

Evaluation of Passenger Terminal Service Facilities using SWOT Analysis at Tanjung Emas Class I Port, Semarang

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ABSTRACT

This study aims to evaluate passenger terminal service facilities at Tanjung Emas Port, Semarang, using the SWOT Analysis method (Strengths, Weaknesses, Opportunities, Threats). This evaluation aims to identify the strengths, weaknesses, opportunities, and threats faced by passenger terminals in providing optimal service to users. The results of the analysis show that the main strength lies in adequate infrastructure and security systems, such as effective CCTV. However, weaknesses related to emergency response facilities and limitations in the dissemination of cargo policies need to be improved. Opportunities to improve service quality can be realized through the use of modern technology, while the biggest threats arise from increased passenger volumes and regulatory changes. Recommendations include improving emergency response facilities, utilizing CCTV for real-time monitoring, and providing better transportation facilities for passengers. The implementation of this strategy is expected to be able to improve the quality of passenger terminal services in the future.

Keywords: Tanjung Emas Port; facility evaluation, SWOT, strengths, weaknesses, opportunities, threats.

INTRODUCTION

Ports are a key element in the maritime transportation system, playing an important role in supporting a country's economy and logistics. As the main link between land and sea transportation modes, ports become centers of economic activities that include ship receipts, passenger handling, and loading and unloading of goods (Mwendapole & Zhihong, 2021). The efficiency and effectiveness of port operations greatly affect the quality of service, which has a direct impact on user satisfaction and the smooth flow of goods and passengers (Utama et al., 2024).

Passenger terminals, as one of the main facilities in the port, play a crucial role in supporting the mobility of passengers and goods. Passenger terminal facilities, such as lounges, security, and departure information systems, must be up to standard in order to meet user expectations. Passenger comfort and safety are the main indicators of the success of services at the terminal (Triatmodjo, 2019).

The Port of Tanjung Emas in Semarang, as a Class I port in Indonesia, plays a strategic role in domestic and international trade, especially on the island of Java. As the main gateway for passengers and goods, Tanjung Emas Port is expected to be able to provide quality services in accordance with international standards (Ayuningtias & Purwaningsih, 2016). However, with the increasing volume of passengers and goods, it is important to evaluate the quality of service at the passenger terminal to ensure that the facilities provided remain in line with user expectations and service standards.

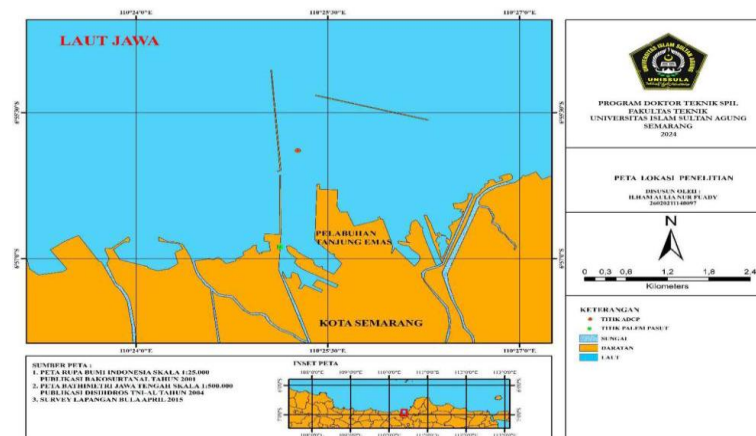


Figure 1. Map of the Location of Tanjung Emas Port Semarang

This study aims to evaluate passenger terminal facilities and services at Tanjung Emas Port using the SWOT Analysis method. This method will help identify gaps between user expectations and satisfaction, as well as provide recommendations for improvement to improve the quality of terminal services. It is hoped that the results of this research can strengthen the competitiveness of Tanjung Emas Port in the international arena and support national economic growth.

Ports have a strategic role in supporting a country's economic and logistical activities. As a transit center, the port functions in ship receipt, passenger handling, and cargo loading and unloading, where operational efficiency greatly determines the quality of service (Mwendapole & Zhihong, 2021; Utama et al., 2024). The passenger terminal is an important point in the movement of land and sea transportation modes, as well as the management of passenger logistics. Therefore, the quality of facilities in the terminal greatly affects user satisfaction and has an impact on socio-economic aspects (Triatmodjo, 2019; Muhajir et al., 2022).

Passenger Satisfaction and Service Performance The Importance Performance Analysis (IPA) method is often used to evaluate the gap between expectations and service performance (Parasuraman et al., 1988). At Tanjung Emas Port, this analysis shows that there are gaps in several aspects of services, especially in comfort, safety, and public facilities, which require improvements to meet passenger expectations (Sugiyono, 2017).

Application of Technology in Ports The application of modern technology in ports has been proven to be able to improve efficiency and quality of service. Technologies such as facial recognition, contactless payments, and RFID have been adopted in several international ports to speed up the service process and improve security (Mwendapole & Zhihong, 2021; Soraya et al., 2022). This technological innovation is very relevant to be adopted in ports in Indonesia to increase competitiveness and operational efficiency.

Ports in Indonesia As the largest maritime country, ports in Indonesia, including the Port of Tanjung Emas, play an important role in national and international trade. Based on the Regulation of the Minister of Transportation No. PM 71 of 2017, Tanjung Emas Port is expected to meet service standards related to safety, security, and comfort (Ayuningtias & Purwaningsih, 2016). However, the survey results show that some aspects of facilities still need to be improved to meet user expectations (Della & Rachmannullah, 2021).

Terminal Facilities and Services Port passenger terminals play an important role in serving the movement of passengers and goods. Facilities such as waiting rooms, security systems, and departure information are essential to ensure passenger comfort (Triatmodjo, 2019). The Port of Tanjung Emas and other ports in Indonesia need to continue to evaluate and improve the quality of facilities in order to compete at the global level (Khadarisman et al., 2016).

Overall, the review emphasizes the importance of implementing technology and improving facilities

at passenger terminals to ensure optimal service quality and improve the competitiveness of ports at the international level.

Table 1. Passenger Terminal Service Facility Indicators

Safety Facilities	
I.1	Availability of fire extinguishers (APAR)
I.2	Evacuation route instructions and evacuation gathering points are available
I.3	Emergency phone number information available
I.4	Healthcare worker availability and visibility
I.5	Availability of P3K equipment
I.6	Wheelchair availability
I.7	Availability of stretchers
I.8	Handling the occurrence of tidal floods or sea tides
I.9	Water pumps in anticipation of floods
Security and Order Facilities	
I.10	There is CCTV
I.11	Security guardrail
I.12	The condition of the embalming/de-cremation staircase with the roof access to the ship
I.13	Availability and visibility of security personnel
I.14	Security disturbance information (complaints) is clearly visible
I.15	Metal detector works well
I.16	Parking lot conditions
I.17	Restrictions on the carry-on baggage of passengers
I.18	Timeliness of arrival and departure of ships
Reliability/Order Facilities	
I.19	Time efficiency in ticket sales and redemption services
I.20	Information on ship departure and arrival schedules is available
Comfort Facilities	
I.21	Waiting room facilities and conditions
I.22	Toilet Condition
I.23	Condition of the Prayer Room
I.24	Lighting intensity inside the terminal
I.25	Air conditioning, fan, ventilation temperature regulation
I.26	Organized and regular passenger lane facilities
I.27	Conditions of health care rooms
I.28	Smoking places or areas
I.29	Canteen/cafeteria for eating and drinking
I.30	Gardens in the terminal area
Facilities of Convenience	
I.31	The information conveyed to passengers is read and heard clearly
I.32	Providing information in case of travel disruption
I.33	Availability of onward transportation information
I.34	Availability of complaint service places
I.35	The availability of trollies and uniformed porters who have identities
I.36	Public transportation to come and go to the terminal
I.37	Port terminal location / layout
I.38	Availability of free wifi/internet for passengers
Equity Facilities	
I.39	Facilities provided for passengers with disabilities
I.40	Special rooms/places are provided for breastfeeding mothers
I.41	Affordability of ticket prices

RESEARCH METHODS

Form of Research

This study uses the SWOT analysis method to examine the influencing factors in strengthening the

variable process. SWOT is a method that helps in identifying internal and external factors that influence decision-making strategies. Each factor is assessed using the Likert scale (values 1-5) to provide an overview of weights and scores that reflect the suitability of the strategy.

SWOT analysis is divided into two categories, namely internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats). Based on these two factors, several strategies can be formulated:

1. Strength-Opportunity (S-O) Strategy: Leverage strengths to make the most of opportunities.
2. Strength-Threat (S-T) Strategy: Use your strengths to overcome threats.
3. Weaknesses-Opportunity (W-O) Strategy: Reduce weaknesses by taking advantage of existing opportunities.
4. Weaknesses-Threats (W-T) Strategy: Avoiding threats by minimizing weaknesses.

	EFI	STRENGTH (S)	WEAKNESS (W)
EFE			
OPPORTUNITIES (O) (Identify external opportunity factors)		S-O Strategy List of strengths to gain benefits from available opportunities	W-O Strategy List to overcome weaknesses by taking advantage of available opportunities
THREATS (T) (Identify external threat factors)		S-T Strategy List of strengths to avoid threats	W-T Strategy List to minimize weaknesses and avoid threats

Figure 2. SWOT Variable Matrix

The stages in the SWOT analysis process include data collection, analysis through the creation of internal-external matrices and SWOT matrices, and decision-making to determine management policies based on the results of the analysis. The strategies resulting from this analysis aim to maximize strengths and opportunities, while minimizing existing weaknesses and threats, thereby supporting better management success.

Research Location:

The research was conducted at the passenger terminal of Tanjung Emas Port, Semarang. Data was collected from passengers arriving and departing at the terminal over a two-month period, focusing on peak times, such as during the holiday season. The data obtained through these surveys and interviews are used to evaluate various aspects of facilities and services at the passenger terminal.

Population and Sample:

The study population is passengers who use services at Tanjung Emas Port during the research period. The sample is part of the number and characteristics that the population has. According to Sugiyono (2017:81) To determine the sample to be taken in this study, there are various sampling techniques used.

To determine the number of samples, the researcher used the Slovin formula: (Sugiyono, 2019:143)

$$n = \frac{N}{1 + Ne^2}$$

Where:

- n = Number of samples
N = Number of population
e = Error tolerance limit used (10%)

- a. Calculation of the number of samples taken at Tanjung Emas Port:

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{180.000}{1 + 180.000 (0.1)^2}$$

$$n = 99.94 \text{ (rounded to 100)}$$

Table 2. Gender of Respondents

Gender	
Man	44
Woman	56

Table 3. Age of Respondents

Age	
Young (13-17 years old)	3
Young Adults (18-30 Years)	58
Adult (31-40 Years)	38
Senior (over 40 years old)	3

Data Collection Techniques

SPSS analysis is used as the first step to test the research instrument. The research data obtained from the questionnaire is tested first before further analysis to ensure the validity and reliability of the data. The data collection instrument in this study produces quantitative data. According to Sugiyono (2017), quantitative analysis includes grouping data based on variables and respondents, tabulating data, presenting data per variable, calculating results to answer problem formulations, and testing hypotheses.

RESEARCH RESULTS

SWOT Analysis

EXTERNAL	INTERNAL	
	STRENGTHS S-O Strategy	WEAKNESSES W-O Strategy
OPPORTUNITIES (Opportunities)	<ul style="list-style-type: none"> - Strengthening terminals by building health posts, improving access to roads and facilities for disabled passengers. - Utilizing information technology systems as passenger service media, customer helpdesk, and travel information in real time. - Providing services to porters and trolley staff to increase human resource capacity and service quality. - Providing free Wi-Fi access at all terminal points with usage information. - Providing facilities for disabled passengers and promoting those facilities. - Providing health rooms with real-time information access and staff availability. 	<ul style="list-style-type: none"> - Adding lifts or escalators to improve accessibility for passengers with limited mobility. - Improving the quality of toilet facilities and cleanliness. - Improving facilities such as prayer rooms and waiting rooms to remain clean and comfortable. - Increasing ventilation and AC quality. - Improving data integration and information system access in real time. - Removing outdated signage and creating new guidelines for passenger paths. - Renovating the health room and improving medical equipment.
THREATS (Threats)	S-T Strategy <ul style="list-style-type: none"> - Improving building infrastructure with emergency facilities and early warning systems, as well as health and safety support. - Increasing socialization of restrictions on goods using the bus. - Installing CCTV to monitor and supervise ship traffic in real time. - Collaborating with operators and authorities for passenger transportation safety. - Providing special facilities for the elderly and pregnant women. - Improving security by adjusting the layout of security posts and ensuring surveillance. - Disseminating real-time information to passengers to help them plan their trips. 	W-T Strategy <ul style="list-style-type: none"> - Improving infrastructure with weather-resistant materials to withstand ship surroundings. - Improving and updating terminal layout and signage for easier navigation. - Increasing budget for facility maintenance and enhancement. - Creating a routine maintenance schedule and cleanliness inspections. - Providing information systems to prevent crowding and enhance flow. - Promoting policies on baggage limits. - Educating passengers through outreach on travel planning and baggage restrictions.

Figure 4. SWOT Analysis Results

INTERNAL					Weakness				
Strength									
No.	Indikator	Bobot	Rating	BxR	No.	Indikator	Bobot	Rating	BxR
1	I.1	0,052632	4,07	0,214211	1	I.11	0,111111	4,07	0,452222
2	I.2	0,052632	4,07	0,214211	2	I.20	0,111111	4,18	0,464444
3	I.3	0,052632	3,99	0,21	3	I.21	0,111111	4,01	0,445556
4	I.4	0,052632	4,07	0,214211	4	I.22	0,111111	3,93	0,436667
5	I.5	0,052632	4,09	0,215263	5	I.24	0,111111	3,96	0,44
6	I.6	0,052632	4,01	0,211053	6	I.25	0,111111	4,09	0,454444
7	I.7	0,052632	4,09	0,215263	7	I.26	0,111111	4,09	0,454444
8	I.9	0,052632	3,33	0,175263	8	I.28	0,111111	4,02	0,446667
9	I.10	0,052632	3,98	0,209474	9	I.32	0,111111	3,99	0,443333
10	I.12	0,052632	4,06	0,213684	Total	1		36,34	4,037778
11	I.13	0,052632	4,12	0,216842	S - W (Keukuatan - Kelemahan)				
12	I.14	0,052632	4	0,210526					-2,3683
13	I.15	0,052632	3,98	0,209474	Threats				
14	I.18	0,052632	4,08	0,214737	No.	Indikator	Bobot	Rating	BxR
15	I.19	0,052632	4,04	0,212632	1	I.8	0,166667	3,62	0,603333
16	I.23	0,052632	3,96	0,208421	2	I.16	0,166667	3,34	0,556667
17	I.27	0,052632	3,98	0,209474	3	I.17	0,166667	3,94	0,656667
18	I.30	0,052632	4,08	0,214737	4	I.35	0,166667	3,57	0,595
19	I.33	0,052632	4,17	0,219474	5	I.36	0,166667	3,85	0,641667
Total	1		31,72	4,69474	6	I.40	0,166667	3,9	0,65
EXTERNAL					Total	1		22,22	3,703333
Opportunity					O - T (peluang - Ancaman)				
No.	Indikator	Bobot	Rating	BxR					0,403333
1	I.29	0,166667	3,93	0,655					
2	I.31	0,166667	3,96	0,66					
3	I.34	0,166667	4,07	0,678333					
4	I.37	0,166667	4,51	0,751667					
5	I.38	0,166667	4,15	0,691667					
6	I.39	0,166667	4,02	0,67					
Total	1		24,64	4,106667					

O - T	South - West
0,403333	-2.3683 years

Figure 2. Results of Strategy Determination



Figure 3. SWOT Results

CONCLUSION

Based on the results of the SWOT analysis, the main strength of the Tanjung Emas Port passenger terminal lies in adequate security infrastructure, but weaknesses related to emergency response facilities and policy socialization need to be overcome immediately. Opportunities for service improvement can be realized through the application of modern technology to improve efficiency and safety. The threat of increased passenger volumes and regulatory changes must be anticipated with the right strategies, such as infrastructure improvements and socialization of operational policies. The implementation of the ST (Strengths-Threats) strategy will help terminals deal with external threats by leveraging internal strengths.

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