TRIP DISTRIBUTION MODELING OF NON CONTAINER FREIGHT TRANSPORT FOR VOLUME PREDICTION OF DOMESTIC TRADE IN THE PORT OF TANJUNG PERAK SURABAYA

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ABSTRACT

East Java is a province of Indonesia which is strong economically. Availability of transportation services has a positive correlation to community development economic. It needs mapping of origin destination matrix freight flow as development efforts of marine transport infrastructure. In this study, zoning distribution is adjusted with region boundaries or district which has port to receive freight transport movement inter island and zoning distribution of east java based on region which could receive non container freight transport movement in the land side. The purpose of the study is to create a model of the distribution of non-container freight transport movement and predict for the next 5 years.

This study is the first step to actualize marine transportation at the Port of Tanjung Perak Surabaya. In this study use a synthetic gravity model with the constraints of power and exponential functions, and based on economic variables which is compared with furness method. It will obtain origin destination matrix, as a result of the identification of the movement of freight sea port in East Java.

The results of this study is a matrix that describes the origin destination of the freight transport by identifying the origin and destination of freight transport movement scheme which is differentiated in commodities. Modeling analysis of the gravity model modeling method with the results of the best models that will be the model selected. The best model selected value of SSE (Sum Square Error) is the smallest of deterrence function exponential and power approaching models From the analysis of the gravity model without limitation the model is chosen as barriers exponential function with distance constraints. Analysis of the gravity modeling can be formulated $T_{ij} = 1 \times 10^{-4}.E_i.E_j.EXP (0.0000007.C_{ij})$ $E_i$ and $E_j$ with economic parameters zones and zone objectives. For non-container freight transport with top main commodity is CPO (Crude Palm Oil), fertilizer and cement.

Key words: Port of Tanjung Perak, Furness Method, Gravity Model, Origin Destination Matrix, Unconstrained
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