ABSTRACT

Stunting is a serious health issue in Indonesia that affects children's physical and cognitive development. The Indonesian government has set a target to reduce the stunting rate to 14% by 2024 as part of the accelerated efforts within the National Medium-Term Development Plan (RPJMN) 2020-2024. In the efforts of prevention and early intervention, digital technologies such as integrated stunting prevention systems have been developed. This study aims to design a stunting prediction feature integrated into the Genting application using the Support Vector Machine (SVM) algorithm, which can provide stunting predictions for children, enabling timely interventions. It is hoped that this can help reduce the prevalence of stunting in Indonesia, as well as increase awareness and response capacity among healthcare workers and parents.

The testing results of the Genting application using the SVM algorithm show excellent performance with an overall accuracy of 96%, indicating a reliable model in classifying nutritional status with consistent performance across various metrics. In the second iteration, the SVM model achieved an accuracy rate of 70% with 7 correct predictions out of 10 attempts, but showed significant improvement by achieving 100% accuracy in the third iteration, indicating that all predictions matched the children's actual nutritional status according to the WHO growth standards. Additionally, the User Acceptance Testing (UAT) results showed an increase from 84.8% in the second iteration to 88% in the third iteration. The majority of users found this feature very helpful in predicting the stunting status of children, while black box testing confirmed that all application functionalities worked as expected. The Genting application is expected to assist healthcare workers in monitoring and preventing stunting, as well as enabling parents to take better preventive actions.

Keywords: Stunting, Support Vector Machine (SVM), Extreme Programming