

ABSTRACT

APRISKA AYU SAPUTRI (2023), IMPLEMENTATION OF BACKPROPAGATION, LVQ AND MULTILAYER PERCEPTRON ALGORITHMS FOR DISTRICT/CITY POVERTY RATE CLASSIFICATION IN INDONESIA 2022

Artificial Neural Network (ANN) is a classification method that has many algorithms, three of which are backpropagation which is popular, effective, and easy to learn. LVQ is an ANN algorithm that includes a competitive network with a winner take all concept. Meanwhile, multilayer perceptron is an algorithm that is known to be reliable because its learning process can be carried out in a directed manner. The three algorithms can be applied in various fields, one of which is the social field of poverty. The classification method in the case study of poverty in Indonesia is considered important. This is because in 2022, Indonesia will not experience a significant reduction poverty. Therefore, the aims of this research are to determine the distribution of poverty in districts/cities in Indonesia, and to determine the best algorithm and find out the result of district/city poverty mapping in the country. The results of the analysis show that the lowest poverty is in Badung Regency at 1.78% and the highest poverty is in Deiyai Regency at 43.65%. The classification of the three algorithms can be concluded that LVQ is the best algorithm with the highest hit ratio value of 91.26% in the analysis of district/city poverty cases in Indonesia 2022. The results of poverty mapping are quadrant I there were 45 districts/cities, in quadrant II there were 2 districts/cities, in quadrant III there were 74 distric/cities and in quadrant IV there was 1 distric/cities.

Keywords: ANN, Backpropagation, Learning Vector Quantization, Multilayer Perceptron, Poverty