



SUSTAINABILITY REPORTING AND GREENWASHING: IMPLICATIONS FOR TRANSPARENCY AND FIRM VALUE A SYSTEMATIC LITERATURE REVIEW

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Abstract

Sustainability reporting has evolved into a critical mechanism for communicating environmental, social, and governance (ESG) performance and enhancing corporate transparency. However, the rapid expansion of sustainability disclosure practices has intensified concerns regarding greenwashing, where firms strategically misrepresent sustainability performance to create a favorable image. This study aims to systematically review and synthesize the literature on the interrelationship between sustainability reporting, greenwashing, transparency, and firm value. Using a systematic literature review approach, this study analyzes 62 peer-reviewed articles published between 2012 and 2025 from Scopus-indexed and high-quality scholarly sources. The findings reveal that sustainability reporting functions as a dual and context-dependent mechanism. On one hand, it reduces information asymmetry, improves disclosure quality, and enhances stakeholder decision-making, particularly in strong regulatory and governance environments. On the other hand, its inherent flexibility enables impression management, symbolic disclosure, and narrative manipulation, thereby facilitating greenwashing practices. The results further indicate that the impact of sustainability reporting on firm value is conditional upon disclosure credibility, where substantive and verifiable reporting contributes positively, while greenwashing leads to reputational damage, declining investor trust, and negative long-term valuation effects. The study also highlights the role of ESG rating divergence, weak standardization, and institutional heterogeneity in shaping disclosure credibility. This research contributes by integrating fragmented literature into a comprehensive framework and identifying greenwashing as a key moderating factor. Future research is encouraged to develop standardized greenwashing metrics and examine cross-country institutional differences.

Keywords: Firm value; Greenwashing; Sustainability disclosure; Sustainability reporting; Transparency

INTRODUCTION

Sustainability reporting has gained significant attention over the past decade as organizations increasingly face pressure from stakeholders to disclose their environmental, social, and governance (ESG) performance. This growing emphasis is driven by global sustainability agendas, regulatory developments, and heightened investor awareness of responsible business practices. As a result, sustainability reporting has evolved into a key mechanism for enhancing transparency, reducing information asymmetry, and improving corporate accountability (Ioannou & Serafeim, 2019; Hummel & Schlick, 2016). In many jurisdictions, the transition from voluntary to mandatory sustainability reporting frameworks further underscores its importance in strengthening corporate disclosure practices and market efficiency (Christensen et al., 2021).

However, despite its intended role in promoting transparency, the rapid expansion of sustainability reporting has also led to increasing concerns regarding the credibility and reliability of disclosed information. A growing body of evidence suggests that firms may use sustainability reporting not only as a tool for accountability but also as a strategic instrument to shape stakeholder perceptions. This phenomenon is commonly referred to as greenwashing, which represents the discrepancy between a firm's actual environmental performance and its public disclosures (Freitas Netto et al., 2020). Through practices such as selective disclosure, vague sustainability claims, and narrative manipulation, firms may create an overly positive image of their environmental performance while concealing negative impacts (Seele & Gatti, 2017; Cho et al., 2015).



The relevance of greenwashing has become increasingly evident in recent years, particularly in light of the rapid growth of ESG investing. Global ESG assets have expanded significantly, prompting investors to rely heavily on sustainability disclosures in their decision-making processes. However, recent studies highlight substantial inconsistencies in ESG ratings across agencies, indicating potential issues in the reliability and comparability of sustainability information (Berg et al., 2022). This inconsistency creates an environment in which firms can exploit disclosure gaps to engage in greenwashing without immediate detection. Furthermore, high-profile ESG controversies and environmental misrepresentation cases have intensified scrutiny from regulators and investors, raising critical concerns about the effectiveness of sustainability reporting in ensuring genuine transparency.

In the context of firm value, the implications of sustainability reporting and greenwashing are particularly significant. Prior research suggests that credible sustainability practices can enhance firm value by improving corporate reputation, reducing risk, and attracting long-term investment (Fatemi et al., 2018; Velte, 2017). Conversely, misleading sustainability disclosures may lead to reputational damage, loss of investor trust, and negative market reactions when exposed (Aouadi & Marsat, 2018; Capelle-Blancard & Petit, 2019). This dual effect indicates that sustainability reporting does not inherently create value, but rather its impact depends on the perceived credibility of the disclosed information.

Despite the increasing attention to sustainability reporting and greenwashing, the existing literature remains fragmented. Previous studies have largely examined sustainability reporting, greenwashing, and firm value as separate research streams, with limited efforts to integrate these dimensions into a comprehensive analytical framework. Moreover, empirical findings remain inconsistent, particularly regarding whether sustainability reporting genuinely enhances transparency or merely facilitates symbolic disclosure practices (Michelon et al., 2015; Boiral, 2016). This inconsistency suggests the presence of underlying mechanisms—such as greenwashing—that have not been adequately incorporated into prior analyses.

In addition, there is a growing recognition that sustainability reporting may function as a double-edged sword. While it has the potential to improve transparency and accountability, it may also create opportunities for opportunistic behavior in the absence of strong regulatory oversight and standardized reporting frameworks. This highlights the need for a more nuanced understanding of the conditions under which sustainability reporting contributes to or undermines firm value.

Therefore, this study aims to conduct a systematic literature review to examine the relationship between sustainability reporting and greenwashing, and their implications for transparency and firm value. By synthesizing evidence from peer-reviewed studies published between 2012 and 2025, this research seeks to identify key themes, theoretical perspectives, and research gaps. Furthermore, this study aims to develop an integrated conceptual framework that explains the dual role of sustainability reporting and provides insights into how greenwashing moderates its impact on firm value. The findings are expected to contribute to the literature by offering a more comprehensive understanding of sustainability reporting dynamics, while also providing practical implications for regulators, investors, and corporate decision-makers.

LITERATURE REVIEW

Sustainability Reporting and Transparency

Sustainability reporting is widely regarded as a tool to enhance corporate transparency by providing stakeholders with relevant non-financial information. High-quality sustainability disclosures reduce information asymmetry and improve stakeholder decision-making (Ioannis Ioannou & George Serafeim, 2019; Hummel & Schlick, 2016). Firms that engage in



comprehensive reporting tend to gain higher levels of trust and legitimacy, which ultimately strengthens their relationships with stakeholders (Du, 2015).

However, the effectiveness of sustainability reporting in enhancing transparency depends on the quality and credibility of the disclosed information. Mandatory reporting standards and external assurance mechanisms are often associated with higher transparency levels, whereas voluntary disclosures may be subject to managerial discretion and opportunistic behavior (Christensen et al., 2021; Michelon et al., 2015). This indicates that not all sustainability reporting practices equally contribute to transparency.

Greenwashing in Sustainability Reporting

Greenwashing occurs when firms present an overly positive image of their environmental performance without substantial supporting actions. This practice reflects a discrepancy between actual environmental performance and disclosed information (Freitas Netto et al., 2020). It is often linked to impression management strategies, where firms aim to influence stakeholder perceptions rather than reflect actual performance (Cho et al., 2015).

Greenwashing can take various forms, including selective disclosure, vague claims, and symbolic actions (Seele & Gatti, 2017). Firms may emphasize positive sustainability achievements while concealing negative environmental impacts, thereby creating misleading impressions (Lyon & Montgomery, 2015). The presence of greenwashing undermines the credibility of sustainability reporting and reduces its effectiveness as a transparency tool (Kim & Lyon, 2015).

Sustainability Reporting and Greenwashing Interaction

The relationship between sustainability reporting and greenwashing is inherently complex. On one hand, sustainability reporting enhances transparency and accountability; on the other hand, it provides opportunities for firms to engage in symbolic disclosure practices (Boiral, 2016). This dual role reflects the distinction between substantive and symbolic sustainability actions.

Prior studies suggest that firms may adopt sustainability reporting as a legitimacy strategy rather than a reflection of actual performance (Marquis et al., 2016). As a result, sustainability disclosures may not always represent genuine sustainability efforts, but rather serve as tools to manage stakeholder perceptions (Michelon et al., 2015).

This duality implies that sustainability reporting does not automatically lead to improved transparency. Instead, its impact depends on the extent to which disclosures reflect substantive commitments rather than symbolic gestures (Hawn & Ioannou, 2016).

Greenwashing and Firm Value

Greenwashing has significant implications for firm value. In the short term, firms engaging in greenwashing may benefit from improved reputation and positive investor perception, as sustainability disclosures can signal responsible corporate behavior (Flammer, 2015). However, such benefits are often temporary.

In the long term, the discovery of misleading sustainability practices can lead to reputational damage, loss of stakeholder trust, and negative financial consequences (Aouadi & Marsat, 2018). Empirical evidence indicates that markets tend to penalize firms involved in ESG controversies or misleading disclosures (Capelle-Blancard & Petit, 2019).

Furthermore, credible sustainability performance has been shown to enhance firm value by reducing risk and improving financial performance (Fatemi et al., 2018; Velte, 2017). This highlights the importance of transparency and credibility in determining the economic outcomes of sustainability reporting.

Development of Conceptual Framework

Based on the literature, this study proposes that sustainability reporting influences firm value through its impact on transparency, with greenwashing acting as a moderating factor.



High-quality and credible sustainability reporting enhances transparency, leading to positive firm value outcomes. Conversely, when sustainability reporting is used as a tool for greenwashing, it weakens transparency and negatively affects firm value.

This framework emphasizes the importance of distinguishing between substantive and symbolic disclosures in understanding the true impact of sustainability reporting on firm performance. It also highlights the need for stronger regulatory frameworks and standardized reporting practices to mitigate greenwashing and improve the credibility of sustainability disclosures (Christensen et al., 2021; Seele & Gatti, 2017).

METHODS

This study employs a systematic literature review (SLR) approach to synthesize and critically evaluate existing research related to sustainability reporting, greenwashing, transparency, and firm value. The SLR method is chosen because it enables a comprehensive and structured analysis of prior studies, allowing the researcher to identify patterns, inconsistencies, and research gaps within the literature. By adopting this approach, the study ensures a transparent and replicable process in selecting and analyzing relevant academic sources.

This study adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure a transparent, systematic, and reproducible literature review process. The literature search was conducted exclusively using the Scopus database, which was selected because it is one of the largest multidisciplinary citation databases containing high-quality, peer-reviewed journals in accounting, finance, sustainability, environmental management, and corporate governance. Using a single verified database also enhances the consistency and reliability of the literature selection process.

The literature search was performed using the TITLE-ABS-KEY function in Scopus to identify studies containing the predefined keywords in the article title, abstract, or author keywords. The search strategy was designed based on the four main constructs of this study, namely sustainability reporting, greenwashing, transparency, and firm value.

To ensure the quality and relevance of the selected articles, this study applies specific inclusion and exclusion criteria. The inclusion criteria consist of peer-reviewed journal articles published between 2012 and 2025 and indexed in Scopus. These criteria are intended to ensure that the selected studies are both recent and academically rigorous. Meanwhile, the exclusion criteria include non-academic publications such as blogs, opinion articles, and reports without peer review, as well as studies that do not have a clear relevance to the research topic.

After the selection process, the collected articles were analyzed using a thematic analysis approach. This technique allows the researcher to systematically categorize and interpret the findings based on key themes and variables, such as sustainability reporting practices, greenwashing behavior, transparency, and firm value. Each study was further examined based on its research method, theoretical framework, and main findings to identify recurring patterns and relationships. Through this analytical process, the study aims to provide a comprehensive synthesis of the literature and generate meaningful insights into the relationship between sustainability reporting, greenwashing, and firm value.

RESULTS AND DISCUSSION

Results

The systematic literature review conducted in this study provides a comprehensive and structured synthesis of 62 peer-reviewed journal articles published between 2012 and 2025, examining the interrelationship between sustainability reporting, greenwashing, transparency, and firm value. The findings reveal that these relationships are not linear but instead exhibit a



multidimensional and conditional structure shaped by institutional, organizational, and measurement-related factors. Based on the synthesis, the reviewed studies can be systematically categorized into five major clusters: (1) sustainability reporting and transparency, (2) greenwashing practices, (3) ESG and firm value, (4) ESG measurement and rating issues, and (5) governance and institutional context.

The first cluster, consisting of approximately 15 studies, consistently highlights the role of sustainability reporting in enhancing transparency and reducing information asymmetry. Empirical evidence from Ioannou and Serafeim (2019) and Hummel and Schlick (2016) demonstrates that firms engaging in sustainability reporting exhibit significantly higher levels of disclosure quality and stakeholder transparency. Similarly, Christensen et al. (2021) find that mandatory reporting frameworks improve the comparability and reliability of ESG disclosures across firms and countries. Additional studies such as Clarkson et al. (2019) and García-Sánchez (2020) reinforce this finding by showing that structured environmental disclosures and strong governance mechanisms enhance reporting quality.

However, this positive relationship is not universally observed. Several studies within this cluster reveal that sustainability reporting may also serve symbolic purposes. Michelon et al. (2015) and Cho et al. (2015) document that firms often engage in impression management through selective disclosure and narrative manipulation. Supporting evidence from Indonesian studies (e.g., Syamsiah & Setiawati, 2024) indicates that while sustainability reporting adoption is increasing, its quality and substantive impact remain uneven, particularly in emerging markets. This suggests that sustainability reporting operates as both an informational and symbolic mechanism.

The second cluster, comprising 15 studies on greenwashing, reveals that greenwashing is a pervasive and systematic phenomenon rather than an isolated practice. Freitas Netto et al. (2020) provide a comprehensive typology of greenwashing practices, including selective disclosure, vague claims, and misleading communication. Seele and Gatti (2017) further conceptualize greenwashing as a strategic communication process embedded in corporate reporting systems. Empirical evidence from Marquis et al. (2016) shows that firms facing higher external scrutiny are more likely to engage in selective disclosure practices.

Additional studies such as Delmas and Burbano (2016) and Lyon and Montgomery (2015) highlight that greenwashing is driven by institutional pressures and competitive dynamics. Evidence from emerging markets, including Indonesia, further suggests that weak regulatory enforcement, limited assurance mechanisms, and inconsistencies between disclosed and actual environmental performance increase the likelihood of greenwashing (Aptasari et al., 2023; Amin et al., 2025). These studies show that greenwashing practices in Indonesia often manifest in the form of selective disclosure and misalignment between sustainability reporting and actual environmental impact. Collectively, these findings indicate that greenwashing is frequently a rational strategic response to stakeholder pressure rather than purely unethical behavior.

The third cluster, consisting of 15 studies, examines the relationship between ESG performance and firm value. The majority of studies in this cluster report a positive association between credible sustainability practices and firm value. Fatemi et al. (2018) demonstrate that strong ESG performance enhances firm value through improved risk management and operational efficiency. Similarly, Eccles et al. (2014) show that firms with long-term sustainability strategies outperform their peers financially. Meta-analyses such as Friede et al. (2015) and Busch and Friede (2018) confirm that the majority of ESG studies report positive or neutral effects on financial performance.

However, the literature also highlights significant negative effects associated with ESG controversies and greenwashing. Aouadi and Marsat (2018) find that ESG-related controversies



significantly reduce firm value, while Capelle-Blancard and Petit (2019) show that negative ESG news leads to adverse stock market reactions. These findings suggest that the financial benefits of sustainability reporting are contingent upon the credibility of disclosures.

The fourth cluster, comprising 10 studies, focuses on ESG measurement and rating challenges. A key finding across this cluster is the lack of consistency and standardization in ESG metrics. Berg et al. (2022) document significant divergence in ESG ratings across agencies, which undermines the reliability of ESG information. Similarly, Chatterji et al. (2016) and Dorfleitner et al. (2015) find that different rating methodologies produce inconsistent results. This inconsistency creates opportunities for firms to engage in selective disclosure and exploit favorable ratings, thereby facilitating greenwashing. Additional evidence from Gibson et al. (2021) highlights that rating disagreement is not merely a measurement issue but also reflects fundamental differences in how sustainability is conceptualized and evaluated across institutions. Although recent literature has begun to explore the use of advanced analytical tools, such as big data and textual analysis, to improve ESG measurement, these approaches remain limited in scope and have not yet resolved the core challenges related to standardization and comparability.

The fifth cluster, consisting of 10 studies, emphasizes the role of corporate governance and institutional context in shaping sustainability reporting practices. Hawn and Ioannou (2016) distinguish between symbolic and substantive sustainability strategies, highlighting the importance of internal organizational alignment. Rao and Tilt (2016) argue that strong governance structures reduce the likelihood of greenwashing by enhancing oversight and accountability.

Furthermore, El Ghoul et al. (2017) and Dhaliwal et al. (2012) demonstrate that credible sustainability practices reduce the cost of capital and improve access to financing. These findings underscore the importance of governance mechanisms in ensuring that sustainability reporting reflects actual performance rather than symbolic compliance.

Overall, the synthesis of 62 studies reveals three key patterns. First, sustainability reporting enhances transparency and firm value when disclosures are credible and supported by strong governance and regulatory frameworks. Second, greenwashing emerges as a critical moderating factor that weakens the positive effects of sustainability reporting and may even reverse its impact on firm value. Third, inconsistencies in ESG measurement and institutional differences across countries create significant challenges in evaluating sustainability performance.

These findings confirm that sustainability reporting is not inherently beneficial but operates within a complex system influenced by strategic behavior, institutional pressures, and measurement limitations. By integrating evidence across multiple research streams, this study provides a comprehensive understanding of the conditions under which sustainability reporting contributes to or detracts from transparency and firm value.

Discussion

The findings of this study provide robust insights into the paradoxical and conditional nature of sustainability reporting, as evidenced by the synthesis of 62 empirical and conceptual studies across five major research clusters. Rather than functioning as a purely transparency-enhancing mechanism, sustainability reporting emerges as a complex strategic tool that simultaneously facilitates both substantive accountability and symbolic impression management. This duality is consistently observed across the literature and can be systematically explained through the integration of stakeholder theory, legitimacy theory, and signaling theory, while also being strongly influenced by governance structures, institutional environments, and measurement challenges identified in the reviewed studies.



From a stakeholder theory perspective, the findings in the first cluster (sustainability reporting and transparency) confirm that firms engage in sustainability disclosure to meet the increasing expectations of diverse stakeholders. Empirical studies consistently show that sustainability reporting reduces information asymmetry and enhances transparency, particularly in regulated environments. For instance, evidence from Ioannou and Serafeim (2019), Hummel and Schlick (2016), and Clarkson et al. (2019) demonstrates that structured ESG disclosure improves stakeholders' ability to evaluate firm performance and risk. However, the broader synthesis of studies, including Michelon et al. (2015) and Cho et al. (2015), reveals that stakeholder pressure can also produce unintended consequences. When firms are unable to meet escalating expectations through substantive improvements, they may strategically manage disclosures through selective reporting and narrative framing. This indicates that stakeholder pressure does not uniformly lead to transparency, but may instead incentivize symbolic behavior under certain conditions.

Legitimacy theory provides a complementary explanation, particularly when viewed through the lens of the second cluster on greenwashing. The literature consistently demonstrates that firms seek to maintain legitimacy by aligning their disclosures with societal expectations, even when underlying performance does not fully support such claims. Studies such as Marquis et al. (2016), Delmas and Burbano (2016), and Lyon and Montgomery (2015) show that greenwashing is often a rational strategic response to institutional and competitive pressures rather than purely opportunistic misconduct. The concept of decoupling is central in this context, as it explains the systematic divergence between formal sustainability commitments and actual operational practices. This is further reinforced by Hawn and Ioannou (2016), who distinguish between symbolic and substantive sustainability strategies, highlighting that many firms adopt reporting practices that prioritize legitimacy over performance. Evidence from emerging markets, including Indonesia, further strengthens this argument by showing that weaker regulatory enforcement increases the prevalence of symbolic reporting and greenwashing practices.

Signaling theory further enhances the interpretation of the third cluster, which focuses on ESG performance and firm value. The reviewed studies demonstrate that sustainability reporting acts as a signal to investors regarding a firm's long-term viability, risk management, and ethical positioning. Empirical evidence from Fatemi et al. (2018), Eccles et al. (2014), and Khan et al. (2016) shows that credible and high-quality ESG disclosures are associated with higher firm value, improved operational efficiency, and reduced cost of capital. Meta-analyses such as Friede et al. (2015) and Busch and Friede (2018) further confirm that the majority of ESG-related studies report positive or neutral financial effects. However, the integration of findings across clusters reveals that the effectiveness of these signals is highly contingent upon their credibility. When sustainability disclosures are perceived as misleading or inconsistent, the signaling mechanism breaks down, leading to negative market reactions. This is evidenced by studies such as Aouadi and Marsat (2018) and Capelle-Blancard and Petit (2019), which show that ESG controversies and negative sustainability-related news significantly reduce firm value. Thus, the signaling function of sustainability reporting is not inherently positive but depends critically on the alignment between disclosure and actual performance.

A key contribution of this study, supported by the synthesis of all five clusters, is the identification of greenwashing as a central moderating mechanism that explains inconsistencies in the literature. While prior research often treats sustainability reporting as uniformly beneficial, the aggregated evidence from 62 studies demonstrates that its impact on transparency and firm value is conditional. In contexts where greenwashing is minimal and governance is strong, sustainability reporting enhances transparency and contributes positively to firm value. Conversely, in environments characterized by high levels of greenwashing, weak



governance, and inconsistent ESG measurement, sustainability reporting may fail to improve transparency and may even reduce firm value in the long term. This integrated perspective provides a more nuanced explanation for the mixed empirical findings observed across prior studies.

The fourth cluster, focusing on ESG measurement and rating challenges, adds another layer of complexity to this relationship. Studies such as Berg et al. (2022), Chatterji et al. (2016), and Dorfleitner et al. (2015) reveal significant inconsistencies in ESG ratings across different agencies, driven by differences in methodologies, indicators, and weighting systems. This lack of standardization reduces the reliability of ESG information and creates opportunities for firms to selectively disclose information that aligns with favorable ratings. As a result, ESG ratings may inadvertently facilitate greenwashing rather than prevent it. Furthermore, subsequent studies such as Gibson et al. (2021) reinforce this argument by documenting substantial disagreement among ESG rating providers, which further complicates investors' ability to assess sustainability performance. While technological advancements such as machine learning and textual analysis have been increasingly discussed in the literature as potential tools for improving ESG assessment, the existing evidence suggests that these approaches remain in early stages and require further empirical validation before they can effectively address greenwashing risks.

The fifth cluster highlights the critical role of corporate governance and institutional context in shaping sustainability reporting outcomes. The literature consistently shows that strong governance structures, including independent boards, effective oversight mechanisms, and transparent internal controls, reduce the likelihood of greenwashing and improve disclosure credibility. Studies such as Rao and Tilt (2016), and El Ghoul et al. (2017) demonstrate that governance mechanisms align corporate behavior with stakeholder expectations and enhance the effectiveness of sustainability reporting. Similarly, institutional factors, such as regulatory frameworks and enforcement mechanisms, play a crucial role in determining whether sustainability reporting leads to substantive transparency or symbolic compliance. In countries with strong regulatory environments, mandatory reporting standards and enforcement mechanisms reduce the flexibility available for opportunistic disclosure, thereby limiting greenwashing practices. Conversely, in weaker institutional contexts, firms have greater discretion, increasing the risk of symbolic reporting.

Another important dimension emerging from the integrated analysis is the role of narrative disclosure and communication strategies. Sustainability reporting often relies heavily on qualitative narratives, which are inherently flexible and difficult to verify. As highlighted by Cho et al. (2015), firms can use narrative techniques such as positive framing, selective emphasis, and omission of negative information to construct favorable impressions. This narrative flexibility amplifies the risk of greenwashing and complicates stakeholders' ability to assess the credibility of disclosures. This finding suggests that improving the quality of sustainability reporting requires not only better metrics but also greater scrutiny of how information is presented.

The temporal dimension further reinforces the conditional nature of sustainability reporting. The synthesis of studies across clusters indicates that the effects of sustainability reporting on firm value evolve over time. In the short term, sustainability disclosures—regardless of their credibility—may generate positive market reactions due to increased visibility and perceived commitment to sustainability. However, in the long term, the detection of greenwashing can lead to significant reputational damage, regulatory penalties, and financial losses. This dynamic highlights the importance of consistency and authenticity in sustainability reporting, as short-term symbolic gains may be outweighed by long-term risks.



Industry-specific dynamics also play a significant role in shaping sustainability reporting practices. Firms operating in environmentally sensitive industries face higher levels of scrutiny, which increases both the incentives for disclosure and the risks of greenwashing. This creates a paradox in which the industries most engaged in sustainability reporting are also those most prone to symbolic disclosure practices. The synthesis of studies suggests that this paradox is driven by the high costs associated with substantive environmental improvements, which encourage firms to rely on communication strategies rather than operational changes.

Finally, the findings highlight a critical gap in the measurement of greenwashing. Despite the growing body of literature, there is no standardized and universally accepted framework for measuring greenwashing. Existing studies rely on proxies such as ESG controversies, disclosure discrepancies, and qualitative assessments, which may not fully capture the complexity of the phenomenon. This limitation not only affects academic research but also has practical implications for investors and regulators, who rely on accurate information to make decisions. Addressing this gap is essential for improving the effectiveness of sustainability reporting and ensuring that it fulfills its intended role as a tool for transparency and accountability.

Overall, by integrating evidence from 62 studies across multiple research streams, this study advances the literature by providing a comprehensive and nuanced understanding of the conditions under which sustainability reporting enhances or undermines transparency and firm value. It demonstrates that sustainability reporting is not inherently beneficial, but its impact is contingent upon the interplay between disclosure quality, governance mechanisms, institutional environments, and the presence of greenwashing. This integrated perspective not only explains inconsistencies in prior research but also provides a stronger theoretical and empirical foundation for future studies.

Implications for Sustainability Reporting Regulation and Practice in Indonesia

The findings of this systematic literature review have important implications for the development of sustainability reporting practices and regulatory frameworks in Indonesia. The synthesis of 62 studies indicates that although sustainability reporting has the potential to improve transparency and enhance firm value, its effectiveness depends on disclosure quality, regulatory enforcement, corporate governance, and external assurance. These findings are particularly relevant to Indonesia, where sustainability reporting has become increasingly institutionalized through POJK No. 51/POJK.03/2017, the Indonesia Sustainable Finance Roadmap, and sustainability initiatives introduced by the Indonesia Stock Exchange (IDX). Nevertheless, the literature also suggests that mandatory reporting alone is insufficient to prevent symbolic disclosure and greenwashing if it is not accompanied by strong monitoring and standardized reporting practices.

To summarize the practical implications of the findings for the Indonesian context, Table.1 presents the alignment between the major findings identified in this systematic literature review, the current sustainability reporting practices in Indonesia, and the corresponding policy recommendations.

Table 1. Practical Implications of the SLR Findings for Sustainability Reporting Regulation and Practice in Indonesia

Findings from the SLR	Current Practice in Indonesia	Policy Implications
Greenwashing undermines transparency and firm value	POJK No. 51/2017 mandates sustainability reporting, but specific anti-greenwashing provisions remain limited	Develop explicit anti-greenwashing guidelines and strengthen regulatory enforcement



Sustainability disclosure quality varies across firms	Sustainability reports differ considerably in terms of completeness and comparability	Harmonize ESG disclosure requirements by adopting ISSB-based reporting standards
Independent assurance improves reporting credibility	External assurance of sustainability reports remains largely voluntary	Encourage or gradually mandate independent assurance for sustainability reports
Strong corporate governance reduces greenwashing practices	Governance quality differs significantly among listed companies	Strengthen board oversight, ESG committees, and governance mechanisms
Reliable ESG information enhances investor confidence	IDX ESG Leaders promotes sustainable investment, but ESG assessment practices continue to evolve	Improve ESG literacy, transparency, and consistency in sustainability reporting

Source: Developed by the authors based on the systematic literature review and Indonesian sustainability regulations (POJK No. 51/POJK.03/2017; OJK, 2021; Indonesia Stock Exchange, 2023).

The implications summarized in Table 1. indicate that Indonesia has established a strong regulatory foundation for sustainability reporting. However, future policy development should focus not only on increasing compliance but also on improving the credibility and comparability of sustainability disclosures. Strengthening reporting standards, expanding the use of independent assurance, and developing explicit anti-greenwashing regulations are expected to enhance corporate transparency, improve investor confidence, and maximize the contribution of sustainability reporting to long-term firm value.

CONCLUSIONS

This study concludes that sustainability reporting operates as a complex, multi-layered, and context-dependent mechanism that simultaneously functions as both a transparency-enhancing tool and a potential vehicle for opportunistic behavior through greenwashing. Drawing on a systematic synthesis of more than 60 peer-reviewed studies published between 2012 and 2025, the findings demonstrate that the relationship between sustainability reporting, transparency, and firm value is neither linear nor universally positive, but rather conditional upon several interrelated factors, including disclosure credibility, institutional environments, ESG measurement reliability, and corporate governance effectiveness.

At its core, sustainability reporting contributes to reducing information asymmetry by providing stakeholders with non-financial information related to environmental, social, and governance performance. This function is particularly evident in regulatory environments characterized by mandatory reporting frameworks, higher disclosure standardization, and stronger enforcement mechanisms, where sustainability reporting enhances comparability, consistency, and decision usefulness. Under such conditions, sustainability disclosures serve as credible signals that improve stakeholder trust, facilitate capital allocation, and ultimately enhance firm value.

However, the study also reveals a critical paradox: the same flexibility that enables sustainability reporting to convey rich, forward-looking information also creates space for impression management and symbolic disclosure practices. Greenwashing emerges as a systematic and strategic response to increasing stakeholder pressure, rather than merely an isolated ethical deviation. Firms may engage in selective disclosure, narrative manipulation, and symbolic compliance to maintain legitimacy when substantive sustainability improvements are constrained by cost, technological limitations, or operational complexity. As a result,



sustainability reporting does not inherently guarantee transparency, but instead depends on the alignment between disclosed information and actual corporate practices.

A key contribution of this study lies in identifying greenwashing as a central moderating mechanism that conditions the impact of sustainability reporting on firm value. While credible and substantive disclosures are associated with improved financial performance, reduced risk, and enhanced corporate reputation, misleading or inconsistent disclosures can generate adverse consequences, including reputational damage, investor skepticism, and negative market reactions. Importantly, the findings highlight a temporal dimension in this relationship, where symbolic disclosures may produce short-term market benefits but lead to long-term value erosion once inconsistencies are detected.

Furthermore, this study emphasizes the critical role of ESG measurement challenges, particularly the divergence of ESG ratings across agencies, in shaping the effectiveness of sustainability reporting. Inconsistent methodologies, lack of standardization, and varying conceptualizations of sustainability reduce the reliability of ESG information and create opportunities for firms to engage in selective disclosure strategies. This reinforces the argument that improving transparency is not solely a function of increasing disclosure quantity, but also requires enhancing measurement consistency and information quality.

The findings also underscore the importance of corporate governance as an internal mechanism for mitigating greenwashing and enhancing disclosure credibility. Firms with stronger governance structures such as independent boards, effective oversight, and robust internal controls are more likely to align their sustainability disclosures with actual performance, thereby reducing the risk of decoupling. In this regard, governance mechanisms complement external regulatory frameworks in ensuring that sustainability reporting fulfills its intended role as a tool for accountability and transparency.

Overall, this study advances the literature by integrating fragmented research streams into a unified framework that captures the dynamic and conditional relationships between sustainability reporting, greenwashing, transparency, and firm value. It demonstrates that sustainability reporting should not be viewed as inherently beneficial, but rather as a contingent mechanism whose outcomes depend on credibility, consistency, and the broader institutional and governance context in which it operates.

Limitations

Despite its comprehensive scope, this study is subject to several limitations that should be acknowledged. First, the research relies exclusively on secondary data derived from published academic literature, which limits the ability to capture real-time developments, emerging regulatory changes, and rapidly evolving corporate practices in sustainability reporting and greenwashing. Given the dynamic nature of ESG regulations and reporting frameworks, particularly in the post-2020 period, some recent developments may not yet be fully reflected in the literature.

Second, although the study focuses on publications from 2012 to 2025 to ensure relevance and alignment with contemporary ESG developments, this temporal restriction may exclude earlier foundational studies that contribute to the theoretical underpinnings of sustainability reporting, legitimacy, and signaling. While the selected time frame enhances topical relevance, it may limit historical depth in certain theoretical discussions.

Third, the selection of articles from Scopus-indexed journals and Google Scholar databases introduces potential selection bias. Although these sources ensure academic quality and credibility, relevant studies from other databases, industry reports, policy papers, and grey literature are not included. This may result in the exclusion of practical insights, particularly those related to emerging regulatory frameworks and corporate practices that are not yet captured in peer-reviewed publications.



Fourth, the use of a systematic literature review approach combined with thematic analysis involves an inherent degree of subjectivity in the processes of article selection, coding, categorization, and synthesis. Although efforts have been made to ensure rigor and transparency, the interpretation of themes and relationships may be influenced by researcher judgment, which could affect the consistency and replicability of the findings.

Fifth, the study is constrained by the lack of standardized and universally accepted measurement frameworks for greenwashing identified across the literature. Many prior studies rely on indirect proxies such as ESG controversies, disclosure quality indices, or rating discrepancies which may not fully capture the multidimensional nature of greenwashing practices. This limitation reduces the precision of cross-study comparisons and complicates the integration of findings into a unified analytical framework.

Finally, the heterogeneity of methodologies, research contexts, industries, and measurement approaches across the reviewed studies presents challenges in achieving full comparability and generalizability. Differences in institutional environments, regulatory regimes, and stakeholder expectations mean that the findings may not be uniformly applicable across all settings, particularly when comparing developed and emerging markets.

Suggestions for Future Research

Future research is strongly encouraged to build upon the findings of this study by addressing both methodological and contextual gaps identified in the literature. First, there is a critical need for empirical research that directly examines the relationships between sustainability reporting, greenwashing, transparency, and firm value using large-scale, cross-country, and multi-industry datasets. Such studies would enable a more nuanced understanding of how institutional environments, regulatory frameworks, and market conditions shape these relationships.

Second, future research should prioritize the development of standardized, multidimensional, and reliable measurement frameworks for detecting and quantifying greenwashing. The absence of consistent metrics remains one of the most significant barriers to advancing this field. Integrating quantitative indicators (e.g., ESG performance vs. disclosure gaps) with qualitative assessments (e.g., narrative analysis) could provide a more comprehensive approach to measuring greenwashing.

Third, further studies should explore the moderating and mediating roles of key factors such as corporate governance quality, external assurance mechanisms, ESG rating divergence, and investor sophistication. In particular, understanding how these variables influence the credibility and effectiveness of sustainability reporting would provide valuable insights for both researchers and practitioners.

Fourth, longitudinal research designs are needed to capture the dynamic and intertemporal effects of sustainability reporting and greenwashing on firm value. Future studies should examine how short-term signaling benefits evolve into long-term reputational outcomes, and how the detection of greenwashing influences market behavior over time.

Fifth, expanding the scope of research to include emerging markets and environmentally sensitive industries would provide deeper insights into the contextual drivers of sustainability reporting and greenwashing. Institutional pressures, regulatory enforcement, and stakeholder expectations differ significantly across regions, making it essential to examine these phenomena in diverse settings.

Finally, future research could explore the integration of advanced analytical approaches, such as textual analysis, big data analytics, and machine learning, to improve the detection of narrative manipulation and enhance the assessment of sustainability reporting quality. While current applications remain limited, these approaches hold significant potential for addressing



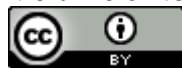
the challenges associated with ESG measurement and greenwashing detection in an increasingly data-driven environment.

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