ABSTRACT

Central Java Province, as one of the provinces with a large population, faces challenges in ensuring the adequate distribution of healthcare facilities in each district/city. This goal can be realized by first grouping the regions using cluster analysis. There are many methods for cluster analysis, and in this study, the methods used are k-means clustering and k-medoids clustering. K-means and k-medoids methods were chosen for cluster analysis because both have advantages in grouping data based on the proximity of data points in multidimensional space. The data used in this study include the number of general hospitals, the number of specialty hospitals, the number of community health centers, the number of non-inpatient community health centers, the number of primary clinics, and the number of integrated health service posts. In this study, the best clustering results were obtained using the k-means clustering method, with a silhouette-coefficient validation comparison analysis yielding a value of 0.3321. Based on the research results, the k-means clustering method was identified as the best clustering method with the optimal number of clusters, $k = 3$. Cluster 1 consists of 12 districts/cities, Cluster 2 consists of 21 districts/cities, and Cluster 3 consists of 2 districts/cities.

Keywords: *Healthcare Facilities, Cluster Analysis, K-Means, K-Medoids, Central Java.*