

Generative Artificial Intelligence and Management 5.0: Advancing Sustainable Organizations through Human – Centric Digital Transformation

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Abstract

Generative Artificial Intelligence (GenAI) is revolutionizing the way organizations can create value by integrating intelligent automation into human creativity, collaboration, and strategic decision making. With Management 5.0 coming into play, organizations are now transitioning away from technology-focused management approach towards human-centric, sustainable, and innovative management practices. The current conceptual paper analyses the role of Generative AI in facilitating the creation of sustainable organizations through human-centric digital transformation. By using contemporary theories, literatures, and management perspectives, the current research studies the role of generative AI in managing and fostering knowledge management, decision support, empowering employees, engaging customers, innovation and organizational agility while pursuing the environmental, social and governance goals (ESG). The study also identifies and highlights some of the key challenges of implementing GenAI in terms of ethical considerations, algorithmic bias, privacy issues, reskilling of the work force and governance. Based on the above analysis, a conceptual framework has been developed to illustrate the relationship between Generative AI capabilities, human-centric management practices and sustainable organizations.

Keywords: *Generative Artificial Intelligence; Management 5.0; Human-Centric Digital Transformation; Sustainable Organizations; Organizational Innovation; ESG; Responsible AI*

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1. Introduction

The fast evolution of Generative Artificial Intelligence (GenAI) technology has revolutionized the digital sphere in that it has allowed businesses to generate, analyze, and use knowledge at a pace and scale never experienced before. Contrary to the automation of specific tasks that was characteristic of AI technologies in the past, GenAI is capable of producing its own text, images, code, and insights, thus complementing the human creative process and decisions made by managers. Businesses around the world are starting to integrate GenAI in various spheres such as marketing, human resource management, finance, operations, and customer relationship management in order to increase productivity and organizational learning. GenAI enhances the ability of an organization to sense new opportunities, capture digital innovations, and reconfigure resources amid changes in the business environment (Brynjolfsson et al., 2025). Management 5.0 can be viewed as a paradigm shift from technology-based management systems to intelligent, sustainable, and human-centric management systems. Management 5.0 is an application of the tenets of Industry 5.0. The organization effectiveness is achieved through the harmonious blending of technology systems and social structures, employees' skills and abilities, and cooperation in work processes (Bhanot & Gaikwad, 2025). Organizations are required to incorporate environmental, social and governance practices along with being innovative and competitive. Generative AI helps the organization in achieving these goals by enabling intelligent

resource management, personalized employee learning, sustainable product design, predictive analysis and stakeholder engagement. Nevertheless, the use of generative AI needs effective governance for handling the issues related to algorithmic bias, data security, intellectual property rights, etc. Human Centered AI principles suggest that AI should be transparent, accountable, fair and aligned with human values (United Nations, 2024). Even though the field of research has broadened with respect to Artificial Intelligence (AI), digital transformation, and sustainable management, not much attention has been paid to the interaction of Generative AI, Management 5.0, and human-centered digital transformation. Most of the research on AI focuses on technological, operational or automation perspective of AI and fewer number of studies have attempted to examine whether and how GenAI is capable of improving the innovation capacity, well-being of employees, strategic agility, and sustainability of organizations at the same time (Gaikwad, 2024). This study attempts to bridge the identified gap in literature by presenting an integrated conceptual framework that illustrates how Generative AI, human-centric management and dynamic capability of organizations together lead to sustainable organizational transformation.

2. Background of Study

The world of business operations has seen an unprecedented revolution in terms of digital transformation, facilitated through innovations in fields such as artificial intelligence, cloud computing, big data analytics, and intelligent automation. In these areas of technology, one major breakthrough is the creation of Generative Artificial Intelligence (GenAI), which has the ability to create human-like content such as text, images, coding, designs, and insights. While previously used forms of AI have been mainly limited to prediction and automation of tasks, GenAI has opened up possibilities of enhancing creativity, innovation, and strategic decision-making among other areas of operation (McKinsey & Company, 2025). The process of management evolution has led to the creation of Management 5.0 that integrates both modern technologies and values of people, ethical leadership, organizational resilience, and sustainable development. Unlike digitalization, Management 5.0 incorporates collaboration intelligence that utilizes artificial intelligence as an enhancement of human skills. Management 5.0 focuses on the creation of inclusive work environments that enable empowerment of employees, organizational learning, and creation of stakeholder value through the use of modern technologies. Hence, the combination of GenAI with Management 5.0 is a major breakthrough towards human-oriented digitalization of organizations (European Commission, 2024). The organizations must simultaneously address critical challenges such as algorithmic bias, misinformation, cybersecurity risks, intellectual property protection, workforce reskilling, and AI governance to ensure that technological progress contributes positively to sustainable organizational development (OECD, 2024). While there is considerable progress in the use of Generative AI in different industries, there is still a lack of academic knowledge about the strategic positioning of Generative AI within the Management 5.0 framework. Most of the existing literature has focused on the use of AI technology or operationally. At the same time, there are few research papers which address the contribution of AI to people-focused leadership, capability building, governance, and transformation oriented at sustainability. The need for a conceptual framework, which would explain how Generative AI capabilities work together with Management 5.0 concepts to build a resilient, innovative, and sustainable organization, arises out of the above-mentioned conceptual gap (World Economic Forum, 2025).

3. Scope and Significance of Study

The scope of this study is to develop a comprehensive conceptual understanding of how Generative Artificial Intelligence (GenAI) can facilitate Management 5.0 by enabling human-centric digital transformation and sustainable organizational development. Recent evidence suggests that Generative

AI has evolved into a general-purpose technology with the potential to reshape productivity, innovation, and organizational competitiveness across industries (OECD, 2025). The relevance of the study emanates from furthering the discourse on Management 5.0 whereby technological advancements are used to augment the abilities of humans rather than replace them. While most literature has been concentrating on automation, efficiency, and productivity, this paper will underscore the need for collaborative intelligence, empowerment of employees, ethical leadership, and responsible innovation as key elements of AI-enabled organizations. The framework of this study incorporates the tenets of Dynamic Capabilities Theory, Socio-Technical Systems Theory, and Human-Centered AI in illustrating how organizations can undergo sustainable transformation through adopting technology responsibly. According to the Global Partnership on Artificial Intelligence (GPAI), an organization that integrates human-centric AI practices stands in a better position to foster innovation without compromising on accountability and fairness (Global Partnership on AI, 2025). Gartner (2025) emphasized that organizations with higher AI maturity are more likely to realize sustainable business value by integrating Generative AI into strategic decision-making, organizational processes, and workforce development. This study establishes a theoretical foundation for future empirical investigations examining the relationships among Generative AI capabilities, Management 5.0 practices, human-centric digital transformation, and sustainable organizational performance. The proposed framework can be empirically validated across different industries, organizational sizes, and national contexts using qualitative, quantitative, or mixed-method research designs. The OECD's recent work on the human-centered adoption of trustworthy AI further reinforces the need for interdisciplinary research that aligns technological innovation with organizational resilience, employee well-being, and sustainable development objectives (OECD, 2025b).

4. Objective of Study

- To examine the role of Generative Artificial Intelligence (GenAI) in enabling Management 5.0 for human-centric digital transformation
- To identify the key technological, organizational, and human factors influencing the adoption of Generative AI in sustainable organizations
- To analyse the opportunities and challenges associated with implementing Generative AI for organizational innovation, operational excellence, and sustainable business performance
- To explore the strategic implications of Management 5.0 in fostering responsible AI adoption, ethical governance, employee empowerment, and organizational resilience
- To propose a comprehensive conceptual framework integrating Generative Artificial Intelligence, Management 5.0, and human-centric digital transformation for advancing sustainable organizations

5. Review of Literature

Passalacqua et al. (2025) conducted a systematic review of Human-Centred AI in Industry 5.0 and found that successful AI implementation depends on balancing technological advancement with employee well-being, organizational learning, and ethical governance. The review highlighted that organizations integrating AI with human capabilities achieve greater innovation, resilience, and sustainable performance. The authors emphasized that human-centred AI should serve as a strategic enabler rather than merely an automation tool (Passalacqua et al., 2025).

According to Schmager and colleagues (2025) systematically reviewed the emerging concept of Human-Centred Artificial Intelligence (HCAI) and identified transparency, fairness, accountability, human oversight, and trust as its defining dimensions. Their study proposed a comprehensive research agenda that positions HCAI as a multidisciplinary approach integrating technological innovation with

organizational and societal values. The authors argued that future organizations must embed human-centred principles throughout AI design, deployment, and governance processes.

Dong, Bonnefon, and Rahwan (2024) examined methodological challenges in human-centred AI management and argued that organizations increasingly rely on AI systems for managerial functions such as recruitment, task allocation, and performance evaluation. Their research demonstrated that employee acceptance of AI-driven management depends on perceived fairness, transparency, and organizational trust. The authors recommended combining experimental and field-based research approaches to better understand the behavioural consequences of AI-assisted management.

Mariani, Hsu, and colleagues (2025) explored the relationship between Generative AI and innovation management from a human-centred perspective. The study concluded that GenAI enhances idea generation, knowledge creation, and collaborative innovation while simultaneously creating new managerial challenges related to governance, creativity, and organizational learning. The authors proposed that future innovation systems should integrate human expertise with AI capabilities to maximize strategic value creation.

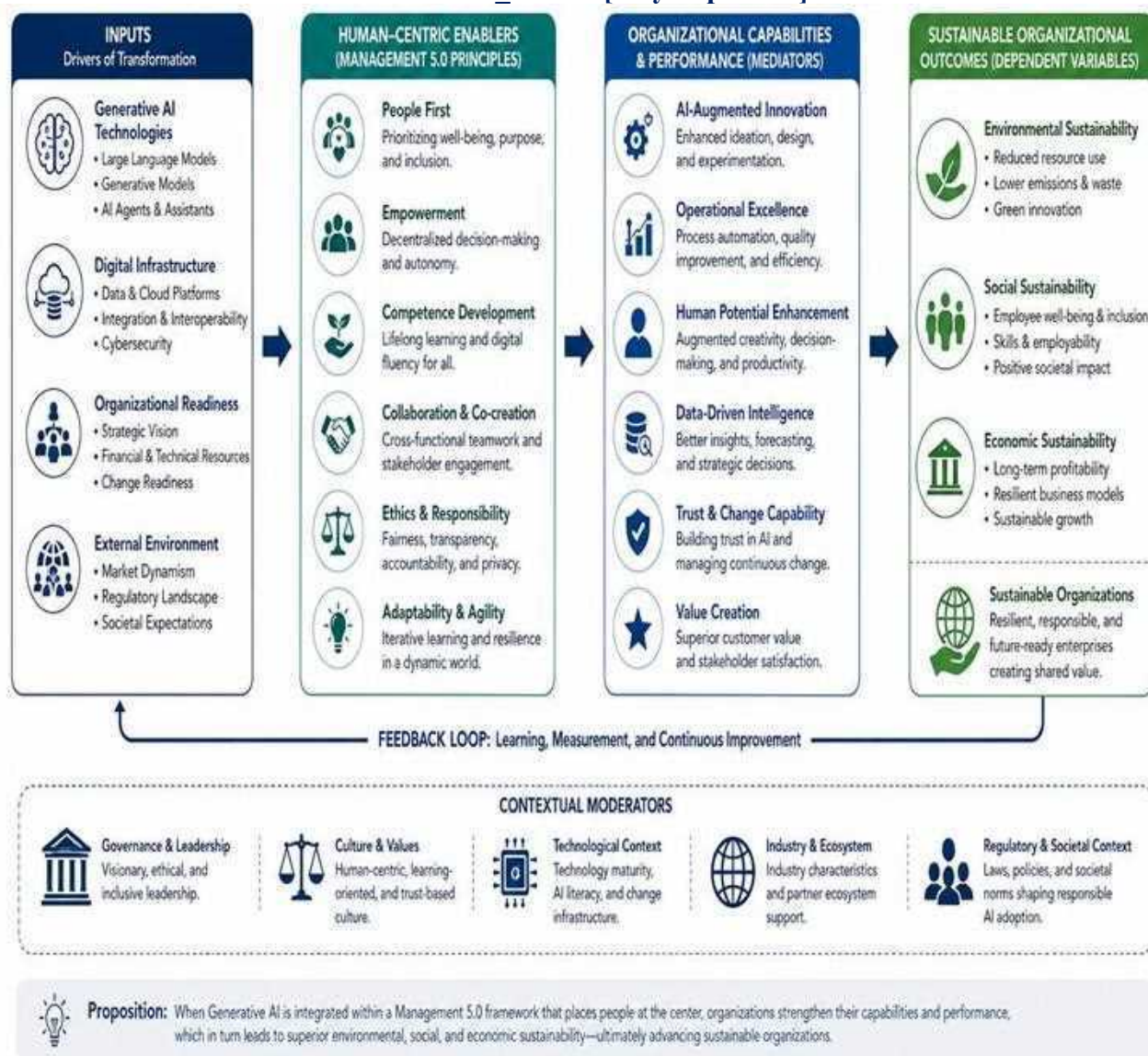
Jin (2025) reviewed Generative AI research published in leading Academy of Management journals and identified six dominant themes, including human–AI collaboration, managerial decision-making, organizational creativity, ethical governance, strategic value creation, and trust in AI systems. The review highlighted that Generative AI is reshaping management theory by redefining leadership roles and encouraging organizations to develop responsible AI capabilities that complement human judgment rather than replace it.

Sengar, Hasan, Kumar, and Carroll (2024) presented a comprehensive systematic review of Generative Artificial Intelligence and its multidisciplinary applications. The study demonstrated that recent advances in large language models and generative technologies have expanded AI applications across business, healthcare, education, engineering, and management. The authors further emphasized that responsible AI principles, ethical governance, and sustainability considerations are essential for ensuring the long-term success and societal acceptance of Generative AI systems.

6. Discussion and Analysis

Generative Artificial Intelligence has emerged as a strategic organizational capability that extends beyond process automation to facilitate intelligent knowledge creation, innovation, and evidence-based decision-making. Within the Management 5.0 paradigm, AI functions as a collaborative partner that augments managerial expertise rather than replacing human judgment. Organizations increasingly employ Generative AI to improve strategic planning, customer engagement, product development, and knowledge management, thereby strengthening their adaptive capabilities in volatile business environments. This transformation supports the view that AI-driven organizations are better positioned to achieve sustainable competitive advantage through continuous learning and intelligent resource utilization (Feuerriegel et al., 2024). Generative AI enables this transition by supporting personalized learning, intelligent decision support, and collaborative problem-solving while preserving human oversight. Consequently, organizations adopting human-centric AI practices are more likely to improve employee engagement, innovation capability, and organizational resilience (Longo, Padovano, & Umbrello, 2025).

Figure 1: Conceptual Framework



The conceptual framework depicts how Generative Artificial Intelligence (GenAI), with the help of digital infrastructure, organizational readiness, and environmental elements, can promote human-centered digital transformation through Management 5.0. Principles of Management 5.0 like human-centeredness, empowerment, competence, collaboration, ethical consideration, and adaptability play as enablers for converting GenAI into organizational capabilities like innovation, operations, enhancement of human potential, intelligence, trust, and value creation. Organizational capabilities in turn promote sustainability in environment, society, and economy to create resilient and future-proof organizations. The framework also emphasizes the role of governance, organizational culture, technological context, industry ecosystem, and regulation as moderators, while learning and feedback are critical for sustaining AI-assisted sustainable transformation process.

Human-centric digital transformation represents the foundation of sustainable organizational development in the digital era. Successful transformation extends beyond technology implementation and requires organizational culture, leadership commitment, employee participation, and continuous capability development. Generative AI facilitates this transformation by democratizing organizational

knowledge, accelerating innovation cycles, enhancing communication, and improving workforce productivity. The realizing these benefits requires organizations to establish transparent governance structures, promote AI literacy, and develop ethical guidelines that ensure technology remains aligned with organizational values and stakeholder expectations (European Commission, 2025). Generative AI contributes to the achievement of Environmental, Social, and Governance (ESG) objectives by enabling intelligent resource optimization, predictive analytics, responsible supply chain management, and data-driven sustainability reporting. AI-assisted decision-making improves operational efficiency while reducing resource wastage and supporting environmentally responsible business practices. The organizations can leverage Generative AI to strengthen employee well-being, diversity, inclusion, and stakeholder engagement through personalized and equitable digital solutions (United Nations Development Programme [UNDP], 2025).

Concerns regarding algorithmic bias, data privacy, cybersecurity, intellectual property rights, misinformation, explain ability, and regulatory compliance continue to influence organizational acceptance of AI technologies. Furthermore, workforce displacement and the changing nature of managerial roles require continuous employee reskilling and adaptive leadership. All of these lead to digital and mental stress (Gaikwad & Bhattacharya, 2024). The organizations must therefore establish robust AI governance frameworks that balance technological innovation with ethical accountability, transparency, and stakeholder trust to ensure responsible digital transformation (UNESCO, 2024). The discussion indicates that sustainable organizations will increasingly depend on their ability to integrate Generative AI within the broader philosophy of Management 5.0. Rather than viewing AI as a standalone technological solution, organizations should develop dynamic capabilities that combine intelligent technologies with human expertise, ethical governance, innovation culture, and strategic agility. Such integration creates resilient organizations capable of responding effectively to technological disruption while simultaneously generating economic value, social well-being, and environmental sustainability. The proposed conceptual perspective therefore provides a foundation for future empirical research examining AI-enabled organizational transformation across diverse industrial and institutional contexts (World Intellectual Property Organization [WIPO], 2025).

7. Finding of Study

- The study finds that Generative Artificial Intelligence (GenAI) has emerged as a strategic enabler of Management 5.0, transforming organizations from technology-driven systems into human-centric, intelligent, and innovation-oriented enterprises. Rather than replacing human expertise, GenAI complements managerial capabilities by enhancing decision-making, creativity, and organizational learning. The analysis indicates that human-centric digital transformation is the cornerstone of sustainable organizational success. Organizations that integrate GenAI with employee empowerment, ethical leadership, collaborative intelligence, and continuous learning are better positioned to improve workforce productivity, innovation capability, and organizational resilience.
- The study further reveals that the successful implementation of GenAI depends not only on technological infrastructure but also on organizational readiness, AI governance, leadership commitment, workforce reskilling, and a culture that promotes responsible innovation. These organizational capabilities significantly influence the long-term effectiveness of AI-driven transformation initiatives. Another important finding is that Generative AI contributes substantially to organizational sustainability by improving operational efficiency, optimizing resource utilization, strengthening customer engagement, supporting data-driven decision-

making, and facilitating Environmental, Social, and Governance (ESG) objectives. These capabilities collectively create long-term economic, social, and environmental value.

- The study also identifies several critical challenges associated with GenAI adoption, including algorithmic bias, data privacy, cybersecurity risks, intellectual property concerns, regulatory uncertainty, and ethical decision-making. Addressing these challenges requires robust governance frameworks, transparent AI policies, and continuous monitoring to ensure responsible and trustworthy AI implementation. The study proposes a comprehensive conceptual framework demonstrating that the integration of Generative AI capabilities, Management 5.0 principles, and human-centric digital transformation leads to sustainable organizational outcomes through enhanced innovation, strategic agility, responsible governance, stakeholder value creation, and long-term organizational competitiveness. The framework provides a strong theoretical foundation for future empirical research and practical implementation across diverse organizational settings.

8. Conclusion

Generative Artificial Intelligence is redefining the future of organizations by enabling a transition from conventional digitalization to human-centric digital transformation under the principles of Management 5.0. This conceptual study demonstrates that sustainable organizational success depends not merely on the adoption of advanced AI technologies but on their responsible integration with human intelligence, ethical leadership, organizational learning, and continuous innovation. The proposed framework highlights that the synergy between Generative AI capabilities, human-centric management practices, and sustainability-oriented strategies can enhance organizational agility, resilience, stakeholder value, and long-term competitiveness. At the same time, organizations must address challenges related to governance, transparency, data privacy, workforce reskilling, and ethical AI deployment to maximize the benefits of intelligent technologies. The study contributes to the evolving literature on AI-enabled management by offering a comprehensive conceptual foundation for future empirical research and practical implementation, thereby supporting the development of resilient, responsible, and sustainable organizations in the era of Management 5.0.

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