

***Classification of Toddler Nutritional Status Using the Random Forest Method
Based on Anthropometric Data***

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ABSTRACT

Toddler nutritional status is an important indicator in monitoring child growth and development. Nutritional problems in toddlers, such as undernutrition, stunting, and obesity, can have long-term impacts on children's health and development. Therefore, an effective system is needed to assist the process of classifying toddler nutritional status through the utilization of information technology. This study aims to classify toddler nutritional status using the Random Forest method based on anthropometric data, including gender, age, weight, and height. The research process includes data preprocessing, dataset merging, handling imbalanced data using the class weight technique, and parameter tuning to improve model performance. The classification model was developed based on the indicators of weight-for-age (BB/U), height-for-age (TB/U), and weight-for-height (BB/TB). The results show that the Random Forest model achieved good performance in classifying toddler nutritional status. The accuracy values obtained were 93.25% for the BB/U indicator, 93.49% for the TB/U indicator, and 93.49% for the BB/TB indicator. However, the model still has limitations in recognizing minority classes, especially in the TB/U indicator, as indicated by the relatively lower Macro F1-Score. Based on these results, the Random Forest method has the potential to be used as an initial screening tool for classifying toddler nutritional status more quickly and efficiently.

Keywords: Toddler Nutritional Status, Random Forest, Classification, Anthropometric Data, Machine Learning.