Guest Editorial Preface

Special Issue on Innovation and Sustainability:
The Challenges of a New Era

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Currently, we are witnessing a growing environmental, social, and governmental concern with sustainable development. In this context, society, organizations, and the market demand that companies innovate in business and new sustainable business practices. Governments have been implementing new policies to guide innovation towards sustainability, thus reducing negative impacts on the environment. These policies are aligned with the Millennium Development Goals.

On the other hand, companies have as main objectives the reduction of costs and the increase of productive capacity. This causes companies to constantly seek a reduction in personnel expenses and increase the demand for natural resources. These objectives can create social problems and gradual environmental degradation. Thus, strategies must be developed to create new alternatives. Thus, the promotion of sustainable development in business organizations should ensure environmental, economic, and social well-being.

In the last two decades, managers have increasingly invested in reducing waste in their supply chains through pollution prevention, pollution control, and quality management. In this way, they have been trying to reduce pollution by making their supply chains increasingly green.

At this juncture, the field of circular economy and industrial symbiosis has been increasingly applied, as these take into account the waste that moves between organizations. Thus, the symbiosis industry consists of the use of residual by-products from one company that serves as raw material for another company. Besides the by-products, the concept also considers the use of other resources. In this way, companies can create value (innovating) based on their waste while forming creative inter-organizational relationships. This business innovation (services, products, or processes) should positively impact the regional environment so that stakeholders can increasingly approve and implement it.

The six articles in this special issue cover a range of aspects related to sustainable development, sustainable innovation, circular economy, industrial symbiosis, or sustainable supply chain management. Each of these articles has undergone a double-blind peer review. This special issue is composed of both quantitative and qualitative articles.

The paper “Circular Bio-Economy Voyage: Its Defining Elements From the Managerial Vantage Point” by authors Prigya Rawat and Vinay Singh embarks to contemplate the circular bio-economy applying managerial approach by splitting the complicated abstraction into a more straightforward

structure using VOS Viewer software. The paper discovers nine determinant variables supported by the point of organizational advantage. The nine variables are: 1) industrial symbiosis; 2) sustainable transitions; 3) multi-level perspective; 4) bio-economic regions; 5) governance; 6) innovations; 7) challenges; 8) sustainability; 9) and regional value chains. The variables were analyzed by experts and ordered by relevance. The variable challenges came first in the order, followed by sustainable transitions. The least relevant variable evaluated by the specialists was industrial symbiosis.

The authors Gyanendra Bagri, Dixit Garg, and Ashish Agarwal, contributed to the special issue with the paper "To Analyze the Relationship Between Strength, Weakness, Opportunities, and Threats of Indian Coal Mining Industries Towards Sustainable Development". The paper aims are to quantify the strength, weaknesses, opportunities, and threats (SWOT) of coal mines company to develop a suitable strategy to minimize negative environmental impact towards sustainable development. This study helps coal mining strategy managers to minimize coal waste generation by waste management techniques. For this work Hybridizing DEMATEL with Trapezoidal fuzzy and then combining it with SWOT can be a novel tool for determining the most important factors of the SWOT matrix.

The paper "Texture Mapping of Plant's Leaves: A Multi-Dimensional Application for Next-Gen Agriculture" by authors Rohit Rastogi, Akshit Rastogi, and Divya Sharma aim to improve the recognition of plant diseases to increase the quality and quantity of agricultural products. This has been achieved through the use of ML and Image Processing and understanding their texture and patterns through the study. It will also help identify any mal-effects of pollution, bacteria, or fungus that damages the plant leaves. Different Image Processing steps have been applied to refine the digital data. The paper serves as an effort to establish an accurate technical process with the help of SVM on various available refined plant data sets and supports the use of technology in this promising field.

The author Suchismita Satapathy contributed to the special issue with the paper "Sustainable Supply Chain Management Barriers in Shrimp Food Supply Chain: A Case Study of India by MCDM Method". The paper aims to analyze and study the barriers to implementing sustainable supply chain management in the Indian shrimp industry. The barriers that prevent shrimp companies from implementing SSCM in their practices are found and prioritized. By removing these barriers in the shrimp industry, SSCM can be implemented in the shrimp industry. This implementation will help the companies as well as help the environment, society, and the economy. Food safety can also be increased.

The paper "Analysis of the Seasonal Variation of the Physical and Chemical Characteristics of the Water of the Roosevelt River, Amazonas, Brazil" by João Fulan, Marcelo Anjos, Nadja Machado, Paulo Silva, Maria Sales, Elder Barbosa, and Harumy Noguchi aims to conduct preliminary surveys on the abiotic factors of the Roosevelt River, Amazonas, Brazil in four different periods: rising, flood, lowing, and dry. Four sites were monitored: P1, P2, P3, and P4. Depth, water transparency, conductivity, pH, surface water temperature, and dissolved oxygen were measured. The results of the study show seasonality in the four sampling stations. Conductivity showed high values in the flood at all sampling stations except for P4. The pH showed low variation in all sampling periods and stations. Only depth and transparency were significant in P2. The authors indicate that further complementary studies are needed to indicate the potential causes of the conductivity variation: autochthonous or human activities.

The authors Carlos Mayenberger and David Perez-Castillo contributed to the special issue with the paper "Does Technological Innovation Divide Economic Growth From Sustainable Development? " The objective of the study is to explore whether technological innovation strategies generate incremental economic returns on competitiveness indexes and, at the same time, unfavorably impact the social, environmental, and human systems of a region. Innovation strategy performance metrics were used in cities that presented innovative indicators. The study analyzes the correlation between innovative performance, environmental recovery, productivity, and social quality of life. The authors concluded that regulations, the rule of law, incentives, inclusive use of technology, systemic vision, flattened organizations, hierarchical structures, and decentralized management responsibilities help

leverage the impact of technological innovation to drive economic growth. However, the authors state that the impact on environmental regeneration and the social gap is highly questionable.

With this special issue, we intend to contribute with new findings on the role of business innovation in sustainable development to meet the new expectations of stakeholders and the new demands of markets. This special issue may also contribute to the development of new innovative and sustainable business models.

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