Analisa Dwelling Time Menggunakan Model System Dynamic Berdasarkan Penerapan National Logistics Ecosystem di Pelabuhan Jakarta Internasional Container Terminal = Dwelling Time Analysts Use Dynamic System Models Based on The Implementation of National Logistics Ecosystem at Jakarta International Container Terminal Port

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Abstrak

Terminal merupakan unsur utama yang paling penting dari Pelabuhan dalam melayani kapal dalam melaksanakan bongkar muat barang. Fasilitas yang dibutuhkan dalam kegiatan bongkar muat barang disesuaikan dengan jenis barang, kemasan barang yang akan ditangani dan jenis kapal yang akan dilayani. Namun di Pelabuhan memiliki kendala dalam dwelling time. Banyak penelitian telah dilakukan mengenai dwelling time. Dalam penelitian ini, dilakukan simulasi pemodelan sistem dinamik untuk mengurangi dwelling time di Pelabuhan Jakarta Internasional Container Terminal dan penerapan Ekosistem Logistik Nasional. Metode yang digunakan dengan sistem dinamik akan menunjukkan faktor utama dalam mengurangi dwelling time. Selain itu juga, dilakukan penerapan ekosistem logistik nasional dalam mengurangi dwelling time di pelabuhan JICT. Berdasarkan hasil pengolahan didapatkan bahwa pengaruh terbesar dari dwelling time di Pelabuhan JICT adalah aspek kepabeanan dan infrastruktur. Pengembangan model berdasarkan dari dwelling time, arus kontainer ke yard dan kuantitas bongkar yang telah di validasi mendapatkan mean error kurang dari 5% dan error variance kurang dari 30% sehingga dapat dilanjutkan dalam penerapan ekosistem logistik nasional. Pada dwelling time terjadi penurunan dari 3,52 hari menjadi 1,50 hari atau sekitar 57%. Peningkatan kuantitas bongkar dari 88.878 TEU’s/Bulan menjadi 96.712 TEU’s/Bulan, serta pada arus kontainer terjadi penurunan dari 161.722 Kontainer/Bulan menjadi 159.019 Kontainer/Bulan. Sehingga penerapan ekosistem logistik nasional dapat diterapkan di Pelabuhan JICT untuk mengurangi dwelling time dan meningkatkan kuantitas bongkar.

..... The terminal is the most important main element of the Port in serving ships in carrying out loading and unloading of goods. The facilities needed in the loading and unloading activities of goods are adjusted to the type of goods, the packaging of the goods to be handled and the type of ship to be served. But in the Port has obstacles in dwelling time. A lot of research has been done on dwelling time. In this study, a simulation of dynamic system modeling was conducted to reduce dwelling time at the Port of Jakarta International Container Terminal and the implementation of the National Logistics Ecosystem. The methods used with dynamic systems will show the main factors in reducing dwelling time. In addition, the implementation of national ecosystem logistics is carried out in reducing dwelling time at JICT ports. Based on the results of processing, it was obtained that the biggest influence of dwelling time at JICT Port was the customs and infrastructure aspects. The development of models based on dwelling time, container flow to yards and quantity of unloading that has been validated gets a mean error of less than 5% and error variance of less than 30% so that it can be continued in the implementation of national ecosystem logistics. At dwelling time there was a decrease from 3.52 days to 1.50 days or about 57%. Increased unloading quantity from 88878 TEU's /Month to 96712 TEU's/Month, and in container flows there was a decrease from Container 161722/Month to 159019 Container/Month. So that the implementation of national ecosystem logistics can

be applied at JICT Port to reduce dwelling time and increase the quantity of unloading.