1. Record Nr. UNINA9910799236203321

Titolo	Decision Making in Healthcare Systems / / edited by Tofigh Allahviranloo, Farhad Hosseinzadeh Lotfi, Zohreh Moghaddas, Mohsen Vaez-Ghasemi
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2024
ISBN	3-031-46735-3
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (440 pages)
Collana	Studies in Systems, Decision and Control, , 2198-4190 ; ; 513
Disciplina	780
Soggetti	Control engineering Artificial intelligence Control and Systems Theory Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Contents -- Methodologies for Decision-Making in the Health and Medicine Sector -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Decision-Making Techniques in the Medicine and Health Sector -- 4 Medical Decision Making -- 5 Organizational Decision-Making in Healthcare -- 6 Healthcare Marketing -- 7 Conclusion -- References -- The Application of System Simulation in the Health Sector: A Rapid Review -- 1 Introduction -- 2 Method -- 3 Result -- 4 System Dynamic Simulation (SD) -- 5 Discrete Event Simulation (DES) -- 6 Agent Based Modeling (AB) -- 7 Discussion -- References -- Data Science in the Field of Health -- 1 Introduction and Motivation -- 2 Literature Review -- 2.1 Numeric Data Evaluation -- 2.2 Time Spanned Health Data Evaluation -- 2.3 Health Image Data Evaluation -- 3 Conclusion -- References -- Evaluation of Hospitals and Health Care Centers with Ratio Data -- 1 Introduction and Motivation -- 2 Literature Review -- 2.1 Non-negative Data -- 2.2 Negative Data -- 3 Ratio Data in Healthcare Management and Motivation to Use DEA-R Models -- 4 Further Managerial Implications and Applications -- 5 Conclusion -- References -- Multiple Attribute Decision Making in Ranking the Criteria in Health (with Certain and Uncertain Data) -- 1

Introduction and Motivation -- 2 Literature Review -- 3 Smart Healthcare System Management -- 4 Ranking Healthcare Attributes with Madm Technique -- 5 Identifying the Attributes and Sub-attributes for Evaluating the Performance of Smart Healthcare Management -- 5.1 Execution of Delphi Process -- 6 Ranking Healthcare Attributes with Certain Data -- 6.1 Ranking Using Dematel Technique -- 6.2 Determining the Weights of the Attributes Using the "Swara" Technique -- 6.3 Ranking of Performance Evaluation Attributes for Smarthealthcare Management Using "Waspas" Technique -- 7 Ranking Strategies.
7.1 Average Ranking Method -- 7.2 BORDA Method -- 7.3 COPELAND Method -- 8 Integration Stage -- 9 Ranking Healthcare Attributes with Uncertain Data -- 9.1 Fuzzy Sets and Fuzzy Numbers -- 9.2 Using Fuzzy DEMATEL -- References -- Healthcare Facility Location -- 1 Introduction -- 2 Facility Location -- 2.1 Covering-Based Problem -- 2.2 Median-Based Problem -- 2.3 Other Problem -- 3 Healthcare Facility Location -- 4 Data Envelopment Analysis -- 4.1 Ranking in DEA -- 4.2 Application of DEA on Healthcare -- 4.3 Application of DEA on Location Problem -- 5 Healthcare Facility Location Using DEA -- 5.1 Solving the Model Based on Distance Priority -- 6 Conclusion -- References -- Fuzzy Transportation Model for Resource Allocation in a Dental Hospital -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Preliminaries -- 4 Fuzzy Mixed Integer Linear Programming Model -- 5 Application -- 6 Sensitivity Analysis -- 7 Concluding Remarks -- References -- Locating Problems for Medical Centers and Emergency Services -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Location -- 3.1 Location Models -- 4 Factor Evaluation Method -- 4.1 Factor Rating Method -- 4.2 Distance-Loading Method -- 4.3 Gravity Center -- 5 The Location of Healthcare and Related Service Centers -- 5.1 Location Selection of Healthcare and Service Centers Using MADM Methods -- 6 Fuzzy PROMETHEE -- 6.1 Fuzzy Hierarchical Analysis Process -- 6.2 Fuzzy Logarithmic Least Square Method (FLLSM) -- 6.3 Location Selection of a Healthcare Center and Its Related Health Services Among Several Proposed Locations -- References -- Budgeting in Healthcare -- 1 Introduction -- 2 Moving from Focusing on Financial Accounting to Financial Management -- 3 Non-profit Organizations and Their Financial Conditions -- 4 The Necessity of Budgeting in General and Emphasizing its Need in Healthcare Environment.
5 The Importance of Management Accounting for Healthcare Managers -- 6 Necessary Financial Concepts in the Field of Healthcare -- 6.1 Expense -- 6.2 Cost, Expense and Loss -- 6.3 Classification of Costs to Direct and Indirect -- 6.4 Classification of Costs Based on Product Components -- 6.5 Classification of Costs into Product Costs and Period Costs -- 6.6 Classification of Costs Based on Cost Behavior -- 6.7 Profit Analysis Based on Activity Volume -- 6.8 Profit Margin -- 7 Other Terms Related to Cost -- 7.1 Cost Object -- 7.2 Cost Driver -- 7.3 Costing -- 7.4 Cost Center -- 7.5 Cost Pool -- 7.6 Expired Cost and Unexpired Cost -- 7.7 Opportunity Cost -- 7.8 Sunk Cost -- 7.9 Differential Cost -- 7.10 Avoidable Cost and Unavoidable Cost -- 7.11 Relevant Cost -- 7.12 Standard Cost -- 7.13 Joint Costs -- 7.14 Separable Costs -- 7.15 Mixed Costs -- 7.16 Semi-variable Costs -- 7.17 Semifixed (or Step Function) Cost -- 8 Budgeting -- 8.1 Prerequisites of Budgeting (Scheduling) -- 8.2 Traditional Budgeting Versus Zero-based Budgeting -- 8.3 Top-Down Budgeting Versus Bottom-Up Budgeting -- 9 Types of Budgets -- 9.1 Statistical Budget -- 9.2 Budget Based on Revenues -- 9.3 Budget Based on Expenses -- 9.4 Operating Budget -- 10 Budget Deviation Analysis -- 10.1 Fixed

Budgets Versus Flexible Budgets -- 11 Making Decisions About Capital Investments -- 11.1 Capital Budgeting Basics -- 11.2 The Importance of Cash Flows from Investment -- 12 Project Risk Assessment and its Application in the Capital Investment Decision Making Process -- 12.1 Classification of Capital Projects -- 12.2 The Role of Financial Analysis in Healthcare Capital Budgeting -- 12.3 Cash Flow Forecast -- 12.4 Break-Even Point Analysis -- 12.5 Analysis of Return on Investments (ROI) -- 12.6 Net Present Value (NPV) -- 12.7 Internal Rate of Return (IRR) -- 12.8 NPV Versus IRR.
12.9 Modified Internal Rate of Return (MIRR) -- 12.10 Net Present Social Value Model -- 13 Conclusion -- References -- Sleep Disorders Detection and Classification Using Random Forests Algorithm -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Sleep Health Dataset -- 4 Experiments and Results -- 5 Conclusion -- References -- Green Supply Chain in Medicine -- 1 Introduction -- 2 Medicine Supply Chain -- 3 Green Supply Chain in Medicine -- 3.1 Sourcing in Medicine GSC -- 3.2 Manufacturing in Medicine GSC -- 3.3 Distribution in Medicine GSC -- 3.4 Disposal in Medicine GSC -- 4 Challenges/Opportunities of Medicine GSC -- 5 Conceptual Model of the Medicine GSC -- 6 Case Studies -- 7 Conclusion -- References -- Statistical Analysis and Structural Equations on Influential Parameters in Health -- 1 Introduction -- 2 Statistics -- 3 Description of Variables -- 4 Statistical Test -- 5 Statistical Methods and Assumptions -- 6 Structural Equation Modelling (SEM) -- 6.1 SEM Applications -- 6.2 SEM Approaches -- 6.3 Fitness Indices -- 6.4 SEM Softwares -- 6.5 SEM Application in Health -- 6.6 Modification Indices -- References -- Boosting Facial Action Unit Detection with CGAN-Based Data Augmentation -- 1 Introduction and Motivation -- 2 Methodology -- 2.1 Database Setup -- 2.2 Implementation Details -- 3 Experimental Results -- 4 Conclusion -- References -- Resiliency in Green Supply Chains of Pharmaceuticals -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Methodology -- 4 Analysis and Findings -- 5 Conclusion -- References -- Exploring Congestion in Fuzzy DEA by Solving One Model -- Case Study: Hospitals in Tehran -- 1 Introduction and Motivation -- 2 Preliminaries -- 2.1 DEA Models -- 2.2 Congestion -- 2.3 Fuzzy Numbers -- 3 Proposed Method -- 4 Case Study -- 5 Conclusion -- References.
Performance and Managerial Ability Analysis in Health Sector: A Data Envelopment Analysis Approach -- 1 Introduction -- 2 Methodology -- 3 A Real Application in Healthcare System -- 4 The Impact of Contextual Variables on Efficiency Scores -- 5 Findings and Results -- References -- Mental Health on Twitter in Turkey: Sentiment Analysis with Transformers -- 1 Introduction -- 1.1 Background -- 1.2 Turkish Twitter and Sentiment Analysis -- 2 Methods -- 2.1 Background Materials -- 2.2 Data Collection -- 2.3 Sentiment Scoring -- 2.4 Model Building -- 3 Results -- 4 Conclusion -- References -- Roe v Wade in Twitter: Sentiment Analysis with Machine Learning -- 1 Introduction -- 1.1 Background -- 1.2 Public Policy and Sentiment Analysis -- 2 Methods -- 2.1 Background Materials -- 2.2 Data Collection -- 2.3 Sentiment Scoring -- 2.4 Model Building -- 3 Results -- 4 Conclusion -- References -- Time Scheduling for Staff in Hospitals and Health Care Centres -- 1 Introduction and Motivation -- 2 Literature Review -- 3 Simulation Usage in Planning -- 4 ILP MODEL (Integer Linear Programming Model) -- 5 Precise and Heuristic Algorithms -- References -- Transportation Models in Health Systems -- 1 Introduction and Motivation -- 2 Literature Review -- References.

Sommario/riassunto

This book chooses the topic which is due to the editors' experience in modeling projects in healthcare systems. Also, the transfer of

experiences is the reason why mathematical modeling and decision making in the field of health are not given much attention. To this end, the new aspect of this book is the lack of reference needed to carry out projects in the field of health for researchers whose main expertise is not modeling. Students of health, mathematics, management, and industrial engineering fields are in the direct readership with this book. Different projects in the field of healthcare systems can use the topics presented in different chapters mentioned in this book.