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Generative AI and the Quest for Sustainability: Affordances and Trade-Offs Across the Triple Bottom Line

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Affordances and Trade-Offs Across the Triple Bottom Line

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Generative Artificial Intelligence (GenAI) is increasingly deployed to create new content rapidly, with emerging affordances that may support Sustainable Development Goals (SDGs) (Seidel et al., 2013). The overarching aim of SDGs is to harmonize people, planet, and profit through more informed and adaptive organizational practices. While GenAI is often framed as a tool for efficiency, for enhancing cost savings and productivity (Ooi et al., 2025), this view neglects its potential to enable systemic transformations at the nexus of sustainability and advanced technologies (Kotlarsky et al., 2023). Currently, little is known about how organizations can leverage GenAI in ways that simultaneously address the economic, social, and environmental pillars of the Triple Bottom Line. Moreover, research has largely emphasized GenAI's automation potential, with limited attention to its affordances for human–GenAI collaboration (Volkoff & Strong, 2013), such as judgment enhancement, supervisory functions, and adaptive decision-making. Our study addresses this gap by asking: how are international organizations leveraging GenAI to achieve sustainability goals? We conducted an exploratory case study involving 21 semi-structured interviews with professionals applying GenAI for sustainability across industries and countries, complemented by archival data, and analyzed using the Gioia methodology. Our findings show that GenAI is predominantly applied to advance economic and social sustainability through automation and enhanced human-GenAI collaboration. However, environmental considerations remain secondary, despite being a primary organizational motivation for pursuing sustainability initiatives. This study contributes to the literature on sustainability and human–GenAI collaboration by highlighting both opportunities and trade-offs in using GenAI for sustainability. We emphasize the need for more integrated and context-sensitive research to better understand how GenAI can address all three pillars of the Triple Bottom Line.

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