

A Literature Review of Audit Issues and Improvement Paths in the Context of ESG Information Disclosure

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Abstract

In the context of the global push for sustainable development, Environmental, Social, and Governance information disclosure has emerged as a crucial link between enterprises and the capital market, witnessing rapid growth worldwide. The implementation of the EU's Corporate Sustainability Reporting Directive (CSRD) and the enhanced disclosure requirements under China's dual - carbon goal are clear indicators of this trend. ESG information differs significantly from traditional financial information. It is non-financial, multi-dimensional, and highly subjective. These characteristics pose new challenges to the traditional audit model centered around financial data, especially in terms of the scope of verification, evidence collection, and professional judgment. Although the importance of ESG audit and assurance is increasingly recognized, existing research on ESG assurance is fragmented. There are inconsistencies in research conclusions regarding standardization, professional practices, and economic consequences. A systematic review and integration of these studies is urgently needed to meet the practical demands of the growing ESG disclosure landscape. This review consolidates fragmented ESG audit research and proposes actionable improvement paths to advance ESG assurance practice.

Keywords

ESG information disclosure, ESG auditing, non-financial information assurance

1. Introduction

This paper adopts a literature review method to systematically sort out domestic and foreign studies on Environmental, Social, and Governance (ESG) information disclosure audits, summarizes and comments on them from the perspectives of research themes, research methods and research conclusions, and on this basis, summarizes the deficiencies of existing studies and proposes future research directions. The purpose of this review is to systematically sort out relevant literature, summarize the main academic viewpoints on the impact mechanism of ESG information disclosure on audit processes, methods and audit quality; induce discussions on the impact of industry characteristics and enterprise scale differences on ESG audits in different studies; and generalize the ESG audit improvement ideas proposed in existing studies to form an analytical framework centered on systems, technology and personnel capabilities. Specifically, the research objectives include three aspects: first, to systematically analyze the impact mechanism of ESG information disclosure on audit processes, methods and audit quality, clarifying how ESG information transparency affects audit planning, evidence collection and risk assessment; second, to accurately identify the

differentiated problems of ESG audits in enterprises of different industries and scales, such as the difficulty in unified measurement of ESG indicators in high-pollution industries and the lack of professional capabilities in small and medium-sized enterprises; third, to construct a system-technology-personnel trinity ESG audit improvement framework. Meanwhile, this review also sorts out the main problems existing in current ESG information disclosure audits, including inconsistent audit standards, backward audit technologies and insufficient professional talents, [1] and explores feasible paths for improvement. The research has important theoretical and practical significance. In terms of theoretical significance, it enriches the theoretical system of non-financial information auditing, improves the theoretical basis of ESG assurance, and fills the research gap in the connection between ESG audit standards and practice. In terms of practical significance, it provides scientific reference for regulators to formulate unified and operable ESG audit rules, offers targeted practical guidance for accounting firms to expand ESG audit businesses and improve audit quality, and also helps enterprises standardize ESG information disclosure and enhance their sustainable development capabilities. Overall, this review is expected to sort out the research context of ESG information disclosure audits and provide a foundation for the in-depth development of subsequent related research [2]. In terms of practical significance, it provides a reference for regulators to formulate ESG audit rules, and offers practical guidance for accounting firms to expand ESG businesses and improve audit quality.

2. Literature Review

2.1 Research on ESG Information Disclosure

As an important bridge for enterprises to communicate with stakeholders, research on ESG information disclosure has always centered on two core issues, namely disclosure motivation and economic consequences [3]. Enterprises engage in ESG information disclosure under the combined drive of external institutional constraints and internal strategic needs, with the purpose of conveying signals of sound corporate governance and long-term development value to the market. High-quality ESG information disclosure can effectively reduce the degree of information asymmetry in the capital market, enhance investor confidence in enterprises, further reduce corporate financing costs, and continuously improve enterprises' sustainable operational capabilities and overall risk resistance [4]. Disclosure quality serves as a key premise for ESG information to exert its inherent value, which is mainly reflected in the authenticity, completeness and comparability of the disclosed information. At present, there are obvious deficiencies in the quality of corporate ESG information disclosure, including overly formalistic qualitative descriptions, insufficient quantitative data support, information omissions, false disclosure behaviors and inconsistent disclosure standards among different entities, all of which significantly weaken the practical usefulness of ESG information [5]. The quality of ESG information disclosure is jointly determined by external and internal factors, and this interaction mechanism also provides clear directions for subsequent in-depth research on improving disclosure quality.

2.2 The Role of Auditing in Non-Financial Information Disclosure

Existing literature mainly focuses on the governance role of auditing in non-financial information disclosure, with an emphasis on the audit of social responsibility reports and the assurance of sustainability reports. The core content is to explore how third-party assurance improves the reliability and credibility of non-financial information, restrains corporate greenwashing and selective disclosure, and analyzes its economic consequences from the perspectives of information quality, corporate governance, and capital market reactions. At the same time, it compares assurance standards, implementation subjects, and institutional environments to improve the non-financial information assurance system. Abdifatah Ahmed Haji, Paul Coram and Indrit Troshani argue that social responsibility report assurance can constrain managerial opportunism, reduce greenwashing behavior, and improve disclosure quality [6]. Pengwen Zhang found that auditors' industry expertise can enhance the reliability of social responsibility information and reduce corporate financing costs. Velte points out that high-quality sustainability assurance can enhance the credibility of reports and the decision-making value of information [7]; Hirsch & Heichl further confirm that assurance helps improve the recognition of corporate sustainability information by investors and stakeholders [8]. Research methods are mainly divided into three categories: normative research focuses on constructing the theoretical framework and standard system of assurance; empirical research is the

mainstream, mostly using methods such as regression, DID (Difference-in-Differences), and PSM (Propensity Score Matching) to test the economic consequences of assurance; case and content analysis focus on specific industries to analyze problems in the implementation of assurance. In addition, some studies adopt an international comparison perspective to compare the differences in non-financial information disclosure and assurance systems among different countries. Current research has obvious limitations: non-financial assurance standards are not unified, leading to insufficient information comparability; the problem of formalization is prominent under voluntary assurance; non-financial indicators are difficult to quantify, the acquisition of audit evidence is challenging, and auditors lack comprehensive capabilities. Controversies mainly focus on issues such as whether assurance should be mandatory or voluntary, whether to adopt reasonable assurance or limited assurance, and the division of qualifications of assurance subjects. At the same time, existing studies mostly focus on short-term market effects, and the discussion on long-term governance effects and industry differences is still insufficient.

2.3 Research on ESG Assurance and Auditors' Competence

The core value of third-party ESG assurance lies in independence [9]. If enterprises evaluate their own environmental, social and other performance, it is easy for them to conceal problems or exaggerate achievements in an attempt to polish their image, and such information is hard to convince investors, regulatory authorities and the public. An independent third-party institution has no interest ties with the enterprise and can objectively and neutrally inspect the authenticity and completeness of the enterprise's ESG information in accordance with unified professional standards. This not only provides a credible reference for all parties but also urges enterprises to effectively manage their ESG work, which is a key guarantee for making ESG information more transparent and reliable. The comprehensive requirements of ESG assurance are also driving auditors to develop their capabilities from a single dimension to a comprehensive one. In the past, auditors mainly focused on the verification of financial data, but ESG involves multiple non-financial fields such as environmental protection, employee rights and interests, and corporate governance. This requires them to learn relevant knowledge of environmental and social management on the basis of their original financial expertise, be familiar with the inspection norms related to ESG, improve their ability to analyze and verify non-financial data, and at the same time learn to communicate efficiently with different departments of the enterprise. Ultimately, they need to grow into compound talents who are competent for both traditional financial auditing and ESG assurance work.

2.4 Theoretical Basis and Analytical Perspective

2.4.1 Information Asymmetry Theory

This theory forms the foundation for analyzing ESG auditing issues. A significant information gap exists between enterprises and external stakeholders in terms of ESG information, with enterprises holding an information advantage that may easily lead to false or selective disclosure. Third-party ESG audit assurance can effectively bridge this information gap and reduce the level of information asymmetry in the market through professional verification. On the one hand, in the environmental dimension, enterprises may overstate emission reduction efforts or underreport resource consumption to meet regulatory thresholds; on the other hand, in the social dimension, they might exaggerate stakeholder engagement initiatives while obscuring potential labor rights controversies. In the governance dimension, information asymmetry often manifests as opaque disclosure of internal control deficiencies or related-party transactions. Effectively, third-party ESG audit assurance serves as a critical mechanism to bridge this information gap. Through independent verification and professional evaluation, third-party audits can quantify the authenticity and comparability of ESG data, thereby systematically reducing information asymmetry in the market and enhancing the credibility of corporate ESG disclosures.

2.4.2 Principal-Agent Theory

Based on the principal-agent relationship arising from the separation of enterprise ownership and management rights, managers may neglect the long-term ESG development of enterprises for short-term interests and even whitewash ESG information. Notably, the sensitivity of such agency issues varies across different types of enterprises: large enterprises tend to face higher agency costs due to complex governance hierarchies, while small and medium-sized enterprises (SMEs) are more prone to ESG information gaps due

to weak internal controls. As an external supervision mechanism, ESG auditing can effectively restrain managers' opportunistic behaviors and alleviate interest conflicts between the two parties in the ESG field, with differentiated effects tailored to the governance characteristics of large enterprises and SMEs respectively.

2.4.3 Signaling Theory

Against the backdrop of information asymmetry in the market, enterprises' active acceptance of third-party ESG assurance serves as a positive signal to the capital market. It can enhance the credibility of ESG information, boost the confidence of investors and other stakeholders, and help enterprises build a good market image.

2.4.4 Enlightenments of the Theoretical Framework for This Study

These three classic theories constitute the core theoretical support for this study. They clarify the practical necessity and core value of third-party ESG audit assurance, and provide a clear analytical perspective and research direction for this paper to analyze the existing problems of ESG information disclosure auditing, explore their causes and put forward improvement paths.

2.5 Main Problems Faced by ESG Information Disclosure Audits

This strand of literature primarily identifies the practical challenges encountered in ESG information disclosure audits. Scholars generally agree that such audits are currently plagued by common issues including the lack of specific auditing standards and norms [10], great difficulties in obtaining and evaluating audit evidence, hurdles in verifying the authenticity of ESG information, and insufficient professional competence of auditors. Most studies adopt normative research methods, with some combining case analysis to explore these problems. However, existing research lacks in-depth exploration of the internal connections between various issues and has not yet formed a unified analytical framework for studying the heterogeneous manifestations of these problems across different industries.

2.6 Analysis of the Causes of ESG Information Disclosure Audit Issues

The emergence of various issues in ESG information disclosure audits results from the interplay of multiple factors, mainly influenced by the inherent characteristics of ESG information, external institutional supervision, and the internal development status of the audit industry. ESG information is non-financial and subjective, which easily interferes with professional audit judgments; meanwhile, its scattered data sources and non-unified measurement methods leave the audit work without a standardized verification basis. In alignment with the Global Reporting Standards, [11] the current regulatory system for ESG information disclosure is still immature, and the supporting audit standards and relevant guidelines are lagging behind, failing to provide a sound institutional underpinning for audit practice. There are also obvious shortcomings within the audit industry: accounting firms generally lack practical experience in ESG-related businesses, and the application of applicable audit technical tools and methods is limited. This makes it hard to meet the professional requirements of ESG audits, becoming a key internal factor restricting the effective advancement of ESG information disclosure audit work.

3. Discussion

3.1 Common Audit Issues

Acknowledged by Academia, Academia has reached a broad consensus on the core dilemmas confronting ESG information disclosure audits. First, the absence of unified and detailed audit standards remains the most prominent constraint. Unlike mature financial audit criteria, ESG audit norms lack global consistency and operable implementation guidelines, resulting in significant disparities in audit scope, procedures, and assurance levels across different institutions and regions, which severely impairs the comparability of audit outcomes. Second, the acquisition and verification of audit evidence are exceptionally challenging. ESG information is non-financial, multi-dimensional, and highly subjective, with scattered data sources, ambiguous quantification criteria, and difficulties in tracing and verifying information authenticity, thereby increasing audit risks and uncertainty. Third, auditors' professional competence is insufficient. Traditional

auditors predominantly possess financial expertise, yet ESG audits demand interdisciplinary knowledge in environmental science, social governance, and law. The shortage of compound talents directly restricts the depth and quality of ESG audit practices. Additionally, issues such as the formalization of voluntary assurance, prevalent corporate greenwashing, and inadequate regulatory oversight further exacerbate the practical difficulties of ESG audits.

3.2 Policy Implications and Future Research Directions of Existing Studies

Existing research provides clear implications for practice and directions for theoretical exploration. In terms of policy implications, first, accelerate the construction of a third-party assurance mechanism for ESG information. Clarify the legal status and professional responsibilities of assurance subjects, strengthen the independence of third-party audits, and restrain greenwashing and selective disclosure through mandatory assurance policies for key industries. Second, improve the supporting systems for ESG information disclosure and auditing. Promote the unification of global or regional ESG audit standards, formulate operable technical guidelines and indicator systems, and enhance the standardization and comparability of audit practices. Third, promote the transformation of the auditors' competency structure. Establish interdisciplinary training systems covering finance, environment, and governance, encourage the integration of industry expertise, and cultivate compound talents adapted to ESG audit needs. In terms of future research, scholars should focus on the heterogeneity of ESG audits in different industries and enterprise scales, explore targeted audit models and improvement paths; strengthen the research on long-term governance effects of ESG audits rather than being limited to short-term market reactions; and combine digital technologies such as big data and artificial intelligence to explore technological empowerment paths for ESG audits to enrich the theoretical system and practical solutions of ESG audits.

4. Conclusion

This paper systematically reviews domestic and foreign literature on ESG information disclosure audits, combs the research context from the dimensions of ESG information disclosure, the governance role of non-financial information audits, ESG assurance and auditor competence, and summarizes the core issues, causes, and improvement paths of current ESG audits. The study finds that ESG information disclosure audits are currently plagued by problems such as imperfect standards, difficult evidence collection, and insufficient professional talent, which are jointly caused by the inherent attributes of ESG information, external institutional supervision, and the internal development of the audit industry. Theories such as information asymmetry, principal-agent, and signaling provide important theoretical support for explaining the value and necessity of ESG third-party assurance. This review also has certain limitations. It mainly focuses on the collation and induction of existing research, lacking empirical test and case verification of the improvement path; the research on the heterogeneous performance of ESG audit issues in different scenarios is not in-depth enough, and the analytical framework needs to be further tested and improved in combination with practice. In the future, with the continuous improvement of global sustainable development requirements and the deepening of ESG information disclosure, ESG audit research will develop in the direction of standardization, digitalization, and interdisciplinary integration. Subsequent research can focus on the design and effect testing of unified ESG audit standards, the application of digital technology in audit evidence collection and risk control, the competency model of ESG auditors, and the heterogeneous effects of ESG audits in emerging markets, so as to provide a more solid theoretical support and practical reference for the high-quality development of ESG information disclosure and audit practices.

References

- [1] Zhao, Y., Liu, Z., Fu, X., Liu, Y., & Yang, X. (2026). ESG divergence and the inflow of high-skilled talent in client firms: Evidence from Chinese listed companies (Preprint). Research Square. <https://doi.org/10.21203/rs.3.rs-8275340/v1>
- [2] Zahid, R. M. A., Khan, M. K., Anwar, W., & Maqsood, U. S. (2022). The role of audit quality in the ESG–corporate financial performance nexus: Empirical evidence from Western European companies. *Borsa Istanbul Review*. <https://doi.org/10.1016/j.bir.2022.04.004>

- [3] Khamisu, M. S., Paluri, R. A., & Sonwaney, V. (2024). Environmental, social and governance (ESG) disclosure motives for environmentally sensitive industry: An emerging economy perspective.
- [4] Diab, A., & Eissa, A. M. (2024). ESG performance, auditor choice, and audit opinion: Evidence from an emerging market. *Sustainability*. <https://doi.org/10.3390/su16010124>
- [5] Mohammed, A., & Shawky, M. (2023). Mitigating greenwashing: The role of audit committees and internal audits in ESG reporting assurance (Doctoral dissertation). Durham University. <https://etheses.dur.ac.uk/15045/>
- [6] Haji, A. A., Coram, P., & Troshani, I. (2023). Consequences of CSR reporting regulations worldwide: A review and research agenda.
- [7] Velte, P. (2025). Audit quality and materiality disclosure quality in integrated reporting: The moderating effect of carbon assurance quality. *Corporate Social Responsibility and Environmental Management*. <https://doi.org/10.1002/csr.3153>
- [8] Hirsch, S., & Heichl, V. (2023). Informative value of non-financial reports: Analyzing the impact of disclosure format and auditing.
- [9] Arif, M., Sajjad, A., Farooq, S., Abrar, M., & Joyo, A. S. (2021). The impact of audit committee attributes on the quality and quantity of environmental, social, and governance (ESG) disclosures. *Corporate Governance: The International Journal of Business in Society*. <https://doi.org/10.1108/CG-06-2020-0243>
- [10] El Mahdy, D., Lee, E. (Ivy), Synn, C., & Zhang, Y. (2023). ESG disclosure and the timeliness of earnings announcements and audit reports.
- [11] Ilori, O., Lawal, C. I., Friday, S. C., Isibor, N. J., & ChukwumaEke, E. C. (2023). A framework for environmental, social, and governance (ESG) auditing: Bridging gaps in global reporting standards. *International Journal of Social Science and Economic Research*. <https://doi.org/10.54660/IJSSER.2023.2.1.231-248>

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