

What ESG Has Not (Yet) Delivered: Proposition of a Framework to Overcome Its Hurdles

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Abstract

Environmental, Social, and Governance (ESG) issues have gained increasing prominence in corporate agendas and the academic literature. However, significant hurdles remain regarding its effectiveness, standardization, and authenticity. This work aims to develop a framework containing recommendations to overcome these hurdles and enable more effective ESG practices. To this end, a systematic literature review (SLR) was adopted as the research method to provide an organized and in-depth overview of the current state of the art in the ESG literature and its main gaps. Through the SLR, 35 hurdles were identified, organized into five axes: integration, assessment, stakeholders, territoriality, and sectorization. Building on these hurdles, a framework comprising 39 recommendations was proposed, targeting the ESG key players: companies, rating agencies, guideline developers, academia, and other stakeholders. As a theoretical contribution, this work articulates previously fragmented knowledge on ESG, helping to bridge the identified research gap, outlining pathways for further and deeper reflections, especially in relation to the persistent decoupling between expected and achieved results in sustainability. As practical contributions, it helps avoid negative impacts for ESG key players, leading them to achieve more realistic assessments, adopt better practices, and increase comparability across initiatives, supporting ESG to reach greater effectiveness, enhance assessment metrics, increase the consistency of reporting, broaden stakeholder engagement, and strengthen institutional mechanisms.

Keywords: Environmental, Social, and Governance (ESG); evaluation metrics; guidelines; reports; stakeholders; systematic literature review



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1. Introduction

Integrating sustainability into companies' economic activities has been one of the main challenges faced by the private sector, with significant financial and socio-environmental implications [1]. To address this issue, a group of financial institutions, in partnership with the United Nations (UN), released the report "Who Cares Wins", aimed at guiding companies in integrating sustainability into their operations [2,3]. This document encourages the disclosure of corporate initiatives across the Environmental, Social, and Governance (ESG) dimensions, emphasizing the need for greater stakeholder participation in this process [4,5]. ESG has become a central pillar in the transformation of corporate responsibility,

evolving from fragmented initiatives into strategic criteria for risk management and value creation [2,4,5].

However, its consolidation as a guide for investors, managers, and regulators has been intensified with the creation of the Principles for Responsible Investment (PRI) and the establishment of guidelines like the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) [6,7]. The logic behind ESG suggests that companies performing well across these dimensions are more resilient, access lower-cost capital, retain talent more effectively, mitigate legal and reputational risks, and adapt better to social and environmental pressures [7]. Nevertheless, the practical incorporation of ESG into corporate activities varies considerably by region, sector, and business model, often resulting in disconnected actions and research that, while extensive, remains fragmented [8].

The ESG principles propose a balanced approach that fosters economic development, mitigates negative environmental impacts, and promotes social well-being while enhancing corporate transparency and ethics [9,10]. ESG encourages the development of initiatives ranging from process improvements for carbon emission reduction to the adoption of circular economy principles, and investing in renewable energy and green innovation [11–13]. These initiatives also prioritize workers' well-being, quality of life enhancement, and the promotion of diversity and anti-corruption practices [6,14]. In doing so, companies strengthen their corporate image, increase market value, and generate positive financial outcomes, positioning ESG as a key element in Corporate Sustainability (CS) [6]. CS may be understood as the ability of organizations to create long-term value by integrating environmental, social, and economic dimensions into their strategy, culture, and operations [15]. However, it extends beyond negative impact mitigation and involves generating positive externalities and adopting an active role in promoting sustainable development. This, in turn, consists of creating long-term value by ensuring the enduring viability of natural and human resources for the benefit of future generations [3,16,17].

Within this context, ESG is increasingly understood as an instrument that enables CS, serving internally as a governance mechanism and externally as a means of accountability [18,19]. However, translating ESG into effective sustainability requires more than disclosure or high ESG scores; it involves strategic coherence, stakeholder engagement, and authenticity in corporate actions [20–22]. ESG should function as a genuine lever for sustainability transformation and development. Yet, its concepts are often misused as a misleading or superficial response to institutional pressures, a phenomenon commonly referred to as greenwashing [8,23]. Indeed, there is a lack of reliable metrics and strategies capable of assessing the depth of ESG initiatives. While the need to distinguish “cosmetic” practices, those offering a limited portrayal of reality to meet investor expectations, yet generating little real impact, from genuinely transformative approaches with the capacity to produce significant socio-environmental outcomes is widely acknowledged, such a distinction is rarely operationalized in practice [9,22,24]. This ambivalence reinforces the need for deeper qualitative analyses of ESG practices and their actual alignment with sustainable outcomes, as undertaken in this work. Therefore, the research gap that this work intends to help fill consists of identifying ESG's fragilities to consolidate its knowledge, and to move it forward theoretically and practically, providing it more reliability, and contributing to the advancement of initiatives that effectively deliver sustainability [8,21,25].

Despite the growing presence of ESG in the academic literature, numerous hurdles remain, revealing that some topics essential to its effectiveness continue to be addressed tangentially or uncritically from both theoretical and practical perspectives. The most striking hurdle is greenwashing, frequently mentioned as a recurring concern but without proposing how companies might prevent and avoid it [26–28]. Another critical hurdle lies in the analysis of ESG practices themselves. Despite being a central theme, discussions on

their effectiveness are often suppressed or reduced to financial and reputational outcomes, neglecting the materiality of their social and environmental impacts [12,29]. There is also a hurdle in examining the contradictions and limitations of ESG initiatives, as there is a tendency to treat them solely as a competitive advantage factor or risk management tool, overlooking the barriers to their adoption and maintenance within companies [19,30,31]. Another underexplored hurdle concerns the integration of ESG's three pillars into a systemic approach. Several studies recognize this need, but they often concentrate on one or two dimensions, most frequently governance, while issues from the social and environmental dimensions appear with less intensity [17,25,29]. Additionally, there is a hurdle in standardizing ESG indicators that makes it difficult to measure and facilitate cross-sector comparisons, underscoring the need for innovative methodological approaches to address this limitation [6,32,33]. A review of the scientific literature reveals a recurring effort to map ESG initiatives but without going into depth about how they can be carried out and help companies increase their sustainability, raising concerns about the depth of these analyses [34,35]. Almost twenty years after the first mention of ESG, considering the maturity it has acquired in the last decade and the launch of the Sustainable Development Goals (SDGs) in the 2030 Agenda, it was hoped that the decoupling between economic activity, which is essential to keep the mankind demands, and positive socio-environmental impacts would have already narrowed dramatically, but this is not the reality [15,22,36]. The high rates of pollution, recurring scandals involving abusive labor practices, and corruption in various economic sectors and governments reveal that considerable progress is still needed in the SDGs and the 2030 Agenda [1,7].

The identification of these hurdles faced by organizations allowed for an assessment of ESG's real potential as a driver of organizational transformation by mapping which topics have been underexplored or neglected. These findings formed the basis for developing the research question that guides this work: How can ESG evolve to support better sustainability outcomes? To address this question, this work aims to develop a framework containing recommendations to overcome these hurdles and enable more effective ESG practices targeted for its key players (companies, rating agencies, regulatory bodies, academia, and other stakeholders). To this end, a systematic literature review (SLR) was adopted as the research method to provide an organized and in-depth overview of the current state of the art in ESG literature and its main gaps.

The motivation for identifying such hurdles and structuring a framework to overcome them stems from the recognition that ESG, while increasingly adopted as a guiding framework for corporate sustainability, still suffers from inconsistencies that undermine its credibility and transformative potential. Mapping these hurdles that have hindered ESG progress has made it possible to move beyond a debate on fragmented knowledge, which was previously spread across prior works, and is now synthesized within this work. This advances the state of the art in the ESG field, supporting further and deeper reflections, especially in relation to the persistent decoupling between expected and achieved results in sustainability. Additionally, in practical terms, this work proposes a framework with solutions to these hurdles, addressing them directly to their respective players, who can actually generate sustainable results, such as more coherent and materiality-oriented, thereby enhancing the ESG initiatives as effective instruments for sustainable development.

This article is structured as follows: Section 2 describes the method adopted, with emphasis on the procedures of the systematic literature review. Section 3 presents the results, organized into five axes that group the main hurdles to the consolidation of ESG: integration, assessment, stakeholders, territoriality, and sectorization. Section 4 proposes a framework with recommendations addressed to companies, rating agencies, guideline developers, governments, investors, civil society, and academia. Finally, Section 5 presents

the conclusion that synthesizes the theoretical and practical contributions of this study and outlines directions for advancing the ESG agenda.

2. Scientific Method

This work adopted the scientific method of a systematic literature review (SLR) with a qualitative interpretative approach, as this was considered the most appropriate strategy to critically assess academic research on ESG and its contribution to CS. An SLR is a non-biased method for evaluating and interpreting relevant research on a specific topic by following a clear, replicable, and systematic process. Its stages include (i) planning: justification of the topic's relevance, identification of gaps or inconsistencies, and definition of the research question, objectives, and scope of the review; (ii) execution: selection of databases, keywords, inclusion and exclusion criteria, use of traceability protocols (in this case, PRISMA), data extraction, and synthesis; and (iii) dissemination and application: presentation of results, practical and theoretical implications, and recommendations for future research [37].

Given the exponential growth of the academic field on ESG since the launch of the PRI in 2006, as illustrated by the evolution of publications indexed in Scopus (Figure 1), this topic was considered mature enough to support an in-depth SLR, as proposed in this work.

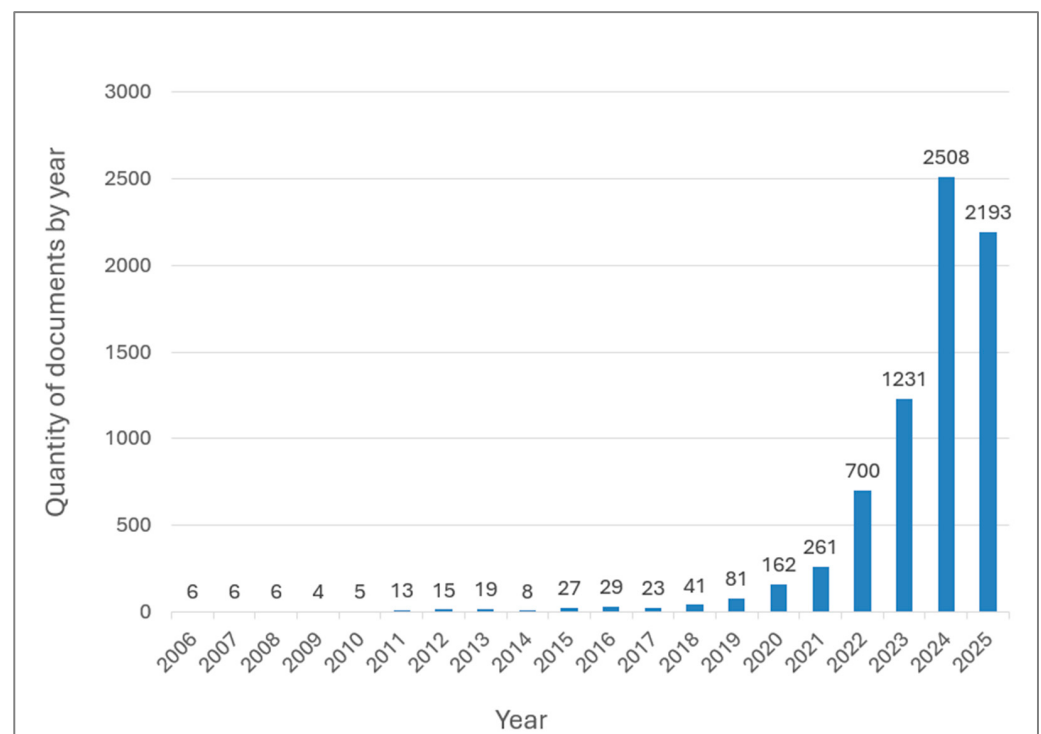


Figure 1. Evolution of scientific production on ESG. Source: adapted from [38].

This growth has been accompanied by significant advances, such as the identification of positive relationships between ESG performance, financial performance, and risk mitigation [11,39]; greater access to capital for investment in expansion, technology, and innovation [40]; and contributions to organizational legitimacy by promoting transparency and strengthening stakeholder relations [41].

The choice of a qualitative interpretative approach stems from evidence observed within the analyzed studies. Despite the numerous scientific articles on ESG, the field remains dominated by quantitative models, primarily focused on financial returns, risk, and disclosure [12,42,43]. As a result, certain ESG dimensions are only superficially explored, such as greenwashing and cosmetic ESG [22,41,44], inconsistencies in ESG assessments [30],

reputational perception [45], ESG reporting effectiveness [46], and financial constraints [44]. Furthermore, the literature reveals that ESG is a field marked by significant theoretical and methodological fragmentation, limiting the applicability of traditional quantitative meta-analyses. For instance, while some studies examine ESG as an integrated construct across the three pillars [25,47,48], others analyze each pillar individually [24,34,49], and a few address sectoral or contextual specificities [46,50,51]. This scenario highlights the complexity of the field and underscores the need for a systematic review that, by emphasizing thematic categorization and critical interpretation, can provide greater conceptual clarity and guide future research.

Another relevant reason for the methodological choice was the need to identify patterns of convergence and contradiction across theoretical strands. For example, the corporate governance pillar is widely recognized as the most consistent ESG factor [12,43,48], while findings related to the environmental pillar remain ambiguous [26,46,47], and the social pillar remains underexplored. These factors require an approach capable of comparing meanings, not just measurements [21]. It is also worth noting that, although specialized software is widely used in systematic reviews, this work has opted for manual analysis to ensure a deeper and interpretative reading of the selected articles. This decision enabled the identification of conceptual nuances, implicit arguments, and contextual specificities that could be overlooked by automated tools. While review support software may be efficient in identifying patterns, term frequencies, and co-occurrence networks, it cannot replace the researcher's analytical capacity to uncover more subtle dimensions, such as theoretical contradictions, interpretative gaps, or non-standard methodological approaches, as occurred with [21].

Finally, this SLR was planned and conducted following the principles of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology, adapted for qualitative studies [52]. This technique enables a rigorous synthesis of the state of knowledge, providing a useful foundation to inform future research agendas, support corporate policies, and guide institutional decisions on ESG and corporate sustainability [53], as outlined in Figure 2.

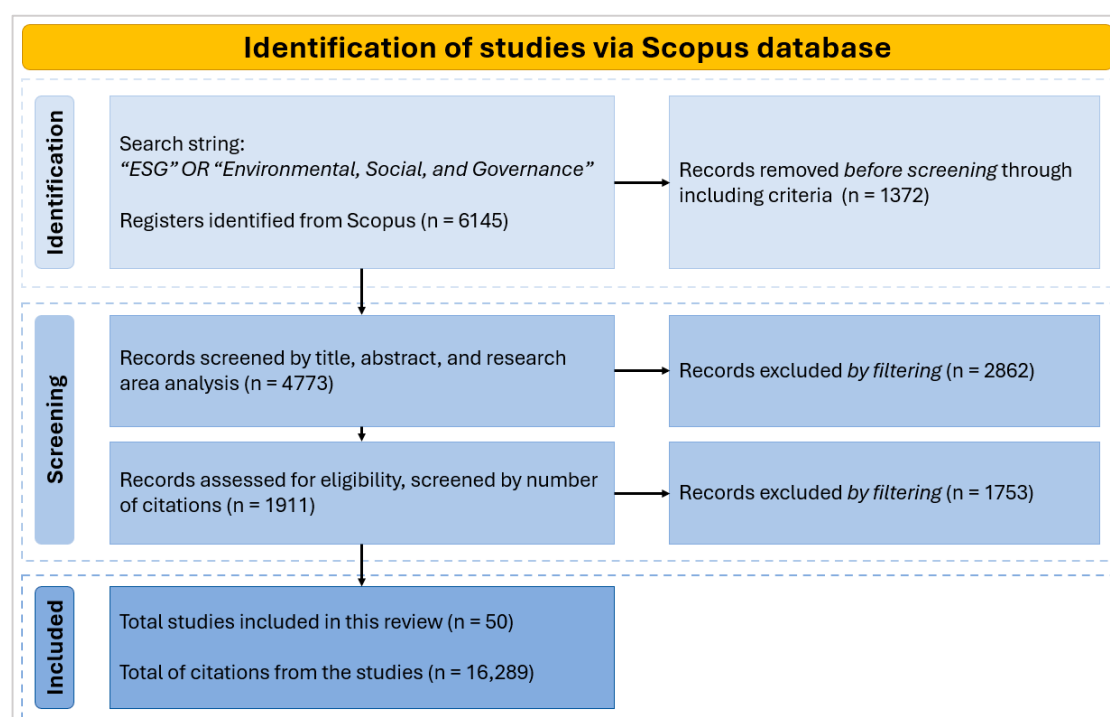


Figure 2. PRISMA protocol applied to this work. Adapted from: [54].

To conduct this work, address its research question, and achieve its objective, the Scopus database was defined as the source of scientific production on ESG due to its scholarly credibility, strict journal inclusion criteria, and the substantial volume of results on the topic [27,55]. The search was restricted to terms appearing exclusively in the “Article Title” field. The initial sample was defined using systematic strategies and inclusion/exclusion criteria. From the 6145 records retrieved in Scopus, 1372 were removed before screening, based on the following inclusion criteria: publication year (from January 2020 to March 2025, corresponding to the five most recent years relative to the search date, 26 March 2025), document type (peer-reviewed articles or reviews only), and language (English only, as it is the most widely used language in the scientific community). Subsequently, titles and abstracts of the remaining 4773 records were reviewed to confirm thematic relevance, excluding those unrelated to the subject, such as those from the fields of health, medicine, and chemistry, resulting in 1119 eligible documents. Next, only articles with more than 100 citations were selected, indicating they are among the most influential in the academic literature, narrowing the sample to 158 documents (1753 excluded). Finally, the corpus was delimited to 50 documents (see Supplementary Materials). This number reflects the concentration of influence within the field and the feasibility of conducting an in-depth qualitative analysis. The 50 selected articles account for 61.4% of the total citations of the previously identified influential works, ensuring that the sample represents the most authoritative voices in the ESG debate. Moreover, the citation threshold of the first (over 1150 citations) and the fiftieth (182 citations) demonstrates that the chosen set captures a consistent level of scholarly recognition and impact. The decision to focus on 50 articles also follows methodological precedents in systematic reviews, which emphasize the importance of balancing breadth and analytical depth to enable a rigorous examination of conceptual and methodological gaps [21,56,57]. This delimitation ensured this work’s operational feasibility, particularly given the deliberate choice not to employ software-assisted tools, as previously mentioned.

An in-depth reading of the selected articles enabled the identification of several hurdles frequently highlighted as relevant but still lacking clarity or analytical depth. Between two and six hurdles were extracted from each article, which were then systematically organized and grouped by affinity.

3. Hurdles to Forward ESG

This article’s review revealed a demand for longitudinal approaches, as well as qualitative and interdisciplinary analyses, aimed at exploring the trajectory of ESG to understand whether its pathways have been broadening or narrowing. The detailed analyses that follow present the 35 hurdles identified as challenges to ESG progress, indicated by the codes “H#” followed by the corresponding number. The affinities among these hurdles led to the formation of the five main groups shown in Figure 3, which are subsequently discussed in light of the literature and briefly described in S2.

This scenario highlights the need to refine existing theoretical models and incorporate new contextual variables to foster the advancement of CS through ESG.

3.1. Integration

Most of the analyzed articles adopted an integrated assessment of the three ESG pillars. The fact is that treating E, S, and G as a single index facilitates comparative analyses with other indices but runs the risk of masking heterogeneities among the pillars and, consequently, hinders the identification of potential synergies or trade-offs between them [25,58,59]. For instance, considering ESG as a single factor, it is assumed that robust governance can offset higher environmental or social costs [60]. However, the literature

still lacks metrics capable of capturing such trade-offs among the pillars (H#01) [16]. Given that each pillar has distinct characteristics, its measurement should initially be conducted separately [50]. This lack of assessment metrics reveals a technical and scientific inclination, both in ESG rating agencies and in the academic literature, to prioritize simplified metrics that treat ESG as a single variable, to the detriment of more refined approaches capable of capturing the complexity and interdependence of ESG pillars [9,24,34]. Nevertheless, Ref. [61] indicated that the absence of standardized definitions for the E, S, and G components, shared among agencies, investors, institutions, and guideline developers, can lead to completely divergent ESG ratings for the same firm (H#02).

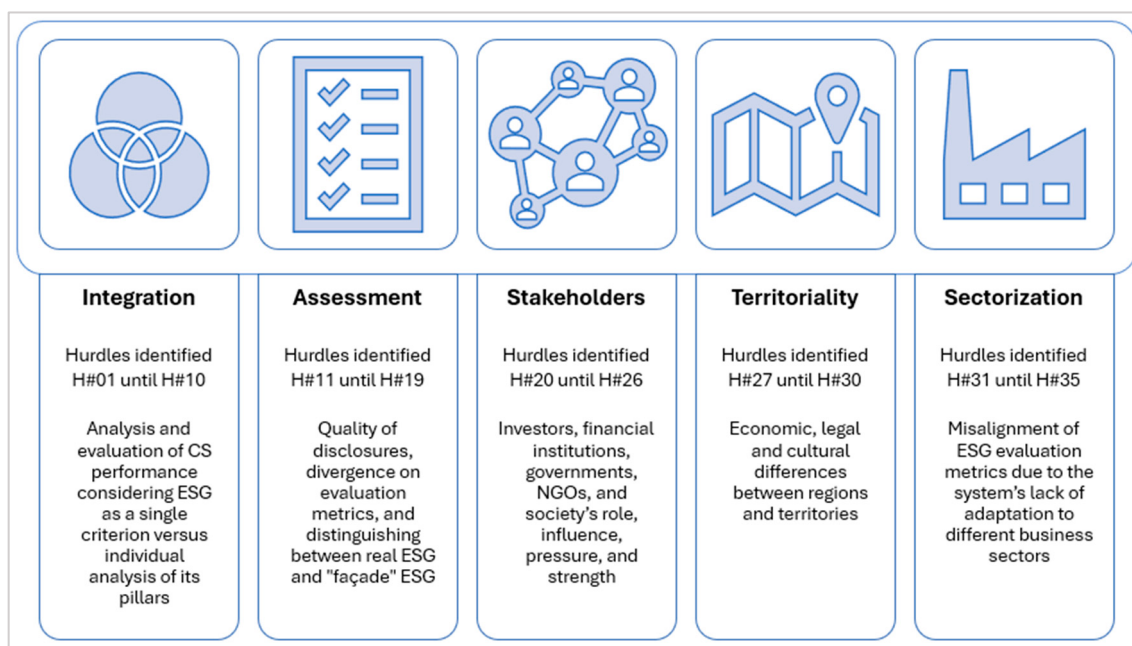


Figure 3. Hurdles to ESG forward grouped by affinity.

Among the few studies that analyzed each pillar individually, there remains a lack of exploration regarding which specific E, S, or G practices actually explain the observed financial or reputational outcomes (H#03) [7,46,62]. Even among scholars, there is no consensus. For example, Refs. [46,51] highlight that investments in environmental initiatives are relevant and positively associated with firm value. Meanwhile, Ref. [34] emphasizes that this relationship depends on the geographical context in which the analysis is conducted.

The Environmental pillar is paradoxically one of the most cited and most overlooked. Although nearly all studies recognize the relevance of environmental impacts, analyses of sensitive topics such as carbon emissions management, energy efficiency, sustainable supply chains, water use, and waste management remain shallow and are rarely adopted as indicators (H#04) [27,28,50]. Moreover, while some studies suggest it has a lower correlation with market value and less predictability compared to governance [18,30,43], others argue that sound environmental practices help reduce financial risk and improve reputation, although these effects are more visible in the long term [19,23,47].

The Social pillar receives limited attention in the literature despite encompassing relevant dimensions such as equity, labor rights, diversity, and community impact [25,43]. Even in contexts where its prominence would be expected, as during the COVID-19 pandemic, what is found in the literature is often scarce and superficial [39]. This may create a mismatch between the emphasis given to the Environmental and Governance pillars and the lack of studies on the singularities of the Social pillar (H#05) [27]. Ref. [63] expanded on this point by noting that broader distributive effects of social initiatives on

workers and communities, such as those generating well-being, empowerment, and social development, remain outside the analysis of the main studies, which are largely focused on financial returns and shareholder perceptions (H#06).

Although Governance is the most established ESG pillar, it has often been treated in the literature as a static indicator, neglecting the institutional mechanisms that sustain it and its moderating role over the other ESG pillars. Some studies highlight the importance of governance as the internal structure that enables ESG practices to be effective. Ref. [43] mentioned intra-organizational complexity in implementing ESG practices, yet failed to clarify how firms might manage this complexity to improve performance (H#07). Oddly, Ref. [51] observed that, in the European financial market, the Governance pillar has no impact on firm value, an outcome they attributed to the rigidity of European legislation. However, such a statement would require the use of the same indicators across different markets to determine whether changes in context would lead to different outcomes (H#08). Other studies have pointed to reputational aspects associated with Governance, addressing concepts such as “moral capital” (i.e., value associated with corporate contributions to environmental and social events) and organizational legitimacy, yet without offering concrete metrics for their measurement (H#09) [24,28,64]. Refs. [17,30] reinforce the idea that the Governance pillar can mediate ESG’s impact on firm value and risk, but fail to explore how this mediation materializes in internal management decisions (H#10). These findings suggest that, while the ESG pillars share common goals related to sustainable value creation, their effects differ in terms of impact magnitude, resource allocation, and the timing of initiatives, thus justifying separate analyses and weighting before composing an integrated ESG view.

3.2. Assessment

This group encompasses ESG assessment mechanisms, as well as the quality of their foundations, namely, the reports published by companies. The growing attention to ESG has spurred scientific research into its financial, reputational, and organizational effects on CS. However, a number of gaps remain significant concerning the authenticity, quality, and comparability of ESG information disclosed by firms. Topics like report quality, greenwashing, and divergence in ESG ratings appear frequently in academic studies yet are almost always addressed peripherally.

The relationship between ESG, risk, and financial return is a recurring theme in the academic literature. However, consensus regarding causality and materiality has yet to be achieved. Some studies have highlighted tangible benefits of this relationship, associating a reduction in the cost of capital with trustworthy ratings and ESG certifications with reputational gains [26,28]. Meanwhile, sector-based materiality approaches are beginning to gain traction, linking material ESG factors to superior financial performance [16,19,65]. Other studies have noted that report quality can influence firm value and debt allocation. Poorly structured ESG disclosures hinder creditors from identifying whether firms’ ESG initiatives are debt-financed, which increases business risk and undermines capital structure [7,41].

Despite these findings, several issues remain underexplored. For instance, endogeneity problems, where the analyzed variable is determined by the same system under investigation, such as the mutual influence between ESG and financial performance, are often overlooked (H#11) [18]. Similarly, the limitations of traditional value metrics used as proxies for measuring ESG impact are rarely examined in depth (H#12) [66]. These omissions suggest a general reluctance to critically engage with the limits and risks embedded in ESG practices, particularly concerning the reliability of metrics, the comparability of assessment methodologies, and the authenticity of disclosures.

Refs. [40,67,68] recognize that the quality of ESG disclosure varies considerably and that generic or non-auditable reports have limited explanatory power concerning corporate financial and ESG performance. Further limitations are observed in the standardization of corporate reports, which, rather than expanding detail and harmonizing guidelines, tend to oversimplify information, thereby complicating integration with other reports and the combined use of frameworks (H#13) [19,61].

The same applies to the methodologies used by major rating agencies, which, in seeking consistency among themselves, simplify rather than explore in greater detail (H#14) [17,27,58]. These studies reveal a growing awareness of the limitations of existing tools in capturing actual ESG practices, yet they rarely explore the consequences of these limitations. Even when data quality is addressed, there is little critical assessment of the metrics employed by ESG rating agencies (H#15) [12,64], nor is there sufficient investigation into whether the sources of divergence across agencies can be minimized (H#16) [16,19,60]. Refs. [5,30,69] acknowledge critical aspects of the ESG agenda and discuss challenges related to informational uncertainty and rating divergence, emphasizing how these inconsistencies can compromise the usefulness of ESG scores for investors. Likewise, Refs. [61,66,69] argue that the integrity and authenticity of ESG ratings are decisive factors for trust in evaluation systems, especially in contexts where greenwashing can compromise results.

Although the possibility of greenwashing is frequently mentioned in the reviewed literature, there is often no distinction made between cosmetic and effective ESG, nor any verification of whether disclosures reflect genuine change or merely formal compliance (H#17) [7,44,48]. In practice, reports based on guidelines such as GRI and SASB are audited to determine whether companies comply with what they declare [70]. However, these audits do not assess whether the actions have a real impact on different stakeholders, such as governments and civil society, as these demands are often subjective [25]. As a result, disclosure criteria are often treated in binary or overly simplified quantitative terms, without verifying the degree of materiality or reach of the initiatives (H#18) [29,46]. Moreover, Refs. [26,33] raised relevant concerns regarding economic incentives that may distort scores and ratings, or potential conflicts of interest within ESG rating agencies, factors that ultimately compromise the reliability of such evaluations (H#19).

3.3. Stakeholders

Another recurring topic in the reviewed literature is the relevance of investors and other stakeholders (governments, customers, civil society, etc.) as influential agents in shaping corporate ESG initiatives. However, a more in-depth analysis reveals that some stakeholders act as catalysts for sustainable practices, while others may inhibit them, depending on how companies respond to their demands [22,25,71]. Despite being frequently treated as a homogeneous group in the studies, stakeholders represent a complex and heterogeneous field that requires more detailed and context-sensitive research [60].

Regarding investors, some specific characteristics of the local capital market are determinants for the relevance attributed to ESG. For example, Ref. [39] observed that, in the Chinese context, ESG-oriented investors prefer retail firms over industrial ones, allocating less capital to production sectors. Ref. [33] explored behavioral distinctions between active and passive fund managers in European and North American markets, revealing that these markets show a stronger tendency to steer firms toward ESG adoption. Additionally, Ref. [61] noted that some investors, when faced with conflicting ESG ratings, express preferences for certain rating agencies, suggesting heterogeneous behavior even within this group.

Despite these contributions, significant hurdles remain, particularly in understanding financial market behavior. There is a lack of studies that segment investors more precisely, such as distinguishing institutional from individual investors, and that empirically test their responses to events like rating divergences or regulatory shifts (H#20) [5,8,72]. Few studies delve into concrete data, like shareholder voting records at meetings or capital flow movements, to verify whether investors actively participate in corporate ESG decisions, whether they reallocate funds based on ESG ratings, or whether they follow some kind of their own assessment (H#21) [13,48]. In this sense, the studies analyzed also did not investigate whether investors' preference for certain rating agencies reflects genuine convictions about the evaluation methodologies or are merely strategic arbitrage choices (H#22) [61].

At the same time, when considering the broader spectrum of stakeholders, including governments, customers, civil society, employees, and local communities, it becomes clear that their collective pressure shapes the adoption and the valuation of sustainable business practices [23,51]. Nonetheless, a recurring hurdle is the difficulty of distinguishing the specific influence exerted by each stakeholder group (H#23). Refs. [8,16,41] confirm the relevance of pressure from institutional investors and a more engaged civil society as key drivers of increased corporate transparency. However, much of the available evidence relies on aggregated metrics such as "social attention" or "general pressure," which obscure the ability to discern the relative weight of institutional investors compared to consumers, media, non-governmental organizations (NGOs), or regulatory bodies (H#24) [6,73,74].

Ref. [60] hypothesized that different stakeholder groups may assign more importance to one ESG pillar than to another. Similarly, Ref. [18] emphasized the need to develop distinct metrics to assess perceptions and pressures from internal versus external audiences (H#25). Refs. [47,63] reinforced the view that, although much of the current analysis remains predominantly focused on value creation for capital markets, ESG strategies should not be limited to investors' interests, but should also encompass the concerns of customers, communities, and employees (H#26).

3.4. Territoriality

Territoriality emerges as a key factor for understanding the variation in ESG practices and outcomes across companies, sectors, and markets [7,15,21]. Macroeconomic conditions, regional cultures, and regulatory guidelines shape the intensity of ESG adoption and the way investors and other stakeholders interpret sustainability-related information [7,13]. Although regulatory differences across countries are frequently cited as relevant factors influencing corporate ESG outcomes, they are rarely operationalized as moderating variables in the reviewed studies. Typically implemented by regulatory commissions, such as the Securities and Exchange Commission (SEC) in the United States and the China Securities Regulatory Commission (CSRC) in China, these guidelines directly affect how, what, and how much companies are required to disclose regarding ESG practices, serving as key instruments for making ESG more transparent, comparable, and reliable. Conversely, their absence or weakness can create openings for practices such as green-washing [31,60,67].

In this SLR, regional elements that influence ESG dynamics were also identified. Refs. [14,43] highlighted how macroeconomic shocks, as financial crises and armed conflicts, can shift socio-environmental responsibility priorities. In specific territorial contexts, such as China, Ref. [12] found that investments in green innovation and even ESG ratings themselves are shaped by capital attraction strategies. Refs. [23,67] emphasized the impacts of regulatory milestones on corporate transparency in China, while Ref. [31] identified progressive regulatory reforms in Malaysia. Refs. [58,68] observed that cultural differences across Asian countries affect the effectiveness of ESG reporting and investor receptivity, an effect also noted by [45] when comparing these findings with the United States. In turn,

Ref. [51] drew attention to European regulatory specificity and maturity. In this regard, studies referring to the increase in European standards have underscored how local regulatory demands modulate the relationship between ESG and financial performance [47,61,74]. However, studies focused on frontier markets and the Global South have stressed the need to adapt ESG metrics to peripheral institutional realities [35].

Despite such academic advances, territoriality remains underexplored [13,15]. Many studies cite macroeconomic events without modeling their general equilibrium effects on the financial markets in which they occurred (H#27) [12,43]. Cultural differences are often represented by simplified indicators, such as dummy variables in statistical or econometric models that merely denote the presence or absence of a given country in the analysis. This implies that instead of capturing the cultural nuances and depths that influence ESG practices and perception, which demands the inclusion of richer variables, such as the Hofstede indices (for culture) or World Bank indicators (for institutional quality), for example, analyses are limited to a generic nation-based categorization, which can result in the loss of critical information about local contexts (H#28) [44,68]. Another relevant point is that such analyses rarely compare North America and Europe with Latin America and Southeast Asia (H#29) [35,51]. In summary, although the importance of macroeconomic, cultural, and regulatory effects across territories is acknowledged, this hurdle still lacks studies that disaggregate these influences and reveal how firms' geographic location conditions ESG-related decisions and outcomes, particularly in terms of how territorial context shapes organizational initiatives (H#30) [46].

3.5. Sectorization

Despite a broad consensus that ESG materiality varies across economic sectors, many of the reviewed studies treat firms as a homogeneous group, thereby diluting significant differences in environmental exposure, investment profiles, and technological maturity [32]. Isolated contributions do confirm the relevance of sectoral distinctions, emphasizing that financial market sensitivity to ESG differs by sectors [8,34]. Similarly, environmental externalities vary according to firm type [8,13]; that is, some firms interact more intensively with environmental resources than others and therefore, in theory, exert greater impact. This also implies a broader scope for meaningful ESG initiatives. Ref. [40] found that environmental practices have a more pronounced effect on the cost of debt in the energy and mining sectors, while Ref. [64] highlighted the greater sensitivity of the energy sector to ESG issues due to the controversies surrounding oil and gas exploration companies.

Studies in emerging markets also underscore sectoral differences. In China, for example, Ref. [49] identified industry-level variation in green innovation, while Ref. [19] found distinctive reporting patterns among sectors more prone to high carbon emissions.

Nevertheless, among the reviewed works, few employed economic sectors as a statistical control variable. Those that did opened avenues for further inquiry, such as clarifying the extent to which ESG materiality decomposed by sector influences firm value, financial performance, and ESG performance itself (H#31) [30,48,58,66]; testing interaction effects of ESG across sectors (H#32) [20,28,32]; and examining whether technological maturity across sectors affects ESG performance (H#33) [13], whether capital availability in certain sectors influences their actual ESG impact (H#34), and whether so-called controversial sectors manage to attract ESG investors while maintaining a “green façade” (H#35) [5,69].

4. Recommendations to ESG Forward

The 35 hurdles previously identified in this work were analyzed as opportunities for ESG forwardness. This approach generated new perspectives on persistent challenges, enabling the development of a framework with recommendations addressed to companies,

stakeholders, ESG rating agencies, guideline developers, and the academic community (i.e., future research). In this section, the framework's recommendations are labeled as "R#" followed by their corresponding sequential number; the full table can be found in S3. In this analysis, each topic may be relevant to more than one player. Therefore, some actions require collaborative solution-building among them (see S4). Additionally, academia plays a transversal role that intersects with all other players, as illustrated in Figure 4.

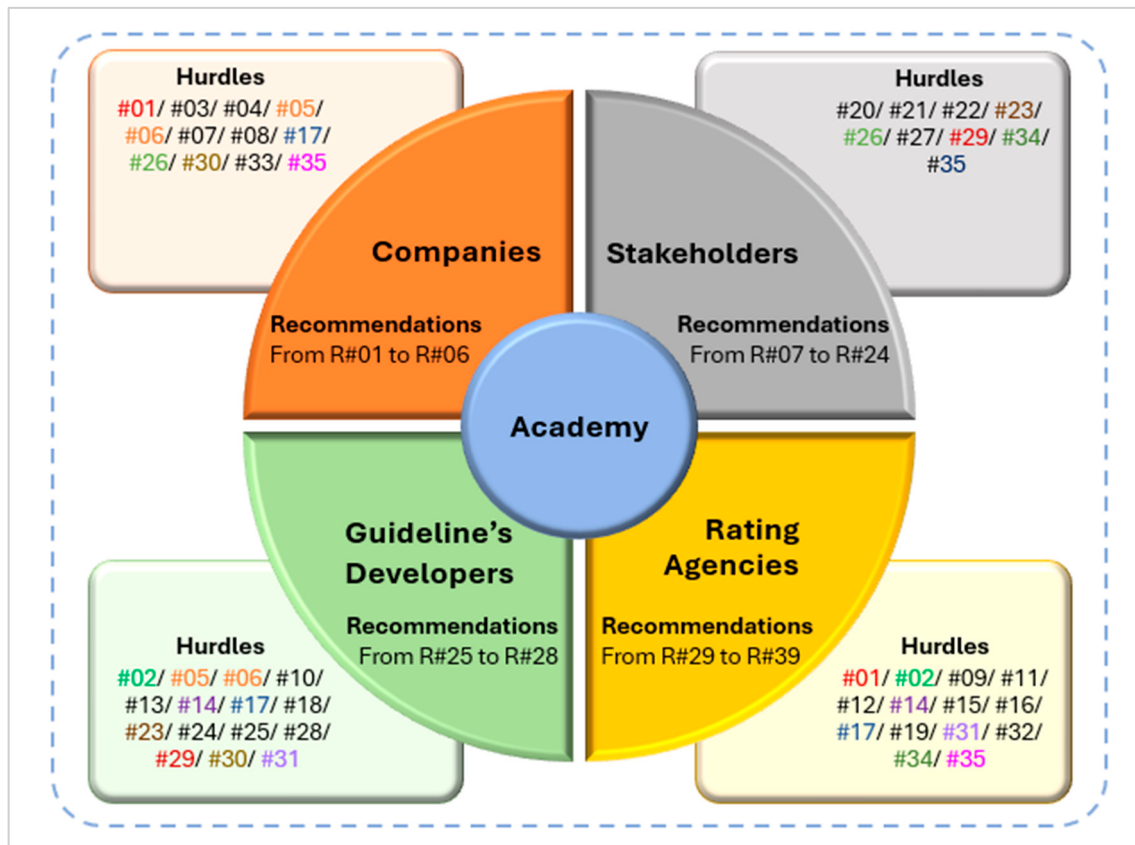


Figure 4. Framework with recommendations to overcome ESG hurdles.

As shown in Figure 4, the Hurdles highlighted in color are those addressed for more than one player. Accordingly, this framework was structured to align the specific responsibilities of each player and promote greater coherence between evaluation, disclosure, regulation, stakeholder engagement, and scientific research, to support more effective organizational practices in sustainability.

4.1. Companies

Although companies lie at the core of scientific research on ESG, since they are the primary agents responsible for generating or mitigating environmental, social, and governance impacts, their role in pursuing sustainability, while already well defined, is still marked by uncertainties [9,43,68]. On the one hand, it is well established that achieving sustainability requires companies to align their processes, policies, and practices with this goal [42]. On the other hand, uncertainty persists about how to move forward, driven by the multiplicity of guidelines to follow, evaluation metrics to meet, and the fragmented demands of numerous stakeholders [19,48,59].

One recommendation that may be transformative for companies is to deepen their corporate culture around ESG principles (R#01). This begins with mapping internal processes and clearly identifying, at all organizational levels, which processes relate to financial

performance (such as cost reduction or productivity gains) and which relate to sustainable performance, since, although closely interconnected, these goals are fundamentally distinct [14,60]. Companies need to establish well-defined policies to clarify how they manage their decision-making criteria based on the ESG pillars (R#02). When rigorously implemented, these two recommendations naturally foster greater employee engagement with the organization's sustainability commitments [40,75]. This, in turn, contributes to more effective operational management, stronger ESG initiatives, higher-quality ESG reporting, and a reduced risk of greenwashing [7,23].

It is also recommended that companies adopt disaggregated metrics for the E, S, and G pillars to more accurately reflect the specific characteristics of their initiatives (R#03), thus enabling a clearer understanding of positive and negative impacts. This initiative facilitates analysis of synergies and trade-offs among the pillars while also strengthening transparency for stakeholders. Additionally, companies must make progress in clarifying the indicators disclosed (R#04), moving beyond "window dressing" approaches and pointing out the materiality of each practice.

Governance strategies, in this context, should be designed to incorporate their moderating function in environmental and social decisions, allowing this pillar to act as a coordinating mechanism (R#05) that balances ESG initiatives and financial performance. It is also recommended that companies take an active stance in response to the diversity of regulatory and sectoral requirements, promoting adaptations that are consistent with their territorial and industrial context (R#06).

4.2. Stakeholders

Stakeholders bear the difficult task of demanding better results from companies, clearer and stricter policies and regulations from governments, and more accurate and transparent information from rating agencies (R#07). This responsibility should not fall solely on investors, but rather be shared by all those directly or indirectly affected by economic activity.

Institutional investors, given their greater capacity to mobilize capital, should exert qualified pressure on companies to promote more comprehensive reporting, including impact indicators and thematic disaggregation (R#08). It is recommended that they adopt their own ESG assessment criteria, complementing agency ratings with internal analyses based on long-term goals (R#09). They can also influence the evolution of ESG practices by demanding empirical evidence of the correlation between sustainable actions and economic value (R#10) through active engagement in shareholder meetings, critical review of disclosure guidelines, and portfolio selection based on their materiality criteria.

On the other hand, individual investors, who are often unfamiliar with the complexity of ESG metrics, should seek greater informational literacy, learning to distinguish between cosmetic and effective reporting (R#11). For this to occur, investment platforms and financial products must offer accessible and comparable information about the integrity of sustainability practices, avoiding misleading signals from generic ratings. Additionally, investor protection agencies should regulate the language used in ESG-labeled products. Equipped with this knowledge, individual investors can demand greater transparency from rating agencies and assess whether their evaluation criteria genuinely align with their interests (R#12). Since their voting power in corporate decisions reflects their actual motivations, this group of stakeholders can strengthen the link between market dynamics and sustainability, translating ESG into tangible financial decisions (R#13). They are also in a position to demand clearer corporate ESG disclosures (R#14), ensuring transparency regarding where their investments are truly generating sustainable development.

Governments and regulatory bodies, as key stakeholders, have a broader influence over the impact generated by corporate economic activity given their role in designing relevant policies to guide and supervise this activity. Policymakers at the national, regional, and municipal levels must work collaboratively to enact laws and regulations that encourage companies to pursue sustainability (R#15). They can also foster local development indicators tied to corporate initiatives (R#16). Governments and regulators should establish institutional frameworks that incentivize sound ESG practices while penalizing opportunistic misbehavior (R#17). In this regard, strengthening regulations on disclosure quality is recommended, with minimum requirements for materiality, impact, and third-party verification (R#18). Laws and regulations should also recognize the sectoral and territorial diversity of companies, tailoring regulatory requirements to companies' size, context, and operational structure (R#19). Moreover, it is the regulators' role to ensure that rating agencies operate with auditable criteria and are free from conflicts of interest (R#20), especially in contexts where their ratings influence credit decisions, investments, and access to capital.

Civil society also plays an important role in this ecosystem. Once corporate sustainability reports are published, they are accessible to all, enabling the public to support initiatives that contribute to sustainable development and question those that may harm the environment or social well-being in affected communities (R#21). The media play a key dual role: disseminating information to the public and amplifying its voice, helping to clarify company disclosures and their actual impacts, whether positive or negative (R#22). These stakeholders, including NGOs and consumers, should expand their roles as surveillance agents by exposing cases of greenwashing, pressuring companies for more effective practices, and promoting accessible ESG knowledge (R#23). They can also serve as external validators of disclosed data and as legitimate channels for representing diverse interests (R#24), which are often overlooked in conventional metrics. Encouraging public participation in advisory councils, governance forums, and sectoral committees can help increase the legitimacy of the ESG practices adopted.

4.3. ESG Rating Agencies

Although, from certain perspectives, ESG rating agencies may also be considered stakeholders for companies, their role is more closely tied to the functioning of financial markets than to the companies being assessed. For this reason, in this study, they are treated as a separate group. The weaknesses identified in the literature regarding these agencies point to empirical hurdles; that is, some issues remain underexplored, not because of a lack of interest, but because the corresponding practices are still underdeveloped or not sufficiently mature in real-world applications. Examples include the need for the development of objective metrics to (i) measure and evaluate "moral capital" and "organizational legitimacy" [64]; (ii) clear metrics for evaluating ESG in different sectors, considering their specificities related to the impacts caused [7,27,69]; and (iii) create more robust assessment systems for qualitative data, capable of over-ride binary proxies such as "does or does not," by assigning different scores based on the depth of corporate commitment to each disclosed practice [60,66]. Another recurring hurdle is the divergence between ESG rating agencies, which is consistently highlighted as a challenge for the companies evaluated [49,50,67]. These discrepancies generate additional work and costs for firms, as well as uncertain information for investors [30,76].

To mitigate these negative effects, agencies could establish a shared panel of definitions for the ESG pillars, balancing assessment criteria and reducing discrepancies in scoring between agencies (R#25). An additional measure would be greater transparency in disclosing their assessment methodologies (R#26), allowing companies to better understand how to develop their initiatives and enabling investors to more accurately interpret

and align their resources. This would also help combat the growing distrust around the integrity and authenticity of ESG ratings and reduce the risk of misinterpretation, particularly about weighting schemes and the conversion of data into final scores [50]. However, excessive standardization in the pursuit of methodological coherence across agencies must be critically reviewed whenever it compromises the contextual sensitivity of ratings.

Agencies should consider developing indicators capable of capturing specific dynamics among the ESG pillars and adopt classification approaches that incorporate auditable qualitative metrics, not relying solely on self-reported data (R#27). Furthermore, they should implement mechanisms to minimize the risk of greenwashing, such as cross-checks with external sources and independent verification protocols (R#28).

Advancing in this direction requires the development of more dynamic analytical models that incorporate instrumental variables and counterfactual testing, supported by tools capable of simulating scenarios and identifying causal relationships. These models should also account for the strategic trade-offs companies often make between financial objectives and ESG goals and promote sector-wide alignment on what should genuinely be considered material in sustainability assessments [47,69].

4.4. Guideline Developers

Given the multiplicity of approaches and the conceptual fragmentation observed in the academic literature on ESG, guideline developers (like GRI, SASB, and TCFD, among others) play a central role in building a shared vocabulary for companies, investors, regulators, and civil society [61]. As previously discussed, the lack of standardization, the excessive simplification of disclosure models, and the insufficiency of auditable criteria generate informational asymmetries, incentivize cosmetic practices, and hinder comparability across organizations and sectors [19]. In this context, guidelines cease to be merely technical instruments and instead function as institutional mechanisms that are essential to ensuring the credibility, transparency, and effectiveness of ESG [69].

To fulfill this strategic role, it is recommended that guideline developers prioritize reducing interpretative ambiguity in the proposed criteria (R#29), ensuring that their parameters are robust enough to capture sectoral and territorial specificities while also remaining sufficiently clear and objective to enable global adoption. To achieve this, guidelines must evolve beyond binary models, which focus on the mere presence or absence of initiatives, and move toward standards that promote the measurement of the actual impact of reported actions (R#30), taking into account their materiality, scope, and depth. This evolution also requires the incorporation of auditable qualitative variables capable of capturing the degree of organizational commitment (R#31), overcoming superficial, self-reported metrics. Additionally, proposed disclosure models should include mechanisms to ensure transparency regarding the influence of stakeholders in decision-making processes and the content reported (R#32), enabling the identification of conflicts of interest and greenwashing practices.

Guidelines should also explicitly state the risks associated with the lack of materiality in disclosed actions (R#33), providing companies with clear direction on how to avoid merely formal initiatives. Finally, it is proposed that guideline developers promote collaborative processes with other ESG ecosystem players, including rating agencies, regulatory bodies, and academic institutions, to foster conceptual convergence and ensure that standards evolve in a manner that is responsive to social demands and advances in scientific research (R#34).

4.5. Academia (Future Research)

Academia plays a transversal role in advancing the ESG agenda, particularly through identifying research gaps, developing new metrics, and proposing more refined analytical models. The literature reviewed indicates that ESG assessment should begin with assigning differentiated weights to the pillars, reflecting their sectoral, regulatory, and territorial specificities, before reconstructing an integrated perspective that captures complementary or compensatory effects. Therefore, future studies can foster models that incorporate interaction terms, sensitivity tests, and metrics capable of distinguishing between cosmetic ESG practices and those that are genuinely transformative (R#35). This represents the next methodological step toward shifting from a simplistically aggregated ESG approach to a truly balanced integration. Such models should analyze the isolated impacts of each ESG pillar while accounting for variables that produce conflicting results (R#36), as in the studies by [34,46] mentioned earlier. Academia is also expected to advance studies focused on the balance among ESG pillars, fostering the development of metrics that capture trade-offs between them (R#37) and encouraging more research on the Environmental and Social pillars. Future studies could identify characteristics that define “moral capital” and organizational legitimacy (R#38) so they can be operationalized by rating agencies in the development of evaluation metrics. Moreover, research can explore how companies may overcome intraorganizational complexity regarding the effectiveness of ESG practices (R#39) to improve their performance.

There is also a lack of models that investigate the distributive effects of ESG practices on non-financial stakeholders or that examine the level of effective stakeholder participation in the development of integrated and sustainability reports. Without such methodological and conceptual refinements, stakeholder theory, though widely celebrated in discourse, risks remaining underutilized in its practical and empirical application.

5. Conclusions

This work began with the recognition that, despite the growing relevance of ESG in the academic literature and organizational practices, significant hurdles persist that challenge its effectiveness as a transformative instrument toward CS. Theoretical and methodological dispersion, informational asymmetries, superficial analyses, and the absence of robust metrics for qualitative data disclosed by firms undermine the consolidation of a coherent and comparable global model. Based on the analysis of the 50 most-influential articles, the main hurdles to ESG forwardness were mapped, thematically organized according to underexplored topics, and a framework with recommendations was proposed for different players within the ESG ecosystem.

This work addressed its research question by identifying 35 hurdles that have hindered ESG progress and, based on this analysis, proposing solutions to overcome them. From a methodological perspective, this systematic review exposes the gaps in evaluation metrics, disclosure practices, and stakeholder engagement, translating these findings into 39 actionable recommendations for key ESG players (companies, rating agencies, guideline developers, regulators, academia, and other stakeholders). In doing so, this article moves beyond the identification of challenges and offers concrete pathways to align ESG more closely with sustainability outcomes. Also, this work contributes to the refinement of ESG and the qualification of its practices, achieving its objective. The interpretive qualitative approach adopted, centered on the critical categorization of the hurdles identified and the formulation of targeted recommendations, enabled shedding light on neglected areas, promoted an integrated reading of this research field, and offered paths for both theoretical advancement and applied development of the ESG agenda, helping to bridge the research gap identified.

This work's findings reveal that although ESG is widely recognized as a corporate tool to foster sustainability, it remains marked by asymmetries across its pillars; conceptual and practical hurdles that fail to account for the particularities of players, sectors, and territories; and, in many cases, cosmetic initiatives or greenwashing. These issues compromise coherence in evaluation processes and restrict ESG's transformative potential. The recommendations proposed in this work provide integrative, materiality-oriented guidelines seeking to align ESG instruments with the real demands of sustainability and the SDGs. In this way, this work advances the construction of an applicable framework to strengthen the legitimacy, effectiveness, and practical usefulness of ESG as a sustainable development instrument.

From a theoretical standpoint, this work identifies the main hurdles that have limited the coherence, comparability, and authenticity of ESG initiatives, thereby synthesizing neglected or underpinned themes in prior works. However, its theoretical contribution lies beyond synthesizing previously dispersed knowledge; this work offers new conceptual contributions and directions in which the ESG foundations must advance. By integrating different perspectives, it broadens the theoretical basis for future research, deepens the academic debate in a field that is still being consolidated, helps to fill its research gap, and advances the state of the art in ESG. Regarding limitations, this research worked with articles from 2020 to 2025; further research could help keep its findings up-to-date, as this is an evolving topic.

From a practical perspective, the contributions of this work can help the ESG key players to overcome the hurdles that jeopardize the ESG progress towards sustainability. By following the proposed framework, companies can improve the effectiveness of their sustainable initiatives; agencies can refine their evaluation frameworks, improving the quality and transparency of their evaluation metrics; stakeholders can increase their involvement with knowledge about their role and influence; and this can strengthen institutional mechanisms.

These contributions are directly aligned with the Sustainable Development Goals, particularly SDG 12 (Responsible Consumption and Production), by promoting more transparent and accountable corporate practices; SDG 9 (Industry, Innovation and Infrastructure), by encouraging innovation in ESG metrics and evaluation processes; and SDG 16 (Peace, Justice and Strong Institutions), by advancing more reliable and legitimate institutional mechanisms. Accordingly, this study positions itself at the scientific frontier of the debate on ESG as a supporting tool for the sustainable transformation of global economic activity.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su17188257/s1>. S1: Articles selected using PRISMA protocol. S2: Summary of the hurdles to forward ESG. S3: Summary of recommendations for the ESG agenda forward. S4: Hurdles addressed by recommendation.

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