

Editorial

Special Issue “Sustainable Operations: Advancing Industry Practices for a Greener Future”

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Sustainable development has quickly become a central priority for governments, industries, and researchers around the world. As organizations grapple with climate change, limited resources, and rising expectations from society, integrating sustainability into everyday operations is no longer optional, it is a requirement. This Special Issue, entitled “Sustainable Operations: Advancing Industry Practices for a Greener Future”, brings together eight articles that explore how industries can move toward greener, become more resilient, and more efficient. These papers highlight how complex and interconnected sustainable operations really are, looking at sustainability from many angles: technological, organizational, methodological, and regional. Together, they offer valuable insights into the strategies, tools, and approaches that can help transform industrial systems for the better.

Several papers in this Special Issue highlight the central role of technological progress in enabling sustainable operations. “Digitalization and Sustainable Industrial Low-Carbon Transformation” examines how digital tools, policy measures, and financial innovation work together to support low-carbon industrial development, showing that digitalization can create synergies that speed up decarbonization and improve efficiency. Complementing this, “New Quality Productive Forces and Sustainable Green Total Factor Productivity” provides empirical evidence on how emerging productive forces interact with green total factor productivity, underscoring the importance of innovation-driven growth for long-term sustainability. Adding to this theme, “Sustainable Transition Pathways for Steel Manufacturing” analyzes low-carbon steelmaking technologies and their adoption, offering valuable insights for policymakers and industry professionals working to guide one of the most carbon-intensive sectors through a realistic and effective transition.

Operational improvements continue to be a foundation of sustainable industrial practice, a theme reflected in the article “Business Process Optimization for a Greener Future: The Russian Experience in Operational Management”, which shows how refining business processes can lead to greener outcomes, particularly in industries undergoing major structural or economic change. Alongside this, “Adopting the Materiality Principle in Sustainable Operations Management” highlights how materiality assessments help organizations focus on the sustainability issues that matter most for stakeholders and long-term value creation, ultimately strengthening the integration of sustainability into everyday operational decisions.

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Methodological advances are essential for helping organizations make well-informed sustainability decisions, a point illustrated by the article “A Hybrid AHP–Fuzzy MOORA Decision Support Tool for Advancing Social Sustainability in the Construction Sector”. This study introduces a hybrid multi-criteria decision-making model that brings social sustainability considerations into construction sector evaluations, reflecting the growing understanding that social factors are a core part of truly sustainable operations.

Sustainable operations are deeply shaped by the territorial and economic systems in which they operate, a point illustrated by the article “Research on the Impact and Mechanism of Modernized Industry–City Integration on the Size of the Local Market”, which examines how coordinated industrial–urban development can drive local market growth and support regional sustainability. Likewise, “Spatial Coordination Analysis and Development Methods of the Catering Sector in Yongkang City” explores spatial development patterns in the local catering industry, offering insights into how better spatial planning and resource allocation can help local sectors evolve more sustainably.

The contributions in this Special Issue show just how wide-ranging and dynamic current research on sustainable operations has become, emphasizing the essential roles of technological innovation, organizational change, methodological rigor, and territorial coordination in advancing sustainability across different industries and regions. We hope this collection serves as a useful resource for researchers, practitioners, and policymakers working to promote more sustainable operational practices.

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