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Strategic Approach in Multi-Criteria Decision Making

A Practical Guide for Complex Scenarios

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Strategic Approach in Multi-Criteria Decision Making

A Practical Guide for Complex Scenarios

Series: International Series in Operations Research & Management Science

- Highlights the use of Sequential Interactive Modelling for Urban Systems (SIMUS) for strategic decision making
- Offers answers common questions formulated by decision makers such as number of criteria needed, method to use, how to solve score ties, etc.
- Includes case studies to help understand difficult concepts, especially related to demands from a scenario and in their modeling

This book examines multiple criteria decision making (MCDM) and presents the Sequential Interactive Modelling for Urban Systems (SIMUS) as a method to be used for strategic decision making. It emphasizes the necessity to take into account aspects related to real world scenarios and incorporating possible real life aspects for modelling. The book also highlights the use of sensitivity analysis and presents a method for using criteria marginal values instead of weights, which permits the drawing of curves that depicts the variations of the objective function due to variations of these marginal values. In this way it also gives quantitative values of the objective function allowing stakeholders to perform a comprehensive risk analysis for a solution when it is affected by exogenous variables. StrategicApproach inMulti-Criteria Decision Making: A Practical Guide for Complex Scenarios is divided into three parts. Part 1 is devoted to exploring the history and development of the discipline and the way it is currently used. It highlights drawbacks and problems that scholars have identified in different MCDM methods and techniques. Part 2 addresses best practices to assure quality MCDM process. Part 3 introduces the concept of Linear Programming and the proposed SIMUS method as techniques to deal with MCDM. It also includes case studies in order to help document and illustrate difficult concepts, especially related to demands from a scenario and also in their modelling.

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