

Measuring Hotel Performance Using the Game Cross-efficiency Approach

Abstract

Hotel performance is the primary concern of hotel operators. Many studies have been carried out to examine the ways in which hotel performance can be appropriately measured and assessed with a view to providing useful information for effective decision-making by hotel management. One of the most frequently used methods for assessing such performance is Data Envelopment Analysis (DEA), which measures the relative efficiency (performance) of decision-making units (DMUs) – hotels in this case – on the basis of their multiple inputs and outputs. However, traditional DEA models are flawed, as they primarily involve pure self-evaluations without any consideration of the possible influence of external competition. When these models are used in hotel performance assessment, the result is that they tend to rate too many hotels as efficient, although they in fact differ in terms of operational efficiency. This study evaluates the relative efficiency of hotels using a recently developed DEA method known as the game cross-efficiency (GCE) approach. The main advantage of this approach is that it not only assesses hotel efficiency effectively on the basis of both self- and peer-evaluation, but it also takes the competition among DMUs into account. The GCE DEA method is illustrated here using efficiency data for 23 international tourist hotels in Taipei.

Keywords: Data envelopment analysis; Game cross-efficiency evaluation; International hotels.