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Review Article

The Evolution of ESG and Sustainability Reporting: A Review of Standards, Challenges, and Impacts on Corporate Transparency

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About Article

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ABSTRACT

Environmental, Social, and Governance (ESG) reporting has become a central element of corporate transparency and accountability as global sustainability concerns and responsible investment practices intensify. This paper reviews the evolution, challenges, and impacts of ESG and sustainability reporting over the past two decades. Using a systematic literature review (SLR) of peer-reviewed studies and regulatory reports published between 2000 and 2025, the study synthesizes bibliometric patterns and thematic insights to trace the transition from voluntary Corporate Social Responsibility (CSR) disclosures to more standardized and mandatory ESG frameworks, including GRI, SASB, TCFD, IFRS S1/S2, and the EU CSRD/ESRS. Findings reveal a clear progression toward institutionalized ESG disclosure driven by regulatory reforms, investor demand, and normative legitimacy pressures. Despite this progress, persistent challenges—such as inconsistent data, limited comparability, fragmented assurance practices, and risks of greenwashing—continue to undermine credibility. Evidence suggests that robust ESG reporting can enhance transparency, strengthen investor trust, and improve governance quality; however, these effects vary depending on the rigor of reporting standards and the authenticity of corporate commitment. The review contributes theoretically by framing ESG reporting as a legitimacy-building and institutionally shaped practice influenced by coercive, normative, and stakeholder pressures. Practically, it offers recommendations for regulators (global alignment and digital reporting), corporations (integrated ESG governance), and investors (data-driven evaluation). Future research avenues include cross-country quantitative analyses and the role of emerging technologies such as AI and blockchain in enhancing ESG assurance and transparency. Overall, the study underscores the growing importance of harmonized ESG reporting for sustainable corporate behavior and market governance.

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1. INTRODUCTION

1.1. Contextual background

During recent decades, Environmental, Social, and Governance (ESG) disclosure has shifted towards a marginal corporate social responsibility (CSR) effort into its core and a primary point of corporate governance, capital market analysis, and policy discourse (Passas, 2024). With the increase in global challenges like climate change, resource depletion, and social inequality, ESG reporting has become a key tool through the need to ensure that corporate strategy is aligned with the needs of sustainable development. This growing realignment of environmental, social, and governance (ESG) concerns in investment choices, credit rating, and regulations highlights a paradigm shift in the manner in which companies are supposed to generate and share value (Adardour *et al.*, 2025).

This shift is a paradigm shift in voluntary and philanthropic voluntary disclosures of CSR, to compulsory and uniform ESG disclosures as a result of regulatory reforms and stakeholder pressure (Zervoudi *et al.*, 2025). ESG reporting as one of the governance instruments has gained momentum as an institutionalized practice, especially with the global sustainability transitions (especially the desire to be net-zero with carbon emission) and the development of the United Nations Sustainable Development Goals (SDGs) (Chang *et al.*, 2025). Therefore, it is no longer the case that ESG disclosure is a cosmetic exercise in corporate virtue signaling; it has also become a real process of risk management, of promoting accountability, and improving long-term resilience.

1.2. Research problem and gap

Regardless of increased ESG reporting frameworks and metrics, this domain is still somewhat fragmented, and all comparability and consistency of disclosures. Companies have to work across many overlapping norms that may include the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), the Task Force on Climate-Related Financial Disclosures (TCFD), and the new standard framework, the International Sustainability Standards Board (ISSB). Such a plethora of principles has led to differing reporting behaviors, and thus, the cross-company or cross-sectoral analysis has become challenging and, in a few instances, has lowered the trust of the stakeholders in the credibility of ESG data.

In addition, even though there are ongoing regulatory convergence initiatives, e.g., the Corporate Sustainability Reporting Directive (CSRD) of the European Union, together with IFRS S1/S2 sustainability disclosure standards, there is still scant academic synthesis on how the emerging standards affect corporate transparency, accountability, and legitimacy in a variety of institutional settings. Previous studies have been inclined to address the technical side of the ESG metrics or financial impacts of ESG performance only, not taking into consideration the dynamics of evolutionary and institutional processes affecting the global perspective of ESG reporting. The current study aims to fill this gap with the consideration of a detailed, theoretically based review of the ESG and sustainability reporting development, its difficulties, and the effect on corporate transparency.

1.3. Research objectives

The objectives that guide this study are three and relate to each other:

i. To trace the history of evolution of the ESG and sustainability reporting standards, it is important to mention the shift towards the mandatory, globally compatible ESG systems after voluntary CSR reporting.

ii. To assess the convergence and divergence between major reporting frameworks, it will be necessary to pinpoint the practical and institutional issues of imposing these standards in various jurisdictions and industries.

iii. To determine how ESG disclosure affects corporate transparency, investor confidence, and quality of corporate governance, hence clarifying how better reporting standards can raise organizational legitimacy as well as market responsibility.

1.4. Research questions

To meet these goals, the study will be informed by the following research questions:

i. What is the development of ESG and sustainability reporting standards in the world in the last 20 years?

ii. Which institutional, regulatory, and market factors affect ESG reporting behaviors?

iii. What implications do the reporting standards and assurances mechanisms have on transparency in the corporate and guarantee trust in the corporate among the stakeholders?

These questions intend to explore the multidimensional aspect of ESG reporting, relating the structural development to the theoretical knowledge of institutional change and organizational behavior.

1.5. Theoretical framing

The paper is grounded on three complementary theory perspectives: Legitimacy Theory, Institutional Theory, and Stakeholder Theory.

- Legitimacy Theory suggests that organizations report ESG information to ensure that they fit within their operating environments in accordance with societal expectations. In such a sense, ESG reporting is used as a communicative policy; to show the adherence to normative and moral standards (Asmoro *et al.*, 2024).
- Institutional Theory narrates how organizational processes such as the disclosure of sustainability are influenced by coercive, imitative, and normative forces of the regulatory bodies, peer organizations, and professional networks. This lens assists in explaining the dispersion of the ESG reporting standards and the survival of the geographical disparities (Ding *et al.*, 2025).
- The Stakeholder Theory underlines the importance of various groups of stakeholders, including investors, regulators, customers, and civil societies, in determining corporate disclosure behavior. Firms do not only report on ESG because they have to comply with the regulations, but also to establish trust and enhance a relationship with critical stakeholders (Yoo, 2025).

A combination of these theories offers a solid theoretical framework to explain the ESG reporting development as a reaction to institutional pressure and a strategic legitimacy and stakeholder engagement instrument.

1.6. Contribution of the study

This research contributes to the field in three ways.

- *Theoretical contribution:* It combines several theoretical points of view and creates a coherent conceptual framework of the evolution of ESG reporting that addresses the gap between the institutional theory and the real process of reporting.
- *Practical contribution:* It determines the pathways to the increased level of standard convergence, reporting assurance, and disclosure credibility, providing meaningful insights to corporations and investors moving in the complicated ESG environment.
- *Policy contribution:* It gives evidence-based suggestions to regulatory and standard-setting agencies, including the ISSB, the European Commission, and the U.S. Securities and Exchange Commission (SEC), on how to promote coherent, transparent, and internationally comparable ESG reporting frameworks.

Eventually, the importance of this study is that it enhances the academic and practical relevance of the ESG and sustainability reporting as a tool of corporate transparency as well as sustainable governance.

While numerous reviews have examined specific components of ESG reporting such as individual frameworks, technical measurement issues, or financial performance outcomes existing syntheses often remain fragmented and narrowly focused. This review differs by providing a comprehensive, historically grounded, and theory-integrated synthesis that traces the full evolution from voluntary CSR disclosures to emerging mandatory global ESG standards (e.g., IFRS S1/S2 and CSRD/ESRS). It uniquely combines bibliometric mapping with a systematic literature review to reveal long-term intellectual, regulatory, and institutional trajectories that earlier studies treat in isolation. Furthermore, this review integrates Institutional, Legitimacy, and Stakeholder Theory to explain the drivers behind reporting convergence, divergence, and assurance gaps offering a deeper conceptual articulation than prior work. By examining the interplay between standard-setters, regulatory environments, and corporate behavior, this study provides a cross-framework, cross-jurisdiction comparison that highlights inconsistencies, emerging harmonisation pressures, and implications for corporate transparency. Finally, the review extends the literature by identifying future-facing technological disruptions (AI, blockchain) and outlining global pathways for ESG reporting harmonization, areas seldom addressed systematically in earlier reviews.

2. LITERATURE REVIEW

2.1. Defining ESG and sustainability reporting

Environmental, Social, and Governance (ESG) reporting is a multidimensional model of measuring and reporting performance of a firm that is not built on the standard financial metrics. Although ESG disclosure shares are conceptually related to Corporate Social Responsibility (CSR) and sustainability reporting, it has differences in terms of scope, purpose, and orientation to accountability. CSR traditionally focused on corporate charity and ethics, which were commonly presented as voluntary practices in accordance with social norms. Sustainability reporting became possible in the early 2000s with the help of the Global Reporting Initiative (GRI) as a way to quantify and report the environmental and social impact of a company in a more organized way (Adardour *et al.*, 2025; Chen *et al.*, 2025).

Instead, ESG reporting combines these dimensions into an investor-oriented approach based quantitatively on sustainability performance, which connects the level of sustainability performance to financial materiality and risk control. It has changed the dialogue on the moral legitimacy to economic rationality; it puts sustainability as a value generator of long-term resilience and value creation (Cardillo & Basso, 2025). In theory, the ESG disclosure can be based on the stakeholder accountability theory, the institutional isomorphism theory, and the legitimacy maintenance theory, as the disclosure of non-financial information is linked to the need to attain social acceptance and the requirement to address the information needs of investors and regulators.

2.2. Historical trajectory

The history of the ESG and sustainability reporting can be roughly split into three phases:

Stage 1: Early CSR and Voluntary Reporting (1990s -2000s)

It is at this time that voluntary sustainability disclosure came into existence, with most of the driving force being corporate morality and reputation. Frameworks such as the GRI (formed in 1997) and the United Nations Global Compact (UNGC) promoted the reporting of social and environmental effects to firms, although the application was decision-based and qualitative. Reports in this period tended to be in very descriptive forms and did not have standard indicators or assurance recommendations (Sulemana *et al.*, 2025; Zervoudi *et al.*, 2025).

Stage 2: Global Standardisation (2010s)

The 2010s have seen a significant move towards structured and similar sustainability reporting. Attempts such as the Sustainability Accounting Standards Board (SASB), Integrated Reporting Framework (IIRC), and Task Force on Climate-related Financial Disclosure (TCFD) were developed in an effort to connect non-financial performance to financial performance. The TCFD specifically focused more on highlighting climate-based financial risks, a turn of tide to materiality-based ESG reporting. The increase in the power of institutional investors and asset managers (e.g., BlackRock, Vanguard) contributed to the need for standardized ESG data as a fiduciary duty (Bais *et al.*, 2024).

Stage 3: Convergence and Integration (2020s).

The present stage is an indication of growing regulatory interventions and convergence. International Reports In the IFRS Foundation, the appointment of the International Sustainability Standards Board (ISSB) (2021) is perceived as a successful milestone of the harmonization, into which previously existing projects, such as SASB and the Climate Disclosure Standards Board (CDSB), would fade into the mists. Simultaneously, the Corporate Sustainability Reporting Directive (CSRD) introduced the European Sustainability Reporting Standards (ESRS) that brought legally binding regulations on ESG disclosure on EU companies. These changes are an indication of shifting fracking voluntary frameworks to a binding investor-grade ecosystem of ESG reporting (Bais *et al.*, 2024; Goerzen *et al.*, 2025).

2.3. Comparative analysis of major standards

When significant frameworks are compared, they are seen to have at least some achievement and recurrent variation. GRI Standards are concerned with inclusivity to the stakeholders and universal applicability, the environmental and social impacts, irrespective of their financial materiality. The SASB Standards, on the other hand, are market-based and focus on specific industry-based financially material ESG risks. The TCFD Framework pays more attention to the governance, strategy, and risk management related to climate disclosures, whereas IFRS S1 and S2 standards provided by ISSB are designed to roll these strategies into a universally consistent framework (Ruzuk, 2025).

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2.4. Drivers of ESG disclosure

ESG disclosure is driven by a number of institutional and market forces. According to an institutional theory approach, regulatory pressures influence an organisation through regulatory requirements; stock exchange pressures dominate through reporting pressures; professional association pressures are created by professional associations; and peer benchmarking pressure and industry norm pressure create a mimetic pressure. Market-wise, the emergence of responsible investment has now made the ESG disclosure a precondition of access to capital. The use of ESG ratings and performance metrics in portfolio strategies by institutional investors is becoming a business case that has been further developed as more and more investors are utilizing these measures. Simultaneously, reputational and legitimacy issues also require companies to report on sustainability information to manage the perception of stakeholders and address social criticism. All of them form a sophisticated landscape of incentives and limitations that determine the quality and extent of ESG reporting (Cardillo & Basso, 2025; Itan *et al.*, 2025).

2.5. Challenges and critiques

Irrespective of the significant improvements, ESG reporting has a number of issues that have been persistent. The most salient of them is data fragmentation, where the metrics do not match, the methods used to measure them are inconsistent, and the result cannot be guaranteed to make comparisons across firms and jurisdictions. Cross-sector analysis is even complicated by the fact that there are no universally recognized definitions of materiality.

The other criticism is the issue of greenwashing, where companies only report positive details, leaving out the negative effects, which will misalign the perceptions of stakeholders. This issue has been aggravated with the mushrooming of ESG ratings agencies because due to methodological inconsistencies, the same company will be rated very differently. Also, ESG compliance is costly with regard to reporting and verification, which disproportionately burdens the small and medium-sized enterprises (SMEs) (Koch & Denner, 2025).

These issues are compounded by regional differences: whereas the EU focuses on double materiality and on regulations, the U.S. model is investor-focused and disclosure-driven, and most Asian systems continue to be based on voluntary or principles-based systems. Altogether, these points indicate that the standardization of ESG is a process that is still in its early phases, which needs a more significant coordination of international standard setters and assurance providers (Cordeiro *et al.*, 2026).

2.6. Impacts on corporate transparency

Generally, empirical results are expected to support a positive association between ESG reporting and corporate transparency; however, these relationships are dependent on their dynamics and their strength. Several studies also show that better reporting of ESGs enhances information symmetry between businesses and investors, lowers capital costs, and boosts trust between stakeholders. In addition, companies that have high-quality disclosures of ESG are generally associated with a high-quality of governance and a stable long-term performance (Li *et al.*, 2024).

Other studies, however, point to mixed or inconclusive findings, especially where ESG disclosure is considered to be a mere form of symbol, but not a substantive practice. Lack of the same assurance and use of boilerplate disclosures might restrict the informational relevance of ESG reports. The causal relationships are further obscured by methodological issues, which include endogeneity and regional bias, and inconsistency of ESG metrics (Ali *et al.*, 2025). As a result, although ESG reporting can be used to increase transparency, the actual contribution of the process is the quality of reporting, the rigor of assurance, and the interpretation by the stakeholders.

2.7. Conceptual framework

Following the literature reviewed in this research, the proposed study suggests the conceptual framework connecting the development of reporting pertaining to ESGs to the corporate transparency and shareholders' trust (Figure 1). According to the model, the quality and comparability of ESG information increase as ESG reporting transforms from voluntarily-reported CSR reporting systems to mandatory models that are holistic and compulsory. The quality of reporting that is enhanced by assurance and regulatory control helps improve the transparency of the corporate environment and has the effect of increasing stakeholder confidence and organizational legitimacy.

Figure 1 illustrates the conceptual framework underlying this review, which positions the evolution of ESG reporting as a dynamic process shaped by institutional pressures and culminating in enhanced corporate transparency and stakeholder trust. The framework begins with the historical progression from voluntary CSR reporting to mandatory ESG disclosure, driven by regulatory demands, investor expectations, and societal legitimacy requirements. This progression interacts with three theoretical components: coercive pressures (e.g., legal mandates and listing requirements), normative pressures (professional standards, industry norms, assurance practices), and mimetic pressures (peer benchmarking and competitive imitation). Together, these elements influence the quality, completeness, and comparability of ESG disclosures, which form the central mediating construct in the model. The framework proposes that higher-quality ESG reporting particularly when accompanied by robust assurance mechanisms increases corporate transparency, reduces information asymmetry, and strengthens stakeholder trust. Conversely, fragmented standards, inconsistent metrics, and symbolic or greenwashed disclosures disrupt these relationships and weaken the transparency outcomes. By making explicit these linkages, the framework clarifies how structural institutional forces and organisational reporting choices collectively shape the credibility and usefulness of ESG information.

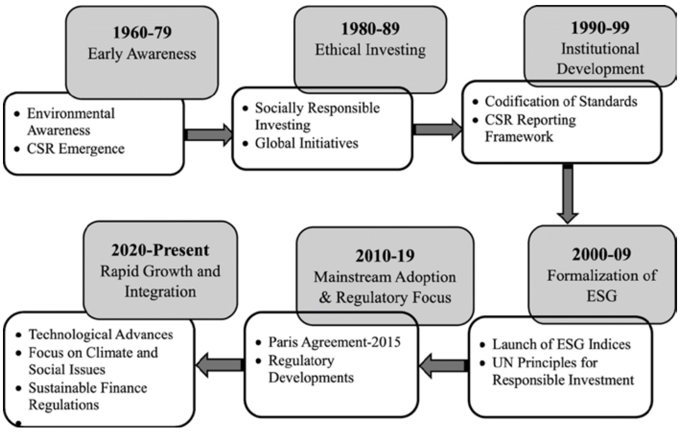

Figure 1. Conceptual Framework of ESG Reporting Evolution and Corporate Transparency
Source: Evolution of the ESG framework (Khan et al., 2024).

3. METHODOLOGY

The study employed a Systematic Literature Review (SLR) to synthesize and critically evaluate the evolution, challenges, and impacts of ESG and sustainability reporting. The review followed PRISMA guidelines to ensure methodological transparency and replicability. Searches were conducted across Scopus, Web of Science, and ScienceDirect because these databases collectively offer the most comprehensive coverage of peer-reviewed research in accounting, finance, management, and sustainability the core domains of ESG reporting research. Scopus was selected for its broad indexing of interdisciplinary journals; Web of Science for its rigorous curation standards and historical depth; and ScienceDirect for its extensive repository of high-impact business, governance, and sustainability publications. Together, these databases reduce disciplinary bias and ensure coverage of both conceptual and empirical scholarship. The timeframe of 2000–2025 was chosen because the year 2000 marks the beginning of formalized sustainability reporting through early GRI standards, representing the transition from voluntary CSR disclosure toward structured ESG frameworks. Extending the review to 2025 allows capturing the most recent developments, including the establishment of the ISSB and the introduction of the EU CSRD/ESRS, making the period appropriate for tracing long-term evolution.

The search strategy used database-specific strings to ensure precise retrieval. In Scopus, the exact search string applied was: TITLE-ABS-KEY ("*ESG reporting*" OR "*sustainability disclosure*" OR "*non-financial reporting*" OR "*corporate transparency*") AND TITLE-ABS-KEY ("*standards*" OR "*frameworks*" OR "*GRI*" OR "*SASB*" OR "*TCFD*" OR "*ISSB*"). In Web of Science, the search was executed using the Topic field with the string: TS = ("*ESG reporting*" OR "*sustainability disclosure*" OR "*non-financial reporting*" OR "*corporate transparency*") AND TS = ("*standards*" OR "*frameworks*" OR "*GRI*" OR "*SASB*" OR "*TCFD*" OR "*ISSB*"). ScienceDirect required a slightly modified query due to its interface constraints; the string used was: ("*ESG reporting*" OR "*sustainability disclosure*" OR "*non-financial reporting*" OR "*corporate transparency*") AND ("*GRI*" OR "*SASB*" OR "*TCFD*" OR "*ISSB*" OR "*reporting standards*").

The initial search identified 1,462 records across the three databases. After removing duplicates, 1,038 records remained for title and abstract screening. Of these, 624 articles were excluded because they did not address ESG or sustainability reporting directly, focused solely on environmental performance without disclosure, or lacked relevance to standards, challenges, or transparency. Full-text assessment was conducted for 414 articles, of which 271 were excluded for reasons such as methodological incompatibility, lack of reporting-related content, or insufficient empirical or conceptual depth. The final sample consisted of 143 studies included in the qualitative synthesis. The selection process follows the PRISMA structure: records identified, duplicates removed, titles and abstracts screened, full texts assessed for eligibility, and final studies included in the review. A PRISMA-style flow diagram can be provided upon request to visually represent this process.

Data extraction and analysis combined thematic coding and bibliometric mapping. NVivo 14 was used to code recurrent patterns and theoretical constructs, allowing themes to emerge inductively while also being examined through the lenses of Institutional, Legitimacy, and Stakeholder Theory. Complementarily, bibliometric techniques using VOSviewer and Bibliometrix enabled visualization of keyword co-occurrence, authorship networks, and the intellectual structure of ESG reporting research. Reliability was strengthened through double-coding of a subset of articles, yielding a Cohen's Kappa above 0.80, and through the triangulation of academic, regulatory, and institutional sources. Limitations primarily relate to language restrictions and potential omission of non-indexed regional literature, although the use of multiple databases mitigates these risks.

4. RESULTS AND DISCUSSION

4.1. Bibliometric and thematic trends

This bibliometric analysis showed that the ESG and sustainability reporting studies followed a continuous growth curve until 2025, and then the growth rate increased exponentially after 2015. This trend is in line with ESG considerations becoming mainstream in the investment markets worldwide and numerous important frameworks on climate-related financial reporting being introduced, like the Task Force on Climate-related Financial Disclosures (TCFD) and the EU Non-Financial Reporting Directive (NFRD). Analysis of citations indicated that there are numerous very influential clusters (Krasteva-Hristova *et al.*, 2025; Rivo-López *et al.*, 2025):

i. Standardization and Framework Development (GRI, SASB, TCFD, ISSB);

ii. ESG and Corporate Performance (relation between disclosure, firm value, and cost of capital);

iii. Is It Institutional (drivers and legitimacy or acceptance dependent upon institutional pressures); and

iv. Greenwashing and Disclosure Credibility (objections to selective disclosure).

Bibliometrix and thematic mapping utilization of VOSviewer also identified the development of the important spheres of research throughout the years. Preliminary research focused on CSR disclosure and voluntary sustainability reporting, whereas more up-to-date investigations revolve around the mandatory disclosure of ESG regulation, digital disclosure technologies, and assurances. Co-authorship and co-citation networks revealed that convergence of accounting, governance, and sustainability scholars occurred, suggesting the development of ESG reporting as a multi-disciplinary study based on the financial and institutional paradigm.

4.2. Evolutionary insights

The review found a strong trend in the evolution of ESG reporting, indicating more and more institutionalization and greater involvement in corporate governance systems. First, the practices of reporting were voluntary, narrative-based, and the main goal of which was reputational management. In the 2010s, reporting structures became more standard and investor-oriented and placed more emphasis on materiality and comparability. A key shift in making ESG disclosure mandatory and regulated in the 2020s saw the creation of the International Sustainability Standards Board (ISSB) and the European Sustainability Reporting Standards (ESRS) under the Corporate Sustainability Reporting Directive (CSRD) (Diwan and Amarayil Sreeraman, 2024).

This institutionalization shows that there has been coevolution of regulatory requirements, market expectations, as well as corporate responses in line with Institutional Theory. Companies are increasingly conventionalizing their reporting on ESG, such that coercive force (legal) and normative forces (best practice in the industry) are involved. Additionally, the ESG reporting has become a part of larger corporate governance since boards now have the responsibility to monitor both the risks and opportunities of sustainability. Such development shows that ESG reporting has transformed from a marginal CSR action to a strategic responsibility and risk management component.

4.3. Challenges identified

These issues, even after an impressive improvement, remain to ensure the credibility and comparability of ESG reporting. One of the problems is that there has not been a standardized set of data and measurements, which impedes both cross-company and cross-industry comparability. Filing even the most popular frameworks, such as GRI, SASB, TCFD, and CSRD, there are different scopes, terms of usage, and focus of reporting. This fragmentation has the effect of producing inconsistent disclosures that make the analysis of investors and regulatory regulation difficult.

Another weakness is verification and assurance. Although the number of regulatory frameworks is demanding more external assurance (e.g., limited assurance under CSRD), the nature and methodologies of ESG assurance can differ significantly. Lack of a standard of assurance recognized by the whole world diminishes the credibility of information disclosed.

Besides, the heterogeneity of the regions and the sectors is also one of the typical challenges. The maturity of ESG disclosure in European firms is, on average, greater on the basis of more robust regulatory requirements when compared to U.S. and Asian firms that are orchestrated more voluntarily by the market. Geographically specific variations also contribute to this discrepancy- financial institutions and energy companies, in particular, are more likely to report in a more comprehensive way than SMEs or service industry-based sectors. The aggregate results of the above findings are that ESG harmonization is biased, limited to regulatory heterogeneity, data heterogeneity, and institutional preparedness heterogeneity (Lunawat *et al.*, 2025).

4.4. Impacts on corporate transparency

The summary of the empirical literature indicates that ESG reporting has tended to improve corporate transparency by increasing the scope, volume, and granularity of reported data. Companies that have well-developed ESG reporting systems have better information symmetry and lower cost of capital, as well as stakeholder engagement. Documents of ESG disclosure have also helped build reputational capital, which brings a sense of trust to investors and long-term relationships with other stakeholders (Adardour *et al.*, 2025; Chang *et al.*, 2025).

This beneficial effect is however diluted by an indication of disclosure quality differences. Mostly, ESG reporting is symbolic and not substantive, and used as a legitimacy instrument, as opposed to actual transparency. The continuing use of boilerplate words, biased reporting, and greenwashing activities casts disclosure in a negative light. Besides, the absence of regular assurance and ongoing discrepancies over reporting models undermines the comparability and dependability of ESG information among companies (Sun *et al.*, 2025).

Accordingly, inasmuch as the ESG reporting is a positive addition to the transparency of a corporation, the level and quality of transparency can be realized by the rigor of reporting standards, the presence of independent assurance, and how firms integrate the concept of sustainability with the strategic decision-making process.

The findings respond directly to the research questions formulated in the introduction. Regarding RQ1 (the evolution of ESG and sustainability reporting over the last 20 years), the review clearly identifies a shift from voluntary CSR-style disclosures in the early 2000s toward increasingly harmonized, mandatory, and investor-focused ESG frameworks, culminating in the IFRS S1/S2 standards and EU CSRD/ESRS. This trajectory illustrates a distinct institutionalization process that earlier literature treated only in isolated phases. In relation to RQ2 (the institutional, regulatory, and market factors shaping ESG reporting behaviours), the results show that coercive pressures from regulators, normative expectations from professional bodies, and mimetic pressures arising from peer benchmarking collectively drive convergence, while regional political–economic structures account for persistent divergence. Finally, RQ3 (the implications of reporting standards and assurance mechanisms for corporate transparency and stakeholder trust) is addressed through evidence that high-quality and assured ESG reporting reduces information asymmetry and enhances perceived legitimacy, although inconsistencies in metrics, assurance depth, and reporting sincerity diminish these effects. Linking these insights together demonstrates that transparency outcomes depend not only on the existence of standards but on the alignment between institutional pressures, corporate governance quality, and assurance practices.

4.5. Emerging themes

The literature helps uncover some of the developing themes that are indicators of the future of ESG reporting.

- *Elevated ESG reporting and data analytics:* Digital organizations and artificial intelligence (AI) are changing the approach to the collection, verification, and reporting of ESG data. With AI-based analytics, it is possible to monitor in real-time, construct predictive models, guaranteeing assurance through automatic models, enhancing accuracy and accessibility by stakeholders (Alshareef, 2025; Animashaun *et al.*, 2025).
- *Double materiality and integrated thinking:* Particularly in the EU, the notion of double materiality, both financial and societal, has become a paradigm shift, as it cuts across financial and sustainability reporting. Integrated reporting structures encourage a comprehensive perspective of value creation, relating the ESG results and strategic performance (Ng *et al.*, 2022).
- *The global standard convergence:* The creation of ISSB and its cooperation with EFRAG signifies a global shift towards the harmonization process that might fix long-lacking fragmentation problems (Goerzen *et al.*, 2025).
- *Social and governance dimensions:* Although the emerging trend of reporting is mainly environmental in nature, the social equity, human capital, and governance dimensions are increasingly being considered as conditions that determine corporate legitimacy and risk exposure (Hipopolito *et al.*, 2025).

These trends show that ESG reporting is taking a digitally empowered, globally harmonized, and strategically entrenched stage and leaving compliance behind and adopting an accountable approach to corporations.

4.6. Theoretical discussion

Theoretically, the results support the explanatory capacity of the Institutional, Legitimacy, and Stakeholder Theories in explaining the dynamics of ESG reporting.

- Institutional Theory explains that convergent pressure in ESG reporting practices is caused by coercive (regulation), normative (professional norms), and mimetic (peer benchmarking) pressures. The developments in the voluntary CSR to the mandatory ESG disclosure indicate institutional isomorphism because companies align with international standards of accountability and sustainability (Ding *et al.*, 2025).
- Legitimacy Theory clarifies the reasons why firms disclose ESG information because this process allows them to keep being accepted by society and explains why they need to disclose such information as a way of justifying their social contract. Increased reporting is a connotation of moral and pragmatic legitimacy to the extent that disclosures are symbolic and not substantive (Erokhin, 2025).
- Stakeholders Theory emphasizes the relationship point in the ESG transparency. More and more firms do appreciate the informational rights of different groups of stakeholders: investors, regulators, employees, and communities, and move to more inclusive and responsive reporting practices (Yoo, 2025).

The interplay between these theoretical perspectives shows that ESG reporting is not just a technical process but a socio-institutional legitimacy-building process. On a macro level, these forces have consequences in multi-level governance and global setting standards since convergence of regulations and cross-border equivalence are critical in establishing globally viable sustainability information systems.

To conclude, ESG reporting has transformed itself into a strategic governance tool, a hybrid mechanism, a vehicle that tries to integrate regulatory compliance, market accountability, and ethical responsibility. However, its final usefulness as a way of increasing transparency lies in the further standard harmonization and digitalization, the authenticity of corporate dedication to sustainable value generation.

5. CONCLUSION

This review synthesizes twenty-five years of scholarship and regulatory evolution to offer a clearer, more integrated understanding of how ESG and sustainability reporting have transformed from voluntary CSR narratives into increasingly standardized and regulated disclosure systems. A key contribution of this SLR lies in demonstrating that ESG reporting is not merely a technical exercise in disclosure but a deeply institutionalised process shaped by regulatory convergence, investor expectations, and legitimacy-seeking behaviours. By combining bibliometric mapping with theory-informed synthesis, the review reveals that the trajectory toward global standardization through instruments such as GRI, SASB, TCFD, ISSB, and CSRD/ESRS has redefined the mechanisms through which transparency is produced, evaluated, and trusted.

A central insight emerging from this review is that standardization improves transparency only when it simultaneously enhances comparability, materiality alignment, and assurance quality. The SLR shows that standard-setting alone does not guarantee transparency. Instead, transparency arises from the interaction between clear reporting requirements, consistent measurement practices, and credible verification. This integrated view helps explain why regions with strong regulatory coherence and assurance mandates (e.g., the EU) achieve higher levels of effective transparency compared to jurisdictions with fragmented or voluntary frameworks. The review, therefore, advances understanding by conceptualizing transparency not as a direct output of standardization, but as a mediated outcome dependent on institutional alignment, data integrity, and reporting sincerity.

RECOMMENDATIONS

This synthesis suggests several implications for regulators, corporations, and investors.

For regulators and standard-setters, the findings emphasize the importance of accelerating international interoperability between ISSB and regional frameworks such as ESRS, as misalignment continues to dilute comparability and stakeholder trust. Effective transparency requires not only unified standards but also digital reporting infrastructures and globally harmonized assurance guidelines. Standard-setters should thus move beyond framework development toward ensuring consistency in implementation, verification depth, and machine-readable reporting.

For corporations, the review highlights the need to transition from compliance-oriented reporting toward integrated ESG governance, where sustainability considerations are embedded in risk management, strategy, and board oversight. Firms that adopt unified data architectures, invest in internal ESG capabilities, and commit to substantive rather than symbolic disclosure are more likely to produce transparent, decision-useful information and benefit from enhanced legitimacy.

For investors and financial institutions, the evidence indicates the necessity of using decision tools that incorporate assured, standardized, and comparable ESG data rather than aggregate or unverified ratings. The review underlines the role of investors as disciplinary agents whose stewardship expectations can reinforce global harmonization and penalize opacity or greenwashing.

Synthesis and implications for future research

By presenting ESG reporting as a hybrid institutional process, this SLR provides a novel theoretical lens for understanding the conditional relationship between standardization and transparency. Rather than assuming a linear link, the review demonstrates that transparency improves only when standardization is accompanied by meaningful assurance, regulatory coherence, and genuine organisational commitment. This refined conceptualization offers a foundation for future empirical research, including cross-country analyses on regulatory effectiveness, investigations into digital reporting technologies such as AI and blockchain, and behavioural studies examining managerial motivations behind disclosure quality.

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