



Efforts to Improve Passenger Facility Services on Ships Longboats In the Musi River, South Sumatra.

Chairul Ilham Insani¹, Eddi Idris.², Yunita Panggabean¹, Monica Amanda¹

¹⁾ Politeknik Transportasi Sungai Danau dan Penyeberangan Palembang

²⁾ Politeknik Pelayaran Surabaya

email: ilhamchairulinsani@gmail.com ; eddi.llaj@gmail.com

ABSTRACT

Longboats using outboard engines powered by 200-400 PK with a capacity of 30-50 people, operating in the waters of the Musi River, have received a negative response from users of river transportation services, especially regarding services in terms of safety, comfort, and appropriateness or suitability for the facilities provided. has been prepared such as dimensions and smooth movement in the long boat. The results of the research and study showed that the seating area for passengers was apparently inadequate, both in terms of service to service users and from the provisions of the applicable laws and regulations, in addition, the corridors inside the ship where people walk to their seats also did not meet the reasonable limits reviewed. from the average height of the male population in Indonesia which is 166 cm compared to the current height of the longboat corridor of <150 cm. Therefore, the results of this research recommend that the corridor height and seating load need to be reviewed and re-engineered to follow the provisions or in accordance with the reasonable needs of passengers.

Keywords: Pier, Longboat, Area, Seating, Passengers

I. INTRODUCTION.

River transportation is transportation that functions as a bridge that connects the road network and/or railway network separated by water to transport passengers and vehicles and their cargo. At the pier under the Ampera there are many types of ships, one of which is the longboat which is used by the people of Palembang City as a means of transporting passengers and the goods they carry to areas that cannot be reached by land transportation. Transportation is the activity of moving goods (cargo) and passengers from one place to another (Salim, 2000: 6). In the transportation system, comfort and safety are highly prioritized as a form of providing good services. Comfort is shown not only to service users, but to boat operators as well. Currently, the condition of longboats operating on the Musi River still has many shortcomings, especially in terms of comfort, flexibility, suitability and safety. Passengers boarding and disembarking at Pier 16 Ilir Palembang number around 650 people per day with various travel directions/routes; The issue that is developing in the transportation of passengers from Palembang to the route area is that the inland water transportation service facilities on the Musi River do not provide suitability and reasonableness such as; the area of the seats, corridors/walking areas in the passenger room, then the distance between seats; This condition has always been a complaint from users of river transportation services, and to find out concretely about this issue, coordination was carried out with BPTD Class II South Sumatra (16 Ilir Palembang Port Unit). in order to improve inland water and ferries transportation services in South Sumatra, of the 50 people who returned the response formula to the questionnaire distributed which gave the answer that the comfort and suitability of the existing river vessels, 50% answered that they were not satisfactory or stated that the service was unsatisfactory and what they complained about is the appropriateness of the service dimensions board the ship.

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II. RESEARCH METHODS

1. Time and Location of Research

The time used by the author for this research was carried out from 01 March 2023 to 01 July 2023 and the implementation of this research took place at the 16 Ilir Palembang Port Unit.

2. Types of research

The type of research used to collect data as reference material for this research is qualitative research. Qualitative research is data in the form of sentences, words or images. Qualitative data can also be defined as data in the form of categorization, characteristics in the form of questions or words (Martono, 2014: 84)

3. Research Instruments

Research instruments are basically tools used to collect data in research (Purwanto, 2018). The tools used to collect data in research are as follows:

a. Measurement Form

The type of measurement used is direct measurement. Direct measurements are measurements that explicitly take the characteristics of the object you want to measure without needing to process them first. The objects to be measured are:

- 1) The size of the passenger seat.
- 2) Distance between seats between passengers.
- 3) The height of the roof from the ship's deck.

b. Interview Form

An interview is a conversation process with the aim of constructing people, events, activities, organizations, motivations, feelings, and so on carried out by two parties, namely the interviewer who asks questions to the person being interviewed (interviewee) Bugin (2015: 155). Researchers conducted interviews with longboat passengers with a total of 30 respondents.

III. RESEARCH DATA:

From the data obtained by documentation, the number of passengers boarding and alighting at the 16 Ilir Palembang pier, starting in 2018, continues to increase every year, starting in 2018 with a total of 189,999 passengers and continues to increase until 2022, reaching 244,438 passengers per year or around 660 passengers. which go up and down at the pier, and in detail can be seen in the following table:

Table 1 Arrival Productivity Data for the Last 5 Years

No.	Year	Passenger	Boat	Goods
1	2018	189,999	33,398	2,819
2	2019	196,021	36,700	1,164
3	2020	97,198	17,005	2,116
4	2021	117,925	18,254	2,119
5	2022	244,438	37,080	5,198

Source: BPTD CLASS II South Sumatra (2023)

Based on the table above, the highest density of passenger arrivals will be in 2022 with a total of 244,438 passengers. The highest density of ship arrivals will be in 2022 with a total of 38,980 ships. The highest density of goods arrivals will be in 2022 with a total of 5,198 tonnes. This shows that Musi river ship shipping activity is quite dense, both arrivals and departures, while passenger departures are reflected in table 2 below;

Table 2. Departure Productivity Data for the Last 5 Years

No.	Year	Passenger	Boat	Goods
1	2018	195,708	33,398	88,089
2	2019	200,770	36,996	87,539
3	2020	97,795	17,153	80,253
4	2021	116,673	18,488	69,262
5	2022	248,079	39,148	106,743

Source: BPTD CLASS II South Sumatra (2023)

Due to the high mobility of passengers when traveling from 16 Ilir to the hinterland area, there are still many complaints from the public regarding transportation services, namely the feeling of discomfort for transportation passengers, both from the ticketing process service and from the service side of the transportation facilities themselves, such as seating area, space for movement on board the ship, walking space and including safety services, and the results of a survey conducted on passengers showed that those who stated that the service was uncomfortable were greater than 60 percent, as stated in table 3 below:

Table 3. Percentage of Passenger Discomfort

No	Work	% Amount	Good (%)	Poor (%)
1.	Trader	30	15	15
2.	Civil Servants	7	2	5
3.	Peg.Private	10	3	7
4.	Student	15	3	11
5.	Mother Rt	20	5	15
6.	Not Working	18	8	10
Total		100	36	64

IV. RESEARCH RESULT

Results of studies on the physical dimensions of Indonesian people (Anthropometri Indonesia.com2023); that the average Indonesian person's seat width or body width is between 460mm-480mm; and the average height of Indonesians (men) is 166 cm and the distance between the leg levers is between 50-70 cm. Based on these measurements, the Minister of Transportation has set standards for the width of seats, walking corridors inside the ship and the distance to the front for long boats in Indonesia to be adjusted. with these dimensions and use this material as material for reviewing the Regulatory Standards contained in the Minister of Transportation's decision, but the results of measurements/surveys carried out by the research team show that the minimum requirement for passenger seats according to passenger characteristics is 75 cm and in reality the deviation in dimensions of seat size This reaches 33 cm, while in terms of size there is a gap between 7.5-10 cm, and the results can be seen in table 34 below.

Tabel 4. Survey Results of Seat Dimensions on Ships

No	Boat	Seat		Seat size	
		Ext. (cm)	UU (cm)	Ext (cm)	UU (cm)
1	Jaipongan JL.8	42	75	40	47.5
2	Kalvin	45	75	45	47.5
3	Nadia Jaya	38	75	35	47.5
4	Semoga abadi 07	35	75	41	47.5
5	Famili	37	75	35	47.5
6	Jasa Prima	40	75	38	47.5
7	Giri Indah	42	75	35	47.5
8	Kartika Sari	38	75	38	47.5
9	Ridho ilahi	48	75	45	47.5
10	Percaya Diri	40	75	35	47.5

Note : Ext: Existing Condition; UU: Dimensions According to Reference

Meanwhile, the width of the existing ship corridor is only 42 cm, whereas it should be 75 cm and the height of people walking inside the ship is 190 cm, and this is in complete contradiction with the existing conditions inside the ship where the height only reaches 100 cm (see table 5)

Tabel 5. Survey Results of Ship Corridor Dimensions

No	Boat	Ship corridor width		Ship corridor height	
		Ext. (cm)	UU (cm)	Ext (cm)	UU (cm)
1	Jaipongan JL.8	42	75	100	190
2	Kalvin	45	75	100	190
3	Nadia Jaya	38	75	100	190
4	Semoga Abadi	35	75	83	190
5	Famili	37	75	80	190
6	Jasa Prima	40	75	100	190
7	Giri Indah	42	75	150	190
8	Kartika sari	38	75	100	190
9	Ridho Ilahi	48	75	80	190
10	Percaya Diri	40	75	100	190

Note : Ext: Existing Condition; UU: Dimensions According to Reference

V. DISCUSSION

Based on the data obtained, the capacity of the ship being built is not in accordance with the theoretical calculations required, meaning that with the dimensions of the existing ship it is found that the provision of seats is not in accordance with the conditions of the existing ship size and the calculations can be seen in the results of the following analysis:

a. Analysis of Available Ship Holding Capacity Based on SUP

To determine the ship's holding capacity based on area, it is necessary to first calculate the ship's area using the following formula:

$$\text{Ship Deck Area} = L \times B$$

Note:

Ship Deck Area (m²)

L: Length of Ship Deck (m²)

B: Width of Ship Deck (m²)

The deck area of the ship using the formula above is only to determine the number of each production unit. Once the effective area of the ship is known, the ship's holding capacity is found using the following formula:

Capacity Passenger space on the 200 PK Kartika Sari longboat Length: 10 meters
Width : 2 meters ; Height : 1 meter

To find out what the ship's holding capacity is based on the SUP, use the following formula:

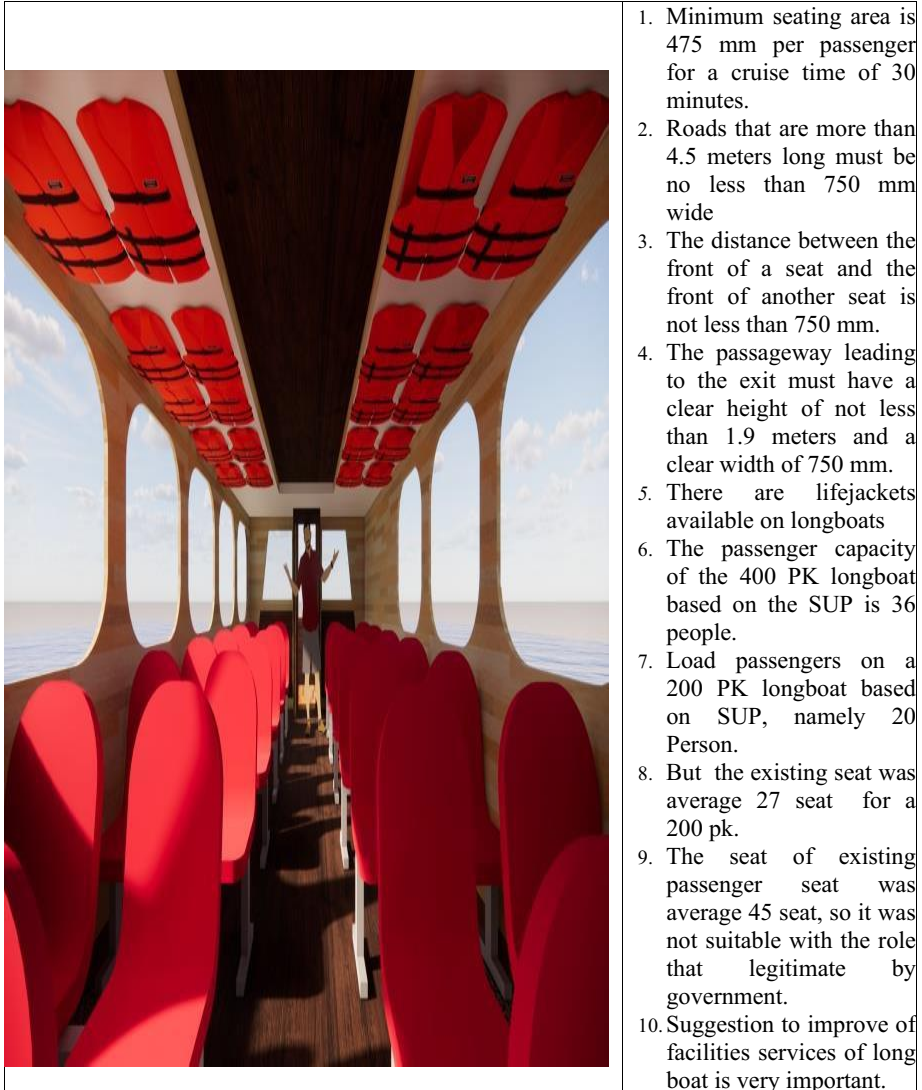
$$\begin{aligned} \text{Holding Capacity} &: \frac{\text{Deck Area}}{\text{Ship 1 SUP}} \\ \text{Holding Capacity} &: \frac{L \times B}{0,7} \\ \text{Holding Capacity} &: \frac{10 \text{m} \times 2 \text{m}}{0,7 \text{m}^2 / \text{SUP}} \\ \text{Holding Capacity} &: 25,64 \text{ SUP} \end{aligned}$$

Once the ship's holding capacity is known, the number of passengers that can be carried by the ship is found based on the Passenger SUP using the following formula:

$$\begin{aligned} \text{Total Passanger} &: \frac{\text{Holding Capacity}}{\text{Passanger 1 SUP}} \\ \text{Total Passanger} &: \frac{25,64}{1,25} \\ \text{Total Passanger} &: 20 \text{ Passanger} \end{aligned}$$

Based on the calculation of the Available Ship Holding Capacity Based on the SUP, it can be seen that the available capacity for transporting a 200 PK longboat is 20 passengers. On the other hand, the results of measurements in the field of the dimensions of the 200 PK ship, it was found that the available seats were 30 seats, or around 50 percent greater. From calculations or theoretical concepts for providing ship passenger facilities (Nur Yuwono, 1994), meaning that in terms of services viewed in terms of ship dimensions, it can be said that the existing conditions are indeed not suitable, and this is in accordance with the complaints of passengers using river transport at this time. To improve passenger services and in order to improve transportation services, it is necessary to design passenger seats along with other complete facilities, so that the available facilities meet the criteria of humanism, comfort and appropriateness. And therefore we propose the dimensional characteristics of the ship as depicted in Figure 1 below.

Figure 1 Longboat Passenger Seating Design



1. Minimum seating area is 475 mm per passenger for a cruise time of 30 minutes.
2. Roads that are more than 4.5 meters long must be no less than 750 mm wide
3. The distance between the front of a seat and the front of another seat is not less than 750 mm.
4. The passageway leading to the exit must have a clear height of not less than 1.9 meters and a clear width of 750 mm.
5. There are lifejackets available on longboats
6. The passenger capacity of the 400 PK longboat based on the SUP is 36 people.
7. Load passengers on a 200 PK longboat based on SUP, namely 20 Person.
8. But the existing seat was average 27 seat for a 200 pk.
9. The seat of existing passenger seat was average 45 seat, so it was not suitable with the role that legitimate by government.
10. Suggestion to improve of facilities services of longboat is very important.

b. Seating conditions and passenger movement space

Based on a survey of the condition of seating and space for passengers on longboats operating at the Lower Ampera Pier, it can be seen that the condition of seating and space for passengers on longboats is in the poor category due to many things that can reduce the level of passenger comfort and safety. Things that reduce the level of passenger comfort and safety are as follows:

1. Seating conditions

The condition of the seats being too close together, the seat material being made of wood which is not covered with cushions which makes passengers uncomfortable while traveling, and on some ships there are no seats and even the seats occupied are damaged and unfit.

2. Passenger movement space

Passenger movement space is the most important component in improving passenger comfort and safety. Meanwhile, on longboats operating at the Lower Ampera Pier, space for passengers to move around is very inadequate, some ships do not have corridors to the seats which makes it difficult for passengers to get to their seats, the distance between the seats and the front of other seats is too close together, and access for passengers to get in and out is difficult. difficult if an accident occurs.

The seating area on longboats operating at Ampera Bottom Pier is not in accordance with the results of humanistic calculations and theoretical concepts and if viewed from Ministerial Decree Number 65 of 2009 because the seating area is less than 47.5 cm/passenger, the distance between the front seats and the front of other seats less than 75 cm, as well as passageways the one leading to the exit is less than 1.9 m high and less than 75 cm wide.

c. Longboat passenger capacity

Based on the analysis carried out by researchers, it can be seen that the passenger capacity for a 200 PK longboat with a length of 10 meters, width of 2 meters, height of 1 meter is 20 passengers. Meanwhile, the 400 PK longboat is 12 meters long, 3 meters wide and 1 meter high, which can accommodate 36 passengers.

Seating Area	Regulation
Seat	475 mm/passenger
Road	The width must be not less than 750 mm
The distance between the front of the seat and the front of the seat other	Must not be less than 750 mm
The path leading to the exit	Height not less than 1.9 m and width 750mm

As an illustration that can be drawn to compare the condition of river transport service facilities; that the width of the seats is planned to be widened by approximately 65 percent, and then the height of the corridor where people can walk on board the ship will be increased to around 75 percent higher than the current condition, the general comparison of which can be seen in Figure 2 below:

Figure 2 Comparison of Existing Conditions with Planned Conditions

On The picture clearly shows the need to improve the dimensions of the existing river ship facilities and balance this with plans to improve the dimensions so that they are more humane and reach the values of appropriateness and safety.

VI. CONCLUSION.

Based on the results of the analysis and discussion that has been carried out, it can be concluded that:

1. The condition of seating and space for passengers on longboats operating on the Musi River and its surroundings is inadequate and not in accordance with the service desires expected by passengers who are more humane and reach the values of safety and suitability for better service in the future, especially in accordance with the mission and a vision of transportation that prioritizes affordability, safety and sailing comfort.
2. The seating area on the longboat does not meet the expectations of passengers who want better seating area and mobility on board
3. It is necessary to design passenger seats that are not appropriate and appropriate
4. safety and humane service

VII. SUGGESTION

Based on the results of the analysis and from research conducted in the waters of the Musi River, it is necessary to improve river transport passenger service facilities that are more humane and at least the size or dimensions of existing passenger service facilities must follow Ministerial Decree Number 65 of 2009 concerning Standards for Non-Convention Ships with the Indonesian Flag , then we get the following:

1. Conduct outreach to shipyards regarding seating areapassengers and movement space in accordance with Ministerial Decree Number 65 of 2009 to improve the comfort and safety of passengers on longboats operating at the Lower Ampera Pier.
2. Collaborating with the Central Government and Regional Government regarding budgets in improving passenger seating areas which are not in accordance with Ministerial Decree Number 65 of 2009.
3. Change the ship design in accordance with Ministerial Decree Number 65In 2009 to shipyards and related agencies to facilitate the implementation of repairs to passenger seats on longboats operating in the waters of the Musi River.

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