Efficiency of Air Transport Based on Data Envelopment Analysis

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***Abstract*—Air transport is an significant enabler for businesses to operate in an increasingly globalised marketplace. Access to air services is also perceived as an necessity for communities to preserve and improve their economic position. Air transport also drives and facilitates wider economic activity through connectivity.**

The dynamically changing market of the air business shows that there is a strong need for a well-thought-out and consistently implemented strategy setting clear objectives with regard to ensuring competitiveness and development. Thus, the analysis of air transport efficiency might help to affirm if countries have a chance to develop business activity based on enhanced mobility.

This article presents evaluation of efficiency of air transport in selected European countries basing on non-parametric methods. The non-parametric approach stemmed from linear programming methods known as the Data Envelopment Analysis (DEA) method. In the DEA model quantity of inputs and quantity of outputs come down to single figures of "synthetic" input and output, which are subsequently used for calculating the object efficiency index. For this purpose, number of employees, number of airports and fleet, were taken as input variables, whereas number of passengers, total cargo were taken as output variables.

The analysis showed which countries are relative efficient performers from the air transport point of view. DEA provides estimates of the potential improvement that can be made by inefficient air transport.

***Key words*—air transport, efficiency, Data Envelopment Analysis, mobility.**

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