
Abstract

In Indonesia, dengue hemorrhagic fever (DHF) has become a serious community health concern due to fluctuating incidence rates influenced by several factors. It requires comprehensive control strategies to prevent the rise of the incidence. This study seeks to classify the future spread of DHF in Bandung City, accompanied by optimal factors that influence the increase in its spread. This study proposes using Decision Tree to predict a classification of DHF spread with implementation of spatial time-based feature expansion. The developed scenario is to build a target class with class prediction model based on the previous time period. From the developed scenario, the selected model has optimal performance to form a class prediction model in the future. The used classes its selves are formed by ranging the incidence rate (IR) into low, medium and high class. The data used includes spatial-temporal information such as population, education level, rainfall, temperature, and blood type from 2017 to 2021. The results obtained show that the performance of Decision Tree using time-based feature expansion is more than 90%, with visual predictions that help identify high risk areas. The contribution of this study is to inform the public and health institution regarding DHF spread for the future and influential factor so that the government can provide policies as early as possible to prevent DHF spread.

Keywords: Incidence Rate, DHF, Prediction, Decision Tree, Feature Expansion, Classification
