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The Impact of ESG Reporting on Corporate Reputation and Crisis Communication Strategies in the Age of AI

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In today's climate of heightened corporate accountability and demand for sustainable business practices, ESG reporting has become a critical determinant of corporate reputation. As transparency expectations rise, regulatory frameworks such as the European Sustainability Reporting Standards (ESRS) require businesses to monitor and report ESG metrics accurately. To meet these demands, AI plays a transformative role, enabling real-time data collection and analysis that allows companies to monitor their environmental impacts, social initiatives, and governance practices with precision. This paper examines how AI-driven ESG reporting influences corporate reputation and crisis communication practices. By automating data collection, ensuring compliance, and providing real-time insights, AI empowers companies to proactively address sustainability challenges while strengthening stakeholder trust. Using a systematic literature review, this study synthesizes existing research on corporate reputation and crisis communication within the context of ESG reporting. Overall, the findings suggest that using AI-driven ESG reporting in corporate communication offers significant benefits for reputation and stakeholder engagement, however, crisis management practices are not yet well-defined in this area. By positioning AI as a strategic enabler in the ESG domain, this paper contributes to the evolving discourse on sustainable corporate governance and responsible investment, offering practical insights for executives, sustainability officers, and corporate communicators.

Keywords:
ESG reporting,
corporate reputation,
crisis communication,
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artificial intelligence

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1 Introduction

In today's corporate landscape, building a strong reputation is inseparable from maintaining sustainable business practices and corporate accountability. As companies strive to meet these expectations, Environmental, Social, and Governance (ESG) reporting has gained momentum as a critical tool for demonstrating sustainability commitments while mitigating the risk of greenwashing accusations. The term "ESG" was first introduced in 2004 in the UN Global Compact report *Who Cares Wins*, developed in collaboration with major financial institutions to assess its integration into financial analysis (Monteiro et al., 2021). Over the past two decades, ESG reporting has transitioned from a voluntary practice to a regulatory requirement, though the timeline for this shift varies across regions. In the EU, mandatory ESG reporting applies to large companies starting in 2024, with small and medium-sized enterprises (SMEs) required to comply from 2026 (Gürlevük, 2024). These requirements, outlined under frameworks such as the European Sustainability Reporting Standards (ESRS), emphasize accuracy, transparency, and accountability in corporate sustainability disclosures. Beyond regulatory compliance, ESG reporting significantly influences corporate reputation. Investors, consumers, and other stakeholders increasingly rely on ESG metrics to assess corporate integrity and sustainability performance. Companies that demonstrate strong ESG commitments benefit from enhanced trust and credibility, whereas failure to comply or inadequate disclosures can result in reputational risks. Artificial Intelligence (AI) is revolutionising management practices and has a substantial impact on output and efficiency across a range of industries. AI technologies, such as machine learning and predictive analytics, are automating data processing, decision-making, and repetitive tasks (Garg et al., 2024; Pap et al., 2024). As AI becomes increasingly integrated into ESG reporting, it offers new opportunities to enhance the precision and reliability of sustainability data. AI-driven ESG reporting has the potential to automate data collection, ensure compliance, and provide real-time insights, enabling companies to proactively manage reputational risks and stakeholder engagement.

This paper examines the intersection of AI-driven ESG reporting, corporate reputation, and crisis communication. By conducting a systematic literature review, the study synthesizes existing research to explore how AI enhances ESG reporting, its impact on corporate reputation, and the challenges for crisis management. The findings contribute to the evolving discourse on sustainable corporate governance, shedding light on the challenges of AI-driven ESG reputation and crisis management.

2 Theoretical Background

Corporate reputation is a critical intangible asset that influences stakeholder trust, customer loyalty, and investor confidence (Jucá et al., 2024). With the rise of sustainability concerns, Environmental, Social, and Governance (ESG) reporting has become a key mechanism for companies to demonstrate corporate responsibility and enhance their reputations. Prior studies suggest that companies with strong ESG performance tend to enjoy higher market valuation, improved stakeholder relations, and enhanced brand loyalty (Fatemi et al., 2018). AI-driven ESG reporting is a great way to enhance corporate transparency and credibility. By automating ESG data collection and analysis, AI can reduce human bias and improve the accuracy of sustainability disclosures (Wamba et al., 2021). However, concerns remain regarding the authenticity of ESG reporting, as firms may engage in selective disclosure or "greenwashing" to manipulate public perception (Krueger et al., 2021). This raises the question of how AI can be leveraged to ensure ESG reporting integrity and reinforce corporate reputation. Crisis communication is an essential component of corporate strategy, particularly in an era where social media and digital platforms can amplify reputational risks. Effective crisis management requires transparency, accountability, and swift response mechanisms, all of which ESG reporting can support (Almaqtari et al., 2021). However, our literature review reveals a significant research gap in how AI-driven ESG reporting intersects with crisis management.

3 Methodology

To shed light on this research topic, a systematic literature review was conducted to synthesize existing research on corporate reputation and crisis communication within the context of ESG reporting. This scientific method involved setting time-based limitations, focusing on the period between 2004 and 2025. In the research, we have utilized the Scopus scientific database, searching related keywords in different combinations. All versions of the search included the expression 'ESG' and then a related word in the context of crisis management, corporate reputation, AI, and communication. The database search combinations included ESG report as the first keyword, followed by the terms: crisis, crisis management, reputation, corporate reputation, corporate image, AI, branding, and external communication.

Initially to find all related publications we have run an extensive search on Scopus with the following formula: ("ESG reporting" OR "ESG" OR "corporate sustainability") AND ("reputation" OR "crisis management") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "Environmental, Social, And Governance")). Upon running this search, we have found 764 publications altogether. In the search, we focused only on publications between 2004 and 2025 and those that have been published in English. Then we have narrowed down our search to specific key areas and ran the research with different combinations. First, we have added artificial intelligence and machine learning to the combination, and with that addition we generated results of 122 articles.

4 Results and Discussion

4.1 ESG Reporting and Corporate Reputation

The first area we have focused on was the connection between ESG reporting and corporate reputation. As the main focus of this paper is to examine how the implementation of ESG reporting can be leveraged in building a positive corporate reputation, this area deserves outstanding attention in the research process. To cover this topic four combinations were searched, including ESG and corporate reputation, branding, corporate image, and external communication. The below table presents the total number of publications found through these searches.

Table 1: Keyword search in Scopus database

ESG and Corporate Reputation	("Artificial Intelligence" OR "Machine Learning") AND ("ESG reporting" OR "ESG" OR "corporate sustainability") AND ("corporate reputation") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "corporate reputation")	41

ESG and branding	("Artificial Intelligence" OR "Machine Learning") AND ("ESG reporting" OR "ESG" OR "corporate sustainability") AND ("branding") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "branding"))	9
ESG and corporate image	("Artificial Intelligence" OR "Machine Learning") AND ("ESG reporting" OR "ESG" OR "corporate sustainability") AND ("corporate image" OR "image") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "image" OR "corporate image"))	66
ESG and external communication	("Artificial Intelligence" OR "Machine Learning") AND ("ESG reporting" OR "ESG" OR "corporate sustainability") AND ("external communication") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "external communication"))	0

Many times, corporate reputation was found mentioned in the context of investments or building an ESG investment portfolio. Corporate reputation and investors are tightly connected, as a strong corporate reputation can attract investors by signaling trustworthiness, stability, and long-term value, ultimately influencing investment decisions and stock performance. By including ESG data, investors can better understand why certain investments perform the way they do, improving their ability to predict returns (Pulian et al., 2025). Pikatza-Gorrotxategi et al. (2024) highlight that media coverage of companies shapes consumer perceptions, which in turn affect corporate reputation and financial performance. One way to enhance a company's reputation is through strong adherence to Environmental, Social, and Governance (ESG) investment criteria. As a company improves its ESG and sustainability reputation, it also strengthens its image as a reliable investment. Fatemi et al. (2018) support this by stating that company value increases when ESG performance is strong but declines when ESG-related concerns arise. Lee et al. (2016) further explore the positive relationship between a company's environmental responsibility and its financial performance, finding that greater commitment to environmental practices is positively correlated not only with financial success but also with improved operational efficiency and overall business performance. Daoud and Michalec (2022) further emphasize that consumers are more likely to purchase products and services from companies that demonstrate ethical behavior and trustworthiness in the marketplace. As a result, businesses that earn consumer trust often become more attractive investment opportunities. Building trust among consumers and employees is a long-term process that requires years of commitment but ultimately yields significant benefits. However, trust issues are not limited to external markets; they also exist within organizations. When trust levels within a company are low, operational efficiency declines, slowing down processes. In contrast, a high level of trust accelerates workflows and enhances overall organizational performance. When it comes to branding, the research showed that literature on this topic is mainly concerned with greenwashing and green marketing. Paolo et al. (2025) investigate whether green investments and practices represent an authentic transformation in corporate strategy or a mere rebranding attempt. When searching "corporate image" we have encountered more articles on investment-related topics as well as with green marketing. More articles popped up looking into generative-AI assisted practices to evaluate ESG reports, but corporate image as part of branding was not highlighted.

4.2 ESG Reporting and Crisis Management

The second research area explored in this paper examines how the mandatory adoption of ESG reporting has compelled corporations to strengthen their crisis management practices. Crisis management is a broad and complex field, and within the realm of communication, it remains particularly sensitive. To get a comprehensive overview of how crisis management is affected by the mandatory ESG reporting, we have conducted searches with different keywords: crisis, crisis management, negative reputation, reactive communication. However, our search didn't get any results. The literature regarding crisis communication in relation with ESG reporting is none to very limited to this day. Neither was any literature when searched for negative reputation, and only two articles were found searching for reactive communication, and neither was covering our topic.

4.3 AI-Driven ESG Reporting

The following formula was implemented to research how artificial intelligence and machine learning facilitate ESG reporting: ("Artificial Intelligence" OR "AI" OR "Machine Learning") AND ("ESG report") AND PUBYEAR > 2003 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE , "English")) AND (

LIMIT-TO (EXACTKEYWORD , "ESG") OR LIMIT-TO (EXACTKEYWORD , "AI")). Altogether, 27 articles were found under this search. The majority of the results cover topics of enhanced efficiency and trust. Ensuring the reliability and transparency of ESG reporting remains a critical challenge, particularly as research on ESG assurance is still in its early stages (Nichole et al., 2024). Unlike traditional financial auditing, ESG assurance involves a diverse range of subjects and data types, making the verification process significantly more complex. To address these challenges, Nichole et al. (2024) propose leveraging artificial intelligence (AI) technologies and external data sources to enhance the accuracy and efficiency of ESG assurance. AI-driven systems can analyze large volumes of complex data, improving the verification process and strengthening the credibility of ESG disclosures. However, AI alone cannot guarantee ESG report integrity; third-party assurance organizations play a crucial role in ensuring compliance with recognized ESG standards (Liyan et al., 2024). The verification process, however, faces persistent challenges related to authenticity, credibility, and fairness (Garg et al., 2024). The selection of verifiers is particularly important as their expertise and impartiality directly impact the trustworthiness of the assurance process. To enhance ESG data verification, Liyan et al. (2024) introduce "Veri-Green," a blockchain-based incentive mechanism designed to improve the verifier selection process. Given the risks associated with verification systems—including reputational damage from approving inaccurate data and security concerns regarding sensitive corporate information—careful structuring and rigorous oversight are essential. Beyond assurance mechanisms, corporate sustainability reporting itself must be standardized and strategically aligned to ensure it serves as a genuine reflection of a company's sustainability trajectory (Gallego-Nicholls et al., 2025). Variability in report quality and emerging challenges highlight the need for continuous scrutiny, standardization, and commitment to best practices. As a vital communication tool, ESG reporting provides stakeholders with insights into an organization's sustainable practices, reinforcing corporate accountability and transparency.

5 Conclusion

Our systematic literature research in Scopus identified 116 relevant publications examining the connection between ESG reporting and corporate reputation, branding, corporate image, and external communication. Our major finding is that corporate reputation is frequently discussed in the context of investment decision-making, with strong ESG performance often seen as a signal of stability, trustworthiness, and long-term value (Pulian et al., 2025). Scholars like Pikatza-Gorrotxategi et al. (2024) emphasize the role of media in shaping corporate reputation, while Fatemi et al. (2018) argue that positive ESG performance enhances company value, whereas ESG-related controversies can lead to reputational decline. Despite these insights, the literature review revealed a significant gap regarding the role of ESG reporting in corporate brand-building. Most of the existing research on branding and corporate image in ESG focuses on macroeconomic stability, green marketing and the risks of greenwashing (Kuzior et al., 2024; Szeberényi et al., 2024). This highlights the need for further research, also focusing on how AI can enhance brand positioning and reputation management while looking at its effect on brand trust through ESG reporting. Our review of ESG reporting in the context of crisis management yielded striking results. Despite the growing regulatory requirements for ESG disclosure, there is little to no existing literature addressing its impact on corporate crisis communication. This lack of literature suggests that while ESG reporting is widely acknowledged as a mechanism for transparency and stakeholder engagement, its potential role in crisis mitigation remains underexplored. Honest and proactive ESG communication could be a key tool in enhancing corporate trust and integrity, yet its strategic implementation in crisis scenarios remains an open question for future research.

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Limitations of the research should be acknowledged. This review was limited to publications indexed in Scopus and written in English, which may have excluded relevant studies published in other databases or languages. These limitations suggest that future research could benefit from a broader and more diverse data set to gain a more comprehensive understanding of the evolving relationship between AI-driven ESG reporting and corporate reputation.

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