

Abstract

This study proposes a prediction of the classification of the spread of dengue hemorrhagic fever (DHF) with the expansion of the Random Forest (RF) feature based on spatial time. The RF classification model was developed by extending the features based on the previous 2 to 4 years. The three best RF models were obtained with an accuracy of 97%, 93%, and 93%, respectively. Meanwhile, the best kriging model was obtained with an RMSE value of 0.762 for 2022, 0.996 for 2023, and 0.953 for 2024. This model produced a prediction of the classification of dengue incidence rates (IR) with a distribution of 33% medium class and 67% high class for 2022. 2023, the medium class is predicted to decrease by 6% and cause an increase in the high class to 73%. Meanwhile, in 2024, it is predicted that there will be an increase of 10% for the medium class from 27% to 37% and the distribution of the high class is predicted to be around 63%. The contribution of this research is to provide predictive information on the classification of the spread of DHF in the Bandung area for three years with the expansion of features based on time.

Keywords: Incidence Rate, DHF, Prediction, Random Forest, Ordinary Kriging
