Forecasting of Occupied Rooms in the Hotel Using Linear Support Vector Machine

M. Y. Anshori [1], I. H. Santoso [2*], T. Herlambang [3], D. Rahmalia [4], K. Oktafianto [5], and P. Katias [1]

[1] *Department of Management, University Nahdlatul, Ulama Surabaya, Indonesia.*
[2*] *Department of Accounting Magister, University of Wijaya Kusuma, Surabaya, Indonesia.*
[3] *Department of Information System, University Nahdlatul, Ulama Surabaya, Indonesia.*
[4] *Department of Mathematics, University of Islam Darul Ulum, Lamongan, Indonesia.*
[5] *Department of Mathematics, University of PGRI Ronggolawe, Tuban, Indonesia.*

Abstract: The hotel business is one of the important sectors in the tourism industry because it has a multiplier effect in social life and economics. Nowadays, the room reservation in hotels is more flexible so that the guests can extend or cancel their stay easily due to the development of technology. Based on the report on the number of room reservations, everyday, there are differences in the number of occupied rooms, so it is required that a forecasting in daily data be made. Forecasting is very important for the hotel management because it is affecting all hotel operations such as staff manning, amenities preparation, breakfast preparation, linen preparation to provide customer satisfaction. Customer satisfaction is a critical component of profitability [1]. The number of occupied rooms depends on in-house guests, same day reservation, extension of stay, early departure, today's cancellation, and walk-in. In this research, the classification method applied is the linear Support Vector Machine (SVM). The linear SVM uses the best hyperplane as a separator between two classes. In this method, we divide the dataset of guest reservation into training data and testing data in various proportions. Then the set of support vectors can be determined by the sequential programming method and we can test them in testing data. Based on simulation with various proportions of training data and testing data, the linear SVM can classify occupied rooms based on guest reservation with a good accuracy, error rate, recall, specificity, and precision.

Keywords: *classification; Support Vector Machine; pattern recognition; data mining*

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* Corresponding author: mailto:ismanto_fe@uwks.ac.id