ABSTRACT

Stunting is a disorder of child growth caused by chronic malnutrition and repeated infections, which can be observed through abnormalities in height or length less than the standard. The results of the Indonesia Nutrition Status Survey (SSGI) indicate that 21.6% of toddlers in Indonesia were stunted in 2021. According to WHO, stunting becomes a public health problem if the prevalence is $\geq 20\%$. Bogor Regency had the highest number of stunted toddlers in 2021, with 30,844 cases. Therefore, a survival analysis was conducted using the Cox Proportional Hazard (CPH) and Random Survival Forest (RSF) methods. This study aims to compare the prediction performance of the CPH and RSF models using the C-Index value and identify variables that significantly affect the prediction of survival time for toddlers. The results of the comparison show that the RSF method with C-Index values of 0.900 is better at predicting toddler survival time than the CPH method with C-Index values of 0.897. Factors that have a significant effect in the CPH model are BB/U Status, Weight, Length at Birth, and Age. Meanwhile, the RSF method can be identified from the importance value. The BB/U Status variable with an importance value of 0.3448 provides a high ability to predict the survival time of toddler growth with stunting cases at the Karadenan Health Center in Bogor. Meanwhile, the Birth Weight variable is less effective at prediction with an importance value of 0.0077.

Keywords: Toddler Growth, Survival Analysis, Cox Proportional Hazard Random Survival Forest, C-Index.