Record Nr. UNISA996546836403316 Autore Xu Yejun Titolo Deriving priorities from incomplete fuzzy reciprocal preference relations: theories and methodologies / / Yejun Xu Pubbl/distr/stampa Singapore:,: Springer,, [2023] ©2023 **ISBN** 981-9931-69-X Edizione [First edition.] Descrizione fisica 1 online resource (180 pages) Disciplina 511.3223 Soggetti Fuzzy sets Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Chapter 1. Introduction -- Chapter 2. Normalizing Rank Aggregationbased Method -- Chapter 3. Eigenvector Method -- Chapter 4. Logarithmic Least Squares Method -- Chapter 5. A Chi-Square Method -- Chapter 6. A Least Deviation Method -- Chapter 7. Priorities from Fuzzy Best Worst Method Matrix -- Chapter 8. Weighted Least Square Method -- Chapter 9. Priorities from Incomplete Hesitant Fuzzy Reciprocal Preference Relations. As we know, multiplicative preference relations (or called pairwise Sommario/riassunto comparisons in AHP) were proposed by Dr. Thomas L Saaty. One important work is to derive its priority from pairwise comparisons. It has been proposed many methods to derive priority for multiplicative preference relation. On the basis of fuzzy sets, the fuzzy reciprocal preference relation is proposed and is extended to the incomplete contexts. However, how to derive the priorities from incomplete fuzzy reciprocal preference relations is an interesting and challenging work. This book systematically presents the theories and methodologies for deriving priorities from incomplete fuzzy reciprocal preference

relations. This book can be divided into three parts. In the first part, this book introduces the basic concepts of fuzzy reciprocal preference relations and incomplete fuzzy reciprocal preference relations. Then, two consistencies of complete fuzzy reciprocal preference relations are introduced: additive consistency and multiplicative consistency. Then, the relationships between the fuzzy reciprocal elements and the

weights are showed. Afterward, in the second part, different priority methods are presented. The inconsistency repairing procedures are also proposed. Last, the priority method for incomplete hesitant fuzzy reciprocal preference relations is presented. This book can be used as a reference for researchers in the areas of management science, information science, systems engineering, operations research, and other relevant fields. It can also be employed as a textbook for upper-level undergraduate students and graduate students.