



OVERSTATED OR UNDERSTATED? EXPLORING THE PARADOX OF GREENWASHING, GREENHUSHING, AND GREENWISHING IN CORPORATE SUSTAINABILITY REPORTING

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Abstract:

The increasing demand for sustainability communication has led to the emergence of practices of greenwashing, greenhushing, and greenwishing, which together embody the spectrum of paradoxes in corporate sustainability reporting. This systematic literature review analyzes how organizations create discrepancies between sustainability disclosure and actual performance through the exaggeration, concealment, or overly optimistic portrayals of sustainability initiatives. This study examines these phenomena by analyzing institutional, market, and methodological factors that influence corporate accountability. A systematic literature review following the PRISMA framework was conducted using the Scopus and Web of Science databases. As a result, 24 studies that satisfy the inclusion criteria were selected. The results of the thematic synthesis revealed three main research clusters: (1) Governance, Institutions and Ecosystem Drivers, i.e. how board composition, political connections and regulatory frameworks influence disclosure; (2) Markets and Stakeholders, i.e. how investors, consumers and partners respond to credibility gaps, and (3) Measurement, Methods and Paradoxes, which highlights methodological approaches in Environmental and Social Governance (ESG) assessments, assurance mechanisms and certification systems that influence sustainability disclosure issues. Evidence suggests that sustainability reporting is influenced not only by business intentions but also by institutional incentives, stakeholder pressures, and the

constraints inherent in current assessment systems. The findings from this study not only enhance theoretical and practical understanding of disclosure authenticity but also suggest a relationship between mechanisms such as credibility, regulatory monitoring, and interdisciplinary evaluation approaches with corporate communications.

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Corporate Transparency, ESG, Greenhushing, Greenwashing, Greenwishing, Sustainability



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Introduction

The past decade has witnessed a decisive transformation from voluntary to highly regulated sustainability reporting, driven by the expansion of global standards such as the Global Reporting Initiative, International Sustainability Standards Board, and regulatory framework including the Corporate Sustainability Reporting Directive. The escalating pressure for sustainability reporting has given rise to the emergence of practices involving over- or under-reporting of sustainability performance. This practice poses a threat to the integrity of sustainability disclosure systems and stakeholders' trust. Greenwashing, a term that refers to the exaggeration or falsification of sustainability statements (Luo et al., 2025; Perkasis et al., 2025), has been extensively reported in recent years, with a variety of bibliometric reviews and empirical studies examining the antecedents, detection methods, and regulatory frameworks that shape the practice (Ben Mahjoub, 2025). This development reflects the maturity of the greenwashing literature as an established field of study in corporate sustainability research. Meanwhile, some organisations take the opposite approach through the practice of greenhushing, deliberately limiting climate communication to avoid criticism or accusations, including reputational risks, regulatory pressures, or rising stakeholder expectations (Gričar et al., 2025; Hilton, 2025). Another behavioural pattern termed as greenwishing is a situation where companies report high sustainability aspirations and commitments, but have no capacity to deliver (Rob et al., 2023). Unlike greenwashing, the phenomena of greenhushing and greenwishing are still new. Academic discussions about these two phenomena are still limited and less systematically explored. In terms of empirical coverage and theoretical integration, the existing literature is still lacking, thus opening up opportunities for further exploration.

This review makes three substantive contributions that advance the understanding of corporate sustainability disclosure practices. First, this study offers a comprehensive synthesis of sustainability overstatement, understatement, and aspirational disclosure practices. Second, it organizes existing empirical evidence into three interrelated analytical themes: governance and institutional drivers, market and stakeholder consequences, and methodological paradoxes by demonstrating how structural incentives, stakeholder pressures, and evaluation systems interact to shape corporate disclosure behavior. Third, it identifies key contextual contingencies and critical research gaps, including providing existing evidence of limited empirical attention to underreported and aspirational signals, and the need for integrated, cross-country, and mixed-methods research designs. Collectively, these contribute to conceptual clarity, strengthen methodological rigor, and provide practical insights into the evolving sustainability communication paradox in corporate contexts.

Literature Review

ESG performance functions as a useful tool for stakeholders to evaluate firms' long-term growth (Ma et al., 2026). However, firms are evaluated not just by their accomplishments but also by the manner in which they convey those accomplishments. The problem that arises from this pressure is the existence of an environment that is conducive to the manipulation of sustainability narratives. Some companies take the path of exaggerating sustainability information to win over stakeholders (Luo et al., 2025). Others deliberately limit information to avoid legal risks and reputational backlash, (Font et al., 2017; Naderi Koupaei et al., 2025; Thakur et al., 2023; Zhao et al., 2023), while some make bold but unconfirmed commitments about sustainability engagements (Rob et al., 2023). Greenwashing, greenhushing, and greenwishing are diverse but interconnected responses resulting from increasing institutional and stakeholder demand for sustainability disclosure.

Greenwashing has become the most frequently researched component of sustainability communications. To appear more responsible than the company's actual performance, the company may choose to exaggerate information about positive environmental or social facts and conceal negative facts (de Freitas Netto et al., 2020; Delmas & Burbano, 2011). Promoting minor activities, hiding negative repercussions, and utilising emotional or imprecise language to improve legitimacy are among the common strategies used to manipulate users of sustainability reports. Referring to Legitimacy Theory, such symbolic disclosure serves as a means to conform their image to societal norms (Zhang et al., 2023). Whereas mimicking the reporting practices of peers to stay out of reputational trouble is explained by the Institutional Theory (Huang et al., 2022; Mateo-Márquez et al., 2022).

Greenhushing, in contrast, is the deliberate hiding, suppression, or minimization of information about sustainability accomplishments (Font et al., 2017; Thakur et al., 2023) to avoid criticism from stakeholders, regulatory scrutiny, or charges of hypocrisy. The phrase greenhushing is relatively new, but practices such as "selective transparency" and "strategic silence" have been around in the literature on corporate disclosure for quite some time. When organisations encounter contradictory expectations from multiple stakeholders, silence becomes a risk mitigation approach that balances legitimacy among competing audiences. In reality, greenhushing is a defensive tactic frequently used by companies to regain reputational balance following public outcry or unsuccessful sustainable initiatives.

Greenwashing, on the other hand, refers to aspirational statements regarding sustainability objectives that exceed a company's present abilities or commitments. Aldy et al., (2023), in recognizing the existence of greenwashing stated that many companies have issued statements regarding decarbonization that are overly ambitious, beyond the reasonable capabilities, and unattainable for the company. Many businesses use low-cost signals without tangible investments or quantifiable plans in making net-zero commitments or visionary ESG targets. Instead of reflecting true competence, businesses declare grandiose sustainability goals as symbolic declarations to gain credibility and investor trust, even while they lack the actual ability to commit to those plans.

Despite being relatively new in the sustainability literature, the terms "greenhushing" and "greenwishing" have been used in a number of studies to refer to these phenomena. Take, for example, the study "Why Do Restaurants Not Want to Stress Sustainability? Insights From New Zealand," by Naderi Koupaei et al., (2025) which looks at how businesses purposefully minimise or keep quiet about true sustainability initiatives to evade criticism or charges of greenwashing. This reflects greenhushing behavior. Greenwashing tendencies are also subtly demonstrated in the paper "Political Connections and Greenwashing: Chinese Evidence" by Liu et al., (2025), in which politically connected companies offer sustainability narratives that are aspirational or future-focused and surpass their verified accomplishments. Greenhushing and greenwishing have begun to emerge and be discussed in practical contexts within the academic literature, however their theoretical foundations can be considered underdeveloped and insufficiently articulated.

These three acts, notwithstanding conceptual distinctions, are all rooted in information asymmetry and impression management. They demonstrate how companies balance conflicting needs to be reputable, accountable, and competitive while managing the reputational and legal risks of disclosure. A stringent regulatory environment can exacerbate this phenomenon. Firms located in jurisdictions with high standard requirements, namely the European Union's Corporate Sustainability Reporting Directive (CSRD) or the upcoming IFRS S1-S2 standards, have greater potential to benefit from narrative flexibility by engaging in impression management. To maintain legitimacy and trust, organizations utilize the flexibility in sustainability reporting frameworks as a means to provide measurable and verifiable data. This can be done by emphasizing positive information, downplaying or not reporting negative impacts, and making symbolic disclosures without any real environmental or social improvements (Roszkowska-Menkes et al., 2024). Such reporting is often motivated by reputation management, written in a vague narrative format that aims to build an image of a responsible company (Hao & Rezaee, 2021; Roszkowska-Menkes et al., 2024).

Overall, greenwashing has evolved into a mature and extensively examined research domain while greenhushing and greenwishing represent newer lines of inquiry that are gradually gaining recognition within the academic discourse. Nevertheless, how governance mechanisms, market pressures, and measurement frameworks shape and interact to influence these sustainability disclosure practices remains insufficiently understood. To address this gap, the present study provides an integrated synthesis shaped by the research questions examined herein:

1. What are the impacts of institutional pressures, corporate governance mechanisms, and ecosystem-level regulations on the frequency and severity of greenwashing, greenhushing, and greenwishing in corporate sustainability reporting?
2. What are the financial, behavioural, and reputational repercussions of these practices on corporate value, stakeholder trust, and market credibility?
3. How have analytical techniques and methodological frameworks evolved to identify, differentiate, and quantify these paradoxical disclosure behaviours?

Material and Methods

Identification

A systematic review approach is applied in this study to gather a substantial set of pertinent literature. The review begins with the selection of appropriate keywords and is continued by word exploration with reference to dictionaries, thesauri, encyclopaedias, and past research. All terms identified were then consolidated, and a structured word strings were applied across the Web of Science and Scopus databases (see Table 1), yielding 1,387 relevant publications.

Table 1: The Search String

Scopus	TITLE-ABS-KEY (greenwash* OR greenhush* OR greenwish* AND (Sustainability OR ESG)) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "ECON")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (PUBYEAR , 2025)) Access date: October 2025
Wos	Refine results for greenwash* OR greenhush* OR greenwish* AND (Sustainability OR ESG) (Topic) and 2025 (Publication Years) and English (Languages) and Business Economics (Research Areas) and Article (Document Types) Access date: October 2025

Screening

At the screening stage, all the studies were analyzed, and only studies relevant to the research questions were shortlisted. This process typically involves the selection of studies that focused on the issues of greenwashing, greenhushing, and greenwishing in the context of corporate sustainability reporting. All overlapping documents were identified and removed. Only journal articles were selected, as they represent reliable sources of practical and evidence-based insights. Reviews, meta-syntheses, meta-analyses, monographs, book series, book chapters, and conference proceedings were omitted from this study. Only published English-language articles up to the year 2025 were selected. In total, 1,153 publications were excluded, and in

the final stage of this phase, 234 articles fulfilled the selection criteria (see Table 2). No publications were removed on the grounds of duplication.

Table 2: The Selection Criterion

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2025	< 2025
Literature type	Journal (Article)	Conference, Book, Review
Publication Stage	Final	In Press
Subject	Business, Management and Accounting, Social science, Economics, Econometrics	Besides Business, Management and Accounting, Social science, Economics, Econometrics

Eligibility

In this phase, 234 shortlisted articles advanced to the evaluation process. Here, each article's title and content were systematically reviewed to confirm adherence to all the inclusion criteria and alignment with the study objectives. 210 articles were discarded for failing to meet the research scope, having insignificant titles, abstracts, or lacking access to the full text of the article. Finally, only 24 articles (see Table 3) were selected for analysis.

Data Abstraction and Analysis

An integrative analysis was applied to investigate and synthesize studies using quantitative approaches. Themes and corresponding themes were developed, with the initial phase involving data collection. Figure 1 illustrates the process of how the author carried out a detailed analysis of 24 publications to capture claims or disclosures pertinent to this study. Next, the main studies related to greenwashing, greenhushing, and greenwishing were systematically evaluated, including the research methods used and the findings reported. The author, together with a research partner, developed themes that served as the framework for this study. During the analysis, the researcher maintained a log to document insights relating to data interpretation. Finally, the analysis results were examined to specify any discrepancies in the formation of themes. If there were variations in interpretation, the authors discussed them together to reach a consensus.

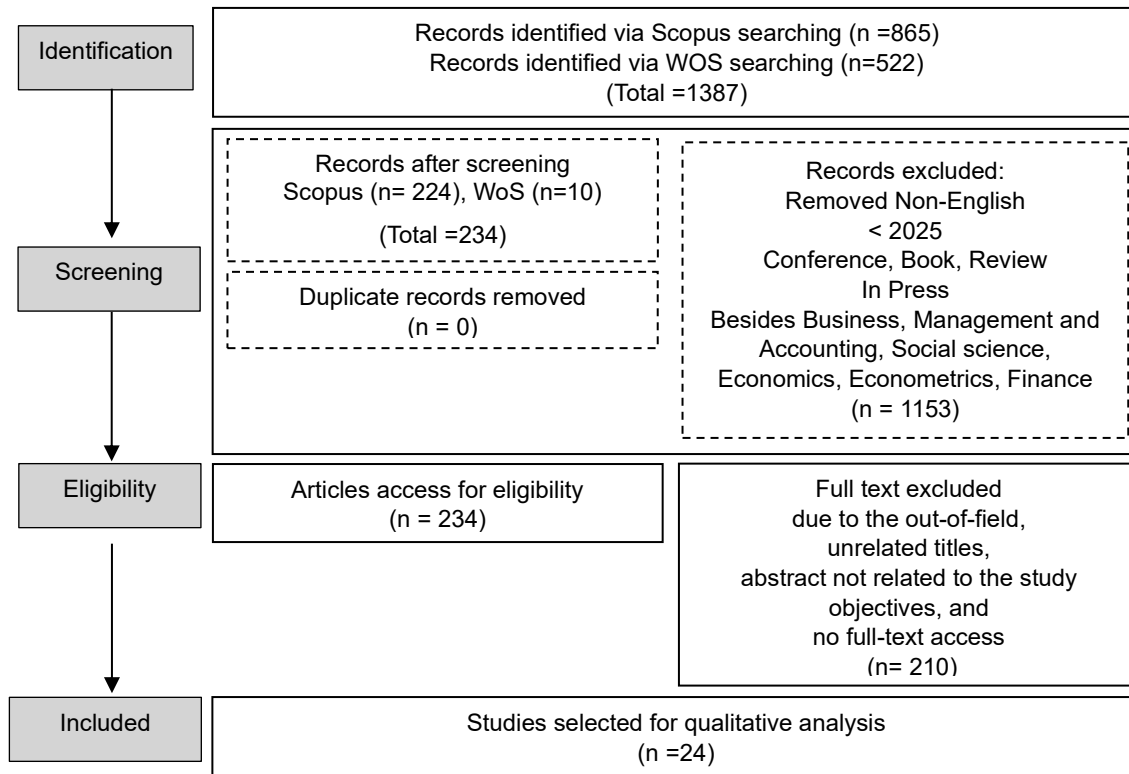


Figure 1: Flow Diagram of the Search Process

Table 3: Details of the Selected Studies

PS Label	Authors	Article Title	Journal
PS1	Xu & Wang, (2025)	Beyond the green facade: Evidence of a nonlinear link between greenwashing and financing efficiency	Global Finance Journal
PS2	Nguyen & Duong, (2025)	Examining the impact of greenwashing on customer boycott intentions: the mediating role of green confusion	Discover Sustainability
PS3	Senan et al., (2025)	Unveiling the linkages between greenwashing, brand hate, and negative consumer behavior: the moderating effect of environmental concern	Discover Sustainability
PS4	Yang et al., (2025)	Governance or collusion? Shareholders' network and corporate ESG greenwashing	International Review of Financial Analysis
PS5	Zhang et al., (2025)	When greenwashing meets ESG: Exploring the role of third-party ESG ratings in corporate greenwashing behavior	Journal of Business Research

PS6	Wang et al., (2025)	Financial crime risks in environmental, social, and governance (ESG) investment: Perspectives on greenwashing and false disclosure	Finance Research Letters
PS7	Ma et al., (2025)	Perceived greenwashing and employee green behavior: The roles of green organizational identity and self-serving leadership	Business Ethics, the Environment & Responsibility
PS8	Chen et al., (2025)	Peer effects of ESG greenwashing within board networks	International Review of Financial Analysis
PS9	Pratama et al., (2025)	Sustainability-related corporate governance and greenwashing practices: preliminary evidence from southeast Asian companies	Meditari Accountancy Research
PS10	Cheng & Yan, (2025)	Environmental management system certification and corporate ESG greenwashing	Energy Economics
PS11	Ferro et al., (2025)	Uncovering ESG Ratings: The (Im)Balance of Aspirational and Performance Features	Corporate Social Responsibility and Environmental Management
PS12	Battisti et al., (2025)	Greenwashing and Sustainability Disclosure in the Climate Change Context: The Influence of Third-Party Certification on Chinese Companies	Business Strategy and the Environment
PS13	(Xu et al., 2025)	Greenwashing in ESG information disclosure: An intertemporal signaling game approach	International Journal of Production Economics
PS14	Rehman et al., (2025)	Role of Greenwashing in Influencing Brand Attitude and Consumption: Identifying Sustainable Business Strategies	Business Strategy and the Environment
PS15	Liu et al., (2025)	Political connections and greenwashing: Chinese evidence	Applied Economics
PS16	Valero-Gil et al., 2025)	Would you date a liar? The impact of greenwashing on B2B relationships under the managerial trust view	BRQ Business Research Quarterly
PS17	Liu et al., (2025)	Incentive or catering effect of environmental subsidies? Evidence from ESG reports on greenwashing	International Review of Financial Analysis
PS18	Xu et al., (2025)	Greenwashing and market value of firms: An empirical study	International Journal of Production Economics
PS19	Paramitha et al., (2025)	Undoing greenwashing: the roles of greenwashing severity, consumer forgiveness, growth beliefs and apology sincerity	Journal of Product & Brand Management

PS20	Chang & Yoo, (2025)	A Trick Called “Eco”: An Analysis of the Antecedents of Eco-Friendly Behavior	SAGE Open
PS21	Ma et al., (2025)	ESG disclosures, green innovation, and greenwashing: All for sustainable development?	Sustainable Development
PS22	Naderi Koupaei et al., (2025)	Why Don't Restaurants Want to Promote Their Sustainability? Insights From New Zealand	International Journal of Tourism Research
PS23	da Silva & Cé, (2025)	The effects of greenwashing on purchasing intention and perceived quality ny the consumer	Revista Brasileira de Marketing (REMark)
PS24	Keresztúri et al., (2025)	Environmental policy and stakeholder engagement: Incident-based, cross-country analysis of firm-level greenwashing practices	Corporate Social Responsibility and Environmental Management

*ps=primary study

Result and Finding

Quality Assessment and Critical Appraisal of Selected Studies

A structured quality assessment (QA) framework was implemented to assess the credibility and methodological rigour of the chosen primary studies. Six standardised quality indicators (QA1–QA6) were used to evaluate each of the 24 studies (PS1–PS24) identified through the PRISMA protocol. These indicators were adapted from prior systematic review practices in sustainability and governance research. This multi-criteria approach enabled consistent assessment of conceptual clarity, methodological integrity, and contribution significance across a variety of study designs.

The six quality indicators were defined as follows:

- QA1: Is the objective explicitly stated?
- QA2: Is the relevance and contribution adequately articulated?
- QA3: Is the methodological design explicitly defined?
- QA4: Are the concepts underpinning the approach explicitly defined?
- QA5: Is the study critically compared and evaluated in relation to other comparable works?
- QA6: Are the work's limitations explicitly stated?

A three-point ordinal scale was used for scoring each of the criterion. **Yes (Y)** = 1 point was given when the criterion was fully satisfied and explicitly addressed in the study. **Partly (P)** = 0.5 points, when the criterion was mentioned but lacks sufficient explanation or methodological detail. **No (N)** = 0 points, when the criterion is absent or inadequately demonstrated. The total quality score for each study was computed by aggregating all six criteria, yielding a maximum attainable score of 6.0. This was then converted into a percentage score using the formula:

$$\text{Percentage (\%)} = \frac{\text{total score}}{6} \times 100$$

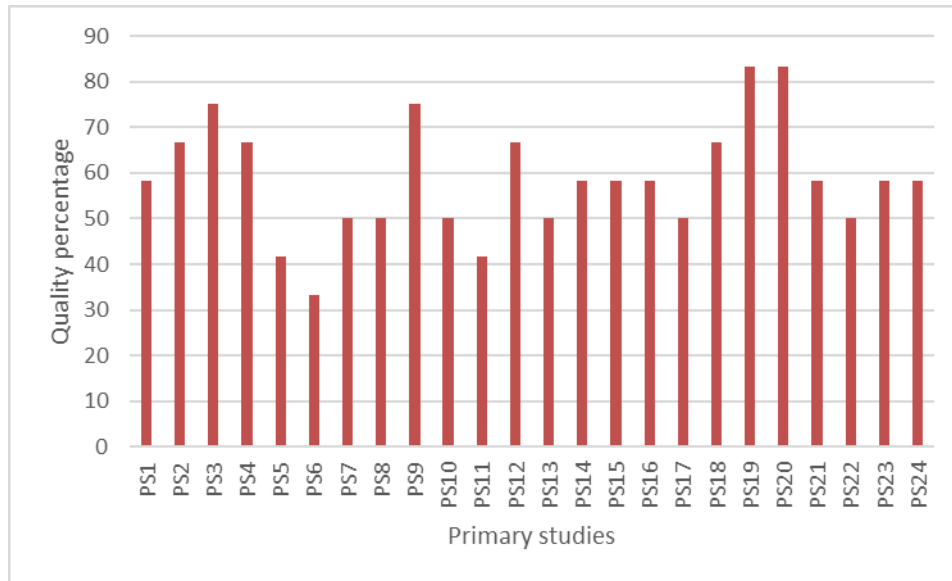


Figure 2: The Average Quality Assessment Score Chart

Referring to Figure 2, the assessment of 24 primary research studies indicates a moderate level of quality, with values varying from 33.3% to 83.3%, and an average quality score of roughly 58%–60%. The analysis of the results revealed that a majority of research exhibits a clear objective and methodology, yet consistently reveals deficiencies in comparative analysis and the articulation of limitations. Several studies, notably PS19 (Paramitha et al., 2025) and PS20 (Chang & Yoo, 2025) attained the highest quality ratings (83.3%), indicative of a well-articulated research design, pertinent findings, and a clear exposition of limitations. In contrast, studies like PS5 (Zhang et al., 2025) and PS6 (Wang et al., 2025) had the lowest scores (33%–41%), primarily owing to inadequate methodological detail and the absence of comparison analysis.

Thematic Analysis of Greenwashing, Greenhushing, and Greenwishing Studies

Theme 1: Governance, Institutional, and Ecosystem Drivers

Empirical findings from previous studies have shown that interlocking directorates and shareholder relations promote uniform disclosure narratives among affiliated companies (Chen et al., 2025; Yang et al., 2025). When several organizations are controlled or influenced by the same individuals and investors, they tend to use similar language, messages, and disclosure practices, especially in optimistic narratives about sustainability performance. This network proximity diminishes the monitoring efficacy and increases the propensity for impressive management (Chen et al., 2025; Keresztúri et al., 2025; Yang et al., 2025). As a result, companies may adopt a symbolic orientation strategy, which refers to a company's focus on making nice-sounding statements, commitments, and narratives, without concrete and measurable evidence of real sustainability performance (Battisti et al., 2025; Cheng & Yan, 2025; Zhang et al., 2025). However, independent directors may alleviate these tendencies by limiting greenwashing activities (Keresztúri et al., 2025). In aggregate, the evidence suggests

that governance structures and relationship networks create an environment that encourages promotional signals over genuine performance.

Building upon these governance dynamics, political embeddedness and policy tools further influence firms' incentives, steering disclosure decisions towards legitimacy-oriented indicators rather than operational content. Companies with strong political connections often face less stringent regulatory and media scrutiny, while government assistance programmes may create a 'catering' effect that rewards visible compliance. Together, both situations encourage firms to strategically manipulate sustainability disclosures (Liu et al., 2025; Ma et al., 2025). By contrast, active stakeholder engagement and strict regulatory enforcement strengthen information discipline (Battisti et al., 2025; Keresztúri et al., 2025). However, policy frameworks may at times prioritise visibility over validated results, prompting organisations to focus more on what can be seen rather than what is achieved. Companies learn that what is important is how they appear to regulators and the public, and not what they actually do in practice (Liu et al., 2025). Taken together, political and institutional factors (such as government, regulation, social pressures, and industry norms) often reroute corporate sustainability communication away from reporting based on evidence, and towards legitimacy driven.

Extending beyond political and institutional influences, external evaluation frameworks such as ratings, certifications, and assurance play a role in facilitating disclosure credibility while entrenching selective disclosure within opacity. Although these mechanisms are intended to improve transparency and bolster stakeholder confidence, they may inadvertently reinforce selective disclosure within layers of procedural obscurity. Empirical analyses show that assurance providers often prioritize processes and aspirational commitment over verifiable outputs, hence allowing for narrative inflation (Battisti et al., 2025; Ferro et al., 2025). Therefore, having an environmental certificate does not always mean that a company is truly sustainable. Instead, firms may strategically utilise these external validations to alleviate scrutiny while obscuring operational shortcomings behind reputable third-party endorsement (Battisti et al., 2025; Cheng & Yan, 2025).

Building on these institutional dynamics, the regional and sectoral environment further influences how governance systems translate into sustainability disclosure behaviour. Evidence from Southeast Asia indicates that although formal sustainability reporting frameworks are becoming more established, inconsistent enforcement and inadequate assurance capabilities lead to variable disclosure quality. This institutional immaturity creates persistent gaps between declared commitments and actual results (Keresztúri et al., 2025; Pratama et al., 2025). In reputationally sensitive industries such as service-oriented sectors, where reputational risks and customer perceptions are paramount, companies frequently respond to the gap by adopting cautious underreporting (Naderi Koupaei et al., 2025). This practice is consistent with the phenomenon of greenhushing, which is a strategy of shielding or downplaying sustainability information to limit public scrutiny or allegations of greenwashing (Ferro et al., 2025; Naderi Koupaei et al., 2025).

In conclusion, the interplay of governance, political, evaluative, and contextual variables shapes the field-level equilibrium governing the corporate sustainability disclosure. Interorganisational networks promote imitation and alignment among related enterprises by facilitating the spread of common disclosure narratives through interlocking boards and shared

ownership structures (Chen et al., 2025; Yang et al., 2025). Moreover, external assurance mechanisms can reinforce these peer-driven influences. Although they are intended to increase credibility, they frequently stabilise selective disclosure norms by indicating acceptable levels of verification depth and narrative flexibility (Battisti et al., 2025; Cheng & Yan, 2025; Zhang et al., 2025). In institutional environments with inadequate oversight or opaque verification, presentational consistency and legitimacy preservation are frequently prioritised over notable performance improvements (Chen et al., 2025; Ferro et al., 2025; Zhang et al., 2025). By contrast, when stakeholder scrutiny or regulatory enforcement increases, disclosure patterns temporarily move towards greater accountability, suggesting that policy-induced pressures can destabilise long-standing symbolic behavior (Battisti et al., 2025; Keresztúri et al., 2025; Yang et al., 2024). In essence, sustainability reporting is a constant scenario between the effort to appearing credible and the desire to maintain control over information.

Market and Stakeholder Consequences

Empirical data indicate that the market consequences of disclosure manipulation are multifaceted, impacting firm valuation, stakeholder trust, and behavioural responses. Prior research reveals nonlinear correlations between the extent of greenwashing and both financial efficiency (Xu & Wang, 2025), and company value (da Silva & Cé, 2025; Nguyen & Duong, 2025; Xu et al., 2025; Xu & Wang, 2025). From an investor perspective, firms that demonstrate genuine sustainability improvements are preferred, whereas non-transparent or inconsistent reporting tends to trigger negative investor reactions (Wang et al., 2025; Xu et al., 2025),

Studies demonstrate that when consumers detect greenwashing, they become confused, angry with brands, and more likely to boycott companies that are perceived to be misleading or dishonest in their communications (da Silva & Cé, 2025; Nguyen & Duong, 2025; Paramitha et al., 2025). However, the impact on reputation is not always consistent, as forgiveness and recuperation are contingent upon factors such as the sincerity of the apology, the seriousness of the transgression, and the perceived authenticity of remedial activities (Paramitha et al., 2025). In short, sustainability communication is not just a matter of marketing, but is closely related to consumer behavior and market legitimacy.

Beyond the consumer market, the credibility of disclosure is equally important at both, the organizational and inter-organizational level. At the organisational level, inauthentic sustainability communications not only erode managerial trust (Valero-Gil et al., 2025) but also discourage employees from engaging in environmentally responsible behaviour (Yang et al., 2025). By contrast, transparent leadership and sustainability signals that are measurable and consistently delivered foster long-term employee alignment with organisational values (Ma et al., 2025; Paramitha et al., 2025; Rehman et al., 2025). In interconnected business networks, the interlocking directors and common shareholders convey expectations and disclosure standards that can either enhance or weaken collaboration (Chen et al., 2025; Yang et al., 2025). To mitigate the danger of misrepresentation, partners frequently implement more rigorous verification clauses, audit procedures, and monitoring mechanisms, thereby internalising trust costs within transaction management (Valero-Gil et al., 2025; Yang et al., 2025).

Consistent and genuine communication strengthens trust outside the organization. Stakeholders tend to be more receptive and engaged when sustainability claims are accompanied by measurable actions that demonstrate authenticity (Paramitha et al., 2025;

Rehman et al., 2025). Crucially, the extent to which markets and stakeholders respond to sustainability reporting depends on the role of external assessors and enforcement frameworks (Battisti et al., 2025; Ferro et al., 2025; Zhang et al., 2025). Deep assurance, transparent audits, and strong regulatory enforcement enhance information discipline and reinforce trust and credibility (Battisti et al., 2025; Ferro et al., 2025; Keresztúri et al., 2025). Taken together, the effects of sustainability disclosure on economic, relational, and behavioural outcomes depend not only on what firms disclose, but also on how that information is verified and governed. When verification is weak, market and stakeholder scepticism increases; when assurance is robust, sustainability reporting becomes a mechanism of accountability rather than merely a tool for image management.

Measurement, Methods, and Paradox

The methodology used in sustainability assessments can influence the credibility and understanding of disclosures. Empirical studies show that many sustainability assessments and ESG rating systems emphasize process and aspirational promises over measurable performance achievements (Ferro et al., 2025; Zhang et al., 2025). Bias in ESG rating systems results in companies being given high marks for their length of narrative and future promises, which opens up opportunities for greenwashing (Battisti et al., 2025; Ferro et al., 2025). The credibility of sustainability assessment is shaped by the extent and rigor of the assurance and certification processes. While Environmental Management System (EMS) certification and third-party labelling are designed to control symbolic exposure, the effectiveness is contingent upon the rigor of the audit as well as the transparency of the verification process (Battisti et al., 2025; Cheng & Yan, 2025; Ferro et al., 2025). Where verification is superficial, the assurance functions as a reputational shield rather than a mechanism of accountability. By contrast, regulatory enforcement and stakeholder engagement can reinforce certification discipline by increasing scrutiny and narrowing the symbolic compliance (Battisti et al., 2025; Cheng & Yan, 2025; Keresztúri et al., 2025).

Methodological innovations are increasingly being used to address credibility issues in sustainability assessments through the use of more sophisticated models and analytical tools. Intertemporal signaling models help explain how companies adjust the timing and content of sustainability disclosures in the face of information asymmetry (Xu et al., 2025). On one hand, artificial intelligence and text mining methods enable the detection of redundant language, narrative discrepancies, and gaps between claims and actual performance (Ferro et al., 2025). On the other hand, these technologies also create new risks as algorithms can be opaque and difficult to interpret (Cheng & Yan, 2025; Ferro et al., 2025). Therefore, technological advances must be supported by strong governance, including transparent use of data, explainable models, and ethical oversight, to ensure that automation truly improves sustainability accountability.

Despite significant methodological advances, there are still significant gaps in operationalizing measurement, particularly about greenhushing and greenwashing. Current disclosure standards and rating inputs tend to prioritize levels of ambition and forward-looking commitments, rendering aspirational claims highly visible, while reduced disclosure or silence is difficult to systematically detect (Battisti et al., 2025; Ferro et al., 2025; Zhang et al., 2025). Consequently, greenhushing is usually identifiable through indirect evidence, such as a reduction in reporting following media coverage or a decline in transparency in response to external criticism (Chang

& Yoo, 2025; Naderi Koupaei et al., 2025). By contrast, greenwashing is most commonly detected through narrative inflation, particularly the articulation of overly ambitious targets (Ma, Feng, et al., 2025; Zhang et al., 2025). Together, these two contrast patterns (silence and overpromise) represent a dual dimension of disclosure bias that is yet to be fully theorized and systematically measured.

Discussion and Conclusion

The result of this systematic literature review presents a holistic picture of the paradoxical nature of corporate sustainability reporting based on three main themes, namely (1) governance, institutional and ecosystem drivers, (2) market and stakeholder consequences, and (3) measurement, methods and paradoxes. Based on the 24 studies, greenwashing remains the most widely studied phenomenon, while greenhushing and greenwashing have been empirically identified in a limited number of studies, but their theoretical articulation remains underdeveloped. The study further demonstrates that corporate misreporting practices are not isolated cases, but rather embedded in a broader network of governance, market expectations, and evaluation ecosystems. Observations from the reviewed literature also reveal a strong geographical concentration of empirical evidence in Asian contexts, particularly China. This concentration limits the generalisability of existing findings and highlights the need for further research across diverse institutional settings, including cross-country comparative studies.

Studies under the first theme show that symbolic communication is consistently influenced by political connections, interlocking boards, and ownership networks (Chen et al., 2025; Yang et al., 2025). The second theme reveals that stakeholders, including investors, consumers, and business partners, respond strategically to perceived credibility gaps, thereby affecting a company's reputation, market value, and levels of trust (Nguyen & Duong, 2025; Rehman et al., 2025; Xu et al., 2025). The third theme shows that uncertainty has become embedded in sustainability reporting practices as a result of persistent methodological and measurement inconsistencies in ESG assessments and certification schemes. These inconsistencies make it difficult to distinguish between genuine reductions in environmental impact and disclosures that rely primarily on aspirational language (Cheng & Yan, 2025; Ferro et al., 2025; Zhang et al., 2025).

Taken more broadly, the findings suggest that the sustainability disclosure paradox emerges from the ongoing interaction between governance structures, market dynamics, and measurement systems. Within this interplay, organisational incentives, trust-based relationships, and prevailing institutional logics collectively influence not only how firms communicate sustainability commitments, but also how those commitments are translated into practice. Moreover, the findings reveal that the quality of sustainability disclosure is driven by institutional and governance system rather than by the intrinsic ethical intentions of the individual company. The degree to which information is exaggerated or concealed is closely related to factors such as the board's role, ownership structure, and regulatory pressure. In an institutional context characterized by weak enforcement, politically connected companies are prone to use symbolic disclosure as a means to protect their reputation (Liu et al., 2025; Ma et al., 2025; Zhang et al., 2025). These tendencies are further reinforced when boards of directors are interconnected between companies, as such network ties facilitate the diffusion and normalisation of similar reporting styles, including the use of overly optimistic sustainability narratives (Chen et al., 2025; Yang et al., 2025). The finding is consistent with Institutional

Theory, which states that companies are more likely to follow what is considered legitimate and acceptable, rather than actual performance.

When investors detect disclosure misrepresentations, they tend to impose valuation penalties (Ferro et al., 2025; Xu et al., 2025; Xu & Wang, 2025). Similarly, consumers often withdraw loyalty and even boycott firms perceived as dishonest (Nguyen & Duong, 2025; Paramitha et al., 2025). The dilemma in sustainability communication is not just a moral or ethical one, but also an economic one, as the credibility gap directly impacts capital flows and stakeholder trust. To address this challenge, ESG assessments, certifications, and third-party assurances were created to enhance disclosure credibility. However, growing evidence reveals that the ambiguity of ratings and differences in audit scope have created measurement biases that enable greenwashing and greenhushing (Battisti et al., 2025; Cheng & Yan, 2025; Ferro et al., 2025).

Findings from this study have important implications for reforming assessment methods, governance, and policy. Authorities should reconsider assurance frameworks that link ESG disclosures to measurable and verifiable performance indicators. This could reduce the narrative-driven reporting and increase focus on measurable performance. At the board level, companies should establish independent sustainability committees to monitor data validity and the coordination of assurance processes. Meanwhile, in developing countries, policymakers should strengthen institutional accountability mechanisms so that companies with government or political connections are evaluated under the same degree of rigour.

The study also highlights the urgent need for a standardized measurement system to assess both over-promising and under-promising, so that the credibility of sustainability communications can be assessed comprehensively. For industry practitioners, these findings suggest that transparency, data integrity, and dialogue with stakeholders are essential to restoring trust in sustainability reporting. As artificial intelligence and text-analytic tools for detecting and reporting misconduct become more sophisticated (Ferro et al., 2025; Wang et al., 2025), firms face heightened scrutiny and a shrinking scope for purely narrative-based disclosures

Although this study provides a comprehensive synthesis, there are still several limitations and areas for future research. First, comparative and longitudinal studies across countries and governance systems are needed to understand how political, market, and social factors influence disclosure practices globally. Second, greenwashing has been extensively studied and measured, but greenhushing and greenwashing still lack a clear measurement framework. This gap emphasizes the need for integrative studies that simultaneously captures exaggeration, silence, and aspirational bias within a unified disclosure framework. Third, artificial intelligence opens up opportunities to automatically detect patterns of sustainability communication, but it also raises ethical concerns regarding algorithmic bias and transparency. Therefore, researchers need to develop AI governance frameworks to ensure that sustainability analysis remains transparent and accountable.

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