

Minimizing the Number of Stunting Prevalence Using the Euclid Algorithm Clustering Approach

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Abstract—Superior and quality human resources are based on healthy human resources with indicators of adequate nutritional intake according to age development. However, the world still faces the problem of hunger and malnutrition today. According to a UNICEF report, the number of people suffering from malnutrition in the world will reach 767.9 million people in 2021. The World Health Organization (WHO) said that malnutrition is a dangerous threat to the health of the world's population. Stunting also has an impact in Indonesia, the prevalence of toddlers experiencing stunting in Indonesia is 24.4% in 2021. The solution created is to classify and cluster the prevalence of stunting to produce a pattern that can be used as best practice to be transmitted to other affected areas. The algorithm used is Euclid. The Euclid algorithm can cluster stunting prevalence data into 4 clusters with the very little category at 79%, the little category at 67%, the many categories at 51%, and the very much category at 21%. The results of the classification and clustering of the best stunting prevalence in cluster one with a very small number, can be used as a source of accurate and updated information that can be used by the government in its efforts to optimize stunting handling in each district/city based on artificial intelligence which can provide handling and optimization patterns. stunting in every district/city.

Keywords—stunting, Euclid, clustering, classification, optimization pattern

I. INTRODUCTION

A UNICEF report states that there is a problem that is now being identified and that by 2021, there would be 767.9 million people suffering from malnutrition worldwide. Malnutrition, according to the World Health Organization (WHO), poses a serious risk to the health of people worldwide. Stunting affects children as well; in Indonesia, 24.4% of toddlers were reported to be stunted in 2021. Thus, it is imperative to conduct stunting clusters; the outcomes of these clusters provide the government with information and decision support as it addresses stunting in each region. The condition known as stunting, which affects children between the ages of 0 and 5, is brought on by a long-term deficiency in nutrition. This deficiency is mostly caused by inadequate

family income and a dirty living environment, which contributes to toddlers' propensity for experiencing growth issues. one of which is stunting, indicated by an IQ (intellectual quotient) lower than that of other typical youngsters and a body posture shorter than the predicted developmental age. Since stunting affects the future caliber of human resources, it is imperative that this problem be rectified. The study's findings demonstrate that while numerous government initiatives have been implemented to hasten the elimination of stunting, the actual rate of reduction in stunting remains well below the desired level. Thus, combating stunting is a pressing issue that needs to be addressed right now, without delay, by all concerned parties.

Stunting is a problem of chronic malnutrition or malnutrition characterized by a child's height being shorter than the standard for children of the same age. Some of them have difficulty achieving optimal physical and cognitive development. B. Speak or walk slowly and often in pain. Growth retardation is a condition in which a child's height is below normal age. Stunting refers to an infant's inability to grow during the first 1,000 days of life due to chronic malnutrition. Indonesia has a fairly serious nutritional problem and is characterized by high levels of malnutrition. Malnutrition affects nutritional status. Stunting is a malnutrition disorder associated with past nutritional deficiencies and is a chronic nutritional problem. The prevalence of stunting in Indonesia is higher than other Southeast Asian countries such as Myanmar (35%), Vietnam (23%), and Thailand (16%) and ranks fifth in the world. Stunting is caused by multifactorial factors and is not solely caused by malnutrition in pregnant women and young children. Therefore, the most important interventions to reduce the prevalence of stunting must be implemented within the first 1,000 days of life in children under 5 years of age. Prevention of stunting includes meeting the nutritional needs of pregnant women, exclusive breastfeeding up to and after 6 months of age, providing adequate quantity and quality of human milk supplements, and monitoring growth. .

Improving access to young children and water in Posyandu. Maintains a clean and sanitary facility and environment. A child whose Z-score for height-for-age is less than two standard deviations below the mean height-for-age reference value is said to be stunted. This reflects a process in which linear growth potential is not achieved due to prolonged or repeated malnutrition that begins before birth [1]. Furthermore, it is an