

Editorial

Risk Management as a Tool for Sustainability

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Risk management is an ever-growing domain of research that is constantly evolving with the development of new and advanced technologies and processes, along with today's increasing concern for sustainability. Additionally, with businesses and projects shifting their focus from the short term, where projects were treated as ends, to the long term, where projects are treated as means to achieving sustainability goals, the research community is reciprocating by examining the role of risk management as a facilitator of sustainability. This Special Issue (SI) seeks to draw together theoretical knowledge and practical solutions to highlight some of the contemporary themes on how risk management can be used as a tool for sustainability. The contributions in this SI present some important aspects of risk and how it can be effectively managed for delivering sustainable projects. A range of novel approaches, frameworks, and models have been developed by the authors to provide real implications for managers, policymakers, and industry practitioners. This SI compiles a diverse, yet highly relevant set of ideas contributing to the topic.

The first article by Munwar et al. [1] examines the area of disaster risk management, focusing specifically on new and cutting-edge technologies in the management of floods. The authors argue that even though several new technologies are in use, there needs to be a more integrated approach to employing these technologies in managing floods. Their paper presents a review of the latest advancements in image processing, artificial intelligence, and integrated approaches with a focus on post-disaster management. Some key gaps are identified, and a practical framework is proposed to optimize flood management using a more holistic approach.

In the next paper, Su et al. [2] also focus on the issue of disaster management and discuss the risks caused by the changes in land use. Focusing specifically on Taiwan, the authors highlight the lack of risk-oriented land-use changes that could lead to an increase in disasters in the region. Using a quantitative approach, the relationship between land-use changes and disasters is examined and several relationships are identified. Based on the findings, the authors present a three-stage data envelopment analysis (DEA) assessment model to dynamically evaluate the impact of land-use changes on disasters.

While Arshad et al. [3], in their paper, emphasize decision-making on road infrastructure projects from a life cycle sustainability perspective. The authors discuss the need for comprehensive sustainability assessment decision criteria in evaluating road projects. Using a mixed-method approach in the collection and analysis of data, they develop elaborate life cycle sustainability-based project evaluation tools, which include a customized project assessment framework, an integration model, and a decision framework for the assessment of different project alternatives.

Dias et al. [4], on the other hand, conduct their research in risk management at a corporate level in the automobile industry with a specific focus on supply chain sustainability. The authors highlight the practical problem of not having a standard tool to guide companies in managing risks effectively within the import and export process of the automotive industry in Brazil. Using a case study method, the authors prioritize and put together a set of tools that are effective at different stages of supply chain risk management.



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Finally, Bakhtawar et al. [5] turn their attention to risk management in the public–private partnership (P3) projects. In their paper, the authors argue that current risk management practices offer a limited capacity to address long-ranging risk impacts on the triple bottom line within and around the project boundaries. The authors further discuss risk and sustainability being two inherently subjective concepts and highlight the need for a pragmatic approach in their combined assessment. Using this as a basis for their study, the authors collect qualitative and quantitative data and employ simulations to develop a model for conducting a sustainability-based risk assessment of P3 infrastructure projects. The model is further tested in two highway projects in Pakistan. Based on their findings, the authors then present the implementation framework for the model.

The crossroad between risk and sustainability is complex, evolving, and resource-intensive. More research will continue to be performed to leverage risk as a tool to achieve sustainability and use sustainability as a driver and goal for better risk management. In this regard, future research around the sustainability of large projects through the lens of project risk management may help develop effective tools and an appealing narrative to bring about sustainability in projects, processes, and services.

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