ABSTRACT

Public welfare is a key factor in national development, reflecting individuals' ability to meet basic needs and participate socially. Welfare disparities remain a challenge, with poverty rates in Central Java posing a significant issue. A data-driven analysis is necessary to formulate appropriate policies to address this problem. This study classifies districts/cities in Central Java based on welfare indicators using the Similarity Weight and Filter Method (SWFM). This method combines hierarchical agglomerative clustering with Euclidean distance and Quick Robust Clustering Using Links (QROCK) for numerical and categorical data. The data, sourced from the Central Java Statistics Agency in 2024, includes indicators of population, health and nutrition, education, employment, consumption patterns, housing and environment, poverty, and other social factors. The clustering analysis is conducted in two stages: numerical data is grouped using hierarchical agglomerative clustering, while categorical data is clustered using QROCK with threshold values (θ) of 0.3, 0.33, 0.35, 0.38, 0.4, 0.43, 0.45, 0.48, and 0.5. The clustering results are then combined using SWFM and validated with the Silhouette Index. This study aims to provide insights into welfare conditions in Central Java and assist the government in designing more effective and data-driven policies.

Keywords: Public Welfare, Clustering, Hierarchical Agglomerative Clustering, QROCK, Similarity Weight and Filter Method