EVALUATION ON DIFFERENT FORECASTING METHODS FOR FACILITY PLANNING OF DOMESTIC PASSENGER TERMINAL OF JUANDA INTERNASIONAL AIRPORT (METHOD: ARIMA AND DUMMY REGRESSION)

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Abstract

Juanda International Airport nowadays has experienced over capacity. In the end of year 2013, Juanda Airport recorded serve 17.6 million passenger/year, an increased of 12% from the previous year. Juanda Airport has terminal building 1 with a capacity of 6.5 million passenger/year and terminal building 2 with a capacity of 6 million passenger/year.

Based on an increased of the number of passengers which is quite high, forecasting method will be very important in relation to the passenger terminal building facilities planning. In this paper, an evaluation of the variations of forecasting methods to determine a sensitivity of changes in the pattern of forecasting the number of passengers at airport. The variations that will be used in this paper are ARIMA and dummy regression.

Forecasting by using ARIMA model $(1,1,1)(1,0,0)^{12}$ with Symetric Mean Absolute Percentage Error (SMAPE) is 12.38% shows that the number of passengers in 2014 is still increasing continuously. Forecasting using dummy regression with SMAPE 15.13% shows that it tends to decrease. Each method was then adopted to be an entry data in the calculation of passenger facilities at terminal building 1 Juanda Airport. The calculation of passenger facility needs the use of existing data in 2013, data from the result of ARIMA forecasting, data from the result of dummy regression forecasting in comparison to data layout Juanda Airports. Facilities of curb departure, departure hall, and the
check-in counter shows that the needs of facilities that has been calculated is greater than the current layout.

**Keyword:** forecasting method, ARIMA, dummy regression, passenger facilities, terminal airport.