FUNGSI TRANSFER *NOISE* MODEL DALAM MEMODIFIKASI MODEL TERBAIK TIME SERIES ARIMA BOX-JENKINS YANG BELUM *WHITE NOISE* :APLIKASI PADA DATA KUNJUNGAN PASIEN POLI GIGI PUSKESMAS DI KABUPATEN KEDIRI

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2009

The earlier study reveals that the best ARIMA model came from patient's attendance data in primary health center Kediri district from January 2005 to February 2009 isn't good enough because the residual is not white noise. Forecasting using model like this will obtain a less precision forecast value. To overcome this problem, we need a method to modify the best autoregressive integrated moving average (ARIMA) model which is not white noise to be a model whose residual is white noise. One method that can be used to reach this aim is using transfer function noise model. The purpose of this non reactive research is to modify the best Autoregressive Integrated Moving Average (ARIMA) time series model which is not white noise using transfer function noise model. The data used is the data about patient's attendance in primary health center, Kediri district. To get the transfer function noise model, we use steps as follow : identify ARIMA(p,d,q) models, compute the cross correlation, identify (b,s,r) value, and estimate the parameters of the transfer function noise model.

Transfer function noise model of patient's attendance in primary health care Kediri district is : $Z_t = \frac{\left(-0{,}2040 + 0{,}19414B^2\right)}{\left(1 + 0{,}86146B\right)} x_{t-10}$ where Z_t is patient attendance, x_t is residual of the best ARIMA model from this data (ARIMA(0,1,1)) and a_t which is the residuals from the transfer function noise model is white noise. The forecasting using transfer function noise model gives better forecast range than forecasting without transfer function noise model.

Keywords : ARIMA Box-Jenkins, Transfer function, Transfer function noise mode.