

ABSTRACT

Acute Respiratory Infection Disease (ARI) is a disease that often occurs in many areas, including in Bireuen Regency. Therefore, analysis of the classification of ISPA diseases and clustering of ISPA-prone distribution areas in Bireuen Regency is important to assist control and prevention efforts this disease. The data used in this research also includes data on ISPA cases from 2019 to 2022 based on medical records at Fauziah Bireuen Regional Hospital. First, in the analysis of ARI disease classification, various classification algorithms such as Neural Network and Support Vector Machine are applied to train a classification model that can compare the percentage level of classification between the two algorithms used in ARI disease classification. So with a percentage result of 92% for the Neural Network and 94% for the Support Vector Machine, this indicates that the Support Vector Machine Method is better in carrying out classification. Second, clustering analysis of ISPA-prone distribution areas, clustering methods such as Agglomerative Hierarchical Clustering are used to group areas based on the pattern of spread of ISPA disease. The results of the clustering will later produce 3 clusters which will later be able to determine the distribution pattern of ISPA-prone areas. Then, with the help of Arcgis software, it can display a map of the level of ARI disease distribution patterns from the clustering results using the Agglomerative Hierarchical Clustering algorithm. It is hoped that the results of this analysis will provide valuable insight for authorities and medical personnel in making decisions regarding efforts to overcome and prevent ISPA in Bireuen Regency. Apart from that, the results of this research can also be a basis for developing a more effective and efficient ISPA monitoring system in the future.

Keywords: ISPA, Classification, Clustering, Mapping.