

1. Record Nr.	UNINA9910484152603321
Autore	Ren Peijia
Titolo	Decision-making analyses with thermodynamic parameters and hesitant fuzzy linguistic preference relations // Peijia Ren, Zeshui Xu
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-73253-3
Descrizione fisica	1 online resource (140 pages)
Collana	Studies in Fuzziness and Soft Computing ; ; Volume 409
Disciplina	658.403
Soggetti	Fuzzy sets Decision making
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- References -- Contents -- 1 Introduction -- 1.1 Background -- 1.1.1 Development of Fuzzy Information -- 1.1.2 Development of Hesitant Fuzzy Linguistic Preference Relation -- 1.1.3 Development of Thermodynamics -- 1.2 Importance of Decision-Making Analyses with Thermodynamic Parameters and Hesitant Fuzzy Linguistic Preference Relations -- 1.3 Aim of Book -- References -- 2 Literature Review -- 2.1 Review of Decision-Making Based on Thermodynamics -- 2.1.1 Decision Methods with Criteria Entropy -- 2.1.2 Decision-Making with Entropy Applications -- 2.2 Review of Decision-Making Based on Hesitant Fuzzy Linguistic Preference Relation -- 2.2.1 Decision Models for Deriving Priority Vector -- 2.2.2 Decision Making with Consistency Measure -- 2.2.3 Consensus Models for Group Decision Making -- References -- 3 A Thermodynamic Method for Intuitionistic Fuzzy Decision Making -- 3.1 Intuitionistic Fuzzy Set -- 3.2 Description of the Method with Thermodynamic Parameters -- 3.3 Intuitionistic Fuzzy Decision-Making Method with Thermodynamic Parameters -- 3.4 Comparative Analyses -- 3.4.1 Result Comparisons with Different Methods -- 3.4.2 Sensitive Analysis on Results with Different Methods -- 3.5 A Case Study on Addressing Hierarchical Diagnosis and Treatments -- 3.5.1 Description of the Case -- 3.5.2 Decision-Making Process -- 3.5.3 Comparison Case Results with Other Methods -- 3.6 Summary -- References -- 4

A Thermodynamic Method for Hesitant Fuzzy Decision Making Based on Prospect Theory -- 4.1 Prospect Theory -- 4.2 Hesitant Fuzzy Sets -- 4.3 Hesitant Fuzzy Prospect Matrix -- 4.4 Thermodynamic Decision-Making Method Based on Prospect Theory -- 4.5 Discussions -- 4.5.1 The Validation of the Method -- 4.5.2 Comments on the Existing Method -- 4.6 A Case Study on Emergency Decision Making in Firing and Exploding Accident.

4.6.1 Description of the Case -- 4.6.2 Decision-Making Process -- 4.6.3 Comparing Case Results with Hesitant Fuzzy TOPSIS -- 4.7 Summary -- References -- 5 A Thermodynamic Method for Heterogeneous Decision Making Based on Confidence Level -- 5.1 Linguistic Information -- 5.2 Heterogeneous Thermodynamic Parameters -- 5.3 Weights Modification Process -- 5.4 Decision-Making with Thermodynamic Parameters and Confidence Level Under Heterogeneous Environment -- 5.5 Discussions -- 5.6 A Case Study on Green Supplier Selection Under a Low-Carbon Economy -- 5.6.1 Description of the Case -- 5.6.2 Indicators Selection -- 5.6.3 Decision-Making Process -- 5.7 Summary -- References -- 6 A Priority Programming Model for Hesitant Fuzzy Linguistic Preference Relation -- 6.1 Hesitant Fuzzy Linguistic Preference Relation -- 6.2 A Hyperplane-Consistency-Based Programming Model -- 6.2.1 Satisfaction for the Consistency Degree -- 6.2.2 Priority Space -- 6.2.3 Mathematical Programming Model -- 6.3 Decision-Making Procedure -- 6.4 Discussions -- 6.4.1 Analyses on Parameter t -- 6.4.2 Statistical Comparative Study -- 6.5 Extension of the Model Under Incomplete Environment -- 6.5.1 Incomplete Hesitant Fuzzy Linguistic Preference Relation -- 6.5.2 A Programming Model for Deriving Priorities -- 6.5.3 Discussions -- 6.6 A Case Study on Assessing the Effects of Hydropower Stations' Flood Discharge and Energy Dissipation on Environment -- 6.6.1 Description of the Case -- 6.6.2 Decision-Making Process -- 6.7 Summary -- References -- 7 A Group Decision-Making Method for Hesitant Fuzzy Linguistic Preference Relations Based on Modified Extent Measurement -- 7.1 A Kernel-Based Algorithm Under Hesitant Fuzzy Linguistic Environment -- 7.2 Group Consensus Measurement -- 7.3 A Group Decision-Making Procedure -- 7.4 Discussions.

7.4.1 Convergence with Different Numbers of Decision Makers and Different Orders of HFLPRs -- 7.4.2 Convergence with Different Maximum Modified Extents -- 7.5 A Case Study on Selecting an Optimal Flood Discharge Technique for a Hydropower Station -- 7.5.1 Description of the Case -- 7.5.2 Decision-Making Process -- 7.6 Summary -- References -- 8 A Consensus Model for Hesitant Fuzzy Linguistic Preference Relation Based on Consistency Driven -- 8.1 Consistency Index for a Hesitant Fuzzy Linguistic Preference Relation -- 8.1.1 Consistency Index -- 8.1.2 Acceptable Threshold -- 8.2 Group Consensus with Hesitant Fuzzy Linguistic Preference Relations -- 8.2.1 Consensus Index -- 8.2.2 Consensus Reaching Process Based on Consistency Measurement -- 8.3 A Decision-Making Procedure -- 8.4 Discussions -- 8.4.1 Acceptably Consistent Threshold -- 8.4.2 Applicability of the Proposed Procedure -- 8.5 A Case Study on Assessing the Erosion Impacts of Hydropower Stations on Environment -- 8.5.1 Description of the Case -- 8.5.2 Decision-Making Process -- 8.5.3 Comparisons -- 8.6 Summary -- References -- 9 Conclusions and Outlooks -- 9.1 Conclusions -- 9.2 Outlooks -- 9.2.1 Future Work for Decision-Making Methods Based on Thermodynamic Parameters -- 9.2.2 Future Work for Decision-Making Methods Based on Hesitant Fuzzy Linguistic Preference Relations -- References.
