

AN ANALYSIS OF CONTAINERS LOADING AND UNLOADING PERFORMANCE AT TERMINAL I OF PT PELABUHAN TANJUNG PRIOK

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ABSTRACT : Loading and unloading performance is highly related to the quantity and quality of work results from the implementation of loading and unloading activities by means of adequate facilities or equipment in accordance with service procedures. This research is intended to identify the inhibiting factors for loading and unloading containers performance at Terminal I of PT Pelabuhan Tanjung Priok, to evaluate the process of implementing containers' loading and unloading procedures at Terminal I of PT Pelabuhan Tanjung Priok, and to determine the effectiveness of containers loading and unloading performance at Terminal I of PT Pelabuhan Tanjung Priok. This research was conducted by utilizing a descriptive qualitative approach. Data were successfully gathered by means of in-depth interviews and observations. The result indicates that the loading and unloading implementation process has been running properly. However, several inhibiting factors were still widely found in loading and unloading activities. Furthermore, the ship's service performance had been successfully improved through the optimization of the loading and unloading service performance. The results of this research may be used to help describing the factors capable of reducing the performance of loading and unloading services.

KEYWORDS : Performance, Loading and Unloading, Effectiveness, Port, Container

INTRODUCTION

Geographically, Indonesia is referred to as one of the largest archipelagic countries with two-thirds of the ocean area larger than the land. In Indonesia, specifically in Jakarta, transportation is currently regarded as a means to promote the beneficial conditions of daily community activities, such as the economy, delivery of goods or services, and transportation. Transportation is also capable of providing an effective way to transport commodities from one place to another with relatively long distances, such as through sea transportation, which is commonly recognized as being more dominant than other transportations.

The rapid development of sea transportation has resulted in the need for port development, specifically at Tanjung Priok Port. A port is an area of water where ships and other water vehicles are docked for loading or unloading passengers, goods and animals, repairs, refueling, etc. A port is also equipped with a dock for mooring ships, loading and unloading cranes, transit warehouses, as well as a place to store goods for a longer period of time while waiting for distribution to the destination and subsequent shipments (Triatmodjo, 1992). Port of Tanjung Priok which is located in Tanjung Priok, North Jakarta, is regarded as one of the largest and busiest ports in Indonesia,.

Growing export and import activities will lead to the increasing use of containers from year to year. Regarding to this matter, an evaluation of capacity to avoid overcrowding due to the high flow of ships and containers that may contribute to the impact on the economy is highly required. It is apparent from the data that 65% of the total flow of ships and goods in Indonesia was carried through this port (Palguno & Supangat, 2016).

Performance is defined as the quantity or quality of the act or process in performing tasks and functions of individuals or groups within the organization guided by norms, standard operating procedures, criteria , and measures imposed by the organization (Torang, 2014). The quality of the performance of the loading and unloading operations which refers to the volume of the company's loading/unloading container is commonly recognized as the company's performance parameter. Good operational quality will enable the company to provide the best performance and to satisfy customers.

Loading and unloading activities are activities of moving goods from land transportation equipment. These loading and unloading activities may be performed when the adequate facilities in a shipping method are available (Koleangan, 2008). Various obstacles are frequently encountered in loading and unloading activities, which may subsequently hinder loading and unloading activities. The available facilities are also considered to have an effect on the speed of loading-unloading activities.

Referring to the description mentioned earlier, the researchers outlined several problems that were formulated as the focus of the research: (1) Identifying factors inhibiting loading and unloading activities at Terminal I of PT Pelabuhan Tanjung Priok. (2) How is the performance procedure of loading and unloading at Terminal I of PT Pelabuhan Tanjung Priok? (3) How is the effectiveness of containers' loading and unloading performance at Terminal I of PT Pelabuhan Tanjung Priok? Therefore, a research in terms of evaluating the dominant constraining factors at Terminal I of PT Pelabuhan Tanjung Priok, particularly in the loading and unloading performance of containers, was highly required to be carried out.

RESEARCH METHOD

In this research, qualitative descriptive analysis method was utilized. Qualitative descriptive method refers to a method commonly used to evaluate specific information or theory at a specific time (Mukhtar, 2013). Consequently, the primary and secondary data or information required in this research was collected by researchers from Terminal Operation I of PT Pelabuhan Tanjung Priok.

The population of this research was the VP of Human Resources and General Affairs as first informant, who were Mr. Angga and all field employees of Terminal Operation I of PT Pelabuhan Tanjung Priok. The sample of this research only consisted of three field employees Terminal I of PT Pelabuhan Tanjung Priok, particularly Mr. Bowo as second informant, Mr. Debby as third informant and Mr. Tengku as Fourth informant. They were chosen to be involved in the interview session because they were directly involved in the loading and unloading process and were considered capable of providing the information required in the research. Therefore, the informants were selected by using the purposive sampling method with the aim of obtaining clear and in-depth information and data. `

The data in this research were gathered by interviews and observation. (1) Observation, Nawawi and Martini explained that observation is the process of observing a certain phenomenon by

documenting the observed activities or behaviors in a sequential manner (Zakky, 2020). The goal of observation is to describe an event related to the object of research, draw conclusions, and then compile the data in a relevant report that may contribute to the benefits of the research. (2) Interview is a systematic way of gathering qualitative research data with one-sided questions and answers based on the purpose of the investigation (Sugiono, 2010). By conducting this interview, the researchers would be capable of exploring important information by someone being studied, and revealing some new findings needed as additional research data.

Table 1. Interview Guide

Interview Questions	Interview Topic	Informants
What is the procedure for loading and unloading container at Terminal I?	Implementation of loading and unloading container	(1) Field employees at Terminal I
What equipment are used to carry out container loading and unloading activities?		
How are container storage grouped?		
What if the load exceeds the specified capacity?	Inhibiting Factors	(1) VP of HR and General Affairs (2) Field employees at Terminal I
What are the inhibiting factors for the container loading and unloading process? And why is it considered an inhibiting factor?		

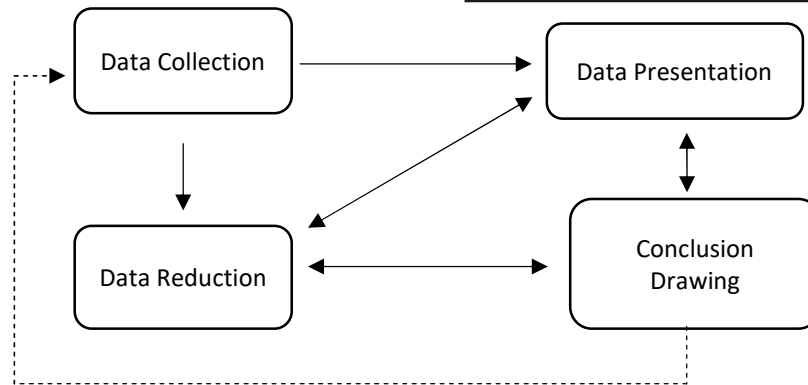


Figure 1. Components of Interaction Model Data Analysis

Source: (Miles & Huberman, 1992)

According to (Miles & Huberman, 1992), the research data analysis technique consists of four elements as follows: Data collection, Data collection is defined as a process of gathering data information from a variety of sources to obtain accurate depiction of the research (observations and interviews). Data reduction, Data reduction is commonly referred to as the process of selecting, focusing, simplifying, abstracting and transforming “rough” data generated from written notes in the research field. Data Presentation: Data Presentation is regarded as an organized collection of information that may provide the possibility of drawing conclusions and taking action. Conclusion Drawing: The data obtained in the research are presented in detail and are then analyzed to obtain the actual results in the research.

DISCUSSION AND RESULT

The result of the research conducted at Terminal I of PT Pelabuhan Tanjung Priok shows several inhibiting factors in the implementation of loading and unloading operations, and he stages in implementing loading and unloading procedures at Terminal I of PT Pelabuhan Tanjung Priok and operational performance at Terminal I of PT Pelabuhan Tanjung Priok.

Table 2. Research Result at Terminal Operation I of PT Pelabuhan Tanjung Priok.

Item	Sub Item	Explanation
Inhibiting Factors	○ Problem in loading and unloading equipment ○ Limited Equipment ○ Traffic	○ Some equipment was likely found to have problems during the loading and unloading process, because equipment maintenance was overlooked. ○ The equipment consisted of several types, but in limited quantities. ○ many trucks were waiting on the road or at the gate entrance before the cargo was placed in the container yard or before the container was lifted onto the ship.
Implementation of Loading and Unloading	○ The process of implementing the container is loaded ○ the process of implementing the unloading container procedure ○ Operational Performance at Terminal I	○ The procedure for loading the ship's container should have been initiated the gate, until the container was loaded. ○ The process of implementing the unloading container would be lifted to the chassis until the container was discharged. ○ Fluctuated in the last five years

Inhibiting Factors

Several internal inhibiting factors were found in the process of containers' loading and unloading at Terminal I of PT Pelabuhan Tanjung Priok. The factors considered by researchers to be the most inhibiting in the implementation of containers loading and unloading at Terminal I of PT Pelabuhan Tanjung Priok were found in the pre-loading implementation until the cargo had been loaded on the ship and the cargo had been unloaded at Terminal I of PT Pelabuhan Tanjung Priok.

The smooth flow of traffic was considered to have an effect on loading and unloading container activities. When the container or cargo was waiting for the ship to dock, severe congestion would tend to occur at the entrance of the gate in and container yard. Many trucks were waiting on the road or at the entrance of the gate in before the cargo were placed in the container yard or before the container were lifted onto the ship. Consequently, congestion might highly affect the smooth loading and unloading activities.

The equipment available at Terminal I of PT Pelabuhan Tanjung Priok consisted of several types, such as: HMC, Land Crane, and RTG, but in limited quantities. There was no equipment specifically owned by Terminal Operation I of PT Pelabuhan Tanjung Priok. When the dock was crowded, the equipment operating in loading and unloading activities should have been divided into each vessel for loading and unloading activities. According to the first Informant, *"Ships docked at Terminal Operation I have approximately 3 to 5 hatches, and these ships use at least two tools during the loading and unloading process. However, when the dock is full, each ship must be carried out by each of at least one tool"*. This obviously may hinder loading and unloading activities if there is no additional equipment in Terminal Operation I of PT Pelabuhan Tanjung Priok.

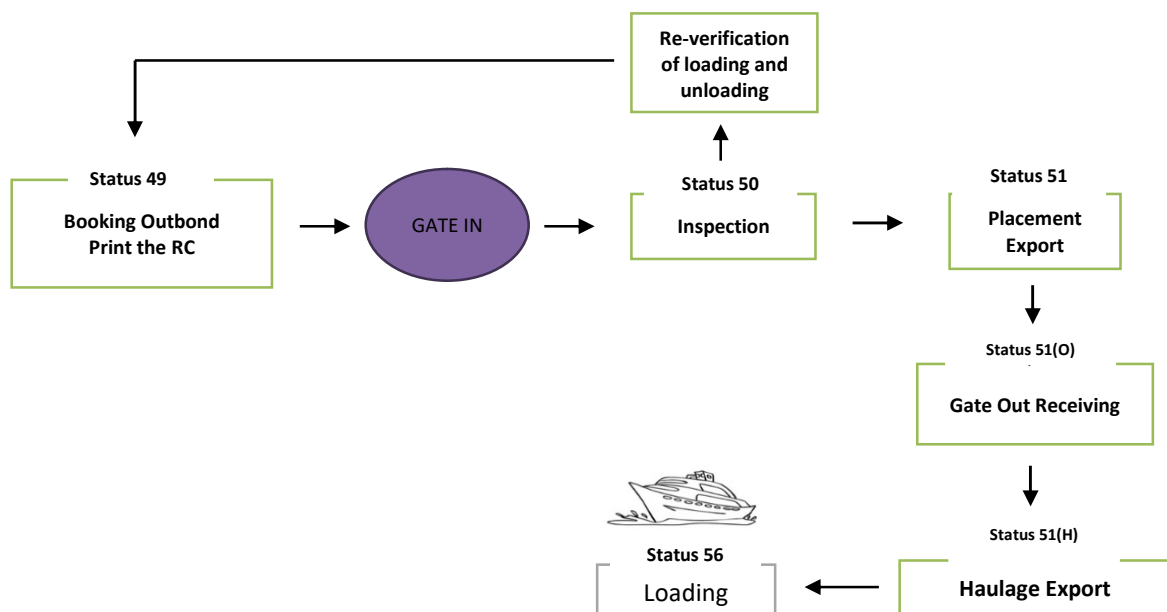
A number of equipment was likely found to have problems during the loading and unloading process, because each equipment definitely provided any advantages and disadvantages. According to the second

informant, “*Equipment which usually indicates serious problems tends to be caused by machine mechanics who pay less attention to equipment maintenance*”. This was certainly considered as an obstacle, because it was capable of having a bad impact on the process of loading and unloading activities. Furthermore, troubled equipment would certainly hamper loading and unloading activities.

Implementation of loading and unloading procedures at the Terminal I of PT Tanjung Priok Port

The process of loading and unloading activities was carried out by referring to the procedures and policies that had been set by a company to avoid any mistakes in the process of loading and unloading at Terminal I of PT Pelabuhan Tanjung Priok. In this case, the researchers discussed the implementation of loading and unloading procedures at Terminal I of PT Pelabuhan Tanjung Priok.

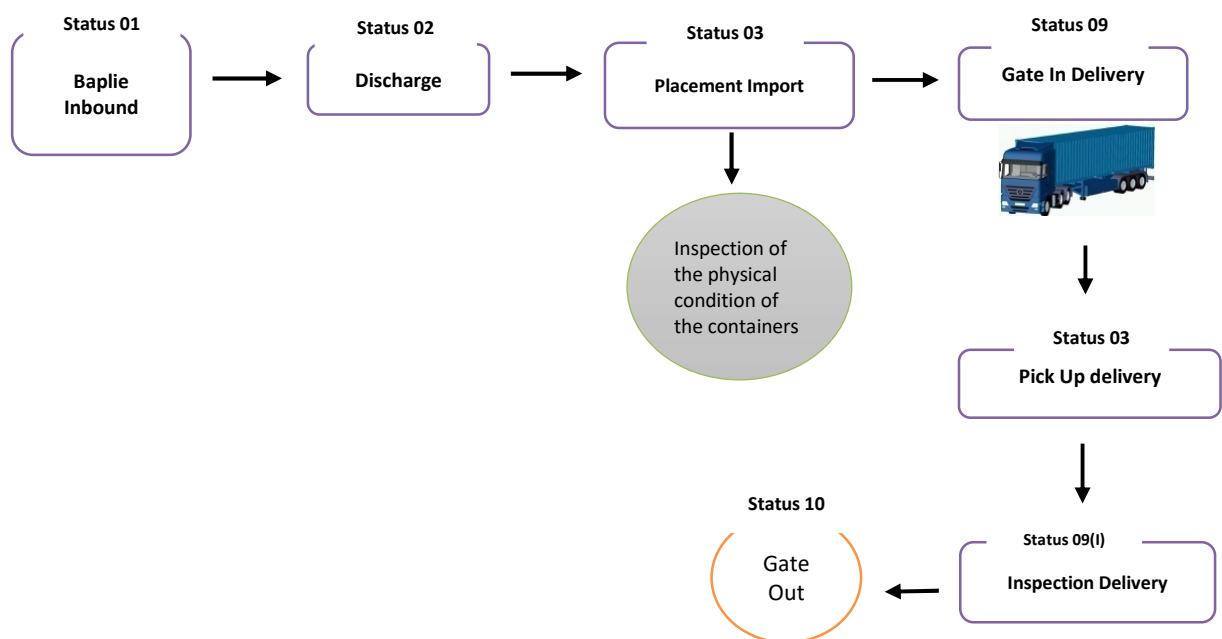
The following is the process of implementing the receipt of goods until the container is loaded:



The procedure for loading the ship's container should be initiated with (1) Booking Outbond/Status 49: the shipper should make payment

and print out the receiving card to be carried and handed over to the gate in officer. (2) Inspection/Status 50: physical inspection of the container and the weight of the container. If the container is damaged and has excessive weight, the cargo carried by the courier must be reported to the management for re-verification. (3) Placement Export/Status 51: carry out the process of placing the cargo into the Container Yard (CY). (4) Gate Out Receiving/Status 51 (O): carry out the process of arranging containers at the Container Yard (CY) according to the tonnage and destination. (5) Haulage Export/Status 51 (H): the process by which the container is loaded onto the ship, and finally (6) Loading/Status 56: the stage where the container has been loaded on the ship and the ship will immediately leave the port .

The following is the process of implementing the unloading procedure until the container is discharged:



The unloading procedure until the container is discharged to the gate out is initiated by (1) Baplie Inbound/Status 01: the containers are still loaded on the ship and has not been unloaded. (2) Discharge/Status 02: containers will be lifted to the chassis to the yard. (3) Placement Export/Status 03: Containers have been arranged in the Container Yard, and then an inspection of the condition of the containers is carried out. If an

irregular physical condition is found, it must be reported to the shipping party regarding to the condition of the containers. (4) Gate In delivery/Status 09: truck enters the yard to pick up the containers. (5) Pick Up Delivery/Status 03: containers are lifted to the chassis, on-chassis and will be discharged from the port (get out). (6) Inspection Delivery/Status 09 (I): inspection of the application letter for release of cargo (SP2) according to the containers that have been carried. (7) Gate Out Delivery/Status 10: The containers have been discharged from Terminal I by showing an application letter for the release of cargo at Gate Out.

Operational Performance at Terminal Operational I

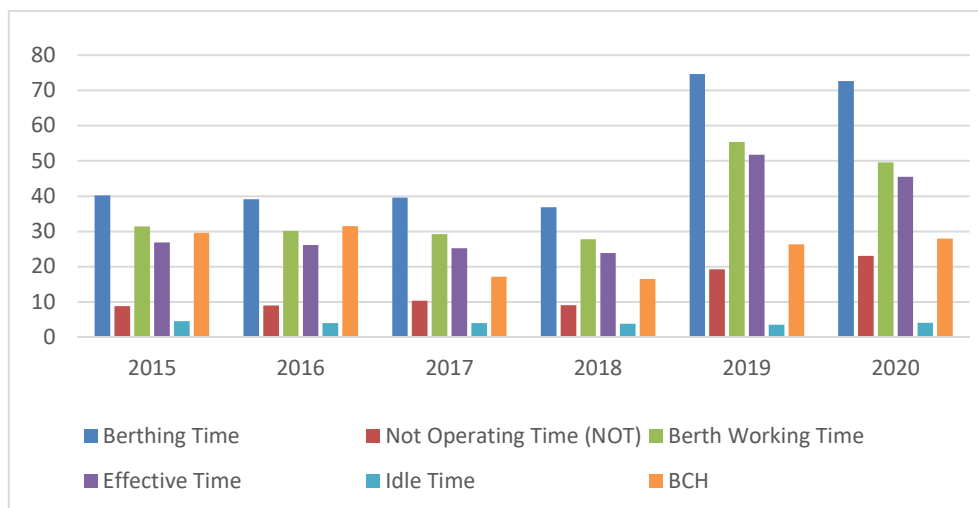


Figure 2. Operational Performance in 2015-2020

Source: PT Pelabuhan Tanjung Priok

Since 2015, as shown in the figure above, fluctuations in Berthing Time (BT) had shown a decline. In 2018, it declined with an average of 36.89 hours and increased in 2019 with an average of 74.60 hours. Moreover, it declined in 2020 with an average of 72.65 hours. North Operation Time (NOT) was also found to increase in 2017 with an average of 10.33 hours and then declined by an average of 9.13 hours, and rose to 2020 with an average of 23.04 hours. Furthermore, Berth Working Time continued to decline until 2018 with an average of 27.77 hours and then rose in 2019 with an average of 55.34 hours, and lessen again in 2020 with an

average of 49.61 hours. Moreover, Effective Time (ET) grew less in 2018 with an average of 23.88 hours, then elevated by an average of 51.74 hours, and declined by an average of 45.49. Idle Time (IT) indicated a continuous decline until 2019 with an average of 3.61 hours and an increase in 2020 with an average of 4.13 hours. In addition, Box Crane Hour (BCH) showed a grow in 2016 with an average of 31.49 hours, then subsided until 2018 with an average of 16.58 hours, and indicated an improvement until 2020 with an average of 27.95 hours.

CONCLUSION

Regarding to the discussion on the containers' loading and unloading performance at Terminal I of PT Pelabuhan Tanjung Priok, there are several conclusions drawn, they are (1) The inhibiting factors for loading and unloading were dominated by congestion at the Gate In and loading and unloading equipment which usually indicates serious problems and equipment limitations that lead to improper containers' loading and unloading performance at Terminal I of PT Pelabuhan Tanjung Priok. (2) The loading and unloading performance procedure had been running properly according to the system that had been implemented. (3) Ship service performance had increased in 2015 to 2020. The increase in ship service performance would greatly affect the loading and unloading process to be more effective. (4) The loading and unloading performance had reached the target of 25 boxes/hour. However, it had decreased in 2016 to 2018 below the predetermined target standard.

In terms of managerial implications, Terminal I of PT Pelabuhan Tanjung Priok should be capable of ensuring that the maintenance system is running properly and accordingly. Therefore, there are no obstacles that are likely to be found during the loading and unloading process. For the smooth operation of the loading and unloading process, both technically and administratively, PT Tanjung Priok Port should improve loading and unloading equipment to Terminal I by conducting an operational needs

assessment to ensure that container loading and unloading operations are running effectively and efficiently.

REFERENCES

- Koleangan, D. (2008). *CONTAINER SYSTEM*. Jakarta: Katalog Perpustakaan Sekolah Tinggi Manajemen Transportasi Trisakti Jakarta. Retrieved from http://library.itltrisakti.ac.id/opac/index.php?p=show_detail&id=46
- Miles, & Huberman. (1992). *Analisis Data Kualitatif Buku Sumber Tentang Metode-metode Baru*. Jakarta: UIP.
- Mukhtar. (2013). *Metode Penelitian Deskriptif Kualitatif*. GP Press Group.
- Palguno, D. N., & Supangat, U. (2016). Efektivitas Kinerja Bongkar Muat Petikemas Di Terminal Operasi I PT. Pelabuhan Indonesia II Cabang Tanjung Priok. *Jurnal Logistik D III Transportasi UNJ*, 9(2), 19–24.
- Sugiono. (2010). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.
- Torang, S. (2014). *Organisasi & Manajemen*. Bandung: Alfabeta.
- Triatmodjo. (1992). *Analisa Tentang Kapasitas Pelayanan Terminal Peti Kemas Semarang*. (Mm), 1–18.
- Zakky. (2020). Pengertian Observasi Menurut Para Ahli dan Secara Umum [Lengkap]. Retrieved from <https://www.zonareferensi.com/pengertian-observasi/>