

SUMMARY

TEDY HERDIAN. Optimizing Operation Management of Container Trucks to Reduce Logistics Costs at Tanjung Priok Port, Case Study: KSO Terminal Peti Kemas Koja. Supervised by TRIDOYO KUSUMASTANTO and BAGUS SARTONO

Tanjung Priok Port is still facing problem of congestion due to the increasing arrival of container trucks at the same time, usually from Thursday to Saturday. The phenomenon of queuing container trucks that resulted in congestion occurs in various ports of the world. This congestion can have a very wide impact such as delayed goods to the destination, increasing pollution around the port and the high cost of logistics for the transportation sector.

The objective of this research is to study of optimization container truck operation management. In this research indicated that congestion occurred as the impact of less optimal management of container trucks at Tanjung Priok Port. This can be seen clearly where the container trucks picking up the export containers at the time of entering the terminal and exit the terminal with the empty trip. On the contrary for container import, trucks enter the terminal with the empty trips and exit the terminal carrying containers.

Descriptive research design was used to know the congestion phenomenon by analyzing the activity pattern and analyzing the empty trips of the container truck. Methods of collecting population data on container trucks entering/exiting Koja Container Terminal 2015-2016 (1.115.344 raw data), In-depth interview to the Chair of the Trucks Association and other experts, interviews with 487 truck drivers and google apps maps for knowing the distance.

The simulation model using vehicle routine problem with simultaneous pick up and delivery (VRPSPD) is applied to find out quantitatively how much potential efficiency can be resulted if the pattern of this activity is used in Tanjung Priok Port. This VRPSPD pattern should be a best practice and unique because it has been done in Tanjung Priok Port but the number is still very limited.

The results of the simulation in 2016 show the potential efficiency of 1,194,806 unnecessary truck movements, thus reducing the distance of 21,625,984 km and reducing fuel consumption between 8,650,396 liters - 14,417,324 liters and the potential to reduce logistics costs on fuel between Rp. 45,746,362,683 – Rp. 76.243.937.806

Keywords: logistics cost, congestion, operation management of container truck, simulation model, Port of Tanjung Priok Port, empty trips, container.