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The Effects of Management's ESG Disclosure Strategy and Voluntary Esg Assurance on Investment Judgments

Macy Knutson
University of South Carolina

THE EFFECTS OF MANAGEMENT'S ESG DISCLOSURE STRATEGY AND VOLUNTARY ESG ASSURANCE ON INVESTMENT JUDGMENTS

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Macy Jaculin Knutson

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Accepted By:

Chad M. Stefaniak, Major Professor

Timothy J. Brown, Committee Member

Tamara A. Lambert, Committee Member

Aaron F. Zimbelman, Committee Member

Ann Vail, Dean of the Graduate School

DEDICATION

To my husband, Mitch

Thank you for the innumerable sacrifices you have made in support of this dream. Your support and companionship are everything, and this accomplishment would mean little without you. We did it!

To my son, Luka

Thank you for being a great sleeper, and for the deep joy you bring into my life. I pray that you will grow up with a love of learning, the confidence to pursue your dreams, and the comfort that your identity lies not in your successes or failures, but in Christ.

To my parents, Jim and Jackie

I am immensely grateful that the hardest working people I have ever known are my parents. Thank you for demonstrating the value of hard work for your children, and for taking on so much to give us opportunities you never had. Thank you for being my first teachers, and ensuring I was equipped to meet every potential I have been gifted. Your love and support in this journey have meant the world.

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ABSTRACT

Many investors desire to integrate a company's environmental, social, and governance (ESG) performance into their investment decisions. Accordingly, most companies now disclose at least some ESG information in annual sustainability reports. However, little regulation exists over ESG reporting, creating a well-acknowledged agency problem for investors and making trust vitally important to investment. In this study, I examine two mechanisms which may facilitate trust amongst ESG investors: Management's ESG disclosure strategy and ESG assurance. Contrary to traditional conceptions of persuasion theory, I find ESG investors reduce investment in response to more transparent negative disclosures when the ESG report is not independently assured. However, I find management's additional disclosure of a proposed remedy to address a shortcoming yields similar responses to disclosing positive performance information alone. Additionally, I provide evidence that the provision of voluntary assurance over the ESG report alters responses to ESG disclosures. Specifically, ESG assurance insulates organizations from reduced investment when the ESG report contains unfavorable disclosures. In supplemental analyses, I find assurance protects organizations against reduced investment in the face of negative disclosures by restoring perceptions of ESG performance and return expectations. My results have implications for both theory and practice, as they identify ESG assurance as a key to allowing transparent ESG disclosures without negatively affecting investor support.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Modern investors demand companies report on Environment, Social, and Governance (ESG) issues, and investors integrate this information into capital allocation decisions (Ioannou & Serafeim 2015; Sultana, Zulkifli, and Zainal 2018; Hartzmark and Sussman 2019; Krueger, Sautner, and Starks 2020; Blackrock 2022; Natixis 2021). However, investors face uncertainty in evaluating ESG disclosures (PwC 2021a), particularly as little regulation governs ESG reporting despite continuing efforts to develop and enact it (e.g., IFRS 2022; SEC 2022; SASB 2022). As a result, many investors report difficulty in comparing ESG investments and maintain considerable fears about biased reporting, expressing concern about the completeness and reliability of information (PwC 2021a; S&P Global 2021). Investors, regulators, and researchers alike have identified trust as critical in assuaging these concerns, and have advocated for greater ESG reporting transparency (i.e., visibility and openness) (Deloitte 2021; PwC 2021a; S&P Global 2022; Yu, Guo, and Luu 2018). While organizations predominately tend to only self-disclose favorable information, recent discussions have suggested companies should not only disclose favorable ESG performance, but also report their own shortcomings as well (PwC 2021a).

In this study, I respond to calls to examine how organizations' different voluntary disclosure strategies may influence investor judgments (Dhaliwal, Li, Tsang, and Yang

2011; Elliott, Grant, and Rennekamp 2017). Specifically, I leverage the current ESG reporting environment and theories of persuasion to examine how investors react to management's voluntary disclosure of unfavorable nonfinancial ESG performance information. I also examine whether communicating unfavorable information is more beneficial when management communicates forward looking remedies for poor performance, and whether investor reactions to different disclosure strategies are dependent upon management's use of other persuasion mechanisms, namely, voluntary ESG assurance.

The ESG reporting environment presents a potent agency problem to investors. Investors wish to invest in companies that make a real societal difference (Brodback, Guenster, and Mezger 2019; Dimson, Karakas, and Li 2015); [1] however, management retains incentive to attract investors at the lowest cost to the firm, and only management knows the true underlying state of ESG performance.[2] Moreover, information disclosed in sustainability reports is not subject to mandatory assurance (GRI 102-56; CAQ 2021). When agents enjoy considerable discretion and minimal accountability, verifiability and trust become vital determinates of principal behavior (Casadesus-Masanell 2004), and management must persuade investors of a message's authenticity. From an ESG reporting perspective, management has two primary avenues to ease investor concerns and

[1] Though brevity precludes discussion in main text, both research and anecdotal evidence suggest investors may hold differing motivations toward ESG disclosures, creating two critically different ESG investor groups. Specifically, Plow ESG investors evaluate ESG investments primarily to make a real *societal difference*, whereas Banner ESG investors assess ESG investments primarily to *maximize profits* (Statman 2020). Though prior research has largely ignored these potentially critical differences, I expect they may be important to my research hypotheses. That is, Plow investors are interested in evaluating management's true commitment toward ESG, whereas Banner investors could be expected to care only superficially about a company's ESG image. Therefore, while I do not propose formal hypotheses for each group in the interest of parsimony, out of text, I have developed hypotheses that predict Plow ESG investors to engage in more critical evaluation of a company's ESG disclosure choices.

[2] While managers sometimes enjoy incentives related to ESG performance (Derchi, Zoni, and Dossi 2021), market demand for maximum returns and positive ESG performance creates incentives for firms to green- or social-wash to attract and retain investors and consumers.

establish reporting credibility. These are (1) employing effective disclosure strategies and/or (2) obtaining voluntary assurance.[3]

Adopting an effective ESG disclosure strategy is one way management can engender investor trust. Management retains discretion over whether and how to report ESG information, making disclosure choices potentially information-rich signals. That is, investors recognize management retains incentive to inflate ESG performance (S&P Global 2021), and therefore must search for cues indicating management's trustworthiness in ESG reporting. I adapt Winchel's (2015) concept of one- and two-sided argumentation to identify three distinct management disclosure strategies. One-sided disclosure refers to voluntary disclosure of only information that is favorable to the organization's goals, whereas two-sided disclosure refers to the additional voluntary disclosure of at least some unfavorable performance information (Winchel 2015). Finally, management could utilize the disclosure of negative information to additionally offer forward-looking remedies. I refer to this strategy as two-sided resolution.

Consistent with traditional logic, many organizations employ a one-sided ESG disclosure strategy because this strategy portrays the most positive image of the organization (Deegan and Rankin 1996; Cohen, Holder-Webb, Nath, and Wood 2012). Companies wish to persuade ESG investors of their positive impact, while not drawing attention to shortfalls (Merkl-Davies and Brennan 2007). While one-sided disclosure should be beneficial in certain situations, persuasion theory suggests a two-sided ESG disclosure strategy could be more effective, especially when management has not

[3] Management could also establish credibility by enacting reputationally-enhancing real, public-facing ESG initiatives, such as those addressing specific investor-valued causes (Tetrault Sirsly and Lamertz 2008). My study focuses on investor reactions to management's *available reporting choices* given the same underlying ESG performance.

obtained ESG assurance, because uncertainty in the reporting environment prompts investors to search for credibility cues (Petty and Cacioppo 1986; Winchel 2015).

Though the disclosure of information that is antithetical to investors' ESG values could be seen as damaging to investor support, research suggests positive signals from this disclosure could outweigh its risks. Incentive-inconsistent information is more persuasive than incentive-consistent (Birnbaum and Stegner 1979; Hutton, Miller, and Skinner 2003), thus, voluntary disclosure of unfavorable information should engender trust from investors and instill confidence in management's ESG commitment (Mercer 2005). Prior research finds investor trust can be an important determinant of investment (Elliott, Hodge, Sedor 2012; Elliott, Grant, Hodge 2018), and it should be of heightened importance when investors wish to invest in alignment with their ESG values. I therefore predict, in the absence of ESG assurance, a two-sided disclosure strategy (i.e., disclosing some unfavorable information) will engender greater investment versus a one-sided disclosure strategy (i.e., disclosing only favorable information). Additionally, Global Reporting Initiative (GRI) standards suggest disclosing negative information "can help the organization demonstrate that it recognizes these impacts and *has taken action or intends to address them*" (GRI 3-3-a). Following these standards, I predict a two-sided resolution strategy will yield trust-enhancing benefits similar to two-sided disclosure, and provide further benefits because management has explicitly communicated its underlying efforts (i.e., internal planning) and commitment to addressing shortcomings, which increases credibility and the resulting persuasiveness of a message (Hovland and Weiss 1951). Thus, I predict in the absence of ESG assurance, a two-sided resolution strategy should engender greater investment compared to a two-sided strategy alone.

In contrast to prior predictions about one- versus two-sided disclosure, a two-sided disclosure strategy should yield relatively less benefits for firms when management has obtained voluntary ESG assurance. Voluntary assurance represents both a signal from management about their commitment to ESG and serves as a credibility-enhancing mechanism to incentive-consistent disclosures (Cheng, Green, and Ko 2015). Assurance reduces the need for investors to search for signals regarding management's reporting honesty because disclosures have been attested to by a third party (Coram, Monroe, and Woodliff 2009). Therefore, voluntary ESG assurance should allow investors to focus on the *content* of the message (Petty and Cacioppo 1986), mitigating green- and social-washing concerns when management reports only incentive-consistent (favorable) ESG information. Further, assurance removes the trust-enhancing effect of two-sided disclosure because an auditor's involvement makes it less clear to an investor whether unfavorable information was disclosed voluntarily or at the auditor's behest. Because the sincerity of a voluntary disclosure is critical in gleaning its trust-enhancing benefits (Lu and Abeysekera 2017; Karlsen Græe, and Massaoud 2008), I predict when management has obtained voluntary third-party assurance, investors will invest more when management employs a one-sided versus a two-sided disclosure strategy.

I perform a 3x2 experiment with nonprofessional ESG investors. Participants read about a fictional investment prospect to add to their ESG investment portfolio. In addition to summarized financial information, participants are provided a summary of the organization's ESG report to view when making their investment judgment. I manipulate, between participants, management's ESG disclosure strategy and ESG assurance. Management's ESG disclosure strategy is manipulated by including only favorable,

favorable and additional unfavorable, or favorable and unfavorable plus resolution ESG performance information in the organization's ESG report. ESG assurance is manipulated by (not) informing participants the ESG report has been assured by an independent third party. Participants respond by reporting perceptions of management credibility, greenwashing concerns, and likelihood to invest.

My findings provide interesting insights to prior literature. Contrary to persuasion theory predictions, I find ESG investors are significantly *less* likely to invest when management transparently discloses unfavorable performance information. While the addition of a resolution yields benefits compared to disclosing negative information alone, it neither improves nor harms investment compared to a one-sided strategy. Additionally, though investors still invest more under one- versus two-sided disclosure in the presence of ESG assurance, results suggest assurance provides at least some insulation from negative responses to two-sided disclosures. In supplemental analyses, I find ESG assurance influences investment under two-sided disclosure by restoring perceptions of ESG performance and return expectations. Finally, I find initial evidence indicating ESG motivation results in unique responses to disclosures and assurance.

My research intersects the financial, auditing, and ESG literatures. First, my study adds to prior literature examining investor responses to voluntary disclosures. The literature has examined investor responses to managerial trust and forthcomingness in the face of a negative earnings surprise (Mercer 2005; Kothari, Shu, and Wysocki 2009; Elliott et al. 2018); I extend this literature into an environment where unfavorable nonfinancial information may not be revealed except for management's voluntary disclosure, and where investors search for signals about management's nonfinancial

commitments. I also adapt similar credibility-enhancing mechanisms identified in prior literature from analysts to management (Winchel 2015), and add specific theoretical insights by separately examining the benefits of disclosing unfavorable information alone and the provision of a potential resolution. Second, my study adds to growing research streams examining stakeholder responses to ESG disclosures. Previous conceptions of ESG disclosure transparency have focused primarily on the volume (Yu et al. 2018; Hoang, Segbotangni, and Lahiani 2020) and presentation (Elliott, Grant, and Rennekamp 2017) of disclosed information; my study sheds light on the costs and benefits gleaned from specific disclosure strategies. Moreover, unlike much of prior ESG research, my study utilizes nonprofessional ESG investors, and identifies an important demographic feature yielding differing responses to ESG information (i.e., ESG motivation; Statman 2020). Third, I add to the auditing and ESG literatures by identifying voluntary ESG assurance as a moderator to two-sided disclosure (Cohen and Simnett 2015). My research should be of interest to stakeholders and firm management, as I identify the disclosure of a resolution and provision of ESG assurance as mechanisms insulating against negative reactions to transparent ESG disclosure.

CHAPTER 2

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background – ESG Reporting

Firms stand to benefit from implementing and reporting ESG initiatives (Elliott et al., 2014; Martin & Moser 2016; Bucaro et al., 2020; Guiral et al., 2020), and should continue to do so as the number of ESG investors in the market rises (Morgan Stanley 2021). In recognition of these benefits, many companies have rapidly increased their ESG disclosures.[4] By 2021, all S&P 100 companies and over 90% of global firms reported at least some ESG information (CAQ 2021; IFAC 2022). However, despite recent and ongoing efforts to streamline and regulate ESG disclosures (e.g., IFRS 2022; SEC 2022; SASB 2022), little regulation currently exists on whether and how companies must disclose ESG metrics. Thus, firms at present retain considerable discretion over where, how, and whether they disclose ESG information. Moreover, most ESG disclosures are not subject to mandatory assurance (GRI 102-56), leaving it up to ESG investors to evaluate the credibility of management's claims.

The ESG reporting environment presents an agency problem to investors in that investors wish to invest in companies whom they believe are making a real societal difference (Brodback et al. 2019; Dimson et al. 2015), yet only management knows the true underlying state of ESG performance, and management retains discretion over

[4] I refer to ESG disclosures as ESG performance information formally disclosed by the firm in press releases, financial statements, annual reports, or the firm's sustainability report.

whether and how to report ESG information. ESG investors recognize this fact and report considerable green- and social-washing fears when approaching a potential investment (S&P Global 2021). Greenwashing and social washing include corporate behaviors such as making false or misleading claims (Gatti, Pizzetti, and Seele 2021), making claims that are not substantiated by evidence or a third party (e.g. Alves 2009; Bazillier & Vauday 2013), or selectively disclosing positive information about ESG issues while concealing negative information on these aspects (e.g. Kim & Lyon 2011; Lyon & Maxwell 2011; Mitchell & Ramey 2011). These fears have led ESG investors to maintain an attitude of skepticism toward ESG disclosures (i.e., "green skepticism") (Chen 2010; Leonidou and Skarmeas 2017; S&P Global 2021). Green skepticism, or lack of trust, has been shown to reduce investor support (Mercer 2005; Darke and Ritchie 2007; Kang and Hustvedt 2014).

The potent agency problems present in ESG reporting make it an ideal environment to examine management's voluntary disclosure strategies. When management retains incentive to report opportunistically, and uncertainty and lack of regulation exists in the reporting environment, establishing trust and credibility becomes especially important to engendering stakeholder support (Swift 2001; Greenwood and Van Buren 2010). However, the relative benefits of certain ESG disclosure strategies have not been explored, and retain considerable tension as investors seeking value-alignment could be discouraged by negative information. Given ESG's growing influence on capital allocation decisions (Hartzmark and Sussman 2019), it is important to examine whether and how management's voluntary ESG reporting choices facilitate investor trust and ultimately, investment.

Management Disclosure Strategies in the Absence of ESG Assurance

I draw on theories of persuasion to develop my research hypotheses. Persuasion refers to "any effort to modify an individual's evaluations of people, objects, or issues by the presentation of a message" (Petty and Cacioppo 1986, 25). From an organizational perspective, many messages are conveyed with the intent of persuading stakeholders to support the organization in one way or another (DellaVigna and Gentzkow 2010; Merkl-Davies and Brennan 2007; Kenno, McCracken, and Salterio 2017; Hamilton and Winchel 2019), and many accounting papers have examined how investors are swayed by management's financial disclosure choices (e.g., Mercer 2005; Elliott 2006; Elliott et al. 2012). However, ESG reporting represents a unique environment to examine persuasion, because investors are interested in using nonfinancial information to determine management's commitment to an external cause (ESG), and management maintains considerable flexibility and few regulatory restraints in deciding what information to convey externally.

I develop three distinct management disclosure strategies from prior literature. Consumer research defines two-sided persuasion as voluntary messages with both positive and negative attributes (Crowley and Hoyer 1994). Winchel (2015) adapted this definition into an analyst setting, terming positive analyst reporting including no or some amount of additional negative argumentation as one- and two-sided argumentation, respectively. From a management reporting perspective, management could first opt for a one-sided disclosure strategy, which I define as voluntary disclosure of only favorable (positive) information to the organization's ultimate goals. Alternatively, management could employ a two-sided disclosure strategy, or voluntarily disclose at least some

additional unfavorable (negative) performance information. Finally, management could voluntarily disclose a mix of information, and disclose negative information to communicate plans to remedy the unfavorable issue. I term this strategy two-sided resolution.

In an attempt to maintain a positive ESG image, many organizations currently employ a one-sided disclosure strategy, that is, they report largely only favorable information in their sustainability reports (Deegan and Rankin 1996; Cohen et al. 2012). Organizations utilizing this strategy do so with seemingly sound reason, as the content of a message influences persuasion (Petty and Cacioppo 1986). That is, a one-sided disclosure strategy portrays the most positive image of the organization's ESG efforts, and therefore could instill positive beliefs in investors insofar as they rely on the content of the message as a persuasive indicator. Research suggests investors may rely on the valence of information when there is little ambiguity in disclosures, when investors are confident in their evaluations, and when they employ quick (non-deliberative) processing to evaluate information (Petty and Cacioppo 1986; Hamilton and Winchel 2019). I contend ESG reporting represents an environment where these assumptions are unlikely to hold. That is, uncertainty in the reporting environment makes it unlikely that investors will rely on information content, and instead are likely to search for trustworthiness cues when evaluating information (Petty and Cacioppo 1986; Hamilton and Winchel 2019). This idea is supported by the green- and social-washing fears maintained by ESG investors (S&P Global 2021). Thus, investors may be particularly skeptical of management's solely positive disclosures (Kim & Lyon 2011), making one-sided disclosure a potentially suboptimal strategy.

In contrast to a one-sided disclosure strategy, management could employ a two-sided disclosure strategy. A two-sided strategy entails voluntarily disclosing information that is both favorable and unfavorable to the company's ultimate goals (Crowley and Hoyer 1994; Winchel 2015). While disclosing unfavorable ESG information seems counter-intuitive to firm goals (Owen, Swift, and Humphrey 2000; Caputo, Pizzi, Ligorio, and Leopizzi 2021), prior research on persuasion theory predicts such disclosure could yield benefits. First, incentive-inconsistent information is more believable than incentive-consistent information, and disclosing the former lends credibility to a source (Birnbaum and Stegner 1979; Hutton et al. 2003; Mercer 2005). Second, persuasion theory predicts particular benefits from two-sided disclosure when trust is important to investors, as openness with information demonstrates a commitment to accountability and enhances perceptions of trust and credibility (Peters, Covello, and McCallum 1997; Heise 1985; Rawlins 2008; Mohan, Buell, and John 2020). Crowley and Hoyer (1994) find advertisers who voluntarily admit negative attributes are perceived as more trustworthy than those who disclose only positive product attributes. Extending this theory into financial accounting, Winchel (2015) finds that when analysts' positive arguments about a company they report on are ambiguous, two-sided argumentation produces favorable investor reactions by increasing the perceived credibility of the report. This study suggests investor skepticism toward positive (i.e., company-favorable) analyst reports can be improved by representing both favorable and unfavorable indicators in the report.

Similarly, openness with negative information could reduce greenwashing fears (Kim & Lyon 2011; Lyon & Maxwell 2011; Mitchell & Ramey 2011), a particular source

of skepticism for investors evaluating ESG performance. Enhanced trust in management facilitates investment (Mercer 2005; Elliott et al. 2012; Elliott et al. 2018; Gatti et al. 2021). Since ESG investors are particularly concerned with management trustworthiness and the possibility of corporate greenwashing (Casadesus-Masanell 2004; S&P Global 2021), voluntarily employing a two-sided disclosure strategy (i.e., reporting additional unfavorable ESG information) should work as a trust-enhancing signal, facilitating greater investment compared to when management makes only one-sided (favorable) ESG disclosures. Formally stated as:

> **H1:** When management has not obtained ESG assurance, investors will be more likely to invest when management uses a two-sided (i.e., discloses both positive and negative information) versus a one-sided disclosure strategy (i.e. discloses only positive information).

Finally, independent reporting guidelines suggest management could leverage two-sided disclosure as an opportunity communicate internal remedies and ongoing commitment to ESG (GRI 3-3-a). That is, disclosing unfavorable information provides management a unique opportunity to communicate forward looking plans to address a shortfall. I term this a two-sided resolution strategy, because management additionally communicates both its intent and strategy to resolve unfavorable performance. In addition to the practical relevance as suggested by the GRI, examining the efficacy of this third strategy should provide theoretical insights to help shed light on the relative benefits of disclosing unfavorable information alone from the benefits of communicating a forward-looking managerial remedy. Specifically, Winchel (2015) operationalizes the negative aspect of two-sided analyst argumentation by including negative performance information (e.g., “Inventory levels increased from prior period”) as well as

recommended actions management must employ to remedy the issue (e.g., "Tighter control efforts are required to avoid negative effects on future earnings or cash flows…"). While nonetheless informative, this conception makes it difficult to derive definitive conclusions about the influence of each disclosure (i.e., negative information and a proposed remedy) on investor judgment.

Persuasion theory and investor attitudes toward ESG predict a two-sided resolution strategy should be even more effective at engendering investor trust than a two-sided strategy alone. Investors evaluating ESG performance care about management's genuine commitment to ESG ideals (Statman 2020). Under a two-sided resolution strategy, management has not only demonstrated openness with negative information, but has also provided actionable improvements to negative performance, assuring stakeholders of management's concern and intent to improve. These communications ought to be a persuasive indicator of management's ESG credibility (Peters, Covello, and McCallum 1997), ultimately engendering trust in the message (Hovland and Weiss 1951). Thus, I predict that a two-sided resolution strategy will yield additional trust-enhancing benefits from ESG investors, producing greater investment:

> **H2:** In the absence of ESG assurance, investors will be more likely to invest when management uses a two-sided resolution disclosure strategy versus a one- or two-sided disclosure strategy.

The previous discussion has focused primarily on two-sided disclosure as a trust-enhancing mechanism. However, persuasion theory predicts the relative benefits of this strategy depend critically on other management signals. I next discuss how voluntary ESG assurance influences investor reactions overall. Then, I discuss how reactions to

management's ESG disclosure strategy should differ in the presence of voluntary ESG assurance.

Voluntary ESG Assurance

Independent third-party assurance is a useful tool in addressing the agency problem faced by potential investors (Wallace 2004). In financial reporting, mandatory assurance mitigates agency problems by requiring a third party to assure the financial statements are presented fairly in accordance with the applicable financial reporting framework (AS 1001.01). In ESG reporting, assurance similarly instills confidence that management's ESG claims are verifiable and follow an acceptable disclosure framework (CAQ 2019). However, ESG assurance remains a voluntary endeavor (GRI 102-56). In 2020, 58% of companies globally obtained some form of third-party ESG assurance (IFAC 2022), indicating considerable divergence in its undertaking.

The non-ubiquitous nature of ESG assurance makes studying investor reactions especially important. Traditional financial accounting research finds assurance's value in enhancing the reliability of management disclosures (Mautz and Sharaf 1961; Libby 1979; Hodge 2001), reducing information asymmetry and facilitating market activity (Wallace 2004). Research has found similar reliability- and credibility-enhancing effects of ESG assurance on a disclosure's credibility (Hodge, Subramaniam, and Stewart 2009; Pflugrath, Roebuck, and Simnett 2011; Brown-Liburd and Zamora 2015; Shen, Wu, and Chand 2016), which in turn increases willingness to invest (Cheng et al. 2015; Shen et al. 2016; Stuart, Bedard, and Clark 2020). In addition to adding credence to disclosures, ESG assurance itself can serve an additional purpose, which may be important when investors retain green skepticism. That is, ESG assurance may serve as a signal of

management's commitment to ESG. Prior research provides some support for this benefit, finding voluntary CSR assurance additionally enhances environmental reputation (Birkey, Michelon, Patten, and Sankara 2016).

Management Disclosure Strategy in the Presence of Voluntary Assurance

As previously discussed, the benefits to be obtained from a two-sided ESG disclosure strategy result from signals persuading investors of management's credibility and commitment to ESG initiatives. However, when disclosures have been voluntarily assured, disclosing unfavorable information should have a different effect on investor judgment, because assurance adds credence to incentive-consistent disclosures (Wallace 2004; Mautz and Sharaf 1961; Birkey et al. 2016). Financial research finds assurance "hardens" disclosures, meaning investors can rely on information content because it has been verified (Minnis 2010). Similarly, in an ESG context, third-party assurance acts as a surrogate persuasion tool, reducing ambiguity and greenwashing fears because claims have been substantiated by a third party (Alves 2009; Bazillier & Vauday 2013). [5] This voluntary verification makes incentive-consistent (i.e., one-sided) claims more believable and reduces the need to search for credibility cues (Wallace 2004). Thus, assurance should alter investors' focus when evaluating disclosures, reducing the search for information indicative of management's disclosure credibility and increasing investor reliance on the information *content* (i.e., valence) (Petty and Cacioppo 1986; Coram et al. 2009; Cheng et al. 2015). When investors are free to attend to the valence of information

[5] Importantly, obtaining assurance over ESG disclosures does not, at present, imply the information is complete. That is, companies may obtain assurance over disclosed ESG performance indicators, but forego assurance on others (i.e., low-performing environmental, social, or governance areas). Prior research indicates ESG investors either do not know or do not care about this limitation (e.g., Hodge et al. 2009; Pflugrath et al. 2011; Brown-Liburd and Zamora 2015). In supplemental analyses, I explore investors' knowledge about ESG assurance and whether we might expect previously observed reactions to change as investors become more educated about its limitations.

without concern of management's reporting honesty, disclosing solely positive information should yield greater investment than disclosing positive and additional negative information. This effect is further pronounced as assurance clouds the voluntary signal of unfavorable disclosure, making it unclear whether negative information was disclosed voluntarily or required by the auditor, further removing any residual trust-enhancing benefits (Lu and Abeysekera 2017; Karlsen Græe, and Massaoud 2008). In sum, assurance lends credence to one-sided ESG claims, reducing the need to search for credibility cues, and removes trust-enhancing signals from disclosing unfavorable information, increasing the benefits to be accrued from a one-sided disclosure strategy where management discloses only favorable information.

> **H3:** When management has obtained ESG assurance, investors will be more willing to invest when management employs a one-sided versus two-sided disclosure strategy.

Together, H1 and H3 predict a disordinal mean pattern for investor responses to ESG disclosure strategies. That is, in the absence of ESG assurance, a two-sided disclosure strategy should yield benefits for firms because there exists uncertainty in the ESG reporting environment, causing investors to search for credibility cues and recognize management's incentive to report only favorable disclosures. In contrast, this strategy becomes relatively less beneficial when management has obtained voluntary ESG assurance, because assurance reduces ambiguity and enhances the credibility of

management's one-sided, positive claims (Alves 2009; Bazillier & Vauday 2013), allowing investors to rely on the overall valence of reported information.[6]

[6] I previously discussed the credibility-enhancing benefits of a two-sided resolution strategy. In the absence of assurance, this strategy should be optimal at encouraging investment as it demonstrates transparency and accountability with unfavorable information in addition to communicating management resolve toward a remedy. However, I refrain from hypothesizing about the effects of this strategy on investment when management has obtained ESG assurance, because assurance should mitigate the benefits of negative disclosures; however, a resolution strategy simultaneously communicates management's forward-looking commitment to a shortcoming. It is therefore unclear how these competing mechanisms may offset each other. I explore these relationships in supplemental analyses.

CHAPTER 3

METHOD

To test my hypotheses, I conducted a 3 x 2 between-participants experiment varying management's ESG disclosure strategy (one-sided, two-sided, two-sided resolution) and ESG assurance (absent, present).

Participants

I utilize CloudResearch and Amazon's MTurk platform to recruit ESG investors to my study. To ensure data quality and increase my study's external validity, I follow a multi-step process to screen and identify potential ESG investor participants (Buchheit, Doxey, Pollard, and Stinson 2018; Leiby, Rennekamp, and Trotman 2021). This process is presented visually in Figure 3.1. First, I identify nonprofessional investors by utilizing a CloudResearch filter which identifies verified MTurk participants who have invested in the stock market. I additionally employ a brief research survey (Survey 1) open to all MTurkers who meet the approval parameters suggested by prior research (Bentley 2021).[7] The purpose of Survey 1 is to identify additional participants who have invested in the stock market. The survey included a Captcha and text response logic questions to prevent bots from accessing the experiment, and several distractor questions (e.g., "I own a pet") in addition to questions of interest (e.g., "I have invested in the stock market"). To

[7] Specifically, participants must have previously completed at least 100 MTurk assignments and have an overall approval rating of at least 95 percent. To ensure participants understand instructions and materials, I require that they be based in the United States and speak English.

ensure high-quality responses, the survey also presented certain questions in different ways, removing participants who provided logically inconsistent answers.

Next, I send an invitation to participate in a second survey (Survey 2) to participants who (1) are CloudResearch identified investors, or (2) completed Survey 1, reporting they have invested in the stock market and passing all consistency checks. The purpose of Survey 2 is to identify ESG investors by screening for participants who report experience investing in ESG stocks or bonds.[8] The survey included a Captcha and text response logic questions to prevent bots from accessing the experiment. Similar to Survey 1, I employ several distractor questions to prevent participants from guessing parameters of interest, and include a question asked two different ways to check for logical consistency. Finally, I capture several demographic questions in both Survey 1 and Survey 2 which allow me to check for consistency in responses across the two studies.[9] I invite 773 participants who report investing in ESG stocks or bonds and pass all consistency checks to participate in my final experiment.

Three-hundred ninety-five ESG investors completed participation in an investment task for my final experiment. To reduce the risk of inattentive participants, I remove 151 participants who responded incorrectly to either the disclosure or assurance attention check questions, and an additional 31 participants who completed the case materials in less than 5 minutes or more than 30 minutes, yielding a final sample of 235 ESG investors. Mean (median) response time was 13.3 (12.2) minutes. Participants are

[8] In addition to identifying ESG investors, I also utilize Survey 2 to identify *ESG Investor Type* (see footnote 1) by asking, "When evaluating an ESG investment, what is more influential in your decision whether or not to invest?". Participants respond on a 101-point scale anchored at 0 "Whether the investment maximizes returns" to 100 "Whether the investment creates a more just and sustainable world." Splitting above and below the scale midpoint indicates whether a participant is a Banner (0-50) or Plow (51-100) ESG investor (Statman 2020).

[9] For example, I compare participants' reported age and education level across surveys, and remove participants who report an illogical change given the time between survey completion (e.g., a change in age over one year).

42% female, report a mean (median) age of 40 (38) years, and have 9.7 (5) years of investment experience.

Investment Case

Participants were asked to assume the role of a prospective investor looking to add to their ESG portfolio. Participants read information about Luma, Inc. (Luma), a hypothetical clothing retailer specializing in athleisure wear. The case contained background information about Luma, abbreviated financial information, and an excerpt from Luma's ESG report. The case holds constant all information except for information directly related to the two independent variables.

Independent Variables

I manipulate ESG disclosure strategy (*DISCL*) by changing whether the company discloses only favorable ESG information, additionally discloses unfavorable ESG information, or discloses unfavorable ESG information plus management's plan to resolve the negative metric. I manipulate ESG assurance (*ASSUR*) as present or absent by informing participants in the present condition that the ESG report has been assured by a third party.

Dependent Variables

Investment Likelihood

The primary dependent variable in my study is investors' reported likelihood to invest (*INVEST*). I measure participants' likelihood to invest following prior research (e.g., Elliott et al. (2018). Specifically, I ask participants, "How likely are you to invest in Luma stock?" (101-point scale with endpoints 1 "Not at all likely" and "Very likely"), as well as, "Assume you have $10,000 to invest in the ESG opportunities. How much of this

$10,000 will you invest in Luma stock?" (10,001-point scale with endpoints 0 "Nothing at all" and 10,000 "Entire amount").[10] Additionally, I ask participants what kind of financial returns they expect from an investment in Luma stock on a 101-point scale with endpoints "Significantly Below Average" and "Significantly Above Average".

Management Trust

Participants next respond to Mercer's (2005) management credibility items. The scale is made up of three competence and three trust items. Trust items include "I believe Luma management is very trustworthy," I believe that Luma management is very honest," and "I believe that Luma management may not be truthful in their ESG disclosures." All items are captured on 7-point Likert scales from "Strongly Disagree" to "Strongly Agree".

Disclosure Credibility

Participants also respond to disclosure credibility items adapted from Mercer (2004). Items include, "Luma's ESG disclosures are honest and are not biased to attract investors," "Luma's ESG disclosures are credible," "Investors can trust Luma's ESG disclosures," and "Luma's ESG disclosures are complete". All items are captured on 7-point Likert scales from "Strongly Disagree to "Strongly Agree".

Green Skepticism

Participants next report their greenwashing concerns by responding to the scale items adapted from Zhang, Li, Cao, and Huang (2018). Specifically, participants report their agreement with the following statements: "Luma's ESG report makes green claims that are vague or seemingly un-provable," "Luma's ESG report overstates or exaggerates

[10] Results are reported using investment likelihood as the dependent variable. All results are qualitatively similar when using participants' total investment (*investment likelihood x reported investment amount*) as the dependent variable.

what its green performance actually is," "Luma's ESG report leaves out or masks important information, making green claims sound better than they are." I also capture participants' perceptions of ESG performance by asking whether Luma's ESG performance overall met their expectations. All items are captured on 7-point Likert scales from "Strongly Disagree" to "Strongly Agree".

Attention Checks

Finally, before responding to demographic questions, participants respond to two questions aimed at assessing their attention to the study's independent variables. Specifically, participants are asked whether Luma's ESG report was assured by an independent third party, and to select the appropriate image reflecting the disclosure(s) presented in the "Resource Efficiency and Sustainability" section of Luma's ESG report.

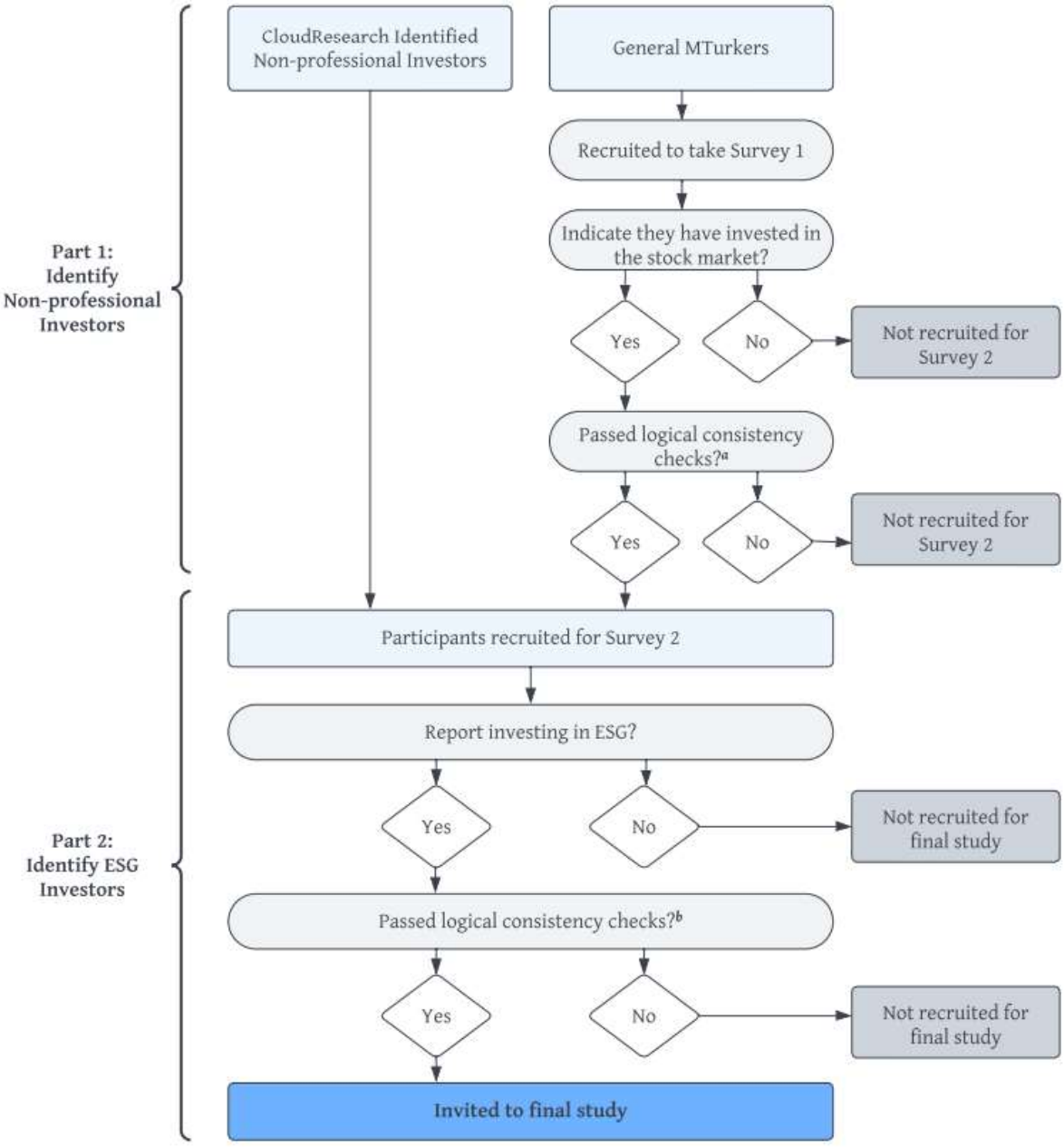


Figure 3.1
Flowchart: Participant Recruitment Procedures

NOTES:
This figure presents the procedures utilized to identify and recruit ESG investors to my final study. In order to ensure data quality and increase my study's external validity, I followed a two-step process to identify appropriate participants (Buchheit et al. 2018; Leiby et al. 2021). The purpose of Part 1 is to identify non-professional investors. To do so, I utilize a CloudResearch filter of pre-identified non-professional investors, and additionally recruit a group of general participants from Amazon's MTurk platform to complete Survey 1. Survey 1 included screening questions to prevent bots from accessing the survey and several distractor questions designed to conceal the question of interest. Survey1 participants advance to Part 2 if they (1) indicate they have invested in the stock market and (2) pass all logical

consistency checks employed in Part 1. These participants, along with the CloudResearch group, were invited to participate in Survey 2, which similarly included screening questions to prevent bots from accessing the survey and several distractor questions designed to conceal the question of interest . I invite participants to my final study if they (1) indicate they are ESG investors and (2) pass all logical consistency checks employed in Part 2.

aIn Part 1, I check for logical consistency in participant responses by designing and analyzing within-survey responses. For example, Survey 1 included a check-all question asking participants to select all that apply. Items included "I have voted in a presidential election" and "I have invested in the stock market", among others. Participants are later asked to indicate "Yes" or "No" to questions such as, "I have voted in a presidential election" and "I have invested in the stock market". Participants are eliminated if they respond to any of these questions inconsistently.

bIn Part 2, I check for logical consistency in participant responses by designing and analyzing both within- and across-survey responses. For example, Survey 2 asked participants to indicate all investment vehicles in which they have invested. Subsequently, participants answer the question, "I have invested in ESG stocks or bonds". Participants are eliminated if they report investing in ESG stocks or bonds, but previously indicated they have invested in neither stocks nor bonds. Additionally, I employ inter-survey consistency checks by comparing participants' reported age and education level across surveys. Participants are eliminated from further recruitment if they report an illogical change given the time between survey completion (e.g., a change in age over one year).

CHAPTER 4

RESULTS

To test my hypotheses, I run a 3x2 ANOVA with *DISCL* (one-, two-, two-sided resolution) and *ASSUR* (absent, present) as the independent variables and *INVEST* as the dependent variable. Descriptive statistics are reported in Table 4.1 Panel A. ANOVA results reported in Table 4.1 Panel B reveal a significant main effect of *DISCL* (F=6.59, p = 0.002) and an insignificant effect of *ASSUR* (F=1.88, p = 0.172) on *INVEST.* The *DISCL*x*ASSUR* interaction is significant (F=2.48, p = 0.086). [11] The overall mean pattern is displayed visually in Figure 4.1. I discuss ANOVA results holistically after individual hypothesis tests.

Hypothesis 1

H1 predicts that in the absence of ESG assurance, investors will be more likely to invest when management employs a two-sided versus one-sided disclosure strategy. H1 would be supported by a significant simple effect indicating greater investment under one-sided disclosure when assurance is absent. Results are reported in Table 4.1, Panel C. I find a mean pattern that is opposite of prediction. Contrary to my prediction, when assurance is absent, I do not observe a significant positive simple effect of *DISCL* on *INVEST* (p = 0.998), and instead find a significant effect in the opposite direction (t=3.38,

[11] All reported p-values are two-tailed, unless otherwise noted.

$p = 0.002$), indicating that in the absence of assurance, ESG investors are more willing to invest when management discloses only positive, versus both positive and negative ESG information. This result does not support H1, and instead indicates that in the absence of assurance, ESG investors respond to the valence of information rather than interpreting management's disclosure of negative information as asymmetry-reducing.

Hypothesis 2

H2 predicts that in the absence of assurance, ESG investors will be more likely to invest when management discloses negative information with a resolution (i.e., two-sided resolution strategy) than when management employs a one- or two-sided disclosure strategy. To test H2, I perform simple effects tests comparing the means of *INVEST* for each *DISCL* in the assurance absent condition. Results reported in Table 4.1, Panel C partially support H2. When the ESG report is not assured, ESG investors are more willing to invest under a two-sided resolution strategy than a two-sided strategy alone ($t = 2.36$, $p = 0.010$, one-tailed). However, I observe no significant difference in *INVEST* between a two-sided resolution strategy and one-sided disclosure strategy ($t = 0.94$, $p = 0.175$, one-tailed).[12] Together, these results indicate the provision of a resolution when negative information is disclosed in the ESG report significantly improves investment. Moreover, while providing unfavorable disclosures with a forward-looking remedy does not improve investment compared to disclosing positive information only, this disclosure also does not reduce investor support.

[12] Following guidance from Guggenmos and Bennett (2021), I also utilize Bayesian analyses to test the null hypothesis that no difference in investment likelihood exists under a one-sided versus two-sided resolution disclosure strategy. The Bayes factor indicates moderate support for the null hypothesis over the alternative ($BF_{10} = 0.417$). Thus, I conclude no difference in investment exists between these two conditions.

Together, findings from H1 and H2 have theoretical and practical implications. First, prior literature predicts uniform benefits from voluntarily disclosing unfavorable performance (Birnbaum and Stegner 1979; Hutton et al. 2003); however, I find these conclusions may not hold true in an ESG setting. Second, my findings shed light on prior literature's conclusions about the benefits to two-sided argumentation. Prior literature has concluded credibility-enhancing benefits from the addition of negative information, but prior conceptions of this construct have included disclosure of a forward-looking remedy (Winchel 2015). My results indicate that, absent other credibility mechanisms (i.e., assurance), the disclosure of negative ESG information *harms* ESG investor support. However, results from the two-sided resolution condition suggest that the additional disclosure of a resolution has a comparatively significant positive effect on investors. Though disclosing negative information with a resolution does not *increase* investment relative to presenting positive information only, I do find it yields similar investor reactions. Practically, the absence of an effect between one- and two-sided resolution disclosures gives insights into organizational resistance to transparency. That is, as long as management communicates its intention to address an ESG shortfall, disclosing ESG shortcomings has no repercussions on investor support.

Hypothesis 3

H3 predicts when management has obtained ESG assurance, investors will be more willing to invest under a one- versus two-sided disclosure strategy. To test H3, I examine the simple effect of *DISCL* (one- versus two-sided) in the assurance present condition. The effect is significant (t=1.63, $p = 0.052$, one-tailed). While this result supports H3, the ANOVA as a whole does not provide support for the hypothesized mean

pattern in accordance with persuasion theory (i.e., two-sided disclosure does not yield persuasive benefits when assurance is absent). Next, I holistically examine the observed ANOVA results to gain insight into the interaction between disclosure strategy and ESG assurance.

As previously reported, ANOVA results indicate a significant negative main effect of *DISCL* (F=6.59, p = 0.002) and an insignificant effect of *ASSUR* (F=1.88, p = 0.172) on *INVEST.* The *DISCL*x*ASSUR* interaction is significant (F=2.48, p = 0.086). Visual inspection of Figure 4.1 indicates the provision of ESG assurance could be especially important when management makes two-sided ESG disclosures. Specifically, though two-sided disclosure decreases investment likelihood compared to one-sided, assuring the ESG report tempers this negative effect, yielding significantly greater investment compared to when two-sided disclosures are not assured (t=2.57, p = 0.011). This finding could hold value in promoting the usefulness of ESG assurance. That is, in the case the organization discloses shortcomings in its ESG report, obtaining ESG assurance may provide at least some protection against negative investor responses.

Two-sided Resolution Disclosure Strategy

Finally, recall that theory-predicted competing credibility signals from assurance and the provision of a resolution precluded hypothesizing about the relative effects of a two-sided resolution strategy under different assurance regimes. To examine the relative effects of assurance and the provision of a resolution to unfavorable disclosures, I examine the simple effects of *DISCL* (two-sided, two-sided resolution) within each *ASSUR* condition. Results reported in Table 4.1 Panel C reveal that compared to a two-sided disclosure, additionally disclosing a resolution has a significant positive effect on

investment when assurance is absent (t=2.36, , p = 0.019), but not when assurance is present (t=0.58, p = 0.559). Moreover, there is no difference in investment likelihood between a two-sided disclosure strategy with assurance and a two-sided resolution strategy absent assurance (*MD* = -0.18, p = 0.960, untabulated). Together with H3, this finding indicates that while ESG assurance can insulate a firm from reactions to specific disclosures, providing a resolution for unfavorable disclosures can yield similar benefits when a company must forego voluntary assurance.

Supplemental Analyses

My experimental design lends itself to several supplemental analyses aimed at deeper understanding of ESG disclosure strategies and ESG assurance on investment behavior. In particular, I examine how ESG assurance affects disclosure credibility and provide further analyses examining the mechanism by which ESG assurance insulates firms from reduced investment in the event of unfavorable disclosures. Finally, I perform analyses aimed at understanding the role of investor motivation in reactions to ESG assurance.

Supplemental Analyses: Informing Prior Research

Prior accounting literature has concluded ESG assurance enhances the credibility of the ESG report (Hodge et al. 2009), increases fundamental value estimates (Hoang and Trotman 2021), and increases willingness to invest (Cheng et al. 2015). However, these conclusions are subject to two important limitations which warrant further insight. First, despite calls to consider the value of ESG assurance in specific contexts (Cheng et al. 2015; Cohen and Simnett 2015), prior studies tend not to distinguish assurance's value amongst different disclosure types. Though one-sided disclosure is popular amongst

organizations, it is unclear whether ESG assurance would have the same effect when the ESG report contains unfavorable performance information.[13] Given repeated calls for more transparency around ESG reporting, and the anticipated adoption of more uniform reporting standards, it is important to examine the effect of ESG assurance when the report contains unfavorable ESG performance information. Second, prior research has utilized analysts (Coram et al. 2009; Pflugrath et al. 2011), nonprofessional investors (Stuart, Bedard, and Clark 2020), and students (Cheng et al. 2015) to make conclusions about investor reactions to voluntary disclosures and assurance. However, it is unknown whether investors who are specifically interested in integrating ESG into their investment strategy (i.e., ESG investors) differ from the general population of investors in how they respond to ESG disclosures.

ESG Assurance and Credibility

To examine whether ESG investors respond similarly to investors used in prior research, and whether ESG assurance increases report credibility under different disclosure regimes, I run a 3x2 ANOVA with *DISCL* (one-, two-, two-sided resolution) and *ASSUR* (absent, present) as the independent variables and disclosure credibility (*DISCL_CRED)* as the dependent variable. Results (untabulated) reveal a significant main effect of *ASSUR* (F=7.77, p = 0.006) on *DISCL_CRED*, such that assurance increases the credibility of ESG disclosures. There is no effect of *DISCL* (F=0.54, p = 0.582), nor a significant *DISCL*x*ASSUR* interaction (F=0.06, p = 0.941) on *DISCL_CRED*. This finding replicates prior ESG research, which concludes the provision

[13] A couple of studies have examined the impact of voluntary assurance in the midst of positive and negative disclosures in a non-ESG setting (e.g., balanced scorecard). These studies have concluded voluntary assurance only impacts users' perceptions and decision-making when the disclosed information is positive (Fargher and Gramling 2003; Coram et al. 2009).

of ESG assurance enhances credibility of the ESG report overall. However, the absence of a *DISCL* effect refutes previously developed conceptions of persuasion theory (e.g., Crowley and Hoyer 1994), because ESG investors do not use specific disclosures to inform the credibility of the ESG report (i.e., they do not recognize voluntary negative disclosures as more honest or believable). Results suggest reactions to voluntary disclosure as predicted by prior research (e.g., Casadesus-Masanell 2004) may not hold in the ESG reporting environment.

ESG assurance and Return Expectations

Next, I examine the effect of ESG assurance and disclosures on return expectations. Prior research predicts a main effect of assurance, such that return expectations are higher when the report is assured (Hoang and Trotman 2021). To test this conclusion, I run the same 3x2 ANOVA as above, but this time with return expectations (*RETURNS*) as the dependent variable. Results reported in Table 4.2 and presented visually in Figure 4.2 reveal insignificant main effects of both *ASSUR* (F=2.24, $p = 0.136$) and *DISCL* (F=0.56, $p = 0.573$) on *RETURNS*. The *DISCL*x*ASSUR* interaction, however, is significant (F=3.12, $p = 0.046$). Analyses of simple effects indicate assurance does not affect return expectations when disclosures are all positive (F=0.70, $p = 0.405$), nor when there are unfavorable disclosures presented with a resolution (F=0.59, $p = 0.443$). However, when disclosure are two-sided, the provision of ESG assurance results in significantly higher return expectations (F=7.42, $p = 0.007$), protecting the organization from a reduction in perceived value.

Together, my findings around disclosure credibility and financial returns have important implications. First, I replicate prior research which finds credibility-enhancing

benefits of ESG assurance. Second, I provide important caveats to how ESG assurance influences investment. Contrary to prior assumption, the credibility of the ESG report does not necessarily map directly to investment decisions. At least amongst ESG investors, the benefits of obtaining ESG assurance may be more nuanced than previously thought. When the ESG report contains only favorable information, assurance has little effect on return expectations. In contrast, when the ESG report contains at least some unfavorable information, assurance can insulate the organization from negative investor reactions. As calls for ESG transparency continue to emanate from various sources (e.g., PwC 2021a; S&P Global 2022; Yu et al. 2018), my findings indicate ESG assurance may be a key to allowing management to transparently communicate ESG shortcomings without negatively affecting investors' return expectations.

ESG Assurance and ESG Performance

Though not directly derived from prior research, I perform additional testing aimed at understanding the process behind ESG investors' reactions to ESG assurance and disclosures. As discussed previously, though assurance increases credibility, these perceptions remain constant across different disclosure types. This finding begs the question of *how* assurance influences return expectations and investment likelihood, specifically when management discloses unfavorable information in the ESG report. One possibility is that absent assurance, unfavorable disclosures negatively affect investors' perceptions of ESG performance, which in turn reduces return expectations and, ultimately, investment likelihood. However, the voluntary nature of ESG assurance could reasonably render its obtainment as a positive input to investor perceptions of management's overall ESG performance. If ESG investors view assurance as an input to

ESG performance, then performance perceptions ought to be restored when assurance is present.

To test this possibility, I run a Hayes (2018) PROCESS Model 85 with 10,000 bootstrapped samples.[14] The theoretical model and unstandardized results of path model estimations are presented in Figure 4.3. The index of moderated mediation is significant (b = 0.09, *90% CI* [0.03, 0.16]). Without assurance, unfavorable ESG disclosures indirectly reduce investment likelihood through reduced ESG performance perceptions and financial return expectations (b = -4.29*, 90% CI* [-7.81, -1.47]). However, ESG assurance moderates the negative indirect effect of unfavorable disclosure on investment. The provision of voluntary ESG assurance restores perceptions of ESG performance and financial return estimates, ultimately preventing reduction in investment (b = -1.32*, 90% CI* [-3.22, 0.28]). This finding provides evidence that (1) unfavorable ESG disclosures harm perceptions of ESG performance, (2) obtaining voluntary assurance restores perceptions of ESG performance, (3) ESG investors link ESG performance to financial performance, even when ESG disclosures have no direct financial implications, and (4) return expectations inform ESG investors' capital allocation decisions.

Investor Motivation

Finally, I perform one additional supplemental test examining a variable new to the ESG literature. Academics have acknowledged investors sometimes consider information outside of the financial statements when making investments (e.g., Sparkes and Cowton 2004). This is certainly the case when individuals integrate ESG information into their investment decisions. However, the literature has not examined whether

[14] Because I am interested in the moderating effect of assurance in the presence of two-sided disclosures, I restrict moderated mediation analyses to two levels of disclosure (one- and two-sided).

differences in investor motivation influence how they integrate this information into their decisions. Statman (2020) points out investors making ESG investment decisions can be further placed into two motivational buckets. First, investors could consider a company's ESG performance primarily with the aim of maximizing profits. Statman (2020) terms these banner ESG investors, because they appear concerned with ESG issues, but ultimately are only "waving banners". Second, ESG investors could consider ESG with the primary aim of making a societal difference. These are termed plow ESG investors, because they "pull plows" for environmental and social well-being.

Though the literature has begun to speculate on differences in how ESG investors utilize sustainability information, no evidence establishes whether these motivations do, in fact, influence investment decisions. My study's design allows initial examination of whether and how ESG motivation may influence reactions to ESG assurance and disclosures. Following Statman (2020), I collect a measure of investor motivation by asking participants, "When evaluating an ESG investment, what is more influential in your decision whether or not to invest?". Participants respond on a 101-point scale anchored at 0 "Whether the investment maximizes returns" to 100 "Whether the investment creates a more just and sustainable world." I categorize participants as having banner or plow motivation by splitting above and below the scale midpoint.[15]

To examine whether ESG investor motivation influences reactions to ESG assurance and disclosure, I perform a 2x2x2 ANOVA with *DISCL* (one- and two-sided), *ASSUR* (present, absent) and *MOTIVATION* (banner, plow) as the independent variables

[15] My sample included 112 (52%) participants who report motivation consistent with plow investors (i.e., difference motivated), and 102 (48%) who report motivation consistent with banner investors (i.e., profit motivated).

and *INVEST* as the dependent variable. Results (untabulated) are presented visually in Figure 4.4. I find a significant three-way interaction between disclosure, assurance, and motivation (F= 2.83, p = 0.095, two-tailed). Further examination reveals a significant two-way interaction between disclosure and assurance for plow investors (F=4.46, p = 0.037), but not for banner investors (F=0.076, p = 0.738). To better understand how plow investors react to ESG information, I perform follow-up simple simple main effect tests examining their reactions to disclosure and assurance. When ESG disclosures are one-sided, plow investors do not change their investment behavior in response to ESG assurance (F=0.023. p =0.879). However, assurance has a significant effect on investment likelihood when the ESG report contains two-sided disclosures (F=9.785, p = 0.002). A Bonferroni-adjusted simple pairwise comparison for plow investors under two-sided disclosure reveals plow investors are significantly more likely to invest in the face of two-sided disclosures when management has obtained ESG assurance versus when the ESG report is unassured (*MD* = 24.054, p = 0.004).

Taken together, these results have several important implications. First, when ESG disclosures are one-sided, ESG assurance has no effect on investment likelihood, regardless of investor motivation. Second, ESG motivation influences how ESG investors react to assurance and disclosures. Banner investors react to the valence of information, investing less when management utilizes two-sided disclosure, regardless of whether the ESG report is assured. In contrast, plow investors consider both disclosure and assurance in forming their ESG investment decisions, and the provision of ESG assurance prevents plow investors from reacting negatively to unfavorable ESG disclosures. Organizations may want to take care in evaluating their investor base. Though banner investors tend to

react solely to information valence, plow investors value ESG assurance in informing their investment decisions. If an organization primarily attracts plow investors, my results suggest the provision of ESG assurance could allow transparent disclosure without negative consequence.

Table 4.1 Descriptive Statistics and ANOVA Results: Investment Likelihood

Panel A: Descriptive Statistics - Investment Likelihood Mean [Standard Deviation]

		Assurance			
Condition	**n**	**Assurance Present**	**n**	**Assurance Absent**	**Total**
One-Sided	39	72.80 [16.51]	31	70.26 [19.42]	71.67 [17.77]
Two-Sided	44	64.21 [24.59]	32	49.88 [30.11]	58.17 [27.79]
Two-Sided Resolution	39	61.13 [27.06]	29	64.38 [23.87]	62.51 [25.61]
Total		65.97 [23.54]		61.32 [26.17]	

Panel B: Two-Way ANOVA Model of Investment Likelihood

Source of Variation	**SS**	**MS**	**df**	**F**	**p-value**
Disclosure	7,577.33	3,788.67	2	6.59	0.002***
Assurance	1,077.76	1,077.76	1	1.88	0.172
Disclosure x Assurance	2,848.76	1,424.38	2	2.48	0.086*
Error	119,550.14	574.76	208		

Table 4.1 (cont.)

Panel C: Hypothesis and Follow-Up Tests

Source of Variation	F	t	p-value
Effect of Disclosure given No Assurance	6.04	2.46	0.003***
Effect of Disclosure given Assurance	2.50	1.58	0.085*
Effect of Assurance given One-Sided Disclosure	0.19	0.44	0.661
Effect of Assurance given Two-Sided Disclosure	6.62	2.57	0.011**
Effect of Assurance given Two-Sided Resolution Disclosure	0.31	0.55	0.581
Absent Assurance			
One-Sided versus Two-Sided Disclosure (H1)	11.42	3.38	0.002***
One-Sided versus Two-Sided Resolution Disclosure (H2)	0.88	0.94	0.175†
Two-Sided versus Two-Sided Resolution Disclosure (H2)	5.59	2.36	0.010***,†
Present Assurance			
One-Sided versus Two-Sided Disclosure (H3)	2.66	1.63	0.052*,†
One-Sided versus Two-Sided Resolution Disclosure	4.50	2.12	0.035**
Two-Sided versus Two-Sided Resolution Disclosure	0.34	0.58	0.559

Table 4.1: This table presents descriptive statistics and results from the 3x2 ANOVA used for hypothesis testing.
Assurance reflects the presence or absence of assurance over Luma's ESG report.
Disclosure reflects whether the ESG report contained only positive disclosures (one-sided), positive and negative disclosures (two-sided), or positive and negative disclosures with a resolution (two-sided resolution).
Investment Likelihood reflects participants' reported likelihood to invest, captured on a 101-point scale [Not at all likely - Very likely].
*, **, *** Indicates significance at $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.
† Denotes one-tailed p-value consistent with directional predictions.

Table 4.2: Descriptive Statistics and ANOVA Results: Return Expectations

Panel A: Descriptive Statistics -Return Expectations Mean [Standard Deviation]

		Assurance			
Condition	**n**	**Assurance Present**	**n**	**Assurance Absent**	**Total**
One-Sided	39	62.85 [18.878]	31	66.23 [14.066]	64.34 [15.677]
Two-Sided	44	66.98 [17.094]	32	56.31 [16.763]	62.49 [17.66]
Two-Sided Resolution	39	64.00 [18.16]	29	60.83 [17.41]	62.65 [17.78]
Total		64.70 [17.32]		61.08 [16.47]	

Panel B: Two-Way ANOVA Model of Return Expectations

Source of Variation	**SS**	**MS**	**df**	**F**	**p-value**
Disclosure	316.64	158.32	2	0.18	0.848
Assurance	635.81	635.81	1	0.72	0.486
Disclosure x Assurance	1,768.90	884.45	2	3.12	0.046**
Error	59,056.49	283.93	208		

Panel C: Follow-Up Tests

Source of Variation	**F**	**p-value**
Effect of Disclosure given No Assurance	2.73	0.068*
Effect of Disclosure given Assurance	0.67	0.512
Effect of Assurance given One-Sided Disclosure	0.70	0.405
Effect of Assurance given Two-Sided Disclosure	7.42	0.007**
Effect of Assurance given Two-Sided Resolution Disclosure	0.59	0.443

Table 4.2: This table presents descriptive statistics and results from the 3x2 ANOVA used to examine the effect of assurance and disclosure on return expectations in supplementary analysis.
Assurance reflects the presence or absence of assurance over Luma's ESG report.
Disclosure reflects whether the ESG report contained only positive disclosures (one-sided), positive and negative disclosures (two-sided), or positive and negative disclosures with a resolution (two-sided resolution).
Return Expectations reflects participants' responses to the question, "What kind of returns do you expect from an investment in Luma stock?" Responses are captured on a 101-point scale [Significantly below average – Significantly above average].
*, **, *** Indicates significance at $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

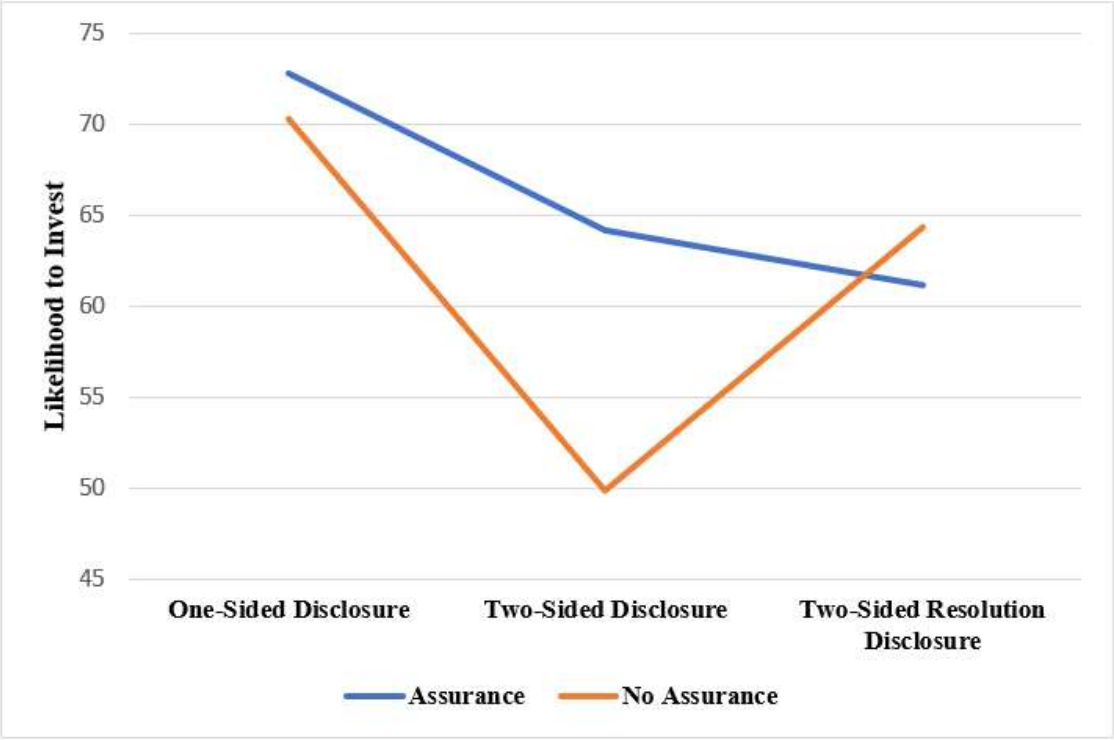


Figure 4.1 The Effect of Management Disclosure Strategy and ESG Assurance on Investment Likelihood

NOTES:
This figure presents the mean pattern of a 3x2 ANOVA examining the interactive effects of management's disclosure strategy (*DISCL*) and ESG assurance (*ASSUR*) on ESG investors' likelihood to invest (*INVEST*). Investment Likelihood reflects participants' reported likelihood to invest, captured on a 101-point scale [Not at all likely - Very likely].

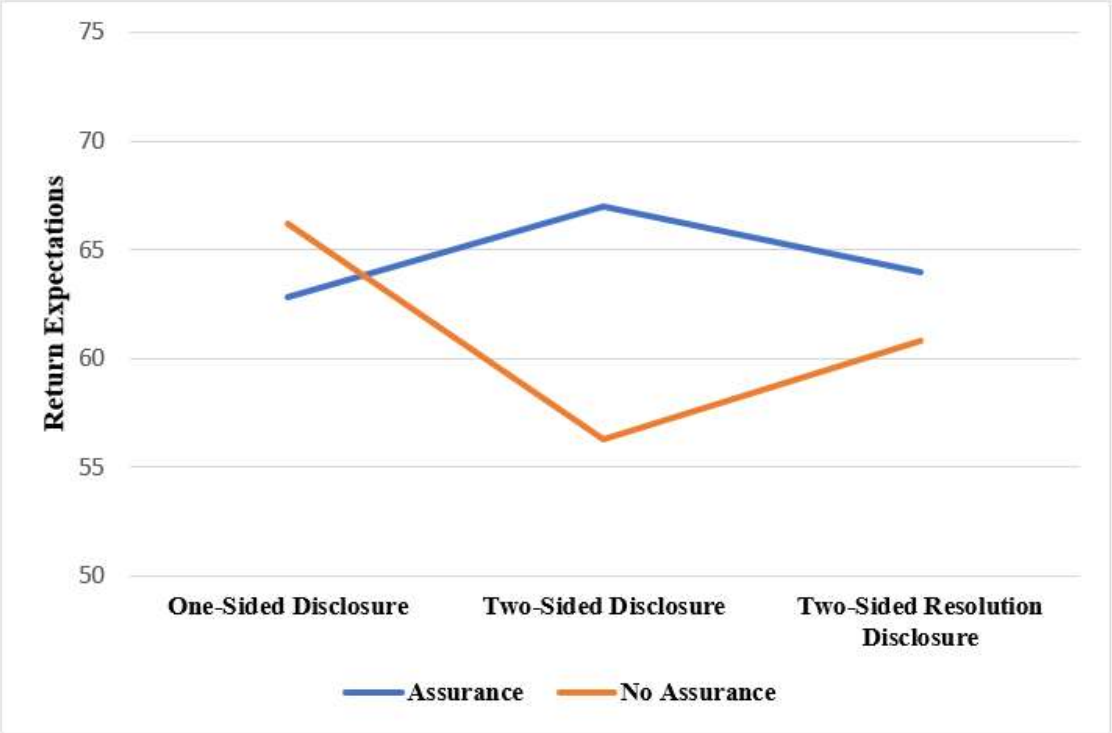
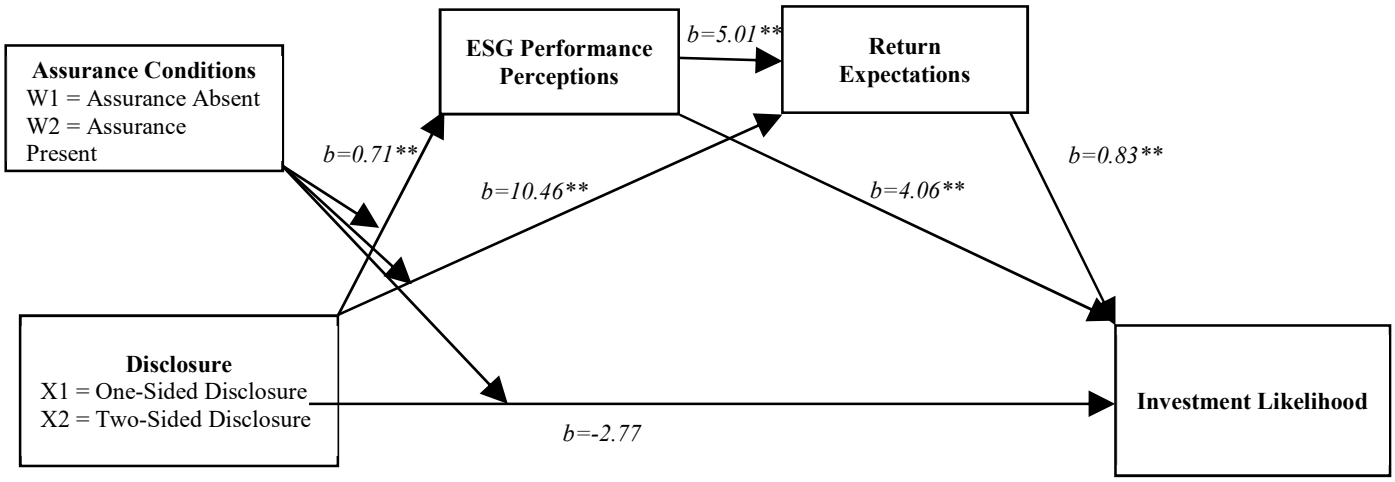


Figure 4.2 Visual Representation of the Effect of Management Disclosure Strategy and ESG Assurance on Return Expectations

NOTES:
This figure presents the mean pattern of a 3x2 ANOVA examining the interactive effects of management's disclosure strategy (*DISCL*) and ESG assurance (*ASSUR*) on ESG investors' Return Expectations (*RETURNS*). Return Expectations reflects participants' responses to the question, "What kind of returns do you expect from an investment in Luma stock?" Responses are captured on a 101-point scale [Significantly below average – Significantly above average].



Indirect Effect of Disclosure on Investment Likelihood through ESG Performance Expectations and Return Expectations:

Assurance Absent: **-4.29, *90% CI* [-7.81, -1.47]**
Assurance Present: -1.32, *90% CI* [-3.22, 0.28]

Index of Moderated Mediation
Difference between indirect effect when assurance is present vs absent:
0.09 *90% CI* [0.03, 0.16]

Figure 4.3 The Moderated Mediating Effect of Disclosure and Assurance on Investment Likelihood

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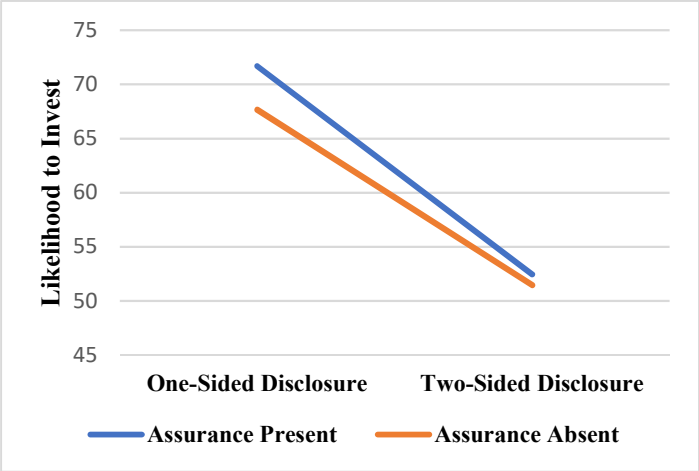
NOTES:
This figure visually depicts the theoretical Hayes' PROCESS Model 85 for the effect of disclosure and assurance on investment likelihood through ESG performance perceptions and return expectations.
ESG Performance Perceptions reflect participants' responses to the statement, "Luma's ESG performance met my expectations." Responses are captured on a 7-point Likert scale [Strongly disagree to Strongly agree].
Return Expectations reflects participants' responses to the question, "What kind of returns do you expect from an investment in Luma stock?" Responses are captured on a 101-point scale [Significantly below average – Significantly above average].
Investment Likelihood reflects participants' reported likelihood to invest, captured on a 101-point scale [Not at all likely - Very likely].
**Indicates significance of coefficient at $p < 0.05$.
Indirect effects and indices of moderated mediation significant at the 90% level are denoted in bold.

Banner Motivation



Plow Motivation

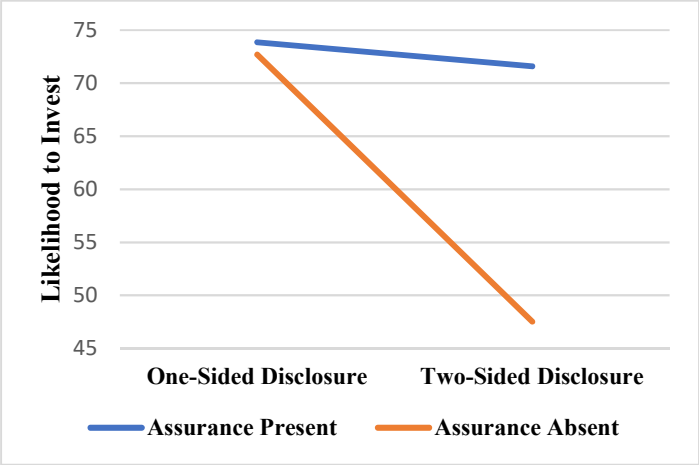


Figure 4.4 Visual Representation of the Three-Way Interaction of Motivation, Disclosure, and Assurance on Investment Likelihood

NOTES:
This figure presents the mean pattern of a 2x2x2 ANOVA examining the interactive effects of ESG investor motivation (*MOTIVATION*), management's disclosure strategy (*DISCL*), and ESG assurance (*ASSUR*) on ESG investors' likelihood to invest (*INVEST*). Investment Likelihood reflects participants' reported likelihood to invest, captured on a 101-point scale [Not at all likely - Very likely].

CHAPTER 5

CONCLUSION

ESG investors face uncertainty in evaluating ESG disclosures. My study leverages the ESG reporting environment, in which investors seek information about management's ESG commitment, and management retains considerable discretion over external reporting, to examine how different disclosure strategies and voluntary assurance influence investment.

Contrary to predictions derived from persuasion theory, I find when the ESG report is not assured, ESG investors do not invest more when management discloses unfavorable ESG information, and instead invest significantly *less*. Second, disclosing a resolution to negative performance does not yield greater investment than disclosing positive information alone, but does provide benefits relative to disclosing negative information without a forward-looking remedy. Third, I find ESG assurance influences investment, providing at least some insulation from negative responses when the report contains unfavorable information. Fourth, results from supplemental analyses provide deeper insight into how ESG assurance influences investment likelihood. ESG assurance increases report credibility regardless of disclosure type; however, this perceived credibility does not ubiquitously predict greater investment. Instead, ESG assurance influences investment likelihood when the report contains negative information, restoring perceptions of ESG performance and return expectations, and ultimately insulating the organization from negative investor responses. Finally, supplemental analyses provide

initial evidence that differing ESG motivations result in unique responses to disclosures and assurance. While banner investors react solely to information valence, plow investors consider both disclosures and assurance, and ESG assurance prevents plow from reacting negatively unfavorable ESG disclosures.

My study has important theoretical and practical implications. From a theoretical perspective, my study informs prior literature on persuasion theory in accounting (e.g., Winchel 2015), and indicates prior conclusions may not ubiquitously generalize to the ESG reporting environment. Additionally, my study is the first to utilize nonprofessional investors specifically interested in ESG. Results provide new insights to prior conclusions about how these investors react to ESG disclosure and assurance (e.g., Pflugrath et al. 2011; Cheng et al. 2015), and should encourage future research to further examine how these stakeholders respond to ESG reporting. My research should also be of interest to organizations and stakeholders. As regulators and investor groups continue persistent calls for greater transparency in ESG reporting (e.g., PwC 2021a; S&P Global 2022; Yu et al. 2018), my research finds at present, organizations have valid reasons for concealing their shortcomings. However, results also indicate that disclosing unfavorable information with a forward-looking remedy may not harm investment compared to utilizing solely positive disclosures. This finding could be encouraging in promoting transparent disclosures, provided organizations are able to address shortcomings. Additionally, my study highlights the potential value of ESG assurance as a key in allowing management to transparently communicate ESG shortcomings without negative consequence.

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