



Strategies to Improve Competitiveness at Nusantara 1 and 2 Passenger Terminals through Enhanced Service Facilities

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Article Info	Abstract
<p><i>Keywords:</i> <i>Port;</i> <i>Passenger terminal;</i> <i>GAP Analysis;</i> <i>Facility Improvement</i></p>	<p>Tanjung Priok Port is one of Indonesia's largest and busiest ports, playing a vital role in goods trade and passenger transportation. This research focuses on enhancing the infrastructure at the Nusantara 1 and 2 passenger terminals to increase the port's competitiveness and value, particularly in the passenger terminal area. Using GAP Analysis, literature review, interviews, observations, and documentation, the study aims to provide solutions for improving and expanding passenger terminal facilities to enhance passenger service and value. The findings indicate that optimal maintenance of port infrastructure significantly enhances the port's value and passenger comfort. Observations reveal a yearly increase in passengers at the PURA 1 & 2 terminals, reaching 353,005 passengers in 2022. The temporary waiting room accommodates 1,600 passengers, while the general waiting room holds 3,666 passengers. Despite the good maintenance of these facilities, further improvements are necessary to meet the growing demands.</p>

1. INTRODUCTION

As time goes by and the economic needs of the community are increasing, it is necessary to develop facilities and infrastructure that can provide services according to predetermined standards. (Ayuningtias D.A. and Purwaningsih R., 2013). Port is an infrastructure used as a stopping point for sea transportation activities, such as a place for ships to dock, a place for ships to carry out the process of boarding and disembarking passengers, as well as the transportation and release of goods. (Harry Geerlings et al., 2017).

Passenger flow, or embarkation and debarkation, is the ups and downs of passengers from the ship, arranged from the chosen destination (WJS Poerwardaminta, 1993). Tanjung Priok Port is one of the largest and busiest ports in Indonesia. Serving as the main gateway for the flow of exports, imports, and inter-island goods, this port handles more than 30% of Indonesia's non-oil and gas commodities and 50% of the entire flow of goods in/out of Indonesia. Because of its important role, Tanjung Priok Port is a key indicator for the Indonesian economy.

Tanjung Priok Passenger Terminal is one of the sea transportation services at Tanjung Priok Port, in carrying out the functions and duties of passenger terminal services, basic and supporting facilities are needed to achieve optimal, efficient and effective results and overcome the problem of flow paths within the terminal. The Nusantara passenger terminal port also has a Port Community System (PCS) system that serves an important

function in increasing port efficiency by reducing paperwork through electronic data exchange, improving operational processes, encouraging global trade facilitation, encouraging digitalization in the maritime industry, and contributing to environmental sustainability through efficient operations and reduced emissions. However, as activity grows and the number of activities at passenger terminals increases, the problems that arise become increasingly complex. One of the related problems is the mismatch between the volume of passengers and the capacity of the available infrastructure.

When conducting this research, the author found several problems that arose related to the infrastructure of Nusantara Passenger Terminal 1 and 2. In this context, the researcher highlighted several important aspects, including the condition of temporary waiting facilities, waiting room facilities, disability parking facilities, and Garbarata.

1. Temporary waiting room

The temporary waiting room is an area provided for passengers who are in transit or waiting for the arrival of the ship. This room has an area of 2,400 m². However, it needs to be realized that the facilities currently available are not sufficient to optimally meet the needs of passengers. To understand more about the condition of this temporary waiting room, a picture explaining the details of the waiting room environment will be included.



Figure 1: Temporary Waiting Room

2. Public Waiting Room

A public waiting room is a facility used by the general public, whether they are waiting at the time of passenger drop-off or pick-up. Inside this public waiting room, passengers wait in queues for administrative processes such as ticket purchase, and ticket check-in, while families who drop off or pick up passengers also wait in hopes of a smooth arrival or return. This room has an area of 5,500 m². However, in its use, there is a need for improved infrastructure facilities, especially related to the number of waiting seats available. In the picture below is the temporary passenger waiting area outside, which has limited facility capacity when facing passenger density during peak times.



Figure 2. Public Waiting Room

3. Disability parking

The disabled parking facility is an area that is provided specifically for visitors with special needs caused by disability conditions. The area of this parking area reaches 6 m². Based on the interview results, the facilities in the disability parking area consist of 4 wheelchairs. However, in the process of delivering visitors to the ship, two of the wheelchairs were carried away with the ship, leaving only 2 wheelchairs in the disability parking area. This incident shows the need for increased and assertive supervision of the facility, to ensure adequate facilities are available for visitors with special needs. The author will attach a picture or condition of the disabled parking area.



Figure 3. Disability parking

4. Garbarata

Transportation of the connecting bridge called the Garbarata functions as a link between the Passenger Pier and the Passenger Ship, very necessary during the process of getting on and off passengers, the Garbarata is a functional facility and is required by each port to have Garbarata Transportation and certainly must have a Garbarata of at least 1 unit, but seeing the condition of the Tanjung Priok passenger port area is the main port of national crossing with only 1 Garbarata unit Very less, based on interview information with Pelindo Staff at the Tanjung Priok passenger terminal said that the garbarata is used alternately by the cargo ship dock in the area near the passenger terminal, which can be said to hamper the process of getting up and down passengers if the garbarata is used at the same time and create queues of passengers and other passenger ships around the dock area, the picture below is documentation of the garbarata while waiting for alternating passengers to exit and enter.



Figure 4. Garbarata

The purpose of this study is to Analyze the capacity needs of facilities at the port based on the number of passengers who will travel, transit, and evaluate the impact of the lack of facility capacity on the services provided to port users. and Formulate recommendations to relevant parties to improve infrastructure and improve user experience at the port.

The researcher hopes that through this research and evaluation of the passenger terminal infrastructure, as well as providing recommendations to relevant parties, a significant increase in the trust and comfort felt by passengers towards the Nusantara passenger terminal services can be achieved. In addition, it is also hoped that the recommendations made will bring benefits in increasing the value and competitiveness of Nusantara terminal ports 1 and 2 in the future.

2. METHODS

This type of research is qualitative research, simply put Creswell, J. W. defines qualitative research as research that investigates human and social problems.

Rachman in Lexy Moleong states that when conducting research, it is important to choose relevant data collection methods and tools in addition to an appropriate methodology.

The researcher reports his findings based on the views and analysis of the data obtained in the field, and documents them in a detailed research report. The techniques used in this research are GAP Analysis, Interview, Observation, and Documentation.

1. GAP Analysis

GAP Analysis is a tool or process for identifying gaps or differences between the current state of the organization and the state it should be. It is used to design organizational implementation plans and improve organizational effectiveness in various areas of the organization.(Kim et al., 2018).

Gap analysis is an evaluation method that compares the actual performance of an organization or system with its expected or desired performance. The purpose of gap analysis is to identify the differences between the current state and the desired state so that the company can identify areas that need to improve their performance or implement changes.

2. Interview

An interview is a conversation with a specific purpose. The conversation is conducted by both parties, namely the interviewer (interviewer) who asks questions and the interviewee (interviewee) who gives Interviews are used by researchers to assess a person's condition. Interviews are usually conducted individually or in groups, so as to obtain data that is oriented towards informative data. The interview method is a dialog or question and answer conducted by two or more people, namely the interviewer and the interviewee (resource person) conducted face-to-face. Interviews are used to reveal data about infrastructure facilities at the Nusantara Terminal 1 and 2 Passenger Terminal Ports.

3. Observation

Using all the sensory organs to focus attention on an object is what is meant by observation as part of the scientific method. Therefore, observation is a systematic and deliberate study of events that occur and can be studied at the time they occur using the sensory organs, especially the eyes. The observation method is more objective than the survey method. This method is carried out by directly observing the topic under study, and in observing something, a person must focus his attention on that something using all his sensory organs.

4. Documentation

The word "documentation" refers to written products, and the term "documentation method" refers to the process of collecting data through recording existing data. Looking for information about things or variables in the form of books, letters, minutes, transcripts, magazines, inscriptions, meeting minutes, agendas, and so on. Research difficulties can be overcome by collecting data through archives and books on ideas, theories, arguments, laws, and other relevant topics using documentation procedures or investigations. The main method of data collection in qualitative research is based on logically and rationally formulated hypotheses, which are supported or refuted by views, ideas, or laws. To identify patterns or themes in the data, the data analysis strategy used in this study follows the approach created by Miles and Huberman. This approach entails limiting the amount of data and sorting after the data has been collected to eliminate irrelevant or overly comprehensive information. The next step is data display, which helps in understanding for further information or event analysis.

3. RESULT AND DISCUSSION

This study aims to evaluate the capacity of passenger service facilities at Nusantara Passenger Terminal Port 1 and 2 with a focus on the years 2022 to 2024. Using passenger debarkation and embarkation data for those years, and considering a temporary space area of 2400m² and a general waiting area of 5500m², the analysis was conducted to evaluate the adequacy of existing facilities and suggest strategies to improve the port's competitiveness.

Based on our observations, it was revealed that the capacity of infrastructure and facilities is not proportional to the existing passenger volume. The passenger data for the years 2022, 2023, and 2024 that we obtained and the authors present clearly illustrate this situation. As part of our argumentation on the mismatch between capacity and passenger volume, we used formulas to calculateTo make your message clear, the discussion should be kept as short as possible while clearly and fully stating, supporting, explaining, and defending your answers and discussing other important and directly relevant issues. Care must be taken to provide commentary and not a reiteration of the results. Side issues should not be included, as these tend to obscure the message.

Table 1. 2022 Passenger Debarkation and Embarkation Database

BULAN	Shipp Call		DEBARKASI			EMBARKASI			TOTAL DEBARKASI DAN EMBARKASI
	DN	LN	DN	LN	JUMLAH	DN	LN	JUMLAH	
JANUARI	51	0	5.773	0	5.773	5.558	0	5.558	11.331
FEBRUARI	53	0	7.387	0	7.387	7.777	0	7.777	15.164
MARET	49	0	5.500	0	5.500	5.277	0	5.277	10.777
APRIL	56	0	10.274	0	10.274	8.059	0	8.059	18.306
MEI	50	0	16.082	0	16.082	17.500	0	17.500	33.582
JUNI	59	0	15.786	0	15.786	18.694	0	18.694	34.480
JULI	56	0	24.806	0	24.806	24.887	0	24.887	49.693
AGUSTUS	52	0	18.889	0	18.889	19.831	0	19.831	38.720
SEPTEMBER	57	0	14.975	0	14.975	15.618	0	15.618	30.593
OKTOBER	52	0	13.936	0	13.936	14.186	0	14.186	28.122
NOVEMBER	53	3	15.611	2.659	18.270	16.021	2.677	18.698	36.968
DESEMBER	61	2	21.247	1.058	22.305	21.912	1.052	22.946	45.269
TOTAL	649	5	170.239	3.717	173.956	175.320	3.729	179.049	353.005

With the general formula used by the author in calculating the capacity of infrastructure and volume.

Formula for calculating passenger capacity in temporary waiting rooms

Diketahui : Temporary waiting room area = 2.400m²

In general, the area per person = 1,5m²

Ditanya : Capacity of people in the room?

RUMUS : Capacity = $\frac{\text{Room area}}{\text{Area per person}}$

$$\text{Capacity} = \frac{2.400\text{m}^2}{1,5\text{m}^2 \text{ per orang}}$$

Capacity = 1.600 orang

The calculation results show that the temporary waiting room can only accommodate 1,600 passengers out of the total passengers in 2022, 2023, and 2024 per month.

To further clarify the above conclusion, let's take the month with the lowest total passengers, which is in March.

Rumus persentase % = $\frac{\text{Total capacity}}{\text{Total passengers in March}}$

$$\text{Persentase \%} = \frac{1.600}{10.777} \times 100$$

Persentase % = 14,85

From the results of these calculations, it can be concluded that the capacity of the temporary waiting room ranges from 14% to 15% of the total passengers in March.

The formula for calculating passenger capacity in a public waiting room.

$$\text{Rumus : Capacity} = \frac{\text{Room area}}{\text{Area per person}}$$

$$\text{Capacity} = \frac{5.500\text{m}^2}{1,5 \text{ m}^2 \text{ per orang}}$$

$$\text{Capacity} = 3.666 \text{ orang}$$

The calculation results show that the temporary waiting room can only accommodate 3,666 passengers from the total passengers in 2022 per month.

Table 1 displays passenger embarkation and debarkation data in 2022. The analysis shows a consistent increase in passenger numbers each month, underscoring the significant growth in port activity over the years. However, the temporary waiting room capacity is insufficient, only able to accommodate about 14-15% of the total passengers in the lowest month, March. Similarly, the capacity of the general lounge is insufficient to handle the total volume of passengers each month.

The passenger data for 2023 will be shown below.

Table 2. 2023 Passenger Debarkation and Embarkation Database

BULAN	Shipp Call		DEBARKASI			EMBARKASI			TOTAL DEBARKASI DAN EMBARKASI
	DN	LN	DN	LN	JUMLAH	DN	LN	JUMLAH	
JANUARI	49	0	12.149	0	12.149	13.169	0	13.169	25.318
FEBRUARI	62	2	14.744	2.067	16.811	15.334	2.006	17.340	34.151
MARET	50	2	9.821	3.402	13.223	9.931	3.392	13.323	26.546
APRIL	61	1	18.519	894	19.413	19.693	877	20.570	39.983
MEI	61	0	24.683	0	24.683	24.568	0	24.568	49.251
JUNI	69	0	23.926	0	23.926	22.988	0	22.988	46.914
JULI	58	0	24.266	0	24.266	24.946	0	24.946	49.212
AGUSTUS	59	0	19.797	0	19.797	20.330	0	20.330	40.127
SEPTEMBER	59	0	12.806	0	12.806	13.086	0	13.086	25.892
OKTOBER	68	0	16.007	0	16.007	15.133	0	15.133	31.140
NOVEMBER	66	2	16.835	2.797	19.632	17.278	2.790	20.068	39.700
DESEMBER									0
TOTAL	662	7	193.553	9.160	202.713	196.456	9.065	205.521	408.234

Moving on to Table 2, which presents passenger data for 2023, and Table 3 for 2024, the trend of increasing passenger numbers continues. The total volume of passengers each month continues to increase, reflecting

the importance of ports as centers of economic activity in Indonesia. However, the limited capacity of port facilities remains a concern, as evidenced by the waiting room capacity calculations.

Table 3.2024 Passenger Debarkation and Embarkation Database

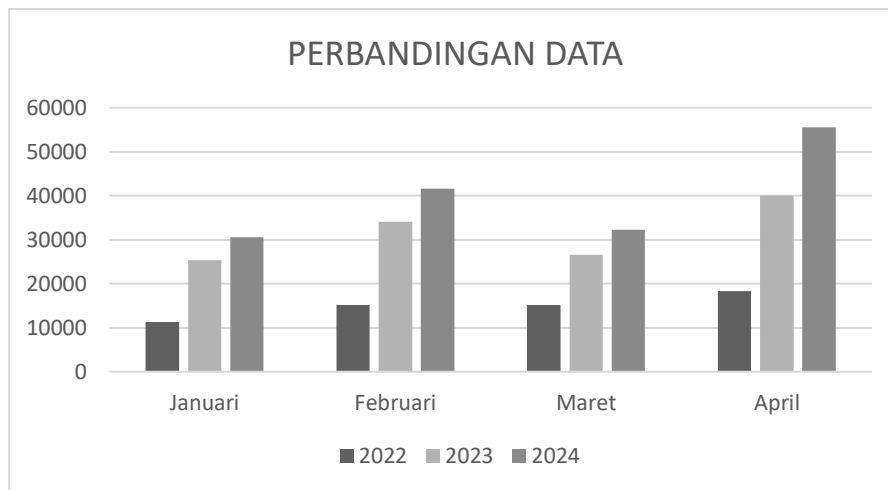
BULAN	Shipp Call		DEBARKASI			EMBARKASI			TOTAL DEBARKASI DAN EMBARKASI
	DN	LN	DN	LN	JUMLAH	DN	LN	JUMLAH	
JANUARI	51	0	15.358	0	15.358	15.193	0	15.193	30.551
FEBRUARI	65	2	15.408	4.764	20.172	16.810	4.656	21.466	41.638
MARET	67	1	16.053	894	16.947	14.491	893	15.384	32.331
APRIL	62	0	29.306	0	29.306	26.203	0	26.203	55.509
MEI									
JUNI									
JULI									
AGUSTUS									
SEPTEMBER									
OKTOBER									
NOVEMBER									
DESEMBER									
TOTAL	245	3	76.125	5.658	81.783	72.697	5.549	78.246	160.029

From the data obtained, it can be seen that the total passenger debarkation and embarkation at Nusantara Passenger Terminal Ports 1 and 2 continues to increase significantly from 2022 to 2024. In 2022, the total number of debarkations and embarkations reached 353,005 passengers, increased to 408,234 passengers in 2023, and continued to climb to 160,029 passengers in 2024. This shows a consistent growth trend in passenger activity at the port over the period investigated.

In looking at the capacity of the facility, calculations show that the temporary waiting area can only accommodate about 1600 people of the total passengers per month in 2022, 2023, and 2024. This indicates a mismatch of the facility capacity with the existing passenger volume. Similarly, the general waiting room can only accommodate about 3666 people out of the total passengers per month in 2022.

Data analysis shows that there is an increase in total passengers from year to year at Tanjung Priok Port. From the results of the three data we obtained, as well as the calculations we wrote above, it can be concluded that the increase in total passengers occurred significantly. It can be seen from the above calculations that the lowest capacity in the three years only reached 14%, which can be accommodated by the temporary waiting room, while as many as 3,066 people can use the public waiting room. The increase in total passengers from year to year, as illustrated from the calculation results, shows that Tanjung Priok Port is experiencing significant growth in its passenger service activities.

From 2022 to 2023, there was a considerable increase in the number of debarked and embarked passengers, and a continued increase from 2023 to 2024. A comparison chart is shown below



Graph 1. Data comparison from 2023 to 2024

This is followed by Graph 1 which visualizes the increasing trend of passenger numbers from 2023 to 2024, specifically in January with a total of 11,331 in 2022, with a total of 25,318 in January in 2023, and a total of 30,551 passengers in January in 2024. From this comparison chart shows that in January each year there is an increase. Especially in February passengers with a total of 15,164 in 2022, with a total of 34,151 in February in 2023, and a total of 41,638 passengers in February in 2024. From this comparison graph shows that in February each year there is also an increase. Likewise in March and April, the increase in each month from year to year is an important basis in determining strategies for improving passenger service facilities at Nusantara Passenger Terminal Ports 1 and 2.

The graph we present is a comparison of passenger debarkation and embarkation data from 2023 to 2024. This graph visualizes the trend of increasing passenger numbers from year to year, which is an important basis for determining strategies for improving passenger service facilities at Nusantara Passenger Terminal Ports 1 and 2. From the comparison of the data presented by the researcher, it can be seen that there is an increase in the number of passengers at the passenger terminal every year. Comparisons were made for the months of January, February, March and April in each year as an example to give the reader an idea of the increasing trend. The consistent increase in passenger numbers from year to year has important implications for passenger terminal management. It indicates the need to adjust and increase the capacity of facilities and services to meet the growing demand from passengers. In addition, this analysis also provides valuable insights for relevant parties to plan future investments in anticipation of the continued increase in passenger activity. The results highlight the urgent need to increase the capacity of passenger service facilities at Nusantara Passenger Terminal Ports 1 and 2. With significant growth in passenger numbers year-on-year, a comprehensive strategy is needed to address the mismatch between facility capacity and passenger volumes. A strategy to improve port competitiveness through improved passenger service facilities is essential. Increasing the capacity of temporary waiting rooms and public waiting rooms should be considered as key measures. In addition, the use of technology and efficient management systems can also help in improving the effectiveness of port operations.

By implementing these strategies, Nusantara 1 and 2 Passenger Terminal Port can improve passenger experience, increase operational efficiency, and ultimately, increase its competitiveness as one of Indonesia's major passenger ports.

4. CONCLUSION

This study evaluates the capacity of passenger service facilities at Nusantara Passenger Terminal Ports 1 and 2 from 2022 to 2024. Using embarkation and debarkation data and considering the areas of temporary and public waiting rooms, the analysis assessed the adequacy of existing facilities and suggested strategies to improve port competitiveness. Findings indicate that Tanjung Priok Port's infrastructure is insufficient to accommodate the growing passenger volume. For example, the temporary waiting room can only hold about 14-15% of passengers during the lowest month. The study highlights the urgent need for infrastructure upgrades to sustain economic growth and improve passenger services.

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