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# The role of AI in advancing sustainable finance and environmental management impact: an analysis of leading construction firms on the London stock exchange

**Hosseinnezhad Nedaei, Bahareh, Albert Amanollahnejad, and Javad Izadi**

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**Purpose**

The construction industry faces increasing pressure to align business practices with sustainable finance objectives and environmental responsibility. This study aims to investigate how major construction firms listed on the London Stock Exchange (LSE) disclose and position artificial intelligence (AI) technologies in relation to sustainable finance initiatives and environmental management practices.

**Design/methodology/approach**

Guided by the Resource-Based View (RBV) and Stakeholder Theory, the study employs qualitative content analysis of sustainability reports, ESG disclosures, and annual reports published between 2021 and 2024 by 23i LSE-listed construction firms. An iterative coding process was used to identify key themes and cross-case patterns relating to reported AI-enabled sustainability practices.

**Findings**

Four major themes emerged from the analysis: AI-driven environmental innovation; AI integration into sustainable finance mechanisms; strategic positioning and stakeholder communication of AI-enabled sustainability; and AI-supported environmental risk monitoring and compliance. The findings suggest that firms increasingly position AI as supporting environmental performance, sustainability reporting, stakeholder engagement, and sustainability-oriented governance. Cross-case analysis further revealed differences in the reported scope, maturity, and strategic framing of AI-enabled sustainability initiatives across firm categories, ranging from integrated systems to targeted applications, pilot initiatives, and future-oriented commitments. These differences are interpreted as indicative disclosure patterns rather than evidence of firm-size effects or independently verified differences in technological capability.

**Research limitations/implications**

This study advances scholarly understanding by demonstrating that AI reshapes traditional models of sustainable corporate strategy, underscoring the critical role of digital innovation at the intersection of environmental governance, financial accountability, and stakeholder engagement.

**Originality/value**

This study provides a novel perspective on the role attributed to AI within sustainability-oriented organisational contexts by examining how firms report and position AI in relation to environmental management, sustainable finance activities, and stakeholder communication. Rather than focusing solely on operational efficiency, the study highlights the strategic and communicative dimensions of AI within corporate sustainability narratives. The research provides empirical evidence relevant to RBV and Stakeholder Theory within the digitalisation context of the construction sector, while highlighting the importance of disclosure credibility, sustainability assurance, organisational legitimacy, and the potential for technology-enabled impression management.

**Keywords:**Artificial intelligence, Sustainable finance, Environmental management, Construction industry, Stakeholder theory, Resource-based view