PREDICTION THE NUMBER OF AIRPLANE PASSENGERS USES FUZZY TIME SERIES

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ABSTRACT

Indonesia with its status as a vast archipelago and large population, faced with transportation problems. Demand for transportation services continues to increase from year to year in accordance with an increase in population and welfare of the community. This is indicated by the fact that almost all provinces in Indonesia have airports. The airport has a role as a gateway for economic activity in the efforts of equitable development. This research uses data on the number of passengers from Sultan Hasanuddin-Makassar International Airport.

The purpose of this research was to make a prediction of the number of aircraft passengers at Sultan Hasanuddin International Airport. The method used in this research is fuzzy time series. This study uses 156 passenger data, from 2006 to 2018. Data processing is done by dividing the data into 70% training data and 30% test data, then prediction is made using fuzzy time series. After producing predictions, an analysis of the prediction error value will be performed using MSE and MAPE with a 10-fold cross validation test scenario.

Prediction of the number of airplane passengers at Sultan Hasanuddin International Airport using fuzzy time series produces an MAPE of training data is 1,08% and MAPE value of test data is 2,26%. Accuration of the prediction in this research was obtained with 10-fold cross validation test scenario, which resulted in an average MAPE is 13,08% and accuration is 86,92%.

Keywords: *Prediction, fuzzy time series, 10-fold cross validation, MSE, MAPE.*