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Nota di contenuto	Chapter 1. Data Envelopment Analysis and Big Data: A Systematic Literature Review with Bibliometric Analysis -- Chapter 2. Acceleration of large-scale DEA computations using random forest classification -- Chapter 3. The estimation of productive efficiency through machine learning techniques: Efficiency Analysis Trees -- Chapter 4. Hybrid Data Science and Reinforcement Learning in Data Envelopment Analysis -- Chapter 5. Aggregation of Outputs and Inputs for DEA Analysis of Hospital Efficiency: Economics, Operations Research and Data Science Perspectives -- Chapter 6. Parallel Processing and Large-Scale Datasets in Data Envelopment Analysis -- Chapter 7. Network DEA and Big Data with an Application to the Coronavirus Pandemic -- Chapter 8. Hierarchical Data Envelopment Analysis for Classification of High-Dimensional Data -- Chapter 9. Dominance Network Analysis:

Hybridizing DEA and Complex Networks for Data Analytics -- Chapter 10. Value extracting in relative performance appraisal with networkDEA: an application to U.S. equity mutual funds -- Chapter 11. Measuring Chinese bank performance with undesirable outputs: a slack-based two-stage network DEA approach -- Chapter 12. Using Network DEA and Grey Prediction Model for Big Data Analysis: An Application in the Global Airline Efficiency.

Sommario/riassunto

This book brings Data Envelopment Analysis (DEA) based techniques and big data together to explore the novel uses and potentials of DEA under big data. These areas are of widespread interest to researchers and practitioners alike. Considering the vast literature on DEA, one could say that DEA has been and continues to be, a widely used technique both in performance and productivity measurement, having covered a plethora of challenges and debates within the modelling framework. Over the past four decades, DEA models have been applied in almost every major field of study. However, DEA has not been used to its fullest extent. As the inter- and intra-disciplinary research grows, DEA could be used in potentially many other ways; for instance, DEA could be viewed as a data mining tool for data-enabled analytics. One opportunity is brought by the existence of big data. Although big data has existed for a while now, gaining popularity among insight seekers, we are still in incipientstages when it comes to taking full advantage of its potential. Generally, researchers have either been interested in examining its origin or in developing and using big data technology. As the amount of (big) data is growing every day in an exponential manner, so does its complexity; in this sense, various types of data are surfacing, whose study and examination could shed new light on phenomena of interest. A quick review of existing literature shows that big data is a new entrant within the DEA framework. Recently, there has been an increasing interest in bringing the two concepts together, with research studies aiming to integrate DEA and big data concepts within a single framework. But, more work is needed to fully explore the value of their intersection—it is time to view DEA in light of its potential usage in new fields or new usage within the existing fields, under the big data umbrella. It is time to view DEA models beyond their present scope and mine new insights for better data-driven decision-making.