



Article Title

Competitive revenue management for fixing quota and price of hotel commodities under uncertainty

Citation

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Abstract

This article develops an artificial neural network (ANN) based forecasting model using the past profit records of hotel commodities. Based on forecasting, hotel commodities are categorised into two kinds: ones that push up the revenue, and others, which pull it down. Thereafter, long and short term goals are formulated for fixing quota and proper revenue management under uncertainty. The paper demonstrates the superiority of the proposed approach. A case study of a hotel has been taken up to demonstrate the model.

Methods

For long term goal, analytical network process (ANP) framework is adopted to establish interrelationships among the factors using DEMATEL methodology. Risk adjusted maximum expected profit is employed for short term goal. Subsequently optimal numbers of commodities are obtained using a fuzzy goal programming approach, and favourable price of the individual commodities is determined keeping the price elasticity as one. Finally, a comparison is made between the respective revenue generated with the new quota and price from the proposed revenue maximization model, and that of the old practised price and quota.

Results

Through a case study the authors have demonstrated the credibility of the model, where it yielded significantly superior outcomes in terms of revenue when both the new quota and new price are considered.

Conclusion

RM of hotel commodities under price uncertainty is an increasingly important issue in practice. In order to earn higher yield, hotels are practicing RM through dynamic pricing to capture the diversified willingness to pay customers. Considering the importance of the

research, this paper has attempted to optimize both the quota and the price of hotel commodities for enhancing the power of RM.