

ABSTRAK

RANCANG BANGUN SISTEM APLIKASI PERAMALAN JUMLAH MUATAN KAPAL RO-RO DENGAN METODE WINTER'S TIGA PARAMETER

(Studi Kasus : PT. ASDP Indonesia Ferry (Persero) - Cabang Merak)

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Transportasi laut merupakan salah satu bagian dari sistem transportasi yang berperan penting terhadap perekonomian suatu daerah khususnya dan negara pada umumnya. Pelabuhan yang terletak di Merak, merupakan salah satu pelabuhan penyeberangan antara pulau Jawa dan Sumatera yang berperan penting bagi mobilitas muatan kapal Ro-Ro. Seiring dengan kebutuhan akan transportasi laut pun cenderung meningkat. maka, dibuatlah sistem aplikasi peramalan yang cara perhitungan dalam memprediksi jumlah muatan menggunakan metode peramalan *Winter's* tiga parameter. Dari penelitian ini berhasil melakukan proses peramalan jumlah muatan penumpang dari sisi Merak untuk tahun 2014 dengan rata-rata *error* sebesar : *Absolute Error(AE)*= 12795,75, *Mean Absolute Deviation (MAD)*= 33948,33, *Mean Squared Error (MSE)*= 69662500,49, *Mean Absolute Percentage Error (MAPE)*= 18,66%. Penelitian ini juga berhasil melakukan proses peramalan jumlah muatan kendaraan dari sisi Merak untuk tahun 2014 dengan rata-rata *error* sebesar : *Absolute Error(AE)*= 4385,39, *Mean Absolute Deviation (MAD)*= 23871,31, *Mean Squared Error (MSE)*= 23251039,86, *Mean Absolute Percentage Error (MAPE)*= 4,47%. Dengan hasil MAPE pada penumpang sebesar 18,66% dan pada kendaraan sebesar 4,47% dapat disimpulkan bahwa peramalan dikatakan baik. Dan merujuk pada peramalan jangka menengah.

Kata Kunci : *Winter's* tiga parameter, AE, MAD, MSE, MAPE.

ABSTRACT

APPLICATION DESIGN SYSTEM FORECASTING NUMBER OF RO-RO CARGO SHIP WITH WINTER'S THREE PARAMETERS

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Sea transportation is part of transportation system that has big influence for its economy system, especially in one place and generally in a country. Port is a sub system part from sea port that has a function as a place for transportation of goods, services and passengers through sea. Related to its functions, that located in Merak, it is one of the port as the crossing tool between Java island and Sumatra island, and has important for *Ro-Ro* boats. In line to the increasing number of people and land transportations, so the needs of sea transportation increased, too. From this situation, therefore it needs a database to manage the prediction of numbers of capacity for next years by using Winter's three parameter. The result of this research is the prediction process of numbers of passengers from Merak in 2014 with in error Absolute Error (AE)= 12795.75; Mean Absolute Deviation (MAD)= 33948.33; Mean Squared Error (MSE)= 69662500.49; Mean Absolute Percentage Error (MAPE)= 18.66%. This research has success full to prediction process from the number of vehicles in Merak in 2014 with the average of error: Absolute Error (EA)= 4385.39; Mean Absolute Deviation (MAD)= 23871.31; Mean Squared Error (MSE)= 23251039.86; Mean Absolute Percentage Error (MAPE)= 4.47%. It can be concluded that the forecast is good and refers to the medium-term forecasting.

Keywords: Winter's three parameters, AE, MAD, MSE, MAPE.