SEEKING CREDIBILITY IN ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORTING

Megan F. Hess *, Andrew M. Hess **

* *Corresponding author,* Williams School of Commerce, Economics, and Politics, Washington and Lee University, Lexington, USA
Contact details: Williams School of Commerce, Economics, and Politics, Washington and Lee University, 204 W. Washington St., Lexington, VA 24450, USA
** Williams School of Commerce, Economics, and Politics, Washington and Lee University, Lexington, USA

OPEN ACCESS

How to cite this paper: Hess, M. F., & Hess, A. M. (2026). Seeking credibility in environmental, social, and governance reporting. *Corporate Governance and Sustainability Review, 10*(2), 30–43. https://doi.org/10.22495/cgsrv10i2p3

ISSN Online: 2519-898X
ISSN Print: 2519-8971

Received: 31.07.2025
Revised: 21.11.2025; 05.02.2026
Accepted: 25.02.2026

JEL Classification: M40, M14, M48
DOI: 10.22495/cgsrv10i2p3

Abstract

Prior studies warn that environmental, social, and governance (ESG) reporting can mask poor sustainability performance and artificially inflate company reputations, but the extant literature offers few solutions to this problem that do not involve regulatory reform (Cooper & Owen, 2007; Hess & Dunfee, 2007; Patekar & Mahajan, 2025). This study contributes to this research gap by exploring ways that managers can improve the credibility of their ESG reporting in a voluntary disclosure environment. Our mixed methods research design leverages data on disclosure, goal setting, goal performance, and assurance collected through a content analysis of the sustainability reports for a sample of publicly traded U.S. companies following the Global Reporting Initiative (GRI) reporting framework from 2013–2019. Our quantitative analyses suggest that ESG ratings (Sustainalytics) are positively associated with the number of sustainability topics disclosed (disclosure breadth), a decrease in economic disclosures, and an increase in environmental disclosures (disclosure depth), setting environmental goals, and successfully reaching sustainability targets. However, we see no association between ESG ratings and goal failure rates or the use of higher-quality auditors. These findings may be especially relevant for managers making decisions about sustainability strategy, disclosure, and assurance, and for ESG investors seeking to identify credible firms for sustainability-focused investment.

Keywords: Sustainability, Non-Financial Disclosure, ESG, Corporate Social Responsibility, Goal Setting, Audit Quality

Authors' individual contribution: Conceptualization — M.F.H. and A.M.H.; Methodology — A.M.H.; Formal Analysis — M.F.H. and A.M.H.; Data Curation — M.F.H.; Writing — Original Draft — M.F.H. and A.M.H.; Writing — Review & Editing — M.F.H.; Supervision — M.F.H.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

Acknowledgements: The Authors thank their colleague Colin Reid and Summer Research Scholars and Independent Study students, especially Anne Shannon and Madeleine Becker, for their assistance with this project. This research was supported by a Lenfest grant from Washington and Lee University.

1. INTRODUCTION

Between 2019 and 2020, more than $17 trillion was invested using environmental, social, and governance (ESG) performance criteria, a 42% increase over the prior year (Bloomberg, 2021). This dramatic increase in ESG investing activity can be attributed to several factors. Many institutional investors report that ESG information is important because these issues have, or will come to have,

material financial impacts on the business (Amel-Zadeh & Serafeim, 2018; Bressan & Sabrina, 2025; Friede et al., 2015; Ghinizzini et al., 2025; Margolis et al., 2009; Patekar & Mahajan, 2025). Moreover, investors and other stakeholders appear to value the insights into operations, strategic priorities, and management quality that can be gained from these non-financial disclosures (Baldini et al., 2025; Dhaliwal et al., 2011; Eccles et al., 2011; Phan & Tran, 2025). The question remains, however, whether the ESG information provided by companies to satisfy this market demand is credible. Many scholars have cautioned that voluntary ESG reporting[1] may be a symbolic gesture that allows companies to mask poor performance and artificially inflate their reputations (Boiral et al., 2019; Cho et al., 2012; Cho & Patten, 2007).

Given these concerns about the lack of credibility in ESG reporting, many studies have stressed the importance of regulatory interventions mandating the form and content of non-financial disclosure to improve the quality of ESG reporting (Cooper & Owen, 2007; Hess & Dunfee, 2007; Patekar & Mahajan, 2025). However, since the future of regulatory reform in the U.S. remains uncertain, we aim to contribute to an important research question left under-examined by the extant literature, namely:

RQ: How can managers improve the credibility of their ESG reporting in a voluntary disclosure environment?

To shed light on this research question, we employ a mixed methods research design to explore the effectiveness of four strategies suggested by the prior literature to improve the credibility of ESG reporting that do not involve regulatory intervention: increasing disclosure, engaging in voluntary sustainability goal setting, successfully reaching these targets, and hiring "Big 4" financial auditors to provide high quality assurance for these disclosures. We collected data for each of these credibility improvement strategies through a content analysis of the voluntary sustainability disclosures for a sample of publicly traded U.S. companies following the Global Reporting Initiative (GRI) reporting framework from 2013–2019 (GRI, 2021). We then tested the effectiveness of each of these strategies using time series, firm-fixed effects multivariate regression analyses to model their associations with ESG ratings from Sustainalytics, which we selected as our proxy for ESG reporting credibility. Sustainalytics is a leading provider of ESG data that is commonly used in academic research (Filbeck et al., 2019; Serafeim & Yoon, 2023; Surroca et al., 2010).

Our findings support previous research that disclosure breadth is associated with improved ESG ratings (Al-Tuwaijri et al., 2004; Clarkson et al., 2008; Hummel & Schlick, 2016). We also add nuance to these prior findings by showing that not all voluntary disclosures may be equally valued, however. For our sample, greater depth of economic disclosure is associated with a decline in ESG ratings, whereas greater depth of environmental disclosure is associated with an increase. Moreover, we find no change in ESG ratings following increased social disclosure. Our results also provide new insights into how credibility is affected by voluntary sustainability goal setting and goal performance (Dahlmann et al., 2019; Ioannou et al., 2016; Maas, 2018). We show that ESG ratings are associated with environmental goal setting, but they do not change in response to economic or social goal setting. We also find that ESG ratings are positively associated with companies successfully meeting their goals, but do not change when companies fail to achieve them. Finally, despite research that shows that market valuations and financial performance are correlated with auditor quality (Clarkson et al., 2019; Maji & Tiwari, 2025), we see no evidence that the use of Big 4 auditors is associated with ESG ratings in our sample.

Our study makes several important contributions to the research and practice of voluntary ESG reporting. We expand the findings of previous studies by examining not just the breadth of disclosure but also its depth in particular reporting categories. Furthermore, this is the first study to our knowledge to examine the association of sustainability goal setting and performance with ESG performance ratings. We believe that the insights gained from this research are especially relevant for managers of firms in voluntary disclosure environments, making decisions about sustainability strategy, disclosure, and assurance. They may also be important for ESG investors seeking to identify credible firms for sustainability-focused investment.

The rest of this paper is structured as follows. Section 2 highlights previous research regarding voluntary methods for improving the credibility of non-financial disclosure that are the focus of this study, and develops our hypotheses for the effect that each will have on third-party evaluations of a company's ESG performance. Section 3 describes our research design, sample, and methods. Section 4 provides the results of our analyses. Section 5 discusses these findings. Section 6 concludes by discussing the implications of the findings, their limitations, and providing directions for future research.

2. LITERATURE REVIEW

2.1. Mechanisms to enhance credibility in ESG reporting

2.1.1. Disclosure breadth and depth

Perhaps the most widely studied remedy to the problem of credibility in non-financial disclosure is that of transparency. Voluntary disclosure theory suggests that managers at companies with good sustainability performance have incentives to share relevant, complete, and accurate information with their stakeholders in order to distinguish themselves from their poorer-performing peers (Bewley & Li, 2000; Dye, 1985; Verrecchia, 1983). Indeed, many studies find a positive correlation between transparency in ESG reporting and ESG performance (Al-Tuwaijri et al., 2004; Clarkson et al., 2008; Hummel & Schlick, 2016). Research also shows that market participants reward firms that are more transparent in their non-financial disclosures with higher stock prices, lower barriers to capital, more

[1] Historically, academics have referred to ESG reporting as corporate social responsibility (CSR) or sustainability reporting. In this study, we refer to CSR and all other forms of sustainability reporting as ESG reporting, since this is the term, most commonly used by the investment community today.

optimistic analyst recommendations, and larger analyst followings (Cheng et al., 2014; Khan et al., 2016; Filbeck et al., 2019; Luo et al., 2015).

In short, transparency efforts are an important way that managers can mitigate concerns about incomplete, imbalanced, and biased reporting. Moreover, following a reporting framework, like the GRI, can discipline managers to consider a greater breadth of sustainability topics and encourage them to provide more detailed information on topics that may be particularly material or relevant to their stakeholders. For these reasons, we expect that third-party evaluators will reward transparent firms with better ESG ratings in recognition of their efforts to share a greater breadth of information.

H1a: There will be a positive relationship between disclosure breadth and ESG performance ratings.

Beyond the breadth of disclosure, we also anticipate that providing greater depth of detail on the individual pillars of the "E", the "S", and the "G" will be an important factor in establishing the credibility of a firm's ESG activities (Clarkson et al., 2008; Hummel & Schlick, 2016; Michelon et al., 2015). Moreover, factoring in the depth of disclosure in a given area, rather than considering only the breadth of disclosure overall, allows firms that have focused their ESG efforts in a single domain, such as environmental activities, to demonstrate their credibility in a way that would not be recognized otherwise. To our knowledge, prior research has not examined both the breadth and depth of voluntary non-financial disclosure to examine how each of these transparency efforts affects ESG performance.

H1b: There will be a positive relationship between disclosure depth (specific economic, environmental, or social disclosures) and ESG performance ratings.

2.1.2. Sustainability goal setting

Another mechanism by which managers can signal their commitment to sustainability is by setting goals. The importance of goal setting as a mechanism to drive behavior change is well established in both the management and psychology literatures (Locke & Latham, 2002, 2006). Goal setting is believed to drive behavior change as the participant works to resolve the cognitive dissonance created by an awareness of the difference between their current state and the desired future state. Goals also focus the participant's attention and direct their efforts towards goal-relevant activities. In addition, goal setting encourages participants to expend additional efforts on goal-related tasks and persist even in the face of setbacks.

Although the literature exploring goal setting in a sustainability context is still developing, scholars have attempted to determine whether (and under what conditions) sustainability goal setting is a signal of a real commitment to improving social and environmental impacts (Maas & Rosendaal, 2016; Pinkse & Busch, 2013). Indeed, several studies show that simply setting sustainability goals does not lead to improved social or environmental performance; rather, organizations need to set ambitious, specific, measurable targets to achieve results (Dahlmann et al., 2019; Ioannou et al., 2016; Maas, 2018). Veenstra and Ellemers (2020) also show how perceived weaknesses in ESG performance can motivate organizations to prioritize sustainability targets (Chatterji & Toffel, 2010).

In short, more research is needed to better understand the effects of sustainability goal setting on third-party evaluations of ESG performance. Indeed, this oversight in the academic literature was an important motivation for conducting this study, since actionable implementation towards sustainability goals increases the likelihood of tangible progress (Suhardjo et al., 2024). We expect that third-party evaluators will respond positively when companies set specific, measurable sustainability goals for several reasons. When companies set specific, measurable targets for performance, this sends a signal that this issue is a strategic priority for the firm. Moreover, following the logic that "what gets measured gets managed", evaluators may perceive that setting sustainability goals means that the firm will also be dedicating time and resources to the initiative (Topping, 2012). In this way, sustainability goal setting may enhance the perceived credibility of voluntary non-financial disclosures. Stated formally:

H2: There will be a positive relationship between sustainability goal setting and ESG performance ratings.

2.1.3. Sustainability goal performance

We also expect that third-party evaluators will be especially impressed when a company not only sets sustainability targets, but also reaches them. Making progress towards previously established sustainability goals implies that the company is credible and that it is "walking the talk". Likewise, failing to meet sustainability goals may imply that the company is not genuine in its commitments or that there are insurmountable obstacles standing in the way of progress. Nevertheless, disclosing detailed performance information, whether that information reveals positive or negative progress towards specific sustainability targets, does add clarity and comparability to ESG information, so it remains an empirical question as to the extent to which companies will be punished for their failures when it comes to sustainability goal performance. For instance, Branzei et al. (2016) find evidence in the long-term bond-market that analysts seem to reward improvements in corporate social responsibility but excuse lapses. Overall, we expect that goal performance success (failure) will increase (decrease) the perceived credibility of a firm's voluntary non-financial disclosures and thereby enhance (decrease) the positive effects of goal setting on ESG performance ratings. Stated formally:

H3a: Goal performance moderates the relationship between sustainability goal setting and ESG performance ratings such that the relationship will be stronger when goal success is high and weaker when goal success is low.

H3b: Goal performance moderates the relationship between sustainability goal setting and ESG performance ratings, such that the relationship will be weaker when goal failure is high and stronger when goal failure is low.

2.1.4. External assurance auditor quality

Many scholars have studied the role of external assurance in improving the quality and credibility of non-financial disclosure (Gipper et al., 2024; Moroney et al., 2012; Simnett et al., 2009). Having an external party, either an accounting firm or consulting firm, assess ESG reporting should improve the accuracy, completeness, comparability, balance, reliability, and relevance of the information shared (Boiral et al., 2019). Moreover, several studies conclude that firms that have their ESG reports assured experience much higher financial performance and have higher investment than firms without such assurance service (Gipper et al., 2024; Kim et al., 2019).

Despite the depth of this research, some important questions about sustainability assurance remain, including whether the credibility of a firm's non-financial reporting increases with auditor quality; that is, when it chooses to have a financial auditor from one of the prestigious "Big 4" accounting firms provide assurance of the ESG report (Guo & Oh, 2024). Clarkson et al. (2019) find a significant increase in a firm's market valuation when the ESG report is externally assured by a Big 4 accounting firm, suggesting that investors value this practice. Maji and Tiwari (2025) also find that the relationship between ESG ratings and financial performance is strengthened when firms use a Big 4 assurance provider. Therefore, we predict that firms that wish to stand out from the crowd and use Big 4 audit firms to provide sustainability assurance will be rewarded with higher third-party ESG evaluations, all else equal.

H4: There will be a positive relationship between the use of Big 4 audit firms for external assurance of sustainability reports and ESG performance ratings.

3. METHODOLOGY

3.1. Research design and sample selection

This study utilizes a mixed-methods design to analyze the relationship between ESG ratings and four managerial strategies theorized to increase ESG reporting credibility. We rely on qualitative methods (content analysis) to create the measures for disclosure, goal setting, goal performance, and assurance, and then employ quantitative methods (time series firm-fixed effects multivariate regression analyses) to systematically test the hypotheses developed above using these measures.

We constructed our sample in September 2016 using the Sustainability Disclosure Database GRI Reports List, which indicated that 5,695 firms were following the GRI reporting framework worldwide at that time. Among the many sustainability reporting frameworks in use today (e.g., SASB, UN SDG, IIRC), we focused our sample on firms using the GRI framework because of its widespread adoption and its emphasis on reporting quality (Ballou et al., 2006; Gray, 2010). Our final sample of 537 firm-year observations from 113 firms includes only those firms on this list that met all of the following criteria: 1) headquartered in the U.S., where stand-alone ESG reporting was voluntary during the sample period; 2) publicly traded; 3) not in the financial services sector (Global Industry Classification Standard (GICS) "40"), which had very little ESG activity during the study period; 4) had financial data available in Compustat; and 5) published at least two sustainability reports indexing the GRI framework during the sample period of 2013–2019.

3.2. Variable measurement and operationalization

3.2.1. Dependent variable

We rely on data from Sustainalytics to provide the ESG performance ratings (*ESG RATING*) used in this study. Sustainalytics rates companies using a range from 1–100, with higher scores indicating better performance[2]. Sustainalytics was selected due to its market prominence, its positive reputation, its overlap with the study period, and its use in numerous academic studies (Filbeck et al., 2019; Serafeim & Yoon, 2023; Surroca et al., 2010).

3.2.2. Independent variables

Our measures of disclosure, goal setting, goal performance, and assurance come from a content analysis of the sustainability reports released by the companies in our sample from 2013–2019. This content analysis captured: a) a count of all the GRI topic-specific standard disclosures in a given year as listed in the report's GRI Index (*DISCLOSURE BREADTH*) and the subtotal of the number of GRI topic-specific standard disclosures in the economic category (*DEPTH ECON*), the environmental category (*DEPTH ENV*), and the social category (*DEPTH SOC*); b) a count of all quantitative sustainability performance goals (*GOAL SETTING*); and c) a progress assessment for each of these quantitative sustainability performance goals. We assessed a firm's progress against each of their sustainability goals as follows: "beat" if the firm disclosed that it had exceeded the performance goal either in amount or in timing; "meet" if the firm disclosed that it was meeting, on track, or making progress with regard to this performance goal; "miss" if the firm disclosed that it was behind or had failed to achieve the performance goal; "new" if the firm disclosed a new sustainability goal (no progress expected); or, "unclear" if progress could not be inferred from the information disclosed. This progress coding was then used to calculate a success rate measure by dividing the sum of the number of goals coded as "meet" and "beat" by the total number of goals in a given firm-year (*SUCCESS RATE*). Likewise, we calculated a failure rate measure by dividing the number of goals coded as "miss" by the total number of goals in a given firm-year (*FAILURE RATE*).

We identified whether a sustainability report received external assurance through a content analysis of the relevant GRI disclosure for this information (GRI G3 version Profile Description 3.13, GRI G4 version disclosure aspect G4-33, and the GRI Standards version disclosure aspect 102-56). If a company disclosed that it had any kind of external assurance (e.g., limited assurance, reasonable assurance, review), then the binary indicator for external assurance (*ASSURANCE*) was

[2] Sustainalytics changed its rating methodology to focus on a new "ESG Risk Ratings" approach in 2019. Our sample does not contain any scores from the new ESG Risk Ratings methodology.

coded as a 1, else 0. Following Clarkson et al. (2019), we assessed external assurance quality based on the name of the assurance provider. We coded the use of a financial assurance firm (*BIG4*) as 1 if the firm was Deloitte, KPMG, PwC, or EY, else 0.

See Appendix (Tables A.1–A.3) for an example of this content analysis process. To ensure the validity of our coding, we employed multiple research assistants to independently code the data. Each coder received several hours of training and supervision, and they performed their work using a carefully constructed template. In addition, a random sample of 29% of the firm-year observations was coded by at least two people. Inter-rater agreement for this sub-sample was 0.998 for disclosures, 0.960 for goals, and 0.971 for external assurance.

3.2.3. Control variables

To isolate the effects of our variables of interest, we include several control measures in our analysis. Following previous research, we control for firm size (*SIZE*), profitability (*ROA*), growth opportunities (*BTM*), and risk (*LEVERAGE*), as each has been shown to influence ESG performance ratings (Christensen et al., 2022). We also include working capital (*WCAP*) as a measure of financial liquidity, which could affect a firm's ability to invest in ESG projects. We further included a control for whether the report was externally assured (*ASSURANCE*), regardless of provider, as previous studies indicate that ESG ratings are improved with the use of external assurance (Gipper et al., 2024).

Over the study period, the specific standard disclosures included in the GRI reporting framework were updated twice: from "G3.1" to "G4" in 2013, and then to the "GRI Standards" in 2016. We thus include indicator variables (G3, G4, GRI STDS) for each version of the framework in our model to control for any differences that these updates to the GRI reporting framework might have on the number of and/or categorization of sustainability disclosures. We include indicator variables for sector based on the GICS and year effects to control for variations in market conditions across industries and over time in our models. Importantly, we also control for individual firm-level effects to isolate a variety of other factors that could affect ESG evaluations, such as variation in corporate governance, executive leadership, and remuneration practices, media attention, stakeholder pressures, and institutional ownership (Delmas & Burbano, 2011; Gillan et al., 2021).

3.3. Analytical framework

This study uses time series firm-fixed effects multivariate regression analyses to test our hypotheses about the relationships among ESG performance and disclosure breadth and depth, goal setting, goal performance, and external assurance quality. This panel design is particularly effective for examining the relationships among the study variables over time, and because it controls for firm-level heterogeneity (Askarany & Xin, 2024; Biju et al., 2025; Bressan & Sabrina, 2025; Yip et al., 2025).

3.4. Model specification

This study employs the following time series firm fixed-effects multivariate regression model to test our hypotheses. All independent variables and control variables were lagged by one year in the model. Lagging the predictor variables by a year helps establish temporal precedence for any observed changes in the dependent variable. Variable definitions with details on the operationalization and units of analysis are provided in Appendix (Table A.4).

$$\begin{aligned} ESG\ RATING_{i,t} = {} & \beta_0 + \beta_1 DISCLOSURE\ BREADTH_{i,t-1} + \beta_2 DEPTH\ ECON_{i,t-1} \\ & + \beta_3 DEPTH\ ENV_{i,t-1} + \beta_4 DEPTH\ SOC_{i,t-1} + \beta_5 GOAL\ SETTING_{i,t-1} \\ & + \beta_6 SUCCESS\ RATE_{i,t-1} + \beta_7 GOAL\ SETTING\ x\ SUCCESS\ RATE_{i,t-1} \\ & - \beta_8 FAILURE\ RATE_{i,t-1} - \beta_9 GOAL\ SETTING\ x\ FAILURE\ RATE_{i,t-1} \\ & + \beta_{10} BIG\ 4_{i,t-1} + CONTROLS_{i,t-1} + Firm_i\ Effects + Year_t\ Effects + Sector\ Effects + \varepsilon \end{aligned} \quad (1)$$

3.5. Alternative research methodologies

Other research methodologies could also be employed to address the research question posed by this study. For instance, the qualitative case study method is also appropriate for developing a more nuanced, in-depth understanding of a particular phenomenon (Eulerich et al., 2022; Ghinizzini et al., 2025; Grove et al., 2025). Moreover, the inductive method of ethnography (Geertz, 1973) could be employed to analyze the attitudes, beliefs, and activities of equity analysts to unpack how they process, weigh, and act upon ESG disclosures in voluntary reporting environments in order to more directly determine the factors that persuade them that the ESG information shared by firms is credible.

4. EMPIRICAL RESULTS

4.1. Sample descriptive statistics

Table 1 provides descriptive statistics illustrating the characteristics of the sample. We note that the firms in our sample are large (average total assets of $51.18 billion) and profitable (average return on assets of 0.07). With regard to our variables of interest, we note that the average *ESG RATING* for our sample was 66.15, which is in line with prior research using the Sustainalytics database (Serafiem & Yoon, 2023). Our measure of *DISCLOSURE BREADTH* showed a great deal of variance (mean = 42.13, min = 9, max = 91), which is not surprising given the voluntary disclosure conditions present during our sample period. Within the disclosure depth categories, companies reported an average of 5.66 economic disclosures, 17.55 environmental disclosures, and 18.93 social

disclosures in a given year. Likewise, *GOAL SETTING* showed a high degree of variance (mean = 10.12, min = 0, max = 65) with the most goals being set in the environmental category (mean = 6, min = 0, max = 35), followed by social goals (mean = 3.54, min = 0, max = 42), and the fewest in the economic category (mean = 0.61, min = 1.37, max = 10). In terms of goal performance, companies reported an average *SUCCESS RATE* of 52% and an average *FAILURE RATE* of 10% in a given year. About half of the sample used *EXTERNAL ASSURANCE,* with only 15% of these firms using BIG 4 financial auditors to perform the work on average in a given year.

Table 1. Descriptive statistics for the sample

Variable	*Firm-year obs.*	*Mean*	*Std. dev.*	*Min*	*Max*
ESG RATING	537	66.15	6.6	50.64	86.12
DISCLOSURE BREADTH	537	42.13	20.11	9.00	91.00
DEPTH-ECON	537	5.66	3.12	0.00	13.00
DEPTH-ENV	537	17.55	7.56	3.00	34.00
DEPTH-SOC	537	18.93	11.25	1.00	48.00
GOAL SETTING	537	10.12	9.21	0.00	65.00
ECON GOALS	537	0.61	1.37	0.00	10.00
ENV GOALS	537	6.00	5.25	0.00	35.00
SOC GOALS	537	3.54	4.84	0.00	42.00
SUCCESS RATE	536	0.52	0.32	0.00	1.00
FAILURE RATE	536	0.10	0.16	0.00	1.00
ASSURANCE	537	0.50	0.50	0.00	1.00
BIG 4	269	0.15	0.36	0.00	1.00
SIZE	537	10.27	1.05	8.04	13.18
ROA	537	0.07	0.09	-1.23	0.33
BTM	537	0.36	0.29	-0.23	2.18
LEVERAGE	537	0.65	0.19	0.19	2.19
WCAP	537	1.59	1.00	0.17	8.03
G3 GRI VERSION	537	0.18	0.38	0.00	1.00
G4 GRI VERSION	537	0.50	0.50	0.00	1.00
GRI STDS VERSION	537	0.33	0.47	0.00	1.00

Source: Authors' collaboration.

In terms of the correlations found in Table 2, our results are generally in line with our hypotheses and expectations from prior research. Specifically, we find a positive and significant relationship for *ESG RATING* and both *DISCLOSURE BREADTH* and our three measures of disclosure depth (*DEPTH ECON, DEPTH ENV, DEPTH SOC*). The correlations between *ESG RATING* and both *GOAL SETTING* and *SUCCESS RATE* are also positive and significant.

Table 2. Pearson correlations

No.	*Variable*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1	*ESG RATING*	1						
2	*DISCLOSURE BREADTH*	0.38*	1					
3	*DEPTH-ECON*	0.22*	0.77*	1				
4	*DEPTH-ENV*	0.35*	0.92*	0.67*	1			
5	*DEPTH-SOC*	0.39*	0.95*	0.65*	0.79*	1		
6	*GOAL SETTING*	0.21*	0.15*	0.10*	0.15*	0.13*	1	
7	*ECON GOALS*	-0.04	0.05	0.05	0.04	0.04	0.45*	1
8	*ENV GOALS*	0.21*	0.09*	0.05	0.09*	0.08	0.85*	0.17*
9	*SOC GOALS*	0.19*	0.17*	0.12*	0.18*	0.16*	0.86*	0.39*
10	*SUCCESS RATE*	0.10*	0.04	0.05	0.02	0.05	0.11*	0.11*
11	*FAILURE RATE*	0.04	0.11*	0.07	0.13*	0.09*	0.00	0.02
12	*BIG 4*	0.07	-0.12	-0.09	-0.08	-0.13*	-0.08	-0.09
13	*ASSURANCE*	0.22*	0.13*	0.10*	0.14*	0.11*	0.22*	0.08
14	*SIZE*	-0.01	0.12*	0.17*	0.12*	0.08	0.20*	0.15*
15	*ROA*	0.09*	-0.01	-0.05	-0.02	0.01	0.10*	0.02
16	*BTM*	-0.06	0.14*	0.09*	0.18*	0.10*	-0.08	0.04
17	*LEVERAGE*	-0.15*	-0.19*	-0.09*	-0.18*	-0.20*	0.12*	0.02
18	*WCAP*	0.28*	0.09*	-0.01	0.08	0.12*	-0.11*	-0.03
19	*G3 GRI VERSION*	0.11*	0.24*	0.07	0.15*	0.30*	-0.08	-0.05
20	*G4 GRI VERSION*	-0.03	-0.04	-0.10*	-0.00	-0.03	-0.07	0.06
21	*GRI STDS VERSION*	-0.05	-0.15*	0.05	-0.12*	-0.21*	0.14*	-0.02
No.	***Variable***	***8***	***9***	***10***	***11***	***12***	***13***	***14***
8	*ENV GOALS*	1						
9	*SOC GOALS*	0.48*	1					
10	*SUCCESS RATE*	0.16*	0.01	1				
11	*FAILURE RATE*	-0.03	0.04	-0.14*	1			
12	*BIG 4*	-0.01	-0.10	0.01	0.09	1		
13	*ASSURANCE*	0.16*	0.23*	0.11*	0.07	1	1	
14	*SIZE*	0.15*	0.18*	0.05	0.05	0.04	0.18*	1
15	*ROA*	0.14*	0.03	0.17*	-0.07	-0.01	0.03	-0.10*
16	*BTM*	-0.13*	-0.02	-0.10*	0.16*	-0.01	0.12*	0.31*
17	*LEVERAGE*	0.15*	0.06	0.04	0.02	0.22*	0.02	-0.03
18	*WCAP*	-0.16*	-0.02	0.01	-0.07	-0.08	-0.05	-0.20*
19	*G3 GRI VERSION*	-0.06	-0.07	0.03	0.10*	-0.05	-0.10*	-0.01
20	*G4 GRI VERSION*	-0.07	-0.06	-0.07	-0.03	-0.02	-0.00	-0.04
21	*GRI STDS VERSION*	0.13*	0.13*	0.05	-0.05	0.05	0.08	0.06

*Note: * Indicates statistical significance at the <= 0.05 level (two-tailed).*

4.2. Hypothesis testing and statistical significance

The results of the time series, firm-fixed effects multivariate regression analyses used to test our hypotheses, are summarized in Tables 3a and 3b. In Model 1 (controls), we see that firms with higher working capital levels (β = 0.80, p-value ≤ 0.05) and external assurance (β = 1.10, p-value ≤ 0.05) received higher ESG ratings in the following year. Firms using the oldest version of the GRI framework (G3) also had significantly higher ESG ratings as compared with the current GRI Standards version that was our reference category, all else equal (β = 2.27, p-value ≤ 0.001). Our control model also shows that firms in the information technology sector had significantly higher ESG ratings as compared with our reference category (Energy), all else equal (β = 5.55, p-value ≤ 0.05).

Table 3a. Firm-fixed effects time series estimation of disclosure and goal setting on ESG rating

Variable	*Controls*	*Disclosure breadth*	*Disclosure depth*	*Goal setting*
Intercept	**60.89***** (5.67)	**61.21***** (5.35)	**60.33***** (5.37)	**60.92***** (5.36)
DISCLOSURE BREADTH$_{t-1}$		**0.03*** (0.01)		
DEPTH-ECON$_{t-1}$			**-0.21*** (0.09)	**-0.20*** (0.09)
DEPTH-ENV$_{t-1}$			**0.10*** (0.05)	**0.10*** (0.05)
DEPTH-SOC$_{t-1}$			0.04 (0.03)	0.04 (0.03)
GOAL SETTING$_{t-1}$				0.03 (0.02)
ASSURANCE$_{t-1}$	**1.10*** (0.51)	**1.31**** (0.51)	**1.28**** (0.51)	**1.26**** (0.51)
SIZE$_{t-1}$	0.17 (0.47)	0.06 (0.45)	0.17 (0.45)	0.11 (0.45)
ROA$_{t-1}$	3.18 (2.15)	2.86 (2.19)	2.41 (2.18)	2.35 (2.18)
BTM$_{t-1}$	-0.93 (1.03)	-0.97 (1.04)	-1.22 (1.03)	-1.26 (1.03)
LEVERAGE$_{t-1}$	1.67 (1.81)	1.39 (1.79)	1.62 (1.79)	1.41 (1.79)
WCAP$_{t-1}$	**0.80*** (0.34)	**0.79*** (0.34)	**0.75*** (0.34)	**0.74*** (0.34)
G3 GRI VERSION$_{t-1}$	**2.27***** (0.47)	**1.98***** (0.50)	**1.68**** (0.53)	**1.79***** (0.54)
G4 GRI VERSION$_{t-1}$	0.58 (0.35)	0.51 (0.35)	0.26 (0.36)	0.31 (0.37)
Firm, sector, and year fixed effects	Yes	Yes	Yes	Yes
Firm-year obs.	537	537	537	537
Groups (firms)	113	113	113	113
Wald Chi^2	70.73***	82.64***	90.77***	93.36***
Overall R^2	0.27	0.32	0.33	0.35

*Note: *, **, *** indicate statistical significance at the ≤ 0.05, 0.01, and 0.001 levels, respectively (two-tailed). This table presents the results of the time series estimations predicting ESG evaluations at the firm level. Firm, sector, and year fixed effects are included. Standard errors are clustered at the firm level and reported in parentheses. The GRI Standards GRI version and the energy sector are the two reference categories for the indicator variables. Variable definitions are provided in Appendix (Table A.4).*
Source: Authors' collaboration.

Table 3b. Firm-fixed effects time series estimation of goal performance and auditor quality on ESG rating (Part 1)

Variable	*Goal types*	*Goal performance*	*Goal setting x Performance*	*Big 4*
Intercept	**61.20***** (5.35)	**62.33***** (5.27)	**64.76***** (5.28)	**84.22***** (8.08)
DEPTH-ECON$_{t-1}$	**-0.19*** (0.09)	**-0.21**** (0.09)	**-0.20**** (0.09)	**-0.28**** (0.12)
DEPTH-ENV$_{t-1}$	0.09 (0.05)	**0.10*** (0.05)	**0.11*** (0.05)	0.05 (0.07)
DEPTH-SOC$_{t-1}$	0.03 (0.03)	0.04 (0.03)	0.03 (0.03)	**0.12**** (0.05)
GOAL SETTING$_{t-1}$		0.05 (0.03)	-0.07 (0.04)	-0.10 (0.05)
ECON GOALS$_{t-1}$	-0.13 (0.15)			
ENV GOALS$_{t-1}$	**0.12*** (0.06)			
SOC GOALS$_{t-1}$	-0.02 (0.05)			
SUCCESS RATE$_{t-1}$		1.03 (0.57)	-0.56 (0.75)	-0.53 (1.31)
GOAL SETTING x SUCCESS RATE$_{t-1}$			**0.23***** (0.07)	**0.23*** (0.11)
FAILURE RATE$_{t-1}$		0.52 (1.16)	-1.03 (1.49)	-3.67 (2.20)

Table 3b. Firm-fixed effects time series estimation of goal performance and auditor quality on ESG rating (Part 2)

Variable	*Goal types*	*Goal performance*	*Goal setting x Performance*	*Big 4*
GOAL SETTING x FAILURE RATE$_{t-1}$			0.29 (0.17)	0.45 (0.25)
ASSURANCE$_{t-1}$	**1.21*** (0.51)	**1.32**** (0.51)	**1.32**** (0.50)	
BIG 4$_{t-1}$				0.70 (1.29)
SIZE$_{t-1}$	0.11 (0.45)	-0.03 (0.44)	-0.23 (0.44)	-1.27 (0.67)
ROA$_{t-1}$	2.43 (2.18)	1.87 (2.20)	2.34 (2.18)	-3.49 (5.08)
BTM$_{t-1}$	-1.30 (1.03)	-1.29 (1.03)	-0.81 (1.03)	-1.73 (1.42)
LEVERAGE$_{t-1}$	1.14 (1.79)	1.11 (1.78)	0.94 (1.77)	-5.81 (3.29)
WCAP$_{t-1}$	**0.73*** (0.34)	**0.67*** (0.34)	0.61 (0.34)	0.49 (0.44)
G3 GRI VERSION$_{t-1}$	**1.88***** (0.54)	**1.83***** (0.54)	**1.85***** (0.54)	1.07 (0.87)
G4 GRI VERSION$_{t-1}$	0.35 (0.37)	0.37 (0.37)	0.39 (0.37)	0.17 (0.52)
Firm, sector, and year fixed effects	Yes	Yes	Yes	Yes
Firm-year obs.	537	537	536	268
Groups (Firms)	113	113	112	68
Wald Chi^2	98.04***	98.94***	112.43***	80.02***
Overall R^2	0.36	0.36	0.38	0.40

*Note: *, **, *** indicate statistical significance at the ≤ 0.05, 0.01, and 0.001 levels, respectively (two-tailed).*
Source: Authors' collaboration.

Regarding *H1a* that disclosure breadth is positively related to ESG ratings, we find that the main effect for *DISCLOSURE BREADTH* in Model 2 is positive and significant (β = 0.03, p-value ≤ 0.05). Interpreting these results, providing one additional GRI disclosure increased a firm's Sustainalytics score by 0.03 points, holding all other terms constant. With regard to *H1b*, which posits that disclosure depth is also positively related to ESG ratings, the results depend on the disclosure category. Specifically, disclosure depth in the economic area (*DEPTH ECON*) is associated with a significant decline in ESG ratings (β = -0.21, p-value ≤ 0.05), whereas depth in the environmental area (*DEPTH ENV*) is associated with a significant increase (β = 0.10, p-value ≤ 0.05). Interpreting these results, providing one additional economic disclosure decreased a firm's Sustainalytics score by 0.21 points and providing one additional environmental disclosure increased a firm's score by 0.10 points, holding all other terms constant. We find no effect for disclosure depth in the social area. We explore these and other surprising findings from our empirical analysis in the discussion section that follows.

H2, which predicts that there will be a significant positive relationship between sustainability goal setting and ESG ratings, is not supported. However, when we regressed the specific categories of goals on ESG ratings separately, we find that the main effect for environmental goal setting (*ENV GOALS*) is positive and significant (β = 0.12, p-value ≤ 0.05). Interpreting this result, each additional environmental goal increased a firm's Sustainalytics score by 0.12 points, all else held constant. We see no significant effects for either economic or social goal setting.

We find support for *H3a*, which predicts that the relationship between goal setting and ESG ratings will be stronger when goal success is high and weaker when goal success low. The coefficient for the interaction between *GOAL SETTING and SUCCESS RATE* is positive and significant for *ESG RATING* (β = 0.23, p-value ≤ 0.001). Interpreting this result, the effect of a one percent increase in success rate for each additional goal set was associated with 0.23-point increase in ESG ratings, all else constant. On the other hand, we find no effect for goal failure on the relationship between goal setting and ESG ratings; thus, *H3b* is not supported.

H4 predicts that auditor quality, as proxied by the use of Big 4 financial assurance providers, will increase ESG ratings. We note that the sample for this test is quite small, with only 268 firm-year observations for the 68 firms that received external assurance for their sustainability reports. Here we see no significant effect for the use of BIG 4 financial auditors as compared with the use of consulting/engineering firms and subsequent ESG ratings. We do, however, see that within this segment of our sample, social disclosures (*DEPTH SOC*) have a significant positive association with ESG ratings (β = 0.21, p-value ≤ 0.01). Interpreting this result, for firms receiving external assurance of their ESG reports, each additional social disclosure increased a firm's Sustainalytics score by 0.21 points, all else held constant.

4.3. Robustness checks

As a set of robustness checks, we first assessed multicollinearity among the regressors using variance inflation factors (VIFs). The maximum VIF was 5.2 and the average was 3.07, both below conventional thresholds (e.g., 10) and therefore not indicative of problematic multicollinearity amongst the variables in this study. We then compared fixed-effects and random-effects specifications using a Hausman test, which strongly rejected the null hypothesis of no systematic difference between

the two estimators ($\chi^2(12) = 54.67$, $p < 0.001$). This finding suggests that the regressors are correlated with unobserved unit-specific effects, so we rely on the fixed-effects estimates as our main specification. To examine the error structure, we analyzed skewness and kurtosis. Both the skewness ($\chi^2 = 27.05$, df = 20, $p = 0.1338$) and kurtosis ($\chi^2 = 1.59$, df = 1, $p = 0.2074$) components were not statistically significant, indicating that the residuals are not strongly asymmetric (skewness) and do not exhibit unusually heavy or light tails relative to a normal distribution (kurtosis). Together, these diagnostics suggest that the distributional shape of the residuals is broadly consistent with standard regression assumptions.

5. DISCUSSION

The results of this study provide numerous insights into the strategies that appear to signal credibility in ESG reporting in a voluntary disclosure environment. ESG ratings are positively associated with increases in disclosure breadth using the GRI reporting framework. We also see a significant increase in ESG ratings following increased depth of environmental disclosure. Surprisingly, ESG ratings went down following increased depth of economic disclosure, suggesting that increased transparency around economic topics could be viewed negatively by evaluators. We posit that this negative correlation appears because the topics captured in this category, like anti-corruption, anti-competitive behavior, or tax compliance, frequently reflect negative events or compliance concerns.

Also surprising was the absence of any change in ESG ratings following increased depth of social disclosure except within our sub-sample of firms that received external assurance. Perhaps the wide array of topics and stakeholder concerns within the social category, which ranges from employee related concerns to supply chain topics to community concerns and finally consumer protections, makes evaluation of credibility in this category more challenging for this ratings provider. Alternatively, this ESG ratings provider may underweight social disclosures as compared with other disclosure areas. Considering that there is a significant negative correlation between the use of Big 4 financial auditors and the number of social disclosures, this finding suggests that ESG ratings may favor these firms for their more parsimonious and/or higher quality social disclosures.

As for sustainability goal setting, we observe a positive association between companies setting environmental goals and ESG ratings, but we see no evidence that economic or social goal setting is factored into these ratings. We found the lack of association with social goal setting, much like the lack of association with social disclosure, noteworthy considering that on average, companies disclosed more about social topics than environmental ones and that the average number of social goals set in a given firm-year was only slightly less than the average number of environmental goals. While we cannot know precisely why goal setting in the social category does not increase overall ESG ratings, it may be that that goals in this category are seen as less material to the company's overall performance, financial or otherwise (Gibbons, 2024).

Not surprisingly, we see a positive association between companies achieving their sustainability goals and ESG ratings, indicating that goal performance is an important way to signal credibility. We do note, however, that ESG ratings were unaffected by goal failure rates, suggesting that companies may be forgiven for missing a non-financial target and/or that evaluators value the honesty shown by the admission of failure. This finding should further embolden managers to continue to set stretch goals for their sustainability efforts without fear of being punished for failing to reach them.

6. CONCLUSION

This study examined the relationship between ESG ratings and disclosure breadth and depth, goal setting, goal performance, and assurance quality. The results suggest that managers can credibly signal ESG reporting quality under the U.S. voluntary disclosure regime using the GRI framework by increasing the quantity (breadth) of their disclosures, by increasing the depth of their environmental disclosures, by minimizing the depth of their economic disclosures, by setting environmental goals, and by successfully reaching their targets.

As noted in our literature review, firms that are not able to credibly communicate their efforts to stakeholders will not realize the full benefits their ESG efforts. Leaders across a wide range of industries can interpret these results as evidence that being transparent, especially about environmental activities, and by disclosing concrete information about a firm's sustainability goals and progress are all effective strategies for building credibility in non-financial disclosure. By deploying this combination of strategies, managers can ensure that they get credit from stakeholders for the actions they are taking become more sustainable.

It is important to note that these findings should be interpreted with an appreciation for the inherent limitations of our approach. Due to our sample design, we cannot generalize our findings to non-public U.S. firms or to the activities of firms in other countries. We also note that our sample favors large, profitable firms that have performed better than average on sustainalytics' ESG ratings. Therefore, our results may not speak to the experiences of smaller, less profitable firms or those with a weak ESG ratings history. Moreover, given the well-documented lack of correlation between the scores from various rating agencies (Christensen et al., 2022), we cannot generalize our results to ESG ratings other than Sustainalytics. It should also be acknowledged that the methodology used by Sustainalytics to arrive at its ESG rating is proprietary and, as such, we cannot be sure to what extent an improved score reflects their opinion of the credibility of a firm's sustainability efforts.

We also note that our disclosure breadth and depth measures are based on quantity rather than quality, and as such, the findings that increased transparency is a signal of credibility should be interpreted cautiously. We also note that our findings cannot be generalized to firms following voluntary ESG reporting frameworks other than the GRI. While we continue to believe that the GRI

framework is an appropriate choice for this study, we acknowledge that the United Nations Sustainable Development Goals (UNSDGs), the Task Force on Climate-related Financial Disclosures framework (TCFD), and the industry-specific frameworks from the Sustainability Accounting Standards Board (SASB) have grown in popularity and in regulatory importance since this project was originally conceived, and as such, it will be important to replicate this analysis in future studies using these newer non-financial disclosure frameworks.

Finally, it is important to emphasize that our empirical analyses identify associations rather than causal effects. Although we lag our independent variables by one year and use firm fixed effects to mitigate concerns about time-invariant unobserved heterogeneity, we cannot rule out alternative explanations such as reverse causality or omitted time-varying factors. For example, it is possible that disclosures are reactive rather than proactive, as firms expand their ESG reporting in response to controversies, investigations, or media scrutiny. Our one-year lag structure cannot fully disentangle whether these disclosures are a cause or a consequence of such events. Our findings should therefore be interpreted as evidence of patterns consistent with the theorized relationships, not as proof that disclosure, goal setting, or assurance cause changes in ESG ratings.

Despite these limitations, we believe that our study makes several important contributions to both research and practice. This research project is the first, to our knowledge, to examine the potential role of goal setting and goal performance in the context of ESG performance evaluations. Our sample indicates that managers in many sectors (e.g., energy, information technology, and real estate) have been reluctant to disclose information about their sustainability goal setting efforts, either for lack of activity or concerns about making this information public. Our findings suggest that engaging in environmental goal setting may be an important and yet frequently overlooked way to improve a company's ESG performance and reputation. Moreover, our study indicates that the single most effective strategy that managers can implement to signal credibility is to invest in external assurance for their ESG reports, regardless of whether the assurance comes from a financial assurance provider (Big 4) or a consulting/ engineering firm. While the majority of firms across our sample have been using some form of external assurance for their ESG reports since 2017, this rate varies greatly by sector, which suggests that many firms could benefit by internalizing these findings.

Providing management with insights into the mechanisms to best represent their ESG-related efforts will, we hope, further strengthen the link between "doing good" and "doing well" and help these firms attract ESG-focused investment. We also hope that future research can generalize the results of this study by examining these relationships in firms of different sizes using a variety of ESG reporting frameworks working under different regulatory regimes across the globe.

REFERENCES

Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society, 29*(5–6), 447–471. https://doi.org/10.1016/s0361-3682(03)00032-1

Amel-Zadeh, A., & Serafeim, G. (2018). Why and how investors use ESG information: Evidence from a Global Survey. *Financial Analysts Journal, 74*(3), 87–103. https://doi.org/10.2469/faj.v74.n3.2

Askarany, D., & Xin, Y. (2024). ESG ratings and stock price volatility: An empirical analysis amidst the COVID-19 pandemic. *Corporate Ownership & Control, 21* (2), 132–150. https://doi.org/10.22495/cocv21i2art11

Baldini, M. A., Sicoli, G., Rija, M., & Bronzetti, G. (2025). Examining the impact of board composition on environmental, social, and governance disclosure. *Corporate Board: Role, Duties and Composition, 21*(3), 68–75. https://doi.org/10.22495/cbv21i3art6

Ballou, B., Heitger, D. L., Landes, C. E., & Adams, M. (2006). The future of corporate sustainability reporting. *Journal of Accountancy, 202*(6), 65–74. https://www.proquest.com/trade-journals/future-corporate-sustainability-reporting/docview/206783794/se-2

Bewley, K., & Li, Y. (2000). Disclosure of environmental information by Canadian manufacturing companies: A voluntary disclosure perspective. In *Advances in environmental accounting & management* (Vol. 1, pp. 201–226). Emerald Group Publishing Limited. https://doi.org/10.1016/S1479-3598(00)01011-6

Biju, A. V. N., Geetha, S., Prasad, S., Sasidharan, A., & Jayachandran, A. (2025). ESG-firm performance nexus: Evidence from an emerging economy. *Business Strategy and the Environment, 34*(3), 3469–3496. https://doi.org/10.1002/bse.4152

Bloomberg. (2021). *ESG assets rising to $50 trillion will reshape $140.5 trillion of Global AUM by 2025, finds Bloomberg Intelligence.* https://www.bloomberg.com/company/press/esg-assets-rising-to-50-trillion-will-reshape-140-5-trillion-of-global-aum-by-2025-finds-bloomberg-intelligence/

Boiral, O., Heras-Saizarbitoria, I., & Brotherton, M.-C. (2019). Assessing and improving the quality of sustainability reports: The auditors' perspective. *Journal of Business Ethics, 155*, 703–721. https://doi.org/10.1007/s10551-017-3516-4

Branzei, O., Frooman, J., McKnight, B., & Zietsma, C. (2016). What good does doing good do? The effect of bond rating analysts' corporate bias on investor reactions to changes in social responsibility. *Journal of Business Ethics, 148*(1), 183–203. https://doi.org/10.1007/s10551-016-3357-6

Bressan, S., & Sabrina, D. (2025). Evidence for the moderating role of environmental, social, and governance on the profitability of insurance companies. *Risk Governance & Control: Financial Markets & Institutions, 15*(3), 157–165. https://doi.org/10.22495/rgcv15i3p13

Chatterji, A. K., & Toffel, M. W. (2010). How firms respond to being rated. *Strategic Management Journal, 31*(9), 917–945. https://doi.org/10.1002/smj.840

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal, 35*(1), 1–23. https://doi.org/10.1002/smj.2131

Cho, C. H., Guidry, R. P., Hageman, A. M., & Patten, D. M. (2012). Do actions speak louder than words? An empirical investigation of corporate environmental reputation. *Accounting, Organizations and Society, 37*(1), 14–25. https://doi.org/10.1016/j.aos.2011.12.001

Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society, 32*(7–8), 639–647. https://doi.org/10.1016/j.aos.2006.09.009

Christensen, D. M., Serafeim, G., & Sikochi, A. (2022). Why is corporate virtue in the eye of the beholder? The case of ESG ratings. *The Accounting Review, 97*(1), 147–175. https://doi.org/10.2308/TAR-2019-0506

Clarkson, P., Li, Y., Richardson, G., & Tsang, A. (2019). Causes and consequences of voluntary assurance of CSR reports: International evidence involving Dow Jones sustainability index inclusion and firm valuation. *Accounting, Auditing, and Accountability Journal, 32*(8), 2451–2474. https://doi.org/10.1108/aaaj-03-2018-3424

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society, 33*(4–5), 303–327. https://doi.org/10.1016/j.aos.2007.05.003

Cooper, S. M., & Owen, D. L. (2007). Corporate social reporting and stakeholder accountability: The missing link. *Accounting, Organizations and Society, 32*(7–8), 649–667. https://doi.org/10.1016/j.aos.2007.02.001

Dahlmann, F., Branicki, L., & Brammer, S. (2019). Managing carbon aspirations: The influence of corporate climate change targets on environmental performance. *Journal of Business Ethics, 158*(1), 1–24. https://doi.org/10.1007/s10551-017-3731-z

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review, 54*(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review, 86*(1), 59–100. https://doi.org/10.2308/accr.00000005

Dye, R. A. (1985). Disclosure of nonproprietary information. *Journal of Accounting Research, 23*(1), 123–145. https://doi.org/10.2307/2490910

Eccles, R. G., & Serafeim, G. (2011). Accelerating the adoption of integrated reporting. In F. de Leo & M. Vollbracht (Eds.), *CSR INDEX*. InnoVatio Publishing Ltd. https://papers.ssrn.com/abstract=1910965

Eccles, R. G., Serafeim, G., & Krzus, M. P. (2011). Market interest in nonfinancial information. *Journal of Applied Corporate Finance, 23*(4), 113–127. https://doi.org/10.1111/j.1745-6622.2011.00357.x

Eulerich, M., Pawlowski, J., Waddoups, N. J., & Wood, D. A. (2022). A framework for using robotic process automation for audit tasks. *Contemporary Accounting Research, 39*(1), 691–720. https://doi.org/10.1111/1911-3846.12723

Filbeck, A., Filbeck, G., & Zhao, X. (2019). Performance assessment of firms following Sustainalytics ESG principles. *The Journal of Investing, 28*(2), 7–20. https://doi.org/10.3905/joi.2019.28.2.007

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Geertz, C. (1973). Chapter 1/Thick description: Toward an interpretive theory of culture. The interpretation of cultures: Selected essays. In *Basic Books,* 3–30. https://hci.stanford.edu/courses/cs376/private/readings/geertz_thick_description.pdf

Ghinizzini, V., Galavotti, I., & Tibiletti, V. (2025). The role of corporate governance in the environmental, social and governance landscape: A systematic literature review. *Journal of Governance & Regulation, 14*(4), 126–137. https://doi.org/10.22495/jgrv14i4art12

Gibbons, B. (2024). The financially material effects of mandatory nonfinancial disclosure. *Journal of Accounting Research, 62*(5), 1711–1754. https://doi.org/10.1111/1475-679X.12499

Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance, 66*, Article 101889. https://doi.org/10.1016/j.jcorpfin.2021.101889

Gipper, B., Ross, S., & Shi, S. X. (2024). ESG assurance in the United States. *Review of Accounting Studies, 30,* 1753–1803. https://doi.org/10.1007/s11142-024-09856-2

Global Reporting Initiative (GRI). (2021). GRI Standards. https://www.globalreporting.org/standards/standards-development/universal-standards/

Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability…and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society, 35*(1), 47–62. https://doi.org/10.1016/j.aos.2009.04.006

Grove, N. C., Bunning, K. T., Buell, S., Poland, F. M., Kwiatkowska, G. M., Chadwick, D. D., & Goldbart, J. L. (2025). Comment on Grace et al. (2024). Expanding possibilities for inclusive research: Learning from people with profound intellectual and multiple disabilities and decolonising research. Social Sciences 13:37. *Social Sciences, 14*(6), Article 322. https://doi.org/10.3390/socsci14060322

Guo, M., & Oh, N. (2024). Environmental, social, and governance research dynamics in the wake of the U.S. Securities and Exchange Commission proposal: A systematic literature review. *Corporate Governance & Sustainability Review, 8*(4), 8–21. https://doi.org/10.22495/cgsrv8i4p1

Hess, D., & Dunfee, T. (2007). The Kasky-Nike threat to corporate social reporting: Implementing a standard of optimal truthful disclosure as a solution. *Business Ethics Quarterly, 17*(1), 5–32. https://webuser.bus.umich.edu/dwhess/Hess%20and%20Dunfee%202007%20Kasky%20Nike.pdf

Hummel, K., & Schlick, C. (2016). The relationship between sustainability performance and sustainability disclosure — Reconciling voluntary disclosure theory and legitimacy theory. *Journal of Accounting and Public Policy, 35*(5), 455–476. https://doi.org/10.1016/j.jaccpubpol.2016.06.001

Ioannou, I., Li, S. X., & Serafeim, G. (2016). The effect of target difficulty on target completion: The case of reducing carbon emissions. *The Accounting Review, 91*(5), 1467–1492. https://doi.org/10.2308/accr-51307

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. *The Accounting Review, 91*(6), 1697–1724. https://doi.org/10.2308/accr-51383

Kim, J., Cho, K., & Park, C. K. (2019). Does CSR assurance affect the relationship between CSR performance and financial performance? *Sustainability, 11*(20), Article 5682. https://doi.org/10.3390/su11205682

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist, 57*(9), 705–717. https://doi.org/10.1037/0003-066x.57.9.705
Locke, E. A., & Latham, G. P. (2006). New directions in goal-setting theory. *Current Directions in Psychological Science, 15*(5), 265–268. https://doi.org/10.1111/j.1467-8721.2006.00449.x
Luo, X., Wang, H., Raithel, S., & Zheng, Q. (2015). Corporate social performance, analyst stock recommendations, and firm future returns. *Strategic Management Journal, 36*(1), 123–136. https://doi.org/10.1002/smj.2219
Maas, K. (2018). Do corporate social performance targets in executive compensation contribute to corporate social performance? *Journal of Business Ethics, 148*(3), 573–585. https://doi.org/10.1007/s10551-015-2975-8
Maas, K., & Rosendaal, S. (2016). Sustainability targets in executive remuneration: Targets, time frame, country and sector specification. *Business Strategy and the Environment, 25*, 390–401. https://doi.org/10.1002/bse.1880
Maji, S. G., & Tiwari, R. K. (2025). Does audit quality moderate the ESG-corporate financial performance relationship? Empirical evidence from India. *Accounting Research Journal, 38*(2), 263–282. https://doi.org/10.1108/ARJ-01-2024-0038
Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). *Does it pay to be good...and does it matter? A meta-analysis of the relationship between corporate social and financial performance* (SSRN Scholarly Paper No. 1866371). https://doi.org/10.2139/ssrn.1866371
Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting, 33*, 59–78. https://doi.org/10.1016/j.cpa.2014.10.003
Moroney, R., Windsor, C., & Aw, Y. T. (2012). Evidence of assurance enhancing the quality of voluntary environmental disclosures: An empirical analysis. *Accounting & Finance, 52*(3), 903–939. https://doi.org/10.1111/j.1467-629x.2011.00413.x
Patekar, A., & Mahajan, S. (2025). Unraveling the ESG-firm value nexus: A systematic analysis of current literature and emerging themes. *Business Performance Review, 3*(2), 49–65. https://doi.org/10.22495/bprv3i2p5
Phan, H. H., & Tran, N. H. (2025). Environmental, social, and governance strategy implementation and operational efficiency in the banking system. *Corporate & Business Strategy Review, 6*(2), 137–145. https://doi.org/10.22495/cbsrv6i2art14
Pinkse, J., & Busch, T. (2013). The emergence of corporate carbon norms: Strategic directions and managerial implications. *Thunderbird International Business Review, 55*(6), 633–645. https://doi.org/10.1002/tie.21580
Serafeim, G., & Yoon, A. (2023). Stock price reactions to ESG news: The role of ESG ratings and disagreement. *Review of Accounting Studies, 28*(3), 1500–1530. https://doi.org/10.1007/s11142-022-09675-3
Suhardjo, I., Akroyd, C., & Suparman, M. (2024). Beyond sustainability reporting: A theoretical framework for ethical sustainability governance. *Corporate Governance & Sustainability Review, 8*(3), 8–20. https://doi.org/10.22495/cgsrv8i3p1
Simnett, R., Vanstraelen, A., & Chua, W. F. (2009). Assurance on Sustainability Reports: An international comparison. *The Accounting Review, 84*(3), 937–967. https://doi.org/10.2308/accr.2009.84.3.937
Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal, 31*(5), 463–490. https://doi.org/10.1002/smj.820
Topping, N. (2012). How does sustainability disclosure drive behavior change? *Journal of Applied Corporate Finance, 24*(2), 45–48. https://doi.org/10.1111/j.1745-6622.2012.00377.x
Veenstra, E. M., & Ellemers, N. (2020). ESG indicators as organizational performance goals: Do rating agencies encourage a holistic approach? *Sustainability, 12*(24), Article 10228. https://doi.org/10.3390/su122410228
Verrecchia, R. E. (1983). Discretionary disclosure. *Journal of Accounting and Economics, 5*, 179–194. https://doi.org/10.1016/0165-4101(83)90011-3
Yip, P. C. W., Pang, E., & Yu, T. T. K. (2025). The integration of environmental, social, and governance metrics and market value: A multi-dimensional analysis of corporate sustainability and financial performance. *Corporate Governance and Sustainability Review, 9*(3), 145–154. https://doi.org/10.22495/cgsrv9i3p12

APPENDIX

Table A.1. Selection from the GRI Index in Target 2019 Corporate Responsibility Report (p. 70)

Supplier environmental assessment			
GRI 308: Supplier environmental assessment	Management approach	103-1 103-2 103-3	Responsible resource use, p. 40 | Circular behavior & innovation, p. 44 | Standards of vendor engagement | Sustainable products: See sections on: Improved packaging sustainability, our reusable bag program, recycling in our stores, clear on-package instructions [for recycling], and more local recycling.
	New suppliers that were screened using environmental criteria	308-1	New suppliers screened using environmental criteria: 100%. Please note: We have changed the calculation of this figure from last year to better align with the GRI Standards and the practice of peers. All our new suppliers were screened in both 2017 and 2018. We previously reported the percentage of suppliers that were new; we are now reporting the percentage of new suppliers that are screened.
	Negative environmental impacts in the supply chain and actions taken	308-2	Target's standards of vendor engagement establish standards to ensure our suppliers are compliant with environmental regulations. An example of this is our no-tolerance standards for improperly managed wastewater treatment systems. In 2018, 80% of violations found were remediated (four out of five total violations). One factory was removed from our supply chain by the vendor. In addition to our standards, we also have commitments for wastewater testing, efficient water use, and energy efficiency, where we are working directly with our manufacturing supply chain on performance-improvement programs such as the Vietnam Improvement Project and Clean by Design. Additionally, through our partnership with WWF, we engage the textile sector located in China's Taihu basin region to reduce water risks in our supply chain and local communities. Collectively, these programs have trained more than 240 participants at 73 factories and 23 mills in 2018. Water, p. 40. | Standards of vendor engagement

Example disclosure breadth and depth coding based on the above information:

• Count of disclosures for *DISCLOSURE BREADTH* from selected section above = 2. Note that only GRI topic-specific standard disclosures are included and that management approach disclosures are ignored.

• Sub-total of environmental topic-specific standard disclosures (*DEPTH ENV*) from selected section above = 2 (308-1 and 308-2).

Table A.2. Selection from the Target 2019 Corporate Responsibility Report (p. 51)

Goals and commitments	*2017*	*2018*	*Update*
Invest up to $5 million in green chemistry innovation by 2022.*Baseline (2016): $0*	$802,440 invested	$2,494,660 invested	**In progress**. In 2018, we opened a request for proposals to address sustainable chemistry innovation. We awarded a range of grants to a total of nine organizations. We are on track with our plan to invest the total $5 million along a bell curve with lesser dollar amounts in 2017 and 2021 and the bulk of funding in 2018–2020. Full list of grant recipients and project descriptions.
Product quality and safety			
Implement wellness product standards and wellness icons to provide a common framework for what is considered nutritious, clean, transparent, and responsibly sourced across food, beverage, beauty, personal and baby care, and household cleaning categories.			**Exceeded.** In 2018, we introduced Wellness icons in food, beverage, formulated beauty, personal and baby care, and household cleaning, plus two additional categories: supplements and nutrition, and pet food and treats. To learn more about our program and the category-specific product attributes we are tracking, visit www.target.com/wellness.
By the end of 2018, remove artificial flavors, preservatives, sweeteners, and colors from all our owned-brand children's items *Baseline (2016): 68%*	88%	100%	**Achieved.** By the end of 2018, we successfully removed artificial flavors, preservatives, sweeteners, and colors from 100% of our owned-brand children's items.
Foster communities			
Community impact			
Volunteer one million hours annually.	1,096,730 hours	1,089,814 hours	**Exceeded.** Our team members invest their time and talent across a variety of issue areas and partners that are most relevant to their community. In 2018, a total of 1,089,814 hours were completed by team members.
Build 100 new soccer play spaces by 2020.		29 play spaces completed	**In progress.** Target committed $14 million to youth soccer through two national initiatives, including an $8 million local grant program and a $6 million partnership with the U.S. Soccer Foundation. In 2018, 29 mini-pitches were built in Atlanta, Chicago, Houston, Miami, Orlando, and Tampa.

Example sustainability goal setting and goal progress coding based on the above information:
- Environmental goals = 1.
- Environmental goal progress "meet" = 1.
- Social goals = 4.
- Social goal progress "beat" = 2.
- Social goal progress "meet" = 2.

Table A.3. Selection from the Target 2019 Corporate Responsibility Report (p. 65)

GRI Standard	*Disclosure number*	*Target response*
	General disclosures	
External assurance	102-56	Some of our environmental data is assured. It is noted in this index with an asterisk (*) where relevant. We did not seek assurance for the remainder of this report.

Example external assurance coding based on the above information:
- External assurance = 0 because no assurance report was included or the provider identified.
- Big 4 = n/a.

More information on the GRI Standards can be found at https://www.globalreporting.org/standards/.

Table A.4. Variable definitions

Variable	*Definition*
ESG RATING	An evaluation from Sustainalytics about a company's performance on relevant ESG issues for that company across more than 70 indicators, which are weighted according to their level of importance within each of 42 industry groups, for a given fiscal year (t). Each point counts for one unit on a scale of 1–100, with a higher score indicating better performance.
DISCLOSURE BREADTH	The sum of the GRI topic-specific standard disclosures (economic, environmental, and social) in a firm's sustainability report for a given fiscal year (t) as disclosed in the report's GRI Index. Each disclosure counts as one unit of disclosure breadth.
DEPTH ECON	The subtotal of the GRI topic-specific standard disclosures for only the economic category in a firm's sustainability report for a given fiscal year (t) as disclosed in the report's GRI Index. Each economic disclosure counts as one unit of disclosure depth.
DEPTH ENV	The subtotal of the GRI topic-specific standard disclosures for only the environmental category in a firm's sustainability report for a given fiscal year (t) as disclosed in the report's GRI Index. Each environmental disclosure counts as one unit of disclosure depth.
DEPTH SOCIAL	The subtotal of the GRI topic-specific standard disclosures for only the social category in a firm's sustainability report for a given fiscal year (t) as disclosed in the report's GRI Index. Each social disclosure counts as one unit of disclosure depth.
GOAL SETTING	The sum of the quantitative sustainability performance goals disclosed by a company in a firm's sustainability report in a given fiscal year (t). One goal of any category counts as a unit of goal-setting.
ECON GOALS	The sub-total of the quantitative economic sustainability performance goals disclosed by a company in a firm's sustainability report in a given fiscal year (t). Each economic goal counts as a unit of economic goal-setting.
ENV GOALS	The sub-total of the quantitative environmental sustainability performance goals disclosed by a company in a firm's sustainability report in a given fiscal year (t). Each environmental goal counts as a unit of environmental goal-setting.
SOC GOALS	The sub-total of the quantitative social sustainability performance goals disclosed by a company in a firm's sustainability report in a given fiscal year (t). Each social goal counts as a unit of social goal-setting.
SUCCESS RATE	A ratio of the number of sustainability goals described by the firm as on track, making progress, or ahead of plan ("meet" or "beat") divided by the total number of sustainability goals in the given firm-year (t). Each percentage of total goals that were coded as "meet" or "beat" counts as a unit.
FAILURE RATE	A ratio of the number of sustainability goals described by the firm as missed, not on track, or behind plan ("miss") divided by the total number of sustainability goals in the given firm-year (t). Unit = percentage of total goals that were coded as "miss."
SIZE	The natural log of total assets in a given fiscal year (t).
ROA	Return on assets, defined as net income divided by total assets in a given fiscal year (t).
BTM	The book value of equity divided by the market value of equity in a given fiscal year (t).
LEVERAGE	Total liabilities divided by total assets in a given fiscal year (t).
WCAP	Current assets divided by current liabilities in a given fiscal year (t).
ASSURANCE	A binary indicator of 1 if the firm disclosed that it received external assurance on any of its sustainability disclosures in a given fiscal year, else 0.
BIG 4	For firms that received external assurance for their sustainability report, a binary indicator of 1 if the firm disclosed that it used Deloitte, EY, KPMG, or PwC as its provider, else 0.
G3 GRI VERSION	A binary indicator of 1 if the firm followed the G3 GRI Reporting Framework in a given fiscal year, else 0.
G4 GRI VERSION	A binary indicator of 1 if the firm followed the G4 GRI Reporting Framework in a given fiscal year, else 0.
GRI STDS VERSION	A binary indicator of 1 if the firm followed the GRI Standards GRI Reporting Framework in a given fiscal year, else 0.
Sector effects	The 10 different binary sector indicators used in the study are based on the GICS Global Industry Classification Standard.