PRIORITY IMPROVEMENT OF SEA TRANSPORTATION SERVICES KMP DHARMA RUCITRA VII ROUTE SURABAYA – LABUAN BAJO

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ABSTRACT

Sea transportation is an important mode of transportation and is widely used by the people of Indonesia to connect between islands and areas throughout their territory. PT. Dharma Lautan Utama (DLU) is a ferry transportation service company and manager of ferry ports for passengers, vehicles, and goods. To improve the quality of service, a priority step for improvement is prepared which refers to the standards and weaknesses of the service. By using the AHP method, an analysis related to the prioritization of the 6 selected stakeholders is obtained as follows: service improvement criteria which include Safety, Security, Comfort, Convenience, and Regularity obtained the highest priority value on Departure Schedule Improvement of 34% by improving service related to the accuracy of the departure schedule by giving repeated socialization of information or pasting information as clearly as possible, then followed by an increase in Compliance and Passenger Safety Standards of 19%, Shipping Frequency of 17%, Load Factor of 11%, Shipping Costs of 10%, and finally Law Enforcement of 9%.

Keywords: *AHP; Service Improvement; Sea Transportation.*

1. Introduction

Transportation is one of the most important and strategic needs supporting sectors in regional development where transportation has a very vital role as the lifeblood of the economy and driving regional potentials [1][2]. Indonesia is a maritime country that is famous for its thousands of islands and vast seas. Therefore, sea transportation is an important mode of transportation and is widely used by the people of Indonesia to connect between islands and areas throughout their territory.

Improving service quality is one of the important aspects of a service company. Good quality can affect customer satisfaction, increase customer loyalty, and improve the image and reputation of the company. Therefore, improving service quality must be the main focus in developing services so that they remain competitive and continue to develop amid increasingly fierce competition [3][4].

PT. Dharma Lautan Utama (DLU) is a ferry transportation service company and manager of ferry ports for passengers, vehicles, and goods. The company's main function is to provide access to public transportation between adjoining islands and unite large islands as well as provide public transportation access to areas that do not yet have crossings to accelerate development such as improving PT. Dharma Lautan Utama (KPM Dharma Rucitra VII) crossing the Surabaya - Labuan Bajo route.

The increase in service priority is based on the quality management system ISO 9001 Version 2000 and the revision of the ISM Code safety management system by the Decree of the Director General of Land Transportation Number SK.73/AP.005/DRJD/2003 concerning Minimum Service

Standards for Crossing Transportation [1][5][8][9][10], such as security, speed, accuracy, order, convenience, and comfort and affordability.

By knowing the standards and weaknesses of services based on the expected quality, priority formulation to improve service quality can be carried out by involving several parties who are considered reliable in determining priorities for quality improvement [6][7][11].

2. Material and Methods

This research is classified as research quantitative and qualitative descriptive. Quantitative description is a data analysis technique that aims to describe or explain data numerically or quantitatively to analyze data and make conclusions based on the data that has been collected. While the qualitative description is the data collected is usually explained in the form of words, phrases, or sentences. Data collection was carried out in two ways, namely by collecting primary data and collecting secondary data.

2.1 Primary Data

The primary data for this study are the results of interview surveys and questionnaires. By using this method, it is hoped that researchers can dig up as deep and complete information as possible from stakeholders regarding improvement priorities for sea transportation passenger satisfaction Kmp Dharma Rucitra Vii Surabaya – Labuan Bajo Route.

2.2 Secondary Data

Secondary data collection is carried out by obtaining data from related agencies and studying journals, literature, reports, and other library materials related to the issues discussed so that a theoretical basis can be obtained in the discussion.

2.3 Expert or Expert Sampling Method

By using research methods that prioritize existing research objectives, the selected sample is people who are considered experts or experts in their field. The number of respondents for the AHP procedure is not specifically formulated but is limited to a minimum of two respondents.

The distribution of the number of samples in each agency is in Table 1.

Table 1. Number of Expert Samples

No.	Institution Name	Number of Samples
1.	PT. Dharma Lautan Utama	2
2.	Academics Brawijaya University	2
3.	Academics at the University Merdeka Malang	2
	Total	6

2.4 Analytic Hierarchy Process (AHP)

The AHP method is used to obtain assessments or perceptions from stakeholders regarding the priority of increasing passenger satisfaction which is carried out by several predetermined experts.

The AHP method in the decision-making process takes into account individual preferences in qualitative and quantitative comparisons between different criteria. hierarchical decision-making by dividing complex problems into simpler, manageable sub-problems. This method then develops a pairwise comparison matrix to evaluate and compare the weights of different criteria and alternatives and generates a priority score for each considered alternative.

The determination of the criteria in this study was taken from the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 62 of 2019, including the following: security, comfort, safety, convenience or affordability, equality, and regularity.
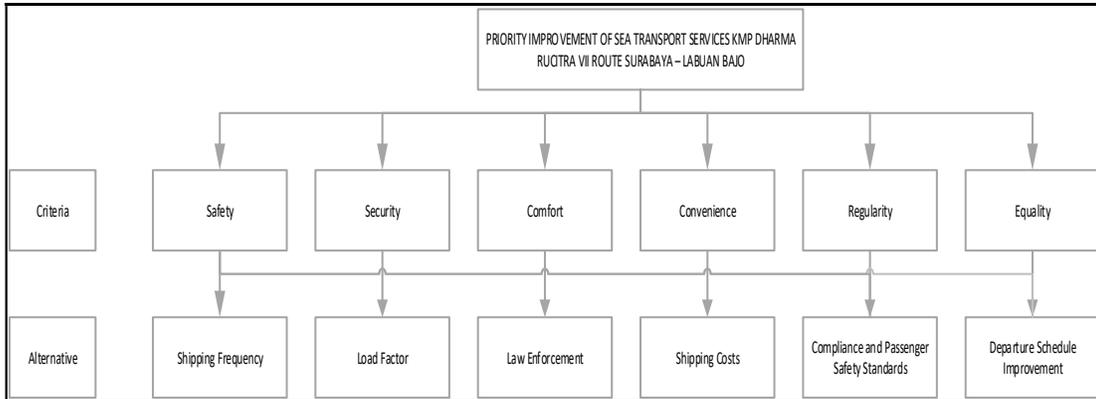
Figure 1. Service Improvement Priority Hierarchical Structure

2.5 Research sites

The locations in this study were the Port of Tanjung Perak Surabaya and the PT. Dharma Lautan Utama which is located at Jalan Perak Timur No. 512 Block B 7-8 Customs District Cantikan, Surabaya City.

3. Result and Discussion

3.1 Service Priority Selection

Selection of decision makers or stakeholders of more than one person, namely 6 people, then a new element is obtained from the combined opinion matrix that comes from the average value whose inconsistent value meets the requirements.

3.2 Weighting Comparison of Criteria (Level 1)

The combined weighting of the 6 stakeholders related to the priority criteria for service improvement can be seen in Table 1. It can be said to be consistent if the value of the consistency ratio (CR) of the combined criterion aspect weighting is <0.1 or 10%.

Based on Table 2 it is known that the highest priority is obtained from variables related to regulations with a percentage of 31.5%; then followed by safety at 21.9%; comfort at 20.5%; convenience at 19.0% and the smallest priority is owned by the security variable which is 7.1%. This means that in making these decisions the role of improvement in regulatory variables has a very large influence compared to the others.

Table 2. The weight of Combined criteria

Variable	Safety	Security	Comfort	Convenience	Regularity	Priority Vector	λmaks	
Safety	1,00	0,26	0,16	2,38	1,20	0,219	0,622	
Security	0,16	1,00	0,01	0,07	0,14	0,071	0,266	
Comfort	0,44	0,07	1,00	0,44	1,22	0,205	0,318	
Convenience	0,19	0,14	0,02	1,00	6,43	0,190	0,998	
Regularity	1,05	2,30	0,36	1,36	1,00	0,315	3,148	
Count	2,84	3,76	1,55	5,26	9,99	1,00	λmaks	5,351
Source: Primary survey, 2023							CI =	0,088
							CR =	**0,078**

3.3 Comparison of Service Improvement Priorities (Level 2)

The weighting calculation on the improvement priority is by multiplying the priority vector of the combined criteria weighting calculation based on the combined priority vector sub-criteria so that the results of these calculations obtain values as in Table 3.

Table 3. Combined Weight Priority of Service Improvement

Service Improvement Priorities	Priority criteria for service improvement					Total Alternatif Qty
	Safety	Security	Comfort	Convenience	Regularity	
Shipping Frequency	0,0025	0,0069	0,1495	0,0143	0,0005	0,1736
Load Factor	0,0024	0,0074	0,0913	0,0127	0,0011	0,1150
Law Enforcement	0,0030	0,0110	0,0646	0,0083	0,0013	0,0882
Shipping Costs	0,0030	0,0110	0,0646	0,0083	0,0113	0,0982
Compliance and Passenger Safety Standards	0,0040	0,0048	0,1478	0,0238	0,0104	0,1908
Departure Schedule Improvement	0,0081	0,0098	0,1819	0,0304	0,1112	0,3415

Source: Primary survey, 2023

Based on the calculation results from variable weighting at level 2, the highest priority is obtained at Departure Schedule Improvement at 34%, Compliance and Passenger Safety Standards at 19%, Shipping Frequency at 17%, Load Factor at 11%, Shipping Costs at 10%, and finally Law Enforcement 9%.
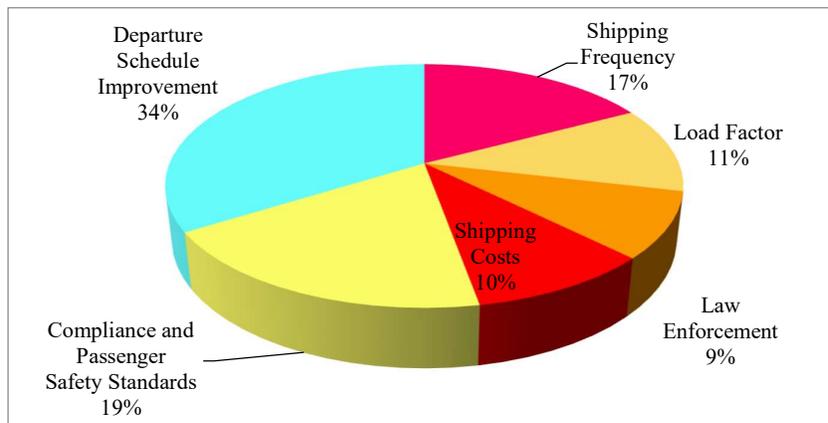
Figure 2. Priority of Improving Sea Transport Services KMP Dharma Rucitra

3.4 Trengthening Selected Alternatives

Based on the assessment that has been given by stakeholders using the Analytic Hierarchy Process, Departure Schedule Improvement is considered a top priority to improve service improvements, especially related to the accuracy of departure schedules that are not by the schedule. This service can be improved by dispatching ships according to the available schedule. Provide information dissemination repeatedly or attach information as clearly as possible so that it can be seen clearly.

4. Conclusions

Based on the results of the analysis using the AHP (Analytic Hierarchy Process) method with five service improvement criteria which include Safety, Security, Comfort, Convenience, and Regularity, the highest priority value is obtained in the Departure Schedule Improvement of 34% by improving service related to the accuracy of the departure schedule by providing repeated

information dissemination or pasting information as clearly as possible, then followed by an increase in Compliance and Passenger Safety Standards of 19%, Shipping Frequency of 17%, Load Factor of 11%, Shipping Costs of 10%, and finally Law Enforcement of 9%.

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