EDITORIAL

Sustainable Analytics: The New Era

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Abstract

Sustainable analytics is important in helping decision-makers to understand their human-centric role in maintaining the resilience of their businesses and developing toward sustainability in the new era of Industry 5.0. The inaugural editorial of *Sustainable Analytics* introduces the journal's missions to advancing the application of analytical techniques and methodologies to promote sustainability across various sectors. It aims to foster interdisciplinary collaboration and innovative solutions to global sustainability challenges. The journal aspires to become a platform for communication and a valuable repositor of resources for researchers in the relevant fields of environmental management, energy, agriculture, urban planning, and supply chain optimization regarding the topics of (big) data-driven decision-making, sustainability metrics, risk and performance management, and the integration of ESG factors.

Keywords: Sustainable Analytics, Inaugural Issue, Data-driven, Human-centric, Resilience.

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We are currently living in the early stages of Industry 5.0, which emphasizes the collaboration between humans and machines, aiming to create a more personalized and sustainable industrial environment [1, 2]. While Industry 4.0 focuses on automation, data exchange, Internet of Things (IoT), artificial intelligence (AI) and machine learning (ML) [3], the key features of Industry 5.0 include, but not limited to, the role of human in collaboration with advanced technologies, enhancing creativity and innovation (**human-centric**); eco-friendly practices and sustainable production methods to reduce environmental impact (**sustainability**); and the resilient of businesses and the whole economy against shocks and disruptions such as pandemics, geopolitical uncertainties and conflicts (**resilience**).

Accordingly, business and especially sustainable analytics is becoming important because it helps decision-makers (policymakers, managers, and even employees) to understand their human-centric role in maintaining the resilience of their businesses and developing toward sustainability [4, 5]. Through resource optimization, regulatory compliance, risk management, collaboration and innovation, sustainable analytics integrate sustainability into business strategy and operations [6], ensuring that organizations can thrive while minimizing their negative environmental and social impacts [7, 8].

Our journal *Sustainable Analytics* is a peer-reviewed academic journal dedicated to advancing

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the application of analytical techniques and methodologies to promote sustainability across various sectors. The journal publishes high-quality research that focuses on the integration of (big) data-driven insights with sustainable practices in areas such as environmental management, energy, agriculture, urban planning, and supply chain optimization. It aims to foster interdisciplinary collaboration and provide innovative solutions to global sustainability challenges through advanced analytics, machine learning, and data science. The journal welcomes original research articles, reviews, and case studies that contribute to the development and implementation of sustainable solutions informed by rigorous analytical frameworks.

It is noted that applications of sustainable analytics vary and may include risk management, portfolio optimization, resource allocation, and so on. Accordingly, we invite submissions for the Inaugural Issue of *Sustainable Analytics* on the following topics and other relevant issues:

- **Data-Driven Decision Making**: Exploring how organizations can leverage big data analytics to make sustainable operational decisions that minimize environmental impact while maximizing financial performance.
- **Sustainability Metrics Development**: Developing new metrics and frameworks for measuring sustainability performance in firms, organizations, and society, including carbon footprint, resource utilization, and waste management.
- **Supply Chain Sustainability**: Analyzing the role of analytics in enhancing the sustainability of supply chains, focusing on sourcing, logistics optimization, and vendor management.
- **Energy Efficiency Analytics**: Investigating how predictive analytics can improve energy efficiency in manufacturing and service operations, leading to cost savings and reduced environmental impacts.
- **Circular Economy Models**: Evaluating the effectiveness of analytics in supporting circular economy initiatives, such as recycling, waste reduction, and product lifecycle management.
- **Sustainable Investment Analytics**: Examining how financial institutions can use analytics to assess the sustainability of investment portfolios and identify green investment opportunities.
- **Risk Management**: Analyzing how analytics can help organizations identify and mitigate risks associated with their operations, both internal (relevant to sustainability practices and regulatory compliance) and external (relevant to national, regional and global uncertainties).
- **Behavioral Analytics for Sustainability**: Studying how behavior analytics can drive the consumers and markets toward sustainable purchasing decisions and promote environmentally friendly practices.
- **Performance and Efficiency Analysis**: Utilizing data-driven techniques to evaluate sustainability performance across industries and geographies.
- **Integration of ESG Factors**: Researching how organizations can integrate Environmental, Social, and Governance (ESG) factors into their operational and financial analytics for better decision-making.
- **Sustainable Product Development**: Investigating the role of analytics in guiding the development of sustainable products, including material selection and lifecycle analysis.
- **Impact of Technology on Sustainability**: Evaluating how emerging technologies, such as AI and IoT, can enhance sustainable analytics practices and operational efficiencies.

We express our sincere gratitude to the authors, reviewers, and editorial board members whose expertise and commitment have made this inaugural issue possible. Your contributions are the foundation upon which we build this journal.

We look forward to your continued support and engagement. We also hope that *Sustainable Analytics* will become a platform for communication and a valuable repositor of resources for researchers in all related disciplines.

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Conflicts of Interest

The author declares no conflicts of interest.

AI Use Statement

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Ethical Approval and Consent to Participate

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