



### Article Title

Towards a knowledge discovery framework for yield management in the Hong Kong hotel industry

### Citation

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### Abstract

Yield management is a technique focusing management decision making on maximizing revenue or profit from the sale of hotel rooms. In the study, the authors develop a yield management technique for maximizing revenue using a *probabilistic rule-based framework* in Knowledge Discovery technique. The paper starts the investigation with a theoretical framework that sets the profit maximization criteria for a hotel.

### Methods

To be more objective in decision making, the authors have developed a simulation model on a hypothetical small-size hotel with 50 rooms. The time frame for this simulation accounts for 7-consecutive-day booking activities in the hotel. It was assumed that the total number of hotel rooms in the whole market is fixed at 1,200 rooms.

### Results

Using the Knowledge Discovery Technique on the simulated data, which represents the optimal operational decisions and strategic booking levels, the rule-set, 'accept', can learn correctly with 89% on whether or not to accept a guest at his arrival at a certain time. Assuming that a booking level set at 70% is classified as *high\_booking\_level*, otherwise it is classified as *low\_booking\_level*, our rule-set, 'high\_booking\_level' can learn correctly with a 89% level on whether the booking level should be *high\_level* or *low\_level* on a certain day. With the high accuracy of prediction, the probabilistic rules would adequately help the hotel management group to achieve a better yield.

### Conclusion

This research has explored an area where there have always been difficulties for hotel managers to work with the yield management. Although there have been some discussions in yield management at different levels in a hotel environment, there has been little progress in its application.

