Record Nr. UNINA9911007488703321 Autore Taleizadeh Ata Allah **Titolo** Stochastic Imperfect Inventory Systems: Inventory and Production Management / / by Ata Allah Taleizadeh Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 3-031-80099-0 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (826 pages) Collana **Business and Management Series** Disciplina 658.5 Soggetti Production management **Business logistics** Stochastic models Operations research Production Logistics **Operations Management** Stochastic Modelling Operations Research and Decision Theory Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Introduction -- Stochastic Imperfect Inventory Models with Scraped --Stochastic Imperfect Inventory Models with Rework -- Stochastic Imperfect Inventory Models with Breakdown -- Stochastic Imperfect Inventory Models with Maintenance -- Stochastic Imperfect Inventory Models with Quality and Inspection. Sommario/riassunto In today's manufacturing environment, managing inventories is one of the basic concerns of enterprises dealing with materials according to their activities. This book introduces and examines important production strategies such as scrap strategy and rework strategy under stochastic conditions that contribute to the reduction of unexpected costs. In a step-by-step manner, it presents stochastic imperfect inventory models, inventory models involving rework processes or breakdowns, as well as their maintenance. Also, different aspects of

uncertainty are provided in multiple chapters of this book. One of the primary questions answered in this book is: What is the optimal

production quantity when there is a failure in the production line? To answer the question, the problem is first modelled mathematically, then the concavity or convexity of the objective function is proved and finally the optimal production quantity of the production system is determined using suitable solution methods. The book is valuable for researchers in operations research and inventory management and professionals working with supply chains.