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University of Basilicata, Matera, Italy

The Ecology of Knowledge in the AI Era

CALL FOR EXTENDED ABSTRACTS - IFKAD 2027
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Special Track n.: 05

AI-Enabled Knowledge Ecosystems for Circular Economy and Climate Change Resilience: Organizational, Managerial and Reporting Perspectives

Description

Climate change represents one of the most profound and systemic challenges of our time, requiring urgent mitigation and adaptation strategies and a fundamental transformation of prevailing production and consumption models (VijayaVenkataRaman et al., 2012; Serrano et al., 2021; Lackner et al., 2022; IPCC, 2023). Within this transition, the circular economy (CE) has emerged as a strategic approach capable of reducing resource use, waste and greenhouse gas emissions while strengthening resilience to climate-related disruptions (Kirchherr et al., 2017; Gallego-Schmid et al., 2020; Khanna et al., 2022; Yang et al., 2023; Leal Filho et al., 2024). Recent research further highlights the climate–circularity nexus and the contribution of circular capabilities, approaches and employability skills to climate change mitigation and adaptation (Esposito et al., 2025; Smaldone et al., 2026; Supino et al., 2026).

However, the transition from linear to circular models remains constrained by entrenched organizational routines, legacy technologies, fragmented supply chains, information asymmetries, limited capabilities, and difficulties in measuring and communicating circular performance. Knowledge Management (KM) is therefore critical for developing, codifying and disseminating the expertise required for circular design, organizational learning and climate-resilient decision-making (Ul-Durar et al., 2023).

At the same time, the growing diffusion of digital technologies (DT) is profoundly reshaping how organizations create, process, share and apply knowledge. Artificial Intelligence (AI), Big Data analytics, the Internet of Things (IoT), blockchain and digital platforms increasingly extend organizational cognitive and analytical capabilities by enabling the continuous generation, integration and circulation of knowledge across organizational and supply-chain boundaries. These technologies can improve visibility over resource flows, support operational optimization and circular decision-making, facilitate industrial symbiosis, and foster inter-organizational knowledge co-creation (Gupta et al., 2019; Acerbi et al., 2020; De Marchi & Di Maria, 2020; Sica et al., 2024).

Their integration with Life Cycle Assessment and carbon accounting can also strengthen sustainability measurement and the generation of timely and decision-useful information (D'Eusanio & Petti, 2024), while digital channels can enhance CE and climate-related disclosure, transparency and stakeholder engagement (L'Abate et al., 2023; L'Abate et al., 2024a; L'Abate et al., 2024b). Recent studies further demonstrate the relevance of DT for resource efficiency, inter-organizational collaboration and organizational performance (Rodrigo et al., 2024; Sánchez-García et al., 2024; Schöggl et al., 2024; Truant et al., 2024).

Despite these advances, the extant literature remains largely fragmented. Existing studies tend to examine the relationships between DT, CE, KM and climate action separately, rather than considering how these dimensions interact within integrated organizational knowledge ecosystems. In particular, limited attention has been devoted to how human knowledge, organizational capabilities and increasingly autonomous AI-enabled technologies can jointly generate, validate, circulate and apply knowledge to support circular strategies and climate change mitigation and adaptation. At the same time, the environmental footprints, energy demand and rebound effects associated with digitalization raise important questions about whether digitally enabled circular solutions are themselves environmentally sustainable (Dwivedi et al., 2022). Moreover, integrative KM–DT frameworks capable of translating knowledge and digital capabilities

into measurable climate outcomes, resilient circular models and credible sustainability disclosure remain underdeveloped (García-Sánchez et al., 2024; Raimo et al., 2025; Salvi et al., 2025).
Against this research gap, this special track invites conceptual, empirical and methodological contributions that advance understanding of how AI, DT and KM can be integrated and governed within organizational knowledge ecosystems to enable CE transitions and strengthen climate change mitigation and adaptation. Particular attention is devoted to the mechanisms through which human and AI can jointly support knowledge creation and sharing, circular decision-making, sustainability measurement and disclosure, inter-organizational collaboration, resilience and sustainable value creation, while critically addressing the environmental and organizational trade-offs associated with increasing digitalization.

Indicative Topics

The track particularly welcomes contributions addressing, but not limited to, the following areas:

- AI-enabled knowledge ecosystems for CE and climate change: the role of human and AI in creating, combining and disseminating knowledge supporting circular transitions, climate change mitigation and adaptation.
- KM and organizational capabilities for circular and climate-resilient transitions: knowledge creation, sharing, learning processes, skills, competencies and dynamic capabilities enabling organizations to move from linear toward circular and resilient business models.
- DT for CE implementation and climate action: applications of AI, Big Data analytics, IoT, blockchain, digital platforms and related technologies to improve resource efficiency, waste prevention, circular design and climate-risk management.
- DT, industrial symbiosis and inter-organizational knowledge sharing: digital platforms, collaborative networks and knowledge ecosystems supporting resource exchanges, supply-chain collaboration, industrial symbiosis and systemic resilience.
- AI and DT for sustainability measurement and assessment: integration of DT with Life Cycle Assessment, carbon accounting, circularity assessment and other sustainability metrics to generate accurate, timely and decision-useful information.
- CE and climate-related disclosure in the AI era: digitalization of sustainability information, AI-supported reporting, transparency, stakeholder engagement, information asymmetry and credibility, comparability and assurance of CE and climate-related disclosure.
- Governance and responsible use of AI within circular knowledge ecosystems: accountability, transparency, knowledge quality, human judgement, tacit knowledge and organizational governance in human–AI decision-making for circularity and climate action.
- The sustainability paradoxes of digitalization: environmental footprints, energy and material consumption, e-waste, rebound effects and other trade-offs associated with the increasing use of AI and DT in circular and climate-oriented strategies.

Keywords

Circular economy; Climate change; Knowledge ecosystems; Knowledge management; Artificial intelligence; Digital technologies; Organizational resilience; Reporting

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Guidelines and Requirements

Researchers wishing to contribute are invited to submit an EXTENDED ABSTRACT (in MS Word format) of min 500 and max 1000 words, not later than **22 JANUARY 2027**. All submission must be done via dedicated form on our website. The abstract should address theoretical background, research objective, methodology, and results in terms of expected contribution to Knowledge Management theory and practice.
Authors are required to follow the guidelines and templates available on IFKAD website: www.ifkad.org

Important Dates

22 January 2027 – Extended Abstract Submission Deadline
19 February 2027 – Acceptance Notification to Authors
16 April 2027 – Early-Bird Registration & Payment Deadline
23 April 2027 – Full Paper Submission Deadline
28 May 2027 – Regular and PhD Students Registration & Payment Deadline

12 June 2027 – Conference Program Release
28-30 June 2027 – Conference sessions *(to be considered as 3 full working days)*

Please note that all above indicated dates are **CUT-OFF** deadlines. There will not be an extention to any of these.

Further Information

For any information related to the conference and/or any special track, please see the event website at www.ifkad.org or contact the conference manager at **info@ifkad.org**