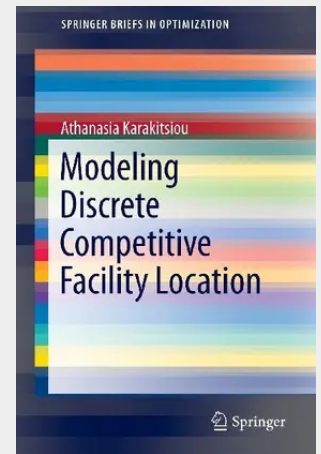


Modeling Discrete Competitive Facility Location

This book presents an up-to-date review of modeling and optimization approaches for location problems along with a new bi-level programming methodology which captures the effect of competition of both producers and customers on facility location decisions. While many optimization approaches simplify location problems by assuming decision making in isolation, this monograph focuses on models which take into account the competitive environment in which such decisions are made. New insights in modeling, algorithmic and theoretical possibilities are opened by this approach and new applications are possible. Competition on equal term plus competition between market leader and followers are considered in this study, consequently bi-level optimization methodology is emphasized and further developed. This book provides insights regarding modeling complexity and algorithmic approaches to discrete competitive location problems. In traditional location modeling, assignment of customer demands to supply sources are made for which the associated costs target the firm and not the customers, though in many real world situations the cost is incurred by the customers. Moreover, there may be customer competition for the provided services. Thus, a new methodological framework is needed in order to encompass such considerations into the modeling and solution process. This book offers initial directions for further research and development along these lines. Aimed toward graduate students and researchers in the field of mathematics, computer science, operational research and game theory, this title provides necessary information on which further research contributions can be based.

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