



Article Title

Identifying the Optimal Combination of Hotel Room Distribution Channels: A DEA Analysis with a Balanced Scorecard Approach

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Abstract

The hotel industry has experienced changes brought on by growth, customer expectations and the proliferation in the use of e-commerce and online distribution channels. Future hotel success depends on how effectively hotel revenue managers are able to manage all of the different booking channels to maximize hotel revenue.

This study represents a new approach for hotels, the use of a Data Envelopment Analysis-Balanced Scorecard (DEA-BSC) model to measure efficiency of distribution channel mix as measured by balanced scorecard results. DEA-BSC was chosen for this study because while traditional business models typically focus on one performance measure like profit, DEA-BSC considers multiple metrics simultaneously (Zhu, 2014a). Inputs for this study included the percentage of rooms sold revenue of five distribution channels including C-Res/Voice, GDS, brand.com, OTAs, and property/relationship sales. Output was consolidated BSC average. Hotels (DMUs) for the study included fifty-three select service hotels managed by a hotel management company with hotels located throughout the United States.

Findings indicated that the DEA-BSC model was able to use channel mix as inputs and consolidated BSC average as output to identify efficient (benchmark) hotels and inefficient hotels. Findings also provided measurement and direction regarding the gap between the hotels that were efficient vs. those that were not. The model could not provide information on whether one output was more effective than another in contributing to the success of a hotel (DMU), but findings generated by the DEA-BSC model provided each inefficient hotel (DMU) with benchmark comparison information to assist the inefficient hotel (DMU) to become efficient.

Conclusion

This study represents a new approach to measuring operational and revenue production efficiency in the hotel industry. The purpose of this study was to explore the usefulness of the DEA-BSC model in identifying benchmark (efficient) hotels and inefficient hotels based on channel mix. While DEA-BSC has been used sporadically to measure hotel results in the hotel industry, no study has explored the relationship between the mix of the five major hotel revenue channels and their impact on the financial and non-financial results of a hotel as measured by a balanced scorecard. This study fills that gap.

The overall findings have confirmed that through the DEA-BSC model, using hotel percentage of rooms sold for the five channels identified as inputs and a consolidated BSC average as output, efficient and inefficient hotels (DMUs) can be identified. The model provided benchmark data to assist inefficient hotels to become efficient, thereby proving its usefulness in discriminating between efficient and inefficient hotels and in suggesting areas of improvement for inefficient hotels. However, the model was not able to single out a specific input as being more important than another. The model develops benchmarks based on the relationship of all of the inputs.

Future research that includes other areas of the hotel and customer in the field of revenue management while looking at both financial and non-financial performance will be necessary for successful business outcome. Costs associated with the various channels and channel mix, the customer (Wang, et al., 2015), ecommerce, and technology will also need to play a larger role in research to advance the field of hotel revenue management and improve overall industry performance. The need for models that deliver consistent results are needed, and do not yet exist (Hua, et al., 2015).

The ability to understand the difference between the traditional way of measuring business and the requirements of the current hotel marketplace can be profound. It is no longer just about price or profit, but includes a much broader scope of generating profitable revenue at the right time at the right price in the right channel, with a focus on customer satisfaction. Further research is now needed within this new context.