

EFFICIENCY MEASUREMENT IN A PRIVATE HOSPITAL IN TURKEY USING DATA ENVELOPMENT ANALYSIS

ABSTRACT

Data Envelopment Analysis (DEA) is a non-parametric analytical method based on linear programming that has gained increasing prominence in recent years, particularly within key service sectors. The primary aim of this analysis is to compare the efficiencies of enterprises or business units sharing the same objectives and orientations, thereby providing a preliminary roadmap for identifying inefficiencies and addressing them.

This study, which focuses on DEA, is organized into five chapters. The first chapter offers a brief introduction to DEA and the healthcare sector in which the analysis is applied. The second chapter examines DEA in greater depth by discussing its characteristics, implementation methods, and application areas. The third chapter presents a literature review—both domestic and international—on the use of DEA in the healthcare field. In the fourth chapter, an application of DEA is discussed based on data from a private hospital in Bursa for the year 2022, with a focus on its various units. The fifth chapter interprets the results obtained and offers recommendations for improvement.

The input/output data and decision-making units used throughout the study were determined through focus group sessions. Subsequently, the relevant data were collected and integrated from the hospital's Human Resources Department, Business Development Department, Administrative Directorate (operating under the Operational Coordination), and External Doctors Unit. The integrated data were analyzed and interpreted using the DEA-Frontier software package running in Excel Solver.

Based on the interpreted data, the efficient and inefficient units of the private hospital were identified; reference sets were provided for the inefficient units, and recommendations were made regarding the types of improvements necessary to achieve efficiency.

Keywords: Data Envelopment Analysis, Efficiency, Private Healthcare Sector

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