



Optimization of Hotel W Management through Performance Comparison of Support Vector Machine and Linear Regression Algorithm in Forecasting Occupancy

M. Y. Anshori¹, T. Herlambang², V. Asy'ari², H. Arof³, A. A. Firdaus⁴,
K. Oktafianto⁵ and B. Suharto^{6*}

¹ Department of Management, Universitas Nahdlatul Ulama Surabaya, Indonesia.

² Department of Information System, Universitas Nahdlatul Ulama Surabaya, Indonesia.

³ Department of Electrical Engineering, University of Malaya, Malaysia.

⁴ Department of Engineering, Faculty of Vocational, University of Airlangga, Indonesia.

⁵ Department of Mathematics, University of PGRI Ronggolawe, Indonesia.

⁶ Department of the Tourism and Hospitality, Faculty of Applied Sciences, University of Airlangga, Indonesia.

Received: September 5, 2023; Revised: April 19, 2024

Abstract: The hospitality industry continues to grow globally. More and more people are traveling for various purposes such as leisure, business, or special events. This growth has created a huge opportunity for hotels to increase revenue and profits. Due to the growth of the industry, competition among hotels has also intensified. So, this condition encourages hotels to look for efficient ways of managing hotel resources. One way to efficiently manage a hotel is by forecasting the hotel occupancy. The study in this paper is aimed to optimize hotel management through the application of occupancy forecasting by the SVM and linear regression methods. The results indicated that the linear regression method had a higher accuracy and a smaller error than the SNM for two cases. When compared, as a whole, using linear regression in case 2 had the smallest RMSE value, in which the difference in RMSE by the linear regression method is around 0.3 -0.9 smaller than that by the SVM method.

Keywords: hotel management; SVM; linear regression algorithm; forecasting occupancy.

Mathematics Subject Classification (2010): 62J05, 70-10, 90Bxx.

* Corresponding author: <mailto:bambang.suharto@vokasi.unair.ac.id>