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Relationship of Loading/Discharging Equipment Facilities and Labour Competence on Work Productivity PT. Temas Depot Tembang 2024

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Abstract: This study aims to examine the relationship between loading and discharging equipment facilities, labor competence, and work productivity at PT Temas Depot Tembang. The research was conducted with a quantitative approach through observation, interviews, and questionnaires involving 32 workers. The findings indicated a significant correlation between the facilities used for loading and discharging equipment, labor competence, and work productivity. It is expected that improving facilities and worker competence will help overcome operational constraints and increase work productivity. Data analysis using the saturated sample technique was conducted using SPSS to identify correlations between variables that support the hypothesis that improvements in both aspects will contribute positively to work productivity.

Keyword: Loading and Discharging Equipment Facilities, Labor Competency, Work Productivity, Container Depot, Container.

INTRODUCTION

In the logistics and warehousing sector, operational efficiency and productivity are key factors to maintain a competitive advantage and meet customer demands. PT Temas Depot Tembang is located at Jl Darma Bakti No. 51, Kec. Tj. Priok, North Jakarta, Special Capital Region of Jakarta. As an important player in this industry, relies heavily on the loading and discharging process to ensure smooth and timely handling of goods. Two crucial factors that affect this process are the facilities and equipment used for loading/discharging, as well as the competence of the workforce involved. According to Kartiko & Primandari (2023) A container warehouse, also known as a container depot, is a place where loaded (FCL), (LCL), and empty containers are stored. A container is a specially designed package of a certain size that can be used repeatedly and is intended for storing and transporting the goods

contained in it (Suryantoro et al., 2020). During weekdays, the PT. Temas Depot Tembang office in Tanjung Priok often experiences a significant buildup of containers. Because of this, there is often a queue around the depot just for the container loading and discharging process, this relates to the productivity of container depots in the workplace. Temas container depot has equipment facilities such as reach stackers, side loaders, and forklifts to assist its operations in loading and discharging activities; besides that, Temas container depot is responsible for ensuring a smooth loading and discharging process and storage, repairing, and cleaning containers.The purpose of this study is to determine how loading and discharging equipment facilities relate to work productivity and how labor competence relates to container work productivity at PT Temas Depot Tembang. The efficiency of the loading and discharging is crucial for the logistical operations and might affect the productivity of the container depot. According to Nurleli Ramli (2021) Work productivity is the result of work that can be achieved by a worker based on how effectively and efficiently they work to achieve the work goals set by their company. This quantitative research was conducted at PT Temas Depot using techniques such as observation, interviews, and documentation.

Literature Review

According to Simanjuntak & Edy (2022) Facilities are physical facilities used to support all company activities and have a period of time in their use. Container loading and discharging facilities, also called container depots, are used to place and stack containers before and after loading and discharging from and to ships (Kurnia et al., 2021). In a container depot, several pieces of equipment are used for loading and discharging containers; 1. Side loaders, which are forklift-like vehicles used to lift or lower containers from and onto trailers via side loaders. 2. A container forklift, which is a forklift truck used to lift containers, 3. A Reach Stacker is a combination loading and discharging tool between a forklift and a mobile crane equipped with a spreader (or container lifter) to lift containers and provide an adjustable lifting range (Eka Pratama, REVA, 2020). Ahmad Wahyu Mas Izudin (2021) found that at the container depot, service activities encompass loading, which involves moving containers from the yard to the dock for transportation to the ship. Deliveries are made by the goods owner taking the container from the container yard to their depot or warehouse. Lift off: This refers to the process of lifting the container from the truck chassis to the depot for storage. Lift on: The process involves lifting a container from the depot to the truck chassis. Stacking is the process of moving containers to remove them from the stacking yard. Stuffing: Placing the cargo in the container. Stripping is the process of removing goods from the container. Receiving: This process involves receiving containers from the expedition or company to be stacked. Repairing: Repairing containers that are damaged during the loading and discharging process, Cleaning: Cleaning the container after use. According to some of the above definitions, cargo that is intended to be sent abroad or between islands can be combined at the container depot loading and discharging facilities. According to Nanda Aira Nur Anisa (2024) The indicators used to measure aspects of loading and discharging equipment facilities are equipment life, equipment availability, and loading and discharging machine maintenance.

According to Law No.13 of 2003 concerning manpower, a worker is any person who has the ability to make goods or services to meet individual and community needs. According to Suryantoro (2020) Tool operators are employees who have the ability or expertise to operate a tool in a specific field. Meanwhile, competence is the capacity to carry out a task or do a job in accordance with the abilities and work knowledge demanded by the job (Sukmawati, 2022). Thus, it can be concluded that labor competence is the skills or knowledge that individuals possess as a form of professionalism in a particular field of work. Using indicators such as quality of work, quantity of work produced, and utilization of time

used to complete tasks can be used as a basis for measuring aspects of workforce competence (Herlambang, 2019).

According to Anwar (2023) work productivity is one of the main indicators of a company's progress, employees who can compete with other companies to produce a service more efficiently are the result of the company's efforts to increase work productivity. Meanwhile, according to Jumaing et al (2024) Work productivity is a measure that compares the quantity and quality of workers in a unit of time, with the aim of achieving results or work products effectively and efficiently through the use of resources. According to Purnama (2019) It is stated that increasing labour competency variables and loading and discharging equipment facilities will lead to an increase in work productivity. In line with the above explanation, container depot companies should use productivity as the main indicator of company progress. Indicators such as skills, abilities, and behaviours are used to measure the components of work productivity (Suryantoro 2020).

Framework and Hipotesis

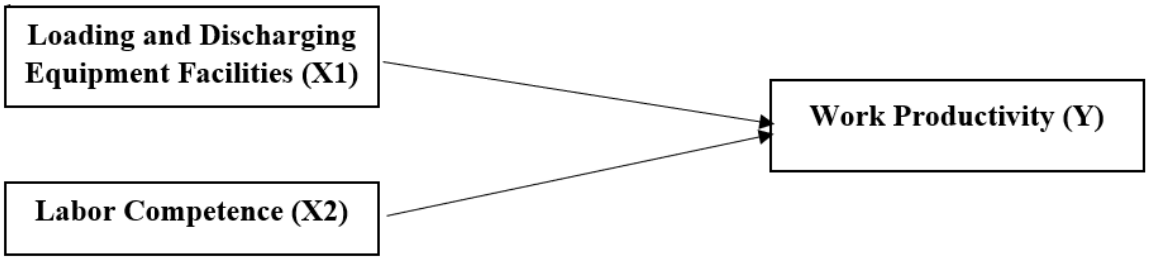

Figure 1. Framework

Hipotesis:

H0: Work Productivity (y) is not related to the loading and discharging equipment facilities (x1) and the labour competence (x2).

H1: There exists a correlation between work productivity (y), loading and discharging equipment facilities (x1), and labor competence (x2).

METHOD

This study used a quantitative approach, which utilised observation and questionnaires. Data were collected from 32 workers at PT Temas Depot. The saturated sample technique ensures an accurate representation of the population. This study aims to determine whether there is a relationship between the two main factors of loading and discharging equipment facilities, as well as labor competence and work productivity. Data analysis was conducted using SPSS. The objective was to determine if there was a significant relationship between these variables.

Tabel 1. Variable Measurement Table

Variable	Variable Concept	Indikator	
Loading And Discharging Equipment Facilities (X1)	Equipment facilities Loading and discharging equipment facilities are tools used for loading and discharging containers.	1. Equipment life 2. Equipment availability 3. Machine maintenance	(Nanda Aira Nur Anisa, 2024)
Labour Competence (X2)	Labour Competency refers to the knowledge and skills of activities performed to complete the task.	1. Quality of work 2. Quantity of work 3. Time utilisation	(Herlambang, 2019)
Work Productivity (Y)	Productivity is a skill or a company's ability to produce more efficiently.	1. Skills 2. Ability 3. Behavior	(Suryantoro, 2020)

RESULTS AND DISCUSSION

Validity Test

1. Validity Test X1

Table 2. Validity Test X1

Correlations							
		X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	Total X1
X1.1	Pearson Correlation	1	.679**	.597**	546**	439**	529**	801**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	32	32	32	32	32	32	32
X1.2	Pearson Correlation	.679**	1	.368**	.303	.340	.410*	.652*
	Sig. (2-tailed)	.000		.038	.091	.057	.020	.000
	N	32	32	32	32	32	32	32
X1.3	Pearson Correlation	.597**	.368**	1	.526**	.626**	.676**	.830**
	Sig. (2-tailed)	.000	.038		.002	.000	.000	.000
	N	32	32	32	32	32	32	32
X1.4	Pearson Correlation	.546**	.303	.526**	1	.579**	.547**	.751**
	Sig. (2-tailed)	.001	.091	.002		.001	.001	.000
	N	32	32	32	32	32	32	32
X1.5	Pearson Correlation	.439*	.340	.626**	.579**	1	.546**	.776**
	Sig. (2-tailed)	.012	.057	.000	.001		.001	.000
	N	32	32	32	32	32	32	32
X1.6	Pearson Correlation	.529**	.410*	.676*	.547*	.546**	1	.816**
	Sig. (2-tailed)	.002	.020	.000	.001	.001		.000
	N	32	32	32	32	32	32	32
Total X1	Pearson Correlation	.801**	.652**	.830**	.751**	.776**	.816**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	32	32	32	32	32	32	32

**. Correlation is significant at that 0.0 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

2. Validity Test X2

Table 3. Valididty Test X2

Correlations							
		X2.1	X2.2	X2.3	X2.4	X2.5	X2.6	Total X2
X2.1	Pearson Correlation	1	.570**	.535**	.761**	.538**	.570**	.863**
	Sig. (2-tailed)		.001	.002	.000	.001	.001	.000
	N	32	32	32	32	32	32	32
X2.2	Pearson Correlation	.570	1	.543**	.481**	.357**	.714**	.806**
	Sig. (2-tailed)	.001		.001	.005	.045	.000	.000
	N	32	32	32	32	32	32	32
X2.3	Pearson Correlation	.535**	.543**	1	.600**	.333	.543**	.758**
	Sig. (2-tailed).002	.002	.001		.000	.62	.001	.000
	N	32	32	32	32	32	32	32
X2.4	Pearson Correlation	.761**	.481**	.600**	1	.485**	.481**	.813**
	Sig. (2-tailed)	.000	.005	.000		.005	.005	.000
	N	32	32	32	32	32	32	32
X2.5	Pearson Correlation	.538**	.357**	.333	.485**	1	.255	.605**
	Sig. (2-tailed)	.001	.045	.062	.005		.159	.000
	N	32	32	32	32	32	32	32
X2.6	Pearson Correlation	.570**	.714**	.543**	.481**	.255	1	.789**
	Sig. (2-tailed)	.001	.000	.001	.005	.159		.000
	N	32	32	32	32	32	32	32

Correlations								
		X2.1	X2.2	X2.3	X2.4	X2.5	X2.6	Total X2
Total X2	Pearson Correlation	.863**	.806**	.758**	.813**	.605**	.789**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	32	32	32	32	32	32	32

**. Correlation is significant at that 0.0 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

3. Validity Test Y

Table 4. Validity Test Y

Correlations								
		Y1	Y2	Y3	Y4	Y5	Y6	Total Y
Y1	Pearson Correlation	1	.562**	.385**	.534**	.608**	.434*	.708**
	Sig. (2-tailed)		.001	.030	.003	.000	.013	.000
	N	32	32	32	32	32	32	32
Y2	Pearson Correlation	.562**	1	.604**	.677**	.749**	.677**	.870**
	Sig. (2-tailed)	.001		.000	.000	.000	.000	.000
	N	32	32	32	32	32	32	32
Y3	Pearson Correlation	.385*	.604*	1	.482*	.463**	.753**	.751**
	Sig. (2-tailed)	.030	.000		.005	.008	.000	.000
	N	32	32	32	32	32	32	32
Y4	Pearson Correlation	.534**	.677**	.482**	1	.797**	.651	.850**
	Sig. (2-tailed)	.002	.000	.005		.000	.000	.000
	N	32	32	32	32	32	32	32
Y5	Pearson Correlation	.608**	.749**	.463**	.797**	1	.633**	.872**
	Sig. (2-tailed)	.000	.000	.008	.000		.000	.000
	N	32	32	32	32	32	32	32
Y6	Pearson Correlation	.434*	.677**	.753**	.651**	.633**	1	.850**
	Sig. (2-tailed)	.0013	.000	.000	.000	.000		.000
	N	32	32	32	32	32	32	32
Total Y	Pearson Correlation	.708**	.870**	.751**	.850**	.872**	.850**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	32	32	32	32	32	32	32

**. Correlation is significant at that 0.0 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Conclusion of validity test results:
Validity test criteria

1. If the significance value is less than 0.05, it might be considered genuine, and vice versa.
2. If r count > r table, it can be concluded that the data is valid
   If r count < r table, it can be concluded that the data is invalid.

Results: The validity test results show that the values of (x1) loading and discharging facilities, (x2) labor competence, and (y) productivity are less than 0.05, so the data is considered valid. The second criterion is that the calculated values of x1, x2, and y are greater than the r table, which amounts to 32 and has an r table value of 0.3494.

Reliability Test.

1. Reliability Test X1

Table 5. Reliability Test X1

Reliability Statistics	
Croncach's Alpha	**N of Items**
.863	6

2. Reliability Test X2

Table 6. Reliability Test X2

Reliability Statistics	
Croncach's Alpha	**N of Items**
.867	6

3. Relibility Test Y

Table 7. Reliability Test Y

Reliability Statistics	
Croncach's Alpha	**N of Items**
.901	6

Generally, the criteria for reliability testing are 0.60.

Conclusion of reliability test results:

From the reliability test results above:

Results of the reliability assessment: The results above indicate that the cronbach alpha x1 level for th efficiency of the bongkar muat facility is 0.863, the cronbach alpha x2 level for work competence is 0.867, and the cronbach alpha y level for work productivity is 0.901.

Normality Test:

Table 8. Normality Test

One-Sample Kolmogorov-Smirnov Test		
N		32
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.75662088
Most Extreme Differences	Absolute	.234
	Positive	.160
	Negative	-.234
Test Statistic		.234
Asymp. Sig. (2-tailed)		.000[c]
Exact Sig. (2-tailed)		.050
Point Probability		.000

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction

Normality test criteria:

a) If the significant value > 0.05. then it can be concluded that the data is normally distributed.
b) If the significant value < 0.05, it can be concluded that the data is not normally distributed.

Conclusion of the normality test results: from the results above, it can be seen that the normality test has a significance value by exact means of 0.050, so it can be concluded that the data is normally distributed.

Pearson Correlation Test (Pearson Product Moment):

Table 9. Pearson Correlation Test

Correlations				
		X1	**X2**	**Y**
X1	Pearson Correlation	1	.629**	.738**
	Sig. (2-tailed)		.000	.000
	N	32	32	32
X2	Pearson Correlation	.629**	1	.698**
	Sig. (2-tailed)	.000		.000
	N	32	32	32
Y	Pearson Correlation	.738**	.698**	1
	Sig. (2-tailed)	.000	.000	
	N	32	32	32

**. Correlation is significant at the 0.01 level (2-tailed)

Criteria pearson correlation Test (pearson product moment):

a) If the significant value (2-tailed) < 0.05, it can be concluded that there is a significant relationship.
b) If the significant value (2-tailed) > 0.05, it can be concluded that there is no significant relationship.

Pearson correlation test results (pearson product moment) :

a) It can be seen that the significant value (2-tailed) x1 on y is 0.000 <0.05 so that it can be said that there is a significant relationship.
b) It can be seen that the significant value (2-tailed) x2 on y is 0.000 <0.05 so that it can be said that there is a significant relationship.

Interpretation:

The Pearson correlation value between x1 and y is 0.738, which falls between 0.60 and 0.799, indicating that the relationship is categorized as strong. This indicates that the results on variable x1 loading and discharging facilities are significantly correlated with variable y work productivity. The Pearson correlation value between x and y is 0.698 and falls between 0.60 and 0.799, indicating a strong correlation between x2 labor capability and y labor productivity.

Pearson correlation test results: it can be concluded that the hypothesis (h1) is accepted while (h0) is rejected because there is a strong relationship.

CONCLUSION

The purpose of this study is to determine whether there is a relationship between loading and discharging equipment facilities and labour competence with the work productivity of PT Temas Depot Tembang. According to this study, labour competence and equipment facilities have a strong and significant correlation in work productivity. Quantitative methods and thorough data analysis enabled this finding. This study shows that improving loading and discharging facilities and improving labour skills can significantly increase work productivity. This strong relationship suggests that companies should pay more attention to these two elements to achieve optimal levels of work productivity. This research provides a solid basis for companies to implement strategies to improve work productivity in a sustainable manner.

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