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Multicriteria Analysis-Mahdi Zarghami
2011-05-27 Multicriteria analysis is one of the most important fields of decision science. This book gives an outline of the formulation of an appropriate model and presents a comprehensive summary of the most popular methods for solving multicriteria decision problems. In addition to the classical approach the book introduces fuzzy and stochastic methodology, models with uncertainty, social choice and conflict resolution. All methods are illustrated with easy to follow simple examples. At the end of each chapter detailed case studies are given in water and environment management including inter-basin water transfer, urban water management, water allocation, groundwater quality management,
forest treatment, ranking water resources projects, reservoir planning, water distribution network design and long-term watershed management. The new methodology and the wide variety of case studies are not easily accessible elsewhere.

Using Multi-Criteria Decision Analysis in Natural Resource Management-Tony Prato 2017-03-02

Providing useful insights on the use of Multi-Criteria Decision Analysis (MCDA) in natural resource management, this book examines a number of empirical applications for several countries and a variety of natural resources. It is shown that using MCDA in the management of water, forestry, wetland and other natural resources can substantially improve the design and implementation of natural resource and environmental policies. Stakeholder involvement is also an important determinant of successful resource management and MCDA provides a useful and effective framework for getting stakeholders involved in resource management decisions. Using Multi-Criteria Decision Analysis in Natural Resource Management gives in-depth analysis of the potential problems in applying these techniques, including difficulties eliciting required information, lack of suitable measures for environmental variables and the need to develop innovative methods to simplify the use of MCDA.

Multicriteria Analysis in Agriculture-Julio Berbel 2018-06-18

This book outlines the latest trends in the use of multicriteria analysis in agriculture by highlighting recent applications for modeling agricultural decision-making. It introduces specific case studies using multicriteria analysis as a method for selecting multiattribute discrete alternatives or solving multiobjective planning problems. The book is intended for a broad readership, including agricultural and environmental economists, engineers and all scientists whose work involves the management of agricultural resources and decision-making in agriculture. The methods and applications presented in this book cover decision-making processes in agricultural and environmental contexts. The methodologies described consider multiple criteria simultaneously in a wide range
of complex decision-making contexts by taking into account multiple, conflicting criteria. Given the wide range of case studies covered, the book offers a comprehensive guide to decision-making in the agricultural context and beyond.

Multicriteria Analysis for Land-Use Management - E. Beinat 2012-12-06 The idea of this book started at approximately 33,000 feet, somewhere above the Alps. On our way to a workshop in Venice we had the opportunity of appreciating the different types of landscapes and the complex patchwork of urban areas, agriculture, forests, rivers and lakes that can be seen from an aircraft. The complexity of this puzzle, and the complex task of managing its evolution, became the topic of conversation for the rest of the flight. It also became the topic of this book. Land-use management and multicriteria analysis offer countless opportunities for mutual reinforcement. These two fields have developed largely independently, but a trend towards the exploration of their synergies is now emerging. This is clear from the recent literature on land-use management, spatial analysis and spatial planning, which increasingly includes references to multicriteria methodologies and decision analysis. At the same time, a growing share of multicriteria applications now focus on environmental and land-use issues. This book includes contributions from authors coming from a variety of disciplines and backgrounds. All together they highlight current issues in multicriteria analysis and land-use management from theoretical, methodological and practical perspectives.

Multicriteria Decision Analysis in Geographic Information Science - Jacek Malczewski 2015-02-02 This book is intended for the GIS Science and Decision Science communities. It is primarily targeted at postgraduate students and practitioners in GIS and urban, regional and environmental planning as well as applied decision analysis. It is also suitable for those studying and working with spatial decision support systems. The main objectives of this book are to effectivley integrate Multicriteria Decision Analysis (MCDA) into Geographic Information Science (GIScience), to provide a comprehensive
account of theories, methods, technologies and tools for tackling spatial decision problems and to demonstrate how the GIS-MCDA approaches can be used in a wide range of planning and management situations. Multicriterion Analysis in Engineering and Management-Dasika Nagesh Kumar 2010 Multicriterion Decision-Making (MCDM) can be perceived as a process of evaluating real-world situations based on various qualitative/quantitative criteria in certain/uncertain/risky environments in order to find a suitable course of action/choice/strategy/policy among the several available options. This book concentrates on the basic principles of multicriterion analysis and acquaints the reader with the recent trends in MCDM analysis. It explains the basics of Structured Decision-Making (SDM) and describes the various features of traditional optimization methods such as linear and non-linear programming, and dynamic programming, as well as non-traditional optimization methods such as genetic algorithms, differential evolution, and simulated annealing and quenching. The text elaborates the normalization methods, weight estimation methods and multiobjective optimization methods both in traditional and non-traditional environments. Classification approaches with cluster validation indices, discrete MCDM methods both in deterministic and fuzzy approach and group decision-making methods are discussed in detail. Advanced topics in decision-making such as data envelopment analysis, Taguchi methodology, ant colony optimization, and particle swarm optimization are also covered. Encyclopedia of GIS-Shashi Shekhar 2007-12-12 The Encyclopedia of GIS provides a comprehensive and authoritative guide, contributed by experts and peer-reviewed for accuracy, and alphabetically arranged for convenient access. The entries explain key software and processes used by geographers and computational scientists. Major overviews are provided for nearly 200 topics: Geoinformatics, Spatial Cognition, and Location-Based Services and more. Shorter entries define specific terms.
Selected Water Resources Abstracts- 1977
Multicriterion Analysis in Engineering and Management-Dasika Nagesh Kumar 2010
Multicriterion Decision-Making (MCDM) can be perceived as a process of evaluating real-world situations based on various qualitative/quantitative criteria in certain/uncertain/risky environments in order to find a suitable course of action/choice/strategy/policy among the several available options. This book concentrates on the basic principles of multicriterion analysis and acquaints the reader with the recent trends in MCDM analysis. It explains the basics of Structured Decision-Making (SDM) and describes the various features of traditional optimization methods such as linear and non-linear programming, and dynamic programming, as well as non-traditional optimization methods such as genetic algorithms, differential evolution, and simulated annealing and quenching. The text elaborates the normalization methods, weight estimation methods and multiobjective optimization methods both in traditional and non-traditional environments. Classification approaches with cluster validation indices, discrete MCDM methods both in deterministic and fuzzy approach and group decision-making methods are discussed in detail. Advanced topics in decision-making such as data envelopment analysis, Taguchi methodology, ant colony optimization, and particle swarm optimization are also covered --Publisher's description
Weighting Methods and their Effects on Multi-Criteria Decision Making Model Outcomes in Water Resources Management-Noorul Hassan Zardari 2014-10-30 This book provides a systematic way of how to make better decisions in water resources management. The applications of three weighting methods namely rating, ranking, and ratio are discussed in this book. Additionally, data mining on keywords is
presented using three popular scholarly databases: Science Direct, Scopus, and SciVerse. Four abbreviated keywords (MCDM, MCDA, MCA, MADM) representing multi-criteria decision-making were used and these three databases were searched for different popular weighting methods for a period of 13 years (2000-2012). The book provides also a review of weighting methods applied in various multi-criteria decision-making (MCDM) methods and also presents survey results on priority ranking of watershed management criteria undertaken by 30 undergraduate and postgraduate students from the Faculty of Civil Engineering, Universiti Teknologi Malaysia.

Advanced Studies in Multi-Criteria Decision Making-Sarah Ben Amor 2020-01-14 With contributions from some of the top academics and scientists in the field, Advanced Studies in Multi-Criteria Decision Making presents an updated view of the landscape of Decision Sciences, current research topics, the interaction with other sciences and fields, as well as the prospects and challenges at an international level. Given that Decision Sciences are recognized today as indispensable for confronting the major societal challenges in science and technology, this book would be of interest to decision-makers, managers, and researchers from academia, and industrial/services companies that would like a fresh insight into MCDM. Features Integrates a wide range of scientific fields with a general reader approach, including applied researchers from the social, business, enterprise sciences Suitable for academics and professionals Presents a broad coverage of MCDM tools either in industry or in services companies and systems Provides a fresh overview on MCDM studies promoted by prestigious R&D institutions

Flood Risk Management-Theodore V Hromadka II 2017-08-30 In this book, contributions from several experts specializing in the area of flood risk management are assembled into a single volume. Application and testing of numerical and statistical models that can simulate the complex reality along with effective flood management strategies that are being implemented in various
nations are presented. This collection of topics will provide an update to the reader as to the state of the art in this important technical field. GIS and Multicriteria Decision Analysis-Jacek Malczewski 1999-04-05 From selecting sites for new hospitals, schools, and factories, to managing forests and rivers, to creating and maintaining highways and bridges, public and private organizations are often called on to make decisions on geographic questions that involve a multitude of alternatives and often conflicting evaluation criteria. This book presents a formal mechanism for dealing with these situations, capturing the information in a Geographic Information System and processing it to derive optimal recommendations for confronting these complex questions.

Multiple Criteria Decision Analysis-Salvatore Greco 2016-02-18 In two volumes, this new edition presents the state of the art in Multiple Criteria Decision Analysis (MCDA). Reflecting the explosive growth in the field seen during the last several years, the editors not only present surveys of the foundations of MCDA, but look as well at many new areas and new applications. Individual chapter authors are among the most prestigious names in MCDA research, and combined their chapters bring the field completely up to date. Part I of the book considers the history and current state of MCDA, with surveys that cover the early history of MCDA and an overview that discusses the “pre-theoretical” assumptions of MCDA. Part II then presents the foundations of MCDA, with individual chapters that provide a very exhaustive review of preference modeling, along with a chapter devoted to the axiomatic basis of the different models that multiple criteria preferences. Part III looks at outranking methods, with three chapters that consider the ELECTRE methods, PROMETHEE methods, and a look at the rich literature of other outranking methods. Part IV, on Multiattribute Utility and Value Theories (MAUT), presents chapters on the fundamentals of this approach, the very well known UTA methods, the Analytic Hierarchy Process (AHP) and its more recent extension, the Analytic Network Process (ANP), as well as a
chapter on MACBETH (Measuring Attractiveness by a Categorical Based Evaluation Technique). Part V looks at Non-Classical MCDA Approaches, with chapters on risk and uncertainty in MCDA, the decision rule approach to MCDA, the fuzzy integral approach, the verbal decision methods, and a tentative assessment of the role of fuzzy sets in decision analysis. Part VI, on Multiobjective Optimization, contains chapters on recent developments of vector and set optimization, the state of the art in continuous multiobjective programming, multiobjective combinatorial optimization, fuzzy multicriteria optimization, a review of the field of goal programming, interactive methods for solving multiobjective optimization problems, and relationships between MCDA and evolutionary multiobjective optimization (EMO). Part VII, on Applications, selects some of the most significant areas, including contributions of MCDA in finance, energy planning problems, telecommunication network planning and design, sustainable development, and portfolio analysis. Finally, Part VIII, on MCDM software, presents well known MCDA software packages.

Multiple Criteria Analysis in Strategic Siting Problems-Oleg I. Larichev 2001-05-31 The purpose of Multiple Criteria Analysis in Strategic Siting Problems is to demonstrate how multiple criteria can be used in analysis of facility location problems. The book begins with an overview, explains the internationally most popular multiple objective analysis methods, and demonstrates their applications on real problems. Siting problems reviewed include nuclear waste disposal in the U.S., solid waste management in Finland, pipeline location in India, and pipeline location in Russia. Methods covered are multiattribute utility analysis, analytic hierarchy process, the ELECTRE outranking method, and verbal decision analysis. The book concludes with a comparative review of methods. The book uses the multi-attribute, multi-party framework of Kunreuther to present the decision context, to include parties with interests in the decisions, as well as the sequence of project events. This perspective is valuable in identifying the qualitative backgrounds of siting
problems that need to be considered. The book demonstrates the importance of multiple criteria in hazardous facility site selection. It also shows how each of the four methodologies covered operate, both in terms of demonstration problems worked with numbers, and how these methods have been applied in the real applications. The real applications were taken from refereed journal documentation, with the exception of Russian pipeline analysis decisions in which Professor Larichev participated. The book is recommended for those interested in decision-making involving problems with social import. This includes environmental aspects, as well as international aspects of decision making. Handbook of Multicriteria Analysis-Constantin Zopounidis 2010-05-25 Multicriteria analysis is a rapidly growing aspect of operations research and management science, with numerous practical applications in a wide range of fields. This book presents all the recent advances in multicriteria analysis, including multicriteria optimization, goal programming, outranking methods, and disaggregation techniques. The latest developments on robustness analysis, preference elicitation, and decision making when faced with incomplete information, are also discussed, together with applications in business performance evaluation, finance, and marketing. Finally, the interactions of multicriteria analysis with other disciplines are also explored, including among others data mining, artificial intelligence, and evolutionary methods. Spatial Multicriteria Decision Making and Analysis-Jean-Claude Thill 2019-01-04 First published in 1999, this volume consists of selected papers presented at the North American Meetings of the RSAI along with invited contributions from scholars active in the field of spatial multicriteria decision making and analysis. It is meant to present diverse lines of research in spatial multicriteria decision making and analysis under the multidisciplinary umbrella of Geographic Information Science. The first part explores selected theoretical and conceptual aspects of spatial multicriteria decision making and analysis not confined to any specific application domain. Part 2 consists of six
chapters focusing on various forms of location decision and analysis problems. Finally, part 3 contains five chapters on various spatial decision problems whose systemic scope sets them apart from locational decision problems.

Multi-Criteria Decision Analysis-Igor Linkov

2020-09-14 Decision analysis has become widely recognized as an important process for translating science into management actions. With climate change and other systemic threats as driving forces in creating environmental and engineering problems, there is a great need for understanding decision making frameworks through a case-study based approach. Management of environmental and engineering projects is often complicated and multidisciplinary in scope and nature, thus issues that arise can be difficult to solve analytically. Multi-Criteria Decision Analysis: Case Studies in Engineering and the Environment provides detailed description of MCDA methods and tools and illustrates their applications through case studies focused on sustainability and system engineering applications. New in the Second Edition: Addresses current and emerging environmental and engineering problems Includes seven new case studies to illustrate different management situations applicable at the international level Builds on real case studies from recent and relevant environmental and engineering management experience Describes advanced MCDA techniques and extensions used by practitioners Provides corresponding decision models implemented using the DECERNS software package Gives a more holistic approach to teaching MCDA methodology with a focus on sustainable solutions and adoption of new technologies, including nanotechnology and synthetic biology Given the novelty and inherent applicability of this decision-making framework to the environmental and engineering fields, a greater number of teaching tools for this topic need to be made available. This book provides those teaching tools, covering the breadth of the applications of MCDA methodologies with clear explanations of the MCDA process. The case studies are implemented in the DECERNS software package, allowing readers to
experiment and explore and to understand the full process by which environmental managers assess these problems. This book is a great resource for professionals and students seeking to learn decision analysis techniques and apply similar frameworks to environmental and engineering projects.


Multicriteria Analysis in Finance-Michael Doumpos 2014-04-10 This book provides a concise introduction into the fundamentals and applied techniques of multiple criteria decision making in the finance sector. Based on an analysis of the nature of financial decisions and the general methods of financial modelling, risk management and financial engineering, the book introduces into portfolio management, banking management and credit scoring. Finally the book presents an overview of further applications of multi criteria analysis in finance and gives an outlook on future perspectives for the application of MCDA in finance.

Applications of Multi-Criteria and Game Theory Approaches-Lyes Benyoucef 2013-10-17 Aligning the latest practices, innovations and case studies with academic frameworks and theories, the broad area of multi-criteria and game theory applications in manufacturing and logistics is covered in comprehensive detail. Divided into two parts, part I is dedicated to ‘multi-criteria applications’ and includes chapters on logistics with a focus on vehicle routing problems, a multi-objective decision making approach to select the best storage policy and an exploratory study to predict the most important factors that can lead to successful mobile supply chain management adoption for manufacturing firms. Part II covers ‘game theory applications’ and encompasses the process of forming a coalition within a corporate network to the problem of integrating inventory and distribution optimization together with game theory to effectively manage supply networks. Providing a forum to investigate, exchange novel ideas and disseminate knowledge covering the broad area of multi-criteria and game theory applications in manufacturing and logistics, Applications of Multi-Criteria and Game Theory
Approaches is an excellent reference for students, researchers but also managers and industry professionals working with manufacturing and logistics issues. Multi Criteria Analysis in the Renewable Energy Industry-José Ramón San Cristóbal Mateo 2012-01-03 Decision makers in the Renewable Energy sector face an increasingly complex social, economic, technological, and environmental scenario in their decision process. Different groups of decision-makers become involved in the process, each group bringing along different criteria therefore, policy formulation for fossil fuel substitution by Renewable Energies must be addressed in a multi-criteria context. Multi Criteria Analysis in the Renewable Energy Industry is a direct response to the increasing interest in the Renewable Energy industry which can be seen as an important remedy to many environmental problems that the world faces today. The multiplicity of criteria and the increasingly complex social, economic, technological, and environmental scenario makes multi-criteria analysis a valuable tool in the decision-making process for fossil fuel substitution. The detailed chapters explore the use of the Multi-criteria decision-making methods and how they provide valuable assistance in reaching equitable and acceptable solutions in the selection of renewable energy projects. Common multi-criteria decision-making methods including Analytical Hierarchy Process, PROMETHEE, ELECTRE, TOPSIS and VIKOR are explored in detail with an application case of each method included at the end of each chapter. As such, Multi Criteria Analysis in the Renewable Energy Industry is an ideal resource for those groups of individuals, institutions and administration such as local authorities, academic institutions, environmental groups, and governments that, through their priorities and evaluation systems, have interests at stake and directly or indirectly influence the decision-making process. Civil Engineering Practice: Water resources-Nicholas P. Cheremisinoff 1987 Multiple Criteria Decision Making Kyoto 1975-M. Zeleny 2012-12-06 This collection of articles

Multicriteria analysis, or MCA, has been increasingly used in environmental decision-making to support the identification of suitable courses of action by integrating factual information with value-based information collected through stakeholder engagement. Multicriteria Analysis for Environmental Decision-Making provides an introduction to the key concepts of MCA and includes a series of case studies that illustrate the application of MCA to a variety of environmental decision-making problems ranging from protected area zoning to landfill siting, and from forest restoration to environmental impact assessment of tourism infrastructures. A compact reference that can be used by researchers, practitioners and planners/decision makers, Multicriteria Analysis for Environmental Decision-Making can also serve as a textbook for undergraduate and postgraduate courses in a broad range of applications.
Management of Scarce Water Resources-Hazim El-Naser 2009 The aim of this book is to provide a practical approach to a wide variety of water related topics. These explore the problems that arid and semi-arid countries face in relation to water resources and water management, using recent case studies as a result of recent and past experience to explore the possible solutions, as well to provide a framework/guideline to assist the practitioner in resolving these problems. The book contains case studies and practical guidelines developed from many years of project management, private sector participation and Ministerial level government appointment in both Water and Irrigated Agriculture. Many solutions were developed for specific problems/tasks, in particular, lessons learned from Management Contracts of water utilities.

Multicriteria Analysis and LCA Techniques-Lucia Recchia 2011-07-03 Multicriteria Analysis and LCA Techniques introduces the reader to the basic principles of multicriteria analysis (MCA) and life cycle assessment (LCA) techniques. The use of these tools is rapidly becoming essential in any feasibility study for comparing different solutions, selecting the most suitable ones, and for analyzing the interface of economy and environment. The main feature of Multicriteria Analysis and LCA Techniques is the application of a new approach to the analysis of energy balance and environmental impact of agro-industrial production chains. It gives detailed descriptions of a number of food and non-food agro-industrial applications of MCA and LCA, thereby providing the reader with practical examples of the implementation of these tools in the field of agro-industry. Multicriteria Analysis and LCA Techniques represents a subsidiary reference book for both undergraduate and graduate students, and can also be used for basic or applied academic research.

Multiple Criteria Decision Making-Constantin Zopounidis 2016-09-08 This book presents a broad range of innovative applications and case studies in all areas of management and engineering, including public administration, finance, marketing, engineering, transportation,
and energy systems. It addresses issues related to problem structuring, preference modeling, and model construction, presenting a framework that provides clear decision-making support in practice. In addition, it includes hybrid and integrated techniques combining multiple criteria decision making (MCDM) with other analytical methods. The book reflects the growing impact of MCDM in the field of management science and operations research. Building on recent and established theoretical advances and presenting their applications in specific domains, it offers a comprehensive resource for researchers, graduate students and professionals alike.

Handbook of ozone technology and applications-Aharon Netzer 1984 Good,No Highlights,No Markup,all pages are intact, Slight Shelfwear,may have the corners slightly dented, may have slight color changes/slightly damaged spine.

Integrating Water Resources Management-Geoffrey D. Gooch 2010 This book investigates IWRM in the four selected t

Multi-Criteria Decision Analysis-Igor Linkov 2011-10-24 Environmental management is often complicated and multidisciplinary and the issues that arise can be difficult to solve analytically. Often, decision makers take ad hoc approaches, which may result in the ignoring of important stakeholder opinions or decision criteria. Multi-criteria decision analysis (MCDA) provides a framework by which these types of decisions can be made but, despite being used effectively in many fields, it is not often used in environmental management. Given the novelty and inherent applicability of this decision making framework to the environmental field, there is a need for more teaching tools for MCDA. In particular, there is a need for a case study based approach to help readers navigate the many MCDA methods and decide how to apply them to a specific case. Through a collection of case studies, Multi-Criteria Decision Analysis: Environmental Applications and Case Studies gives readers the tools to apply cutting-edge MCDA methods to their own environmental projects. It offers an overview of the types of
MCDA available and a conceptual framework of how it is applied, with the focus on its applicability for environmental science. Taking an in-depth look at the case of sediment management, the book introduces different steps of MCDA processes—from problem formulation and model development to criteria weighing and alternative scoring. The authors then explore the case using various MCDA methods, which allows readers to see clearly how the methodologies differ and gain a better understanding of the mechanistic operation of the analysis. A series of case studies in nanotechnology collectively demonstrate the application of MCDA in situations of high variability and uncertainty that require the integration of technical information and expert judgment—an area where MCDA clearly shines. The authors describe multiple decisions—from risk classification to value of information analysis to the assessment of potential research and funding investments—that readers may face in dealing with emerging environmental threats. Demonstrating the broad applicability of MCDA methods for different types of cases, the book presents a series of case studies ranging from oyster restoration to oil spill response. In conjunction with these cases, the book also provides corresponding decision models that are implemented by the DECERNS software and allow users to examine the same case using multiple MCDA tools. The DECERNS software and models are available for download at www.crcpress.com. Intended both as a research and teaching tool, this book inspires creative thinking when applying MCDA to complicated environmental issues.

Multicriteria Evaluation in a Fuzzy Environment—Giuseppe Munda 2012-12-06 This book is the result of some years of research carried out at the Vrije Universiteit of Amsterdam and at the Joint Research Centre of the European Commission. The awareness of actual and potential conflicts between economic progress in production, consumption, and technology and the environment has led to the concept of "sustainable development", implying that economic and ecological values are well balanced in evaluation and decision making. The linkages
between ecosystems and economic systems are the focus of ecological economics. In ecological economics, a multidimensional approach to economic and policy-making is emphasised. In this book, the introduction of multicriteria decision aid techniques in the framework of ecological economics is widely discussed. Since such techniques are based on a "constructive" rationality and allow one to take into account conflictual, multidimensional, incommensurable and uncertain effects of decisions, they can be considered perfectly consistent with the methodological foundations of ecological economics. Since here the assumption is accepted that efficiency, equity and sustainability are the three conflictual values of economics, a mathematical procedure able to deal with these issues in an operational framework is developed, with a particular view on imprecise information in a practical environmental planning context. Given the problem of the differences in the measurement levels of the variables used for economic-ecological modelling, multicriteria methods able to deal with mixed information (both qualitative and quantitative measurements) can be considered particularly useful. Another problem related to the available information concerns the uncertainty (stochastic and/or fuzzy) contained in this information.

Integrated Water Management-P. Meire 2007-11-05 Water is essential for a wide range of human activities and it exists in relatively finite amounts. When dealing with water management, different issues should be combined: water demand, water quality, irrigation and food production, ecosystem preservation, cost minimization, technological options, legislative frameworks, social impact. The main goal of the book is to give a general framework about Integrated Water Management (IWM), that is the planning and management of water resources integrating the different issues involved (ecological, economic, technical legislative, transboundary, etc.). The manuscript is the result of the research activity and the exchange of knowledge among a team of experts in different disciplines and institutions related to water resources, and includes both the different
environmental problems that affect the very different ecosystems, and the main methodologies able to face the problem of IWM. The book is divided in three parts: Concepts and approaches of IWM (Part I), Case studies (Part II), and Reports of the working groups (Part III). Finally, the book contains a section of conclusions that includes discussion about the presented methodologies, approaches, and issues. In particular, the perspective of experts in different disciplines (engineering perspective, biology perspective, economic perspective, etc. has been given).

Multi-Criteria Decision Analysis to Support Healthcare Decisions-Kevin Marsh 2017-04-18

Representing the first collection on the topic, this book builds from foundations to case studies, to future prospects, providing the reader with a rich and comprehensive understanding of the use of multi-criteria decision analysis (MCDA) in healthcare. The first section of the collection presents the foundations of MCDA as it is applied to healthcare decisions, providing guidance on the ethical and theoretical underpinnings of MCDA and how to select MCDA methods appropriate to different decision settings. Section two comprises a collection of case studies spanning the decision continuum, including portfolio development, benefit-risk assessment, health technology assessment, priority setting, resource optimisation, clinical practice and shared decision making. Section three explores future directions in the application of MCDA to healthcare and identifies opportunities for further research to support these.


Multicriteria Decision Aid Methods for the Prediction of Business Failure-Constantin Zopounidis 2013-03-09

This book provides a new point of view on the subject of business failure prediction, through the application of multicriteria analysis methods. The aim of the book is to provide a review of the research in the area and to explore the adequacy of these methods to one of the most complex problems in the area of financial management. In addition, the book explores the applications of the
methods so that it can become a very useful tool for researchers and practitioners. The analysis of the modeling and the results in these applications provides the background for further employment of the methods.

Multiple Criteria Decision Analysis-Valerie Belton 2002 The field of multiple criteria decision analysis (MCDA) - also sometimes termed multiple criteria decision aid, or multiple criteria decision making (MCDM) - has developed rapidly over the past quarter century and in the process a number of divergent schools of thought have emerged. Multiple Criteria Decision Analysis: An Integrated Approach provides a comprehensive yet widely accessible overview of the main streams of thought within MCDA. Two principal aims are: To provide sufficient awareness of the underlying philosophies and theories, understanding of the practical detail of the methods, and insight into practice to enable researchers, students and industry practitioners to implement MCDA methods in an informed manner; To develop an integrated view of MCDA, incorporating both integration of different schools of thought within MCDA and integration of MCDA with broader management theory, science and practice, thereby informing the development of theory and practice across these areas. It is felt that this two-fold emphasis gives a book which will be of value to the following three groups: Practicing decision analysts or graduate students in MCDA for whom this book should serve as a state-of-the-art review, especially as regards techniques outside of their own specialization; Operational researchers or graduate students in OR/MS who wish to extend their knowledge into the tools of MCDA; Managers or management students who need to understand what MCDA can offer them.

Multiple Criteria Analysis-Peter Nijkamp 1981

Multi-Objective Programming and Goal Programming-Mehrdad Tamiz 1996-02-19 Most real-life problems involve making decisions to optimally achieve a number of criteria while satisfying some hard or soft constraints. In this book several methods for solving such problems are presented by the leading experts in the area. The book also contains a number of very
interesting application papers which demonstrate theoretical modelling, analysing and solution of real-life problems.

Actor Analysis for Water Resources Management-Leon Hermans 2005