ABSTRACT

The problem of poverty is the most fundamental thing for the government and is a major concern. In general, poverty is a condition of inability of income to meet basic needs, so that it cannot guarantee survival. Grouping districts/cities based on poverty indicators can make it easier for the government to make policies related to poverty according to the needs of each district/city. Cluster analysis is a statistical analysis technique with the aim of grouping a set of objects based on the similarity of the characteristics of these objects. In this study, it was found that there was one data containing outliers, so the methods used in the study were the K-Means and K-Harmonic Means methods. K-Means is a method that has the ability to group large amounts of data with relatively fast computing time, but this method has weaknesses in determining the initial center of the cluster and is sensitive to outliers. K-Harmonic Means is a clustering algorithm resulting from the development of the K-Means method, which can overcome the problem of sensitivity to the initial centroid initialization by using the harmonic mean value of the data on the research object, in addition the K-Harmonic Means method is more resistant to the influence of outliers than K-Means. Based on the results of the analysis using Dunn Index validation, the K-Harmonic Means clustering method was obtained as the best cluster method with the number of cluster results $k = 6$, parameter $P = 3$ and a Dunn Index value of 0,4444.

Keywords: Poverty, K-Means, K-Harmonic Means, Dunn Index Coefficient