AN ANALYTIC NETWORK PROCESS COMBINED DATA ENVELOPMENT ANALYSIS METHODOLOGY TO EVALUATE THE PERFORMANCE OF AIRPORTS IN TURKEY

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ABSTRACT

Data Envelopment Analysis (DEA) is a known method to determine the efficient and inefficient units in concern. Selection of the proper input and output factors lead to successful and meaningful results. But these depend to the problem type and there is no specific methodology proposed for defining the factors. While inadequate number of factors can lead to incorrect results, redundant factors may cause unnecessary calculations. Therefore this study introduces an Analytical Network Process (ANP) model to select the most important factors among others. The methodology is demonstrated by use of a performance evaluation problem of airports. The characteristics of major airports in Turkey that impact the operations are defined by ANP, and results that will aid operations managers and communities in improving their efficiency are obtained by DEA.

Keywords: Airports, Analytical Network Process, Data envelopment analysis, Input/output factors