

Preface

A supply chain is the network of all the individuals, organizations, resources, activities, and technology involved in the creation and sale of a product, from the delivery of source materials from the supplier to the manufacturer, through to its eventual delivery to the end user. Supply chain management (SCM) is the oversight of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer. The three main flows of the supply chain are the product flow, the information flow, and the finances flow. SCM involves coordinating and integrating these flows both within and among companies.

Decision making is the thought process of selecting a logical choice from the available options. This is generally made under fuzzy environment. Fuzzy decision-making is a decision process using the sets whose boundaries are not sharply defined. The aim of this book is to show how fuzzy sets and fuzzy decision-making can be used in the various stages of supply chain management.

The contents of the book were constituted by following crisp supply chain management books. Thus, our book includes all the topics, which can be found in a classical supply chain management book but under fuzziness. The handled titles of our book are supplier evaluation under fuzziness, supply chain performance measurement under fuzziness, planning, controlling, and improving supply chain under fuzziness, production and materials management under fuzziness, optimization in supply chain under fuzziness, warehouse management under fuzziness, and green and reverse logistics under fuzziness.

The authors who published many fuzzy SCM papers in the literature were selected and invited to our book. Under the above main titles, they wrote on supplier evaluation using fuzzy inference systems, multicriteria supplier selection using fuzzy PROMETHEE method, fuzzy-AHP approach to improve effectiveness of supply chain, supplier evaluation using fuzzy clustering, investigating organizational characteristics for sustainable supply chain planning under fuzziness, fuzzy multiple criteria decision making for supply chain management, supply chain performance measurement: an integrated DEMATEL and fuzzy-ANP approach, imprecise DEA models to assess the agility of supply chains, supply chain performance measurement using a SCOR-based fuzzy VIKOR approach, fuzzy estimations and system dynamics for improving manufacturing orders in VMI supply chains, fuzzy methods for demand forecasting in supply

chain management flows finding in networks in fuzzy conditions, supply chain configuration as a cooperative game with fuzzy coalitions, a decentralized production and distribution planning model in an uncertain environment, a fuzzy linear programming approach for aggregate production planning, batch production plan for periodic demands with uncertain recycling rate in a closed-loop supply system, optimization models for supply chain production planning under fuzziness, recent models and solution methodologies for optimization problems in supply chain management under fuzziness, a multiple means transportation model with type-2 fuzzy uncertainty, a fuzzy set theoretic approach to warehouse storage decisions in supply chains, fuzzy c-means algorithm with fixed cluster centers for uncapacitated facility location problems: Turkish case study, a supply-chain production inventory model with warehouse facilities under fuzzy environment selection and assignment of material handling devices under uncertainty, government green procurement: a fuzzy-DEMATEL analysis of barriers, facility location selection in reverse logistics using a type-2 fuzzy decision aid method, green and reverse logistics management under fuzziness, an axiomatic design approach to the classification of reverse logistics network design studies under fuzziness, green supply chain technology: a comprehensive evaluation and justification multiattribute decision modeling approach.

The authors were invited from different countries to obtain a real international book. Among these countries, we can count Turkey, Greece, Spain, China, Russia, Iran, Canada, Taiwan, Mexico, Colombia, India, and the USA.

Finally, we thank all contributors and referees for their kind cooperation. This book would not be happening without their contributions and efforts.

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