



# Optimization of Hotel Y Management through Application of Occupancy Forecasting by Support Vector Machine and K-Nearest Neighbors Methods

M. Y. Anshori<sup>1</sup>, I. H. Santoso<sup>2</sup>, P. Katias<sup>1</sup>, T. Herlambang<sup>3</sup>, H. Arof<sup>4</sup>,  
B. Suharto<sup>5\*</sup> and K. Oktafianto<sup>6</sup>

<sup>1</sup> Department of Management, Universitas Nahdlatul Ulama Surabaya, Indonesia.

<sup>2</sup> Department of Accounting Magister, University of Wijaya Kusuma, Surabaya, Indonesia.

<sup>3</sup> Department of Information System, Universitas Nahdlatul Ulama Surabaya, Indonesia.

<sup>4</sup> Department of Electrical Engineering, University of Malaya, Malaysia.

<sup>5\*</sup> The Tourism and Hospitality Department, Faculty of Applied Sciences,  
Airlangga University, Indonesia.

<sup>6</sup> Department of Mathematics, University of PGRI Ronggolawe, Indonesia.

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**Abstract:** Almost all countries in the world, including Indonesia [1], strive to develop their tourism potential to earn as much foreign exchange as possible. The role of tourism is very important for a country/region because it has a very broad multiplier effect. Efficiently managed hotels are able to win the competition. Therefore, making the right forecasting and estimation model is of great help for hotel managers to manage hotels effectively and efficiently. For that reason, software development is needed for forecasting and estimation systems. This research tries to synergize management discipline and mathematics so that it can be used more easily, accurately, effectively and efficiently in hotel management. Some reliable forecasting methods among others are Support Vector Machine (SVM) and K-Nearest Neighbors (K-NN). This paper optimizes hotel management through the application of occupancy forecasting by using the SVM and K-NN methods. The simulation results by the RapidMiner software and both methods using 90% of training data and 10% of testing data show that the RMSE produced by the SVM method is 0.011, while the RMSE produced by the KNN method is 0.116. Thus, the SVM method has higher accuracy than the K-NN.

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