07 (1.405) n = 38	2.73 (1.222) n = 146
Total	2.88 (1.225) n = 80	2.55 (1.051) n = 75	2.37 (1.076) n = 85	3.04 (1.311) n = 82	2.71 (1.197) n = 322

Perceived Greenwashing is the average response of items 1-5. Each item is measured on an eight-point Likert scale from 1 = “completely disagree” to 8 = “completely agree” after CSR performance is reported.

^a Item six is reverse coded to be directionally consistent with items 1-5 prior to running analyses.

^b Initial factor loading results include all six items and result in two factors with Eigenvalues greater than one. Consistent with theory and prior research (e.g., Parguel et al. 2011; Vries et al. 2015), our results indicate that item six captures a construct distinct from perceived greenwashing. Thus, item six is excluded from our measure of perceived greenwashing. All inferences remain the same whether item six is included or excluded from analyses.

TABLE 2
Investment Willingness Results

Panel A: Descriptive Statistics—Mean (Standard Deviation), n = Sample Size					
	No Goal	Qualitative Goal	Low Quantitative Goal	High Quantitative Goal	Total
Voluntary Reporting	6.768 (1.959) n = 41	7.625 (1.509) n = 36	7.464 (1.843) n = 55	6.568 (2.206) n = 44	7.111 (1.942) n = 176
Mandatory Reporting	6.590 (2.185) n = 39	7.372 (2.364) n = 39	7.650 (2.256) n = 30	6.290 (2.174) n = 38	6.938 (2.289) n = 146
Total	6.681 (2.061) n = 80	7.493 (1.991) n = 75	7.529 (1.987) n = 85	6.439 (2.182) n = 82	7.033 (2.105) n = 322

Panel B: Two-Way ANOVA

Source	S. S.	df	M. S.	F-statistic	p-value
CSR Goal Type	77.300	3	25.767	6.028	0.001*
CSR Regulation	1.346	1	1.346	0.315	0.575
CSR Goal Type × CSR Regulation	2.725	3	0.908	0.212	0.888
Error	1342.145	314	4.274		
Total	17347.250	322			

Panel C: Simple Effects

		Mean	Mean	t_{314}	p-value
Voluntary Reporting	H1a: Low Quant vs. High Quant	7.46	6.57	2.14	0.017*
	H2a: Qualitative vs. High Quant	7.63	6.57	2.27	0.012*
	Low Quant vs. Qualitative	7.46	7.63	0.36	0.716
Mandatory Reporting	H1a: Low Quant vs. High Quant	7.65	6.29	2.69	0.004*
	H2a: Qualitative vs. High Quant	7.37	6.29	2.30	0.011*
	Low Quant vs. Qualitative	7.65	7.37	0.55	0.580

Investment Willingness is the average of participants' investment attractiveness and investment likelihood ratings. Investment attractiveness is captured on a scale from 0 = "very unattractive" to 10 = "very attractive", and investment likelihood is captured on a scale from 0 = "very unlikely" to 10 = "very likely".

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*One-tailed p-values given directional predictions.

TABLE 3
Change in Investment Willingness Results

Panel A: Descriptive Statistics—Mean (Standard Deviation), n = Sample Size					
	No Goal	Qualitative Goal	Low Quantitative Goal	High Quantitative Goal	Total
Voluntary Reporting	0.146 (0.682) n = 41	0.583 (0.899) n = 36	0.309 (1.671) n = 55	-0.193 (1.030) n = 44	0.202 (1.189) n = 176
Mandatory Reporting	0.256 (0.924) n = 39	0.564 (1.034) n = 39	0.950 (0.894) n = 30	-0.566 (1.274) n = 38	0.267 (1.175) n = 146
Total	0.200 (0.806) n = 80	0.573 (0.899) n = 75	0.535 (1.472) n = 85	-0.366 (1.158) n = 82	0.231 (1.181) n = 322

Panel B: Two-Way ANOVA					
Source	S. S.	df	M. S.	F-statistic	p-value
CSR Goal Type	51.533	3	17.178	13.812	< 0.001
CSR Regulation	0.632	1	0.632	0.508	0.476
CSR Goal Type × CSR Regulation	10.485	3	3.495	2.81	0.020*
Error	390.512	314	1.243		
Total	464.750	322			

Panel C: Contrast Test^a					
Source	S. S.	df	M. S.	F-statistic	p-value
Contrast	44.679	1	44.679	35.925	< 0.001
Residual between-cells variance	12.322	6	2.054	0.826	0.551
Total between-cells variance	62.650	7	8.950	7.196	< 0.001
Residual (error)	390.512	314	1.244		
Total	447.513	321			
Contrast Variance Residual (q^2)	3.41%				

Panel D: Simple Effects				
Source	df	T_{314}	p-value	
Effect of CSR Regulation for Low CSR Goal	1	2.53	0.006*	
Effect of CSR Regulation for High CSR Goal	1	-1.15	0.066*	

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