A NUTRITIONAL STATUS CLASSIFICATION SYSTEM FOR TODDLERS USING A WEB-BASED DECISION TREE ALGORITHM

(Case Study: Depok 3 Community Health Center, Sleman Regency)

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ABSTRACT

The issue of toddler nutritional status remains a significant concern in primary healthcare services, as it affects child growth and development. Based on monitoring of nutritional status in the working area of Depok 3 Sleman Community Health Centre, several indicators of nutritional status, such as protein-energy deficiency, wasting, stunting, and obesity, have not reached the target. This study aims to implement the Decision Tree algorithm to classify toddler nutritional status using clinical data from Depok 3 Sleman Community Health Centre. The research method includes data preprocessing in the form of NaN value detection, label encoding, and normalization, as well as handling data imbalance using SMOTE and feature selection. The evaluation results show that the training data achieved 81.73% accuracy, 83.23% precision, 81.74% recall, and 82.11% F1-score, while the test data achieved 75.89% accuracy, 78.98% precision, 75.94% recall, and 76.38% F1-score. In addition, the model validation results showed an accuracy level of 90%. These results demonstrate that the Decision Tree algorithm, with appropriate feature selection, can reliably predict toddler nutritional status and is suitable as a faster, more objective, and more efficient decision support system.

Keywords: Decision Tree, Classification, Depok 3 Sleman Community Health Center, Feature Selection, Toddler Nutritional Status