عنوان فارسی مقاله:

ارزیابی بازده انرژی برای خطوط هوایی: کاربرد روش VFB-DEA

عنوان انگلیسی مقاله:

Evaluating energy efficiency for airlines: An application of VFB-DEA

توجه!

این فایل تنها قسمتی از ترجمه میباشد، برای تهیه مقاله ترجمه شده کامل، با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک کنید.
5. Conclusions

The topic of airlines' energy efficiency is studied in this paper. Number of employees, capital stock and tons of aviation kerosene are chosen as the inputs. Revenue Ton Kilometers, Revenue Passenger Kilometers, total business income and CO2 emission volume are selected as the outputs. A new model, the Virtual Frontier Benevolent DEA Cross Efficiency model (VFB-DEA), is proposed and applied to evaluate the energy efficiencies of 11 airlines from 2008 to 2012. The results verify the rationality of the new model.

On the whole, the contribution of this paper to the literature is embodied in two aspects. First, based on the existing paper on airlines' energy efficiency, this paper considers the undesirable output. The idea in this paper enriches the theory and method of energy research and supplies a new view on evaluating the development of the airlines. Second, a new model, the Virtual Frontier Benevolent DEA Cross Efficiency model (VFB-DEA) is proposed. It can resolve two limitations of the traditional DEA model: 1. the limitation of self-appraisal, and 2. the limitation in distinguishing DEA efficient DMUs. The results verify the rationality of the new model.

Focusing on evaluating energy efficiency for airlines, this paper has not analyzed the roles that some important factors play in determining the relative efficiency performance of different airlines. The factors can be incorporated into a two-stage bootstrapped DEA (Merkert et al., 2010; Merkert and Hensher, 2011) to seek their impacts on energy efficiency.