



ESG RATING DISAGREEMENT, GREENWASHING PERCEPTION, AND INSTITUTIONAL INVESTMENT DECISIONS: THE MODERATING ROLE OF DISCLOSURE QUALITY AND THIRD-PARTY ASSURANCE

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ABSTRACT

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The divergence of Environmental, Social, and Governance (ESG) ratings across major providers has created an unprecedented information challenge for institutional investors. Drawing on signaling theory, information asymmetry theory, and legitimacy theory, this study develops and proposes testing an integrated model examining how ESG rating disagreement influences institutional investment decisions through the dual mediating mechanisms of greenwashing perception and investor trust in ESG information. We further theorize that ESG disclosure quality and third-party assurance moderate these relationships by attenuating the uncertainty associated with rating divergence. Using a structured survey of 450 institutional investors across Europe, North America, and Asia-Pacific, the proposed methodology employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to test seven hypotheses across direct, mediating, and moderating pathways. Grounded in the empirical observation that pairwise correlations across six major ESG rating providers average only 0.56—leaving nearly 70% of the variance unexplained—this study addresses a critical gap in understanding how rating disagreement propagates through investor cognition to shape capital allocation decisions. The paper contributes to the ESG literature by (1) providing the first integrated model linking rating disagreement to investment decisions through cognitive intermediaries, (2) identifying boundary conditions under which disclosure quality and assurance mitigate the adverse effects of rating confusion, and (3) offering actionable implications for regulators, rating agencies, and corporate sustainability practitioners seeking to restore investor confidence in ESG information.

KEYWORDS: ESG Rating Disagreement, Greenwashing Perception, Institutional Investors, Investor Trust, Disclosure Quality, Third-Party Assurance, PLS-SEM, Sustainable Finance

1. INTRODUCTION

Environmental, Social, and Governance (ESG) investing has undergone a dramatic transformation from a niche strategy to a mainstream institutional imperative. Global sustainable investment assets exceeded \$30 trillion by 2024, representing approximately 36% of total assets under management across major markets (Global Sustainable Investment Alliance, 2024). Yet this growth has been accompanied by a paradox that threatens the very foundation of ESG-informed investment: the ratings that investors rely upon to evaluate corporate sustainability performance diverge substantially across providers, creating what Berg, Koelbel, and Rigobon (2022) termed "aggregate confusion."

The scale of this confusion is empirically striking. Pairwise correlations across six major ESG rating providers—MSCI, Sustainalytics, S&P Global, Refinitiv, ISS ESG, and

Bloomberg—average only 0.56 as of mid-2025, meaning that nearly 70% of the variance in one provider's assessment is unexplained by another's (Sustainableatlas, 2025). The social pillar exhibits the greatest disagreement ($r = 0.42$), while governance shows relatively higher convergence ($r = 0.61$). For comparison, credit ratings from Moody's and S&P correlate at approximately 0.99, rendering ESG rating disagreement an order of magnitude more severe than anything institutional investors encounter in traditional financial analysis.

This informational uncertainty has material consequences. The EY Global Institutional Investor Survey (2024) revealed that 85% of institutional investors consider greenwashing a worsening problem, while 80% believe the materiality and comparability of sustainability reporting is in acute or substantial need of improvement. More troublingly, 66% of surveyed investors indicated that their institution is likely to

decrease its consideration of ESG factors in investment decision-making—a potential retreat from sustainable finance driven not by philosophical opposition but by informational frustration. When investors cannot reliably distinguish genuine sustainability performers from those engaged in impression management, the rational response is to discount ESG information altogether.

Despite the growing recognition of ESG rating disagreement as a systemic challenge, the existing literature has predominantly examined its consequences at the firm level—documenting effects on cost of equity (Chen et al., 2025), stock price synchronicity (Lu, 2025), and firm risk (Wang et al., 2026). Conspicuously absent is an investor-level analysis that traces how rating disagreement propagates through cognitive intermediaries—greenwashing perception and trust erosion—to shape actual capital allocation decisions. Furthermore, while the moderating roles of disclosure quality and third-party assurance have been theorized individually, no integrated framework examines how these institutional mechanisms jointly mitigate the adverse effects of rating confusion on investment behavior.

This study addresses these gaps by developing and proposing to test an integrated model that examines: (1) how ESG rating disagreement amplifies greenwashing perception among institutional investors; (2) how this perception, in turn, erodes investor trust in ESG information and reduces willingness to allocate capital to ESG-rated firms; and (3) how ESG disclosure quality and third-party assurance moderate these relationships by attenuating informational uncertainty. Drawing on signaling theory (Spence, 1973), information asymmetry theory (Akerlof, 1970), and legitimacy theory (Suchman, 1995), we advance seven hypotheses that chart the direct, mediating, and moderating pathways through which rating disagreement affects institutional investment decisions.

The study makes three primary contributions. First, it provides the first integrated model that traces the cognitive pathway from ESG rating disagreement through greenwashing perception and trust erosion to investment outcomes at the institutional investor level. Second, it identifies ESG disclosure quality and third-party assurance as theoretically grounded boundary conditions that moderate the adverse effects of rating confusion, offering actionable levers for policymakers and practitioners. Third, by employing PLS-SEM methodology with a cross-regional sample of institutional investors, the study captures the behavioral mechanisms that mediate between informational inputs (ratings) and investment outputs (allocation decisions)—mechanisms that archival studies using secondary data cannot observe.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 ESG Rating Disagreement: Scope, Sources, and Consequences

ESG ratings are designed to provide standardized assessments of corporate sustainability performance, enabling investors to integrate non-financial considerations into portfolio construction and risk management (Eccles & Strohle, 2018). However, unlike credit ratings, which converge on a common underlying construct (creditworthiness) measured through relatively standardized methodologies, ESG ratings suffer from

fundamental disagreement rooted in scope, measurement, and weighting divergence (Berg et al., 2022).

Berg et al. (2022) decomposed ESG rating divergence into three sources: scope divergence (different categories of ESG attributes assessed, contributing 38%), measurement divergence (different indicators used to assess the same attribute, contributing 56%), and weight divergence (different relative importance assigned to attributes, contributing 6%). The dominance of measurement divergence is particularly consequential because it means that even when rating agencies assess the same ESG dimension, they arrive at different conclusions about firm performance—a finding that undermines the informational value of any individual rating.

Recent research has extended these findings in several important directions. Lohmann (2026) demonstrated that ESG rating disagreement significantly reduces the investable universe under consensus-based screening rules, as firms must meet thresholds across multiple providers to qualify for inclusion. Arena et al. (2025) found that higher-quality sustainability reporting and external assurance reduce rating disagreement, suggesting that disclosure practices serve as a partial remedy. Quoth (2026) documented that ESG rating disagreement affects trading behavior in European financial markets, with higher disagreement associated with increased trading volume and return volatility.

The theoretical implications of rating disagreement extend beyond measurement technicalities. From a signaling theory perspective (Spence, 1973), ESG ratings function as third-party signals that reduce information asymmetry between firms and investors regarding unobservable sustainability characteristics. When these signals conflict, the signaling mechanism breaks down: investors cannot determine whether a favorable rating reflects genuine sustainability performance or merely the idiosyncratic methodology of a particular rating provider. This signal degradation creates the informational preconditions for greenwashing perception to flourish.

2.2 Greenwashing Perception and Its Antecedents

Greenwashing—the practice of misleading stakeholders about a firm's environmental or social credentials—has evolved from a marketing concern to a systemic risk in sustainable finance (Lyon & Montgomery, 2015). While greenwashing has traditionally been studied as a corporate behavior, recent scholarship has increasingly focused on greenwashing perception as an investor-level cognitive construct that mediates the relationship between ESG information and investment decisions (Ruggeri et al., 2025).

The EY Global Institutional Investor Survey (2024) provides compelling evidence of the scope of greenwashing concern: 85% of institutional investors identify greenwashing as a growing problem, while 55% of corporate finance leaders themselves acknowledge that sustainability reporting in their industry risks being perceived as containing elements of greenwashing. This dual acknowledgment—from both the supply and demand sides of ESG information—suggests that greenwashing perception is not merely a fringe concern but a structural feature of the current ESG information ecosystem.

We theorize that ESG rating disagreement amplifies greenwashing perception through two reinforcing mechanisms. First, when investors observe that a firm receives contradictory ESG assessments from different providers, the resulting ambiguity creates cognitive space for suspicion: if one provider assigns a high rating while another assigns a low one, the investor faces the possibility that the favorable rating reflects corporate impression management rather than genuine performance—a classic adverse selection problem (Akerlof, 1970). Second, the persistent nature of rating disagreement undermines the credibility of the entire ESG rating ecosystem, leading investors to question whether any ESG signal can be trusted—a form of institutional delegitimation that amplifies generalized greenwashing suspicion.

Hypothesis 1 (H1): ESG rating disagreement is positively associated with institutional investors' greenwashing perception.

2.3 Greenwashing Perception and Investment Decisions

Greenwashing perception affects investment decisions through multiple theoretical channels. From a legitimacy theory perspective (Suchman, 1995), institutional investors rely on ESG credentials as signals of organizational legitimacy; when these credentials are perceived as hollow or exaggerated, the legitimacy signal is invalidated, and investors withdraw support. From a behavioral finance perspective, greenwashing perception introduces ambiguity into the investment evaluation process, triggering ambiguity aversion (Ellsberg, 1961) that leads investors to reduce exposure to assets whose sustainability characteristics are uncertain.

Empirical evidence supports the negative relationship between greenwashing perception and investment willingness. The American Accounting Association recently published research showing that regulatory mandates magnify both positive and negative effects of quantitative ESG goals on investors' greenwashing perceptions, which in turn drive changes in investment willingness (Behavioral Research in Accounting, 2025). In emerging markets, greenwashing arguments contribute to investor indifference toward ESG, with investors viewing the ESG premium as unjustified when sustainability claims cannot be verified (Biju, 2025).

Hypothesis 2 (H2): Greenwashing perception is negatively associated with institutional investors' willingness to allocate capital to ESG-rated firms.

2.4 Investor Trust as a Mediating Mechanism

Trust in ESG information constitutes a critical mediating construct that links informational inputs to investment outputs. Drawing on Mayer, Davis, and Schoorman's (1995) integrative model of organizational trust, we conceptualize investor trust in ESG information along three dimensions: ability (the perceived competence of rating providers to accurately assess ESG performance), benevolence (the perceived alignment of rating providers' interests with investor interests), and integrity (the perceived adherence of rating agencies and reporting firms to principles that investors find acceptable).

ESG rating disagreement erodes trust across all three dimensions. Ability-based trust suffers when conflicting ratings reveal apparent incompetence in measurement. Benevolence-based trust is undermined when investors suspect that rating methodologies are influenced by commercial relationships with

rated firms. Integrity-based trust is damaged when the persistent divergence suggests a lack of commitment to rigorous, standardized assessment—a perception amplified by the commodification of ESG ratings in a competitive marketplace.

Hypothesis 3 (H3): ESG rating disagreement is negatively associated with institutional investors' trust in ESG information.

Hypothesis 4 (H4): Investor trust in ESG information is positively associated with willingness to allocate capital to ESG-rated firms.

We further theorize that the total effect of ESG rating disagreement on investment decisions operates through both the greenwashing perception pathway and the trust erosion pathway, while maintaining a residual direct effect:

Hypothesis 5 (H5): ESG rating disagreement has a negative direct effect on institutional investment decisions, beyond its indirect effects through greenwashing perception and investor trust.

Hypothesis 6 (H6): Greenwashing perception is negatively associated with investor trust in ESG information, creating a serial mediation pathway from ESG rating disagreement to investment decisions.

2.5 Moderating Effects: Disclosure Quality and Third-Party Assurance

While ESG rating disagreement creates informational challenges, institutional mechanisms exist that may attenuate its adverse effects. We theorize two such moderators: ESG disclosure quality and third-party assurance.

ESG disclosure quality refers to the completeness, comparability, accuracy, and timeliness of corporate sustainability reporting (Christensen, Hail, & Leuz, 2021). High-quality disclosures serve as direct signals from firms to investors, partially substituting for the conflicting signals provided by rating agencies. When disclosure quality is high—characterized by quantitative targets, standardized metrics (e.g., ISSB or CSRD compliance), and granular performance data—investors can form independent assessments of corporate sustainability performance, reducing their reliance on divergent ratings and thereby attenuating the link between rating disagreement and greenwashing perception. Arena et al. (2025) provide preliminary evidence for this mechanism, finding that higher-quality sustainability reporting reduces ESG rating disagreement itself.

Third-party assurance—the independent verification of ESG disclosures by external auditors—provides an additional credibility signal that reduces the informational uncertainty associated with rating disagreement. From an agency theory perspective (Jensen & Meckling, 1976), assurance functions as a monitoring mechanism that constrains managerial discretion in sustainability reporting, thereby reducing the opportunity for greenwashing. When investors know that ESG disclosures have been externally verified, the negative relationship between rating disagreement and investment willingness should be attenuated, because the assurance signal provides a separate, independent basis for confidence.

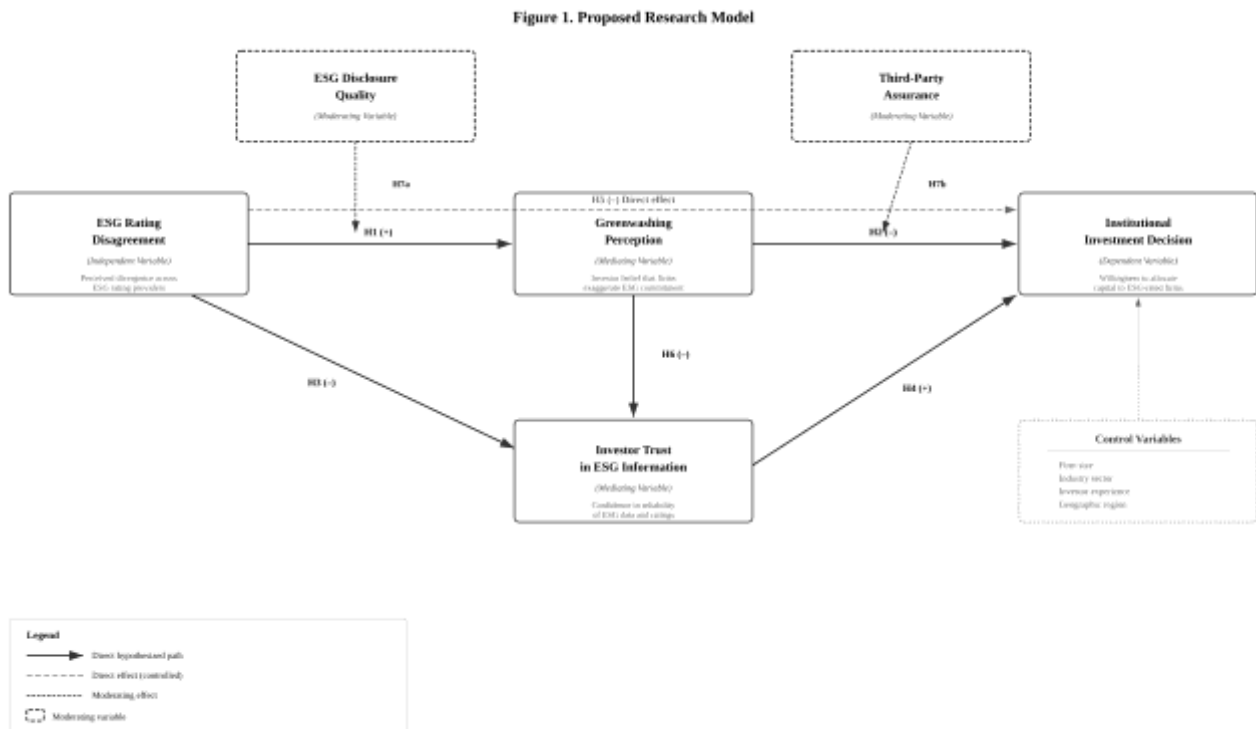
Hypothesis 7a (H7a): ESG disclosure quality moderates the positive relationship between ESG rating disagreement and greenwashing perception,

such that the relationship is weaker when disclosure quality is high.

Hypothesis 7b (H7b): Third-party assurance moderates the negative relationship between greenwashing perception and institutional

investment decisions, such that the relationship is weaker when third-party assurance is present.

Figure 1 presents the proposed research model integrating all hypothesized relationships.

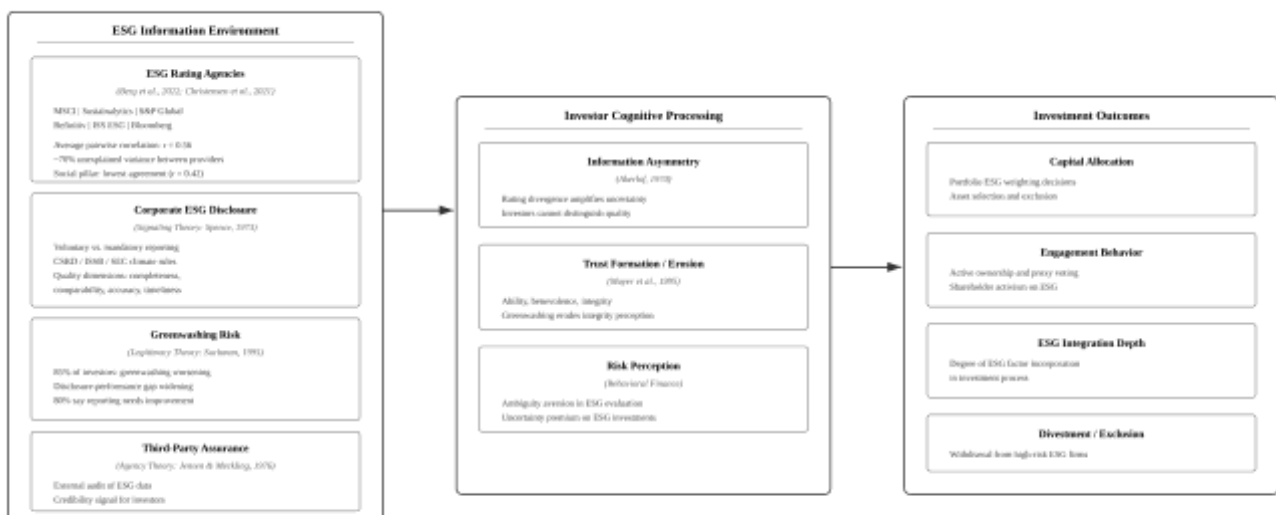


Source: Authors' conceptualization based on signaling theory and information asymmetry theory.

Figure 1. Proposed Research Model

Figure 2 presents the broader theoretical framework situating the research model within the ESG information ecosystem.

Figure 2. Theoretical Framework: ESG Information Asymmetry and Investment Decision-Making



Source: Authors' synthesis of signaling theory, legitimacy theory, agency theory, and information asymmetry theory.

Figure 2. Theoretical Framework: ESG Information Asymmetry and Investment Decision-Making

3. PROPOSED METHODOLOGY

3.1 Research Design and Sampling Strategy

This study proposes a cross-sectional survey design targeting institutional investors who actively incorporate ESG

considerations into their investment processes. The target population comprises portfolio managers, investment analysts, and chief investment officers at asset management firms, pension funds, sovereign wealth funds, insurance companies,

and endowments across three regions: Europe, North America, and Asia-Pacific. These regions represent the most mature ESG investment markets and collectively account for over 95% of global sustainable investment assets (GSIA, 2024).

The proposed sample size of 450 respondents is determined by the structural complexity of the PLS-SEM model. Following Hair, Hult, Ringle, and Sarstedt's (2022) guidelines, the minimum sample size should be ten times the maximum number of structural paths directed at any construct in the model. With seven structural paths directed at the dependent variable (including mediating and moderating effects), the minimum required sample is 70; however, to ensure adequate statistical power (0.80) for detecting medium effect sizes ($f^2 = 0.15$) and to support multi-group analysis across regions, we target 150 respondents per region.

Data collection will employ a combination of professional panel services (e.g., Prolific Academic's institutional investor panel) and direct recruitment through industry associations including the CFA Institute, Principles for Responsible Investment (PRI), and the European Sustainable Investment Forum (Eurosif). Screening criteria require respondents to: (a) hold a current role in investment management or analysis, (b) have at least two years of experience with ESG-integrated investment strategies, and (c) have personal decision-making authority or advisory influence over portfolio construction.

3.2 Measurement Instrument Development

All constructs are measured using multi-item reflective scales adapted from established instruments in the ESG, finance, and organizational behavior literatures. Items are rated on seven-point Likert scales (1 = strongly disagree to 7 = strongly agree) unless otherwise specified.

ESG Rating Disagreement (Independent Variable)

Measured using a six-item scale capturing investors' perceived divergence across ESG rating providers. Items assess awareness of rating inconsistencies, perceived severity of divergence, experience with contradictory ratings for portfolio holdings, and perceived impact on decision-making. Sample item: "I frequently encounter situations where different ESG rating providers give substantially different scores to the same company." Scale adapted from Berg et al. (2022) and operationalized for investor perception measurement.

Greenwashing Perception (Mediating Variable)

Measured using a seven-item scale capturing the perceived prevalence and severity of corporate greenwashing. Items assess suspicion of corporate ESG claims, perceived gap between disclosed ESG activities and actual performance, and generalized skepticism toward corporate sustainability reporting. Sample item: "Many companies that receive high ESG ratings are engaged in superficial rather than substantive sustainability practices." Scale adapted from Ruggeri et al. (2025) and the EY Institutional Investor Survey framework.

Investor Trust in ESG Information (Mediating Variable)

Measured using a nine-item scale operationalizing trust along the three dimensions identified by Mayer et al. (1995): ability (three items assessing perceived competence of ESG rating providers), benevolence (three items assessing perceived alignment of interests), and integrity (three items assessing

perceived methodological rigor and consistency). Sample item: "I am confident that ESG rating agencies have the technical expertise to accurately assess corporate sustainability performance."

Institutional Investment Decision (Dependent Variable)

Measured using a six-item scale capturing investment allocation willingness, portfolio weighting decisions, and engagement behavior related to ESG-rated firms. Items assess both the extensiveness and the intensity of ESG integration in investment decision-making. Sample item: "I am willing to allocate a significant portion of my portfolio to firms with high ESG ratings." Scale adapted from the PRI signatory survey methodology.

ESG Disclosure Quality (Moderating Variable)

Measured using a five-item scale assessing investors' evaluation of corporate ESG disclosure along four quality dimensions identified by Christensen et al. (2021): completeness, comparability, accuracy, and timeliness. Sample item: "The ESG disclosures I typically review provide sufficient quantitative data to independently assess firm sustainability performance."

Third-Party Assurance (Moderating Variable)

Measured using a four-item scale assessing the perceived importance and effectiveness of external verification of ESG disclosures. Items distinguish between limited and reasonable assurance and assess the extent to which assurance influences investment confidence. Sample item: "I am significantly more confident in ESG disclosures that have been independently verified by a reputable third-party auditor."

Control Variables

The model controls for firm size (large-cap vs. mid/small-cap focus), industry sector (high-impact vs. low-impact sectors), investor experience (years in ESG-integrated investing), geographic region (Europe, North America, Asia-Pacific), and respondent role (portfolio manager, analyst, CIO).

3.3 Data Analysis Approach

Data analysis will proceed in two stages following Hair et al.'s (2022) recommended PLS-SEM protocol. Stage 1 involves assessment of the measurement model: internal consistency reliability (composite reliability > 0.70), convergent validity (AVE > 0.50), and discriminant validity (Heterotrait-Monotrait ratio < 0.85 ; Henseler, Ringle, & Sarstedt, 2015). Common method bias will be assessed using Kock's (2015) full collinearity approach, with VIF values below 3.3 indicating absence of pathological collinearity.

Stage 2 involves assessment of the structural model: path coefficients (significance tested via bootstrapping with 5,000 subsamples), coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2). Mediation effects (H1–H6) will be tested using the specific indirect effects approach, with significance assessed via bootstrapped confidence intervals. Moderating effects (H7a–H7b) will be tested using the product indicator approach for continuous moderators and multi-group analysis for categorical moderators. Multi-group analysis (MGA) will examine whether relationships differ significantly across the three geographic regions, providing insights into the generalizability of the model.

4. EXPECTED CONTRIBUTIONS AND DISCUSSION

4.1 Theoretical Contributions

This study advances the sustainable finance literature in several important ways. First, by tracing the cognitive pathway from ESG rating disagreement through greenwashing perception and trust erosion to investment decisions, the study addresses a fundamental gap in understanding how macro-level informational challenges (rating divergence) translate into micro-level behavioral responses (investment decisions). The existing literature has documented the existence of rating disagreement (Berg et al., 2022) and its firm-level consequences (Lohmann, 2026; Quotb, 2026), but the investor-level mechanisms through which disagreement affects capital allocation have remained theoretically underspecified.

Second, the dual mediation model—operating through both greenwashing perception and trust erosion—captures the multidimensional cognitive response to informational uncertainty that single-mediator models cannot. The serial mediation pathway (H6), in which rating disagreement amplifies greenwashing perception, which in turn erodes trust, represents a particularly novel contribution: it theorizes a cascading cognitive process in which informational ambiguity breeds suspicion, which then systematically undermines the epistemic foundations of ESG-informed investing.

Third, the identification of ESG disclosure quality and third-party assurance as moderators provides theoretical clarity on the boundary conditions under which rating disagreement does and does not translate into adverse investment outcomes. This contribution is particularly timely given the rollout of major mandatory disclosure frameworks—the EU's Corporate Sustainability Reporting Directive (CSRD), the International Sustainability Standards Board (ISSB) standards, and the SEC's climate disclosure rules—which are designed precisely to address the quality concerns that this study examines.

4.2 Practical Implications

For regulators and standard-setters, the study's framework suggests that regulatory interventions targeting rating methodology convergence alone may be insufficient. The moderating effects of disclosure quality (H7a) and assurance (H7b) suggest that mandatory high-quality corporate reporting and required third-party verification may be more effective levers for restoring investor confidence than direct regulation of rating agencies. The CSRD's requirement for external assurance of sustainability reports is well-aligned with this theoretical prediction.

For ESG rating agencies, the study highlights the reputational and market consequences of persistent rating divergence. The theoretical framework suggests that rating disagreement not only confuses investors but actively damages the legitimacy of the rating ecosystem—a collective action problem in which each agency's idiosyncratic methodology undermines the credibility of all agencies. Industry-level initiatives to improve methodological transparency and reduce measurement divergence are thus in the collective interest of the rating industry.

For corporate sustainability practitioners, the study implies that high-quality, independently assured ESG disclosures serve as a partial insurance mechanism against the adverse effects of rating disagreement. Firms that invest in comprehensive, standardized, and externally verified sustainability reporting are theoretically positioned to maintain investor confidence even when they receive contradictory ratings from different providers.

4.3 Limitations and Future Research

The proposed cross-sectional design captures associations at a single point in time but cannot establish temporal causality. Longitudinal research tracking changes in rating disagreement and their lagged effects on investment behavior would provide stronger causal evidence. The reliance on self-reported measures of investment decisions introduces potential social desirability bias; future studies could complement survey data with actual portfolio holdings data to validate the behavioral measures.

The study's focus on institutional investors, while theoretically motivated by their market significance, leaves open the question of how retail investors—who typically rely on single rating providers and may lack the sophistication to evaluate rating disagreement—respond to similar informational challenges. The geographic scope, while covering the three major sustainable investment markets, excludes emerging economies where ESG rating coverage is thinner and disagreement patterns may differ. Future research should also examine the temporal evolution of these relationships as mandatory disclosure frameworks mature and rating methodologies converge.

5. CONCLUSION

The divergence of ESG ratings across major providers has created an information crisis at the heart of sustainable finance. With pairwise correlations averaging only 0.56 across six major rating agencies and 85% of institutional investors identifying greenwashing as a worsening problem, the integrity of ESG-informed investing is under unprecedented strain. This study proposes an integrated theoretical model that traces how ESG rating disagreement propagates through investor cognition—amplifying greenwashing perceptions and eroding trust in ESG information—to ultimately shape institutional capital allocation decisions.

By drawing on signaling theory, information asymmetry theory, and legitimacy theory, and by identifying ESG disclosure quality and third-party assurance as boundary conditions, the study offers a theoretically grounded and practically actionable framework for understanding and addressing the ESG information challenge. As global regulators implement landmark disclosure frameworks—CSRD, ISSB, and SEC climate rules—the questions this study raises about the moderating role of disclosure quality and assurance will only grow in policy relevance. The answers will shape whether ESG investing fulfills its promise as a mechanism for aligning capital with sustainability outcomes, or whether informational confusion drives a wholesale retreat from sustainable finance.

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