

Efficiency of Tehran City Public Libraries in Iran: An Appraisal by Combined Use of Data Envelopment Analysis (DEA) with Strong Complementary Slackness Condition (SCSC) and DEA-DA (Discriminant Analysis)

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Abstract

Purpose: This research aims to determine the performance of the public libraries of Tehran city during the years 1390 and 1391 and compare it on the basis of years.

Methodology: By using data envelopment analysis and strong complementary slackness condition combined with discriminant analysis method, Public Libraries of Tehran province in Iran was ranked on the basis of efficiency. This combination has been executed in order to enhance precision of ranking (super efficiency). We studied 121 public libraries of Tehran province in Iran by mentioned method and we chose 4 inputs (number of books, number of librarians, number of chairs, size of infrastructure) and 3 outputs (number of members, number of loans, number of entrance to libraries) per units by means of literature review and consult with library experts.

Findings: We find that 41 public libraries were efficient in year 2011. Efficient public libraries in year 2012 consisted of 45 units. In year 2011, Parvin Etesami public Library was the most efficient unit and in year 2012, central public library of Tehran (Parke Shahr public library) was the most efficient one.

Originality/Value: The value of this paper is to determine the most efficient libraries along with introduction of variables with most and less impact on libraries efficiency. Using such finding, influential inputs and outputs can be improved.

Keywords: Performance evaluation, DEA, strong complementary slackness condition, discriminant analysis.