DATA ENVELOPMENT ANALYSIS APPROACH TO TWO-GROUP CLASSIFICATION PROBLEMS AND AN EXPERIMENTAL COMPARISON WITH SOME CLASSIFICATION MODELS

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Abstract

Discriminant Analysis is a method for determining group classifications for a set of similar units or observations. A number of new efficient mathematical programming approaches have been developed as an alternative to examining classification problems using statistical models. In this study two new mathematical programming approaches are developed for the minimization of the sum of the deviations and the concept of relative efficiency for Data Envelopment Analysis when solving the two group classification problem. The efficiency and practicability of the suggested approaches are supported with a simulation study involving three different distributions and different cases for the units in the groups.

Keywords: Discriminant analysis, Data envelopment analysis, Mathematical programming, CCR-DA, BCC-DA, LOO hit rate.


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