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Analysis Of River Transportation Tariffs For The Simpang Pu - Karang Agung Ilir Village And Simpang Pu - Penuguan Village Routes In Banyuasin Regency.

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Abstract
This study aims to analyze the tariff of river transportation on the route of Simpang PU pier - Karang Agung Ilir Village and Simpang PU Pier - Penuguan Village, Banyuasin Regency. River transportation is the main means of transportation for the community in this area due to geographical conditions that are difficult to reach by land transportation modes. This study identifies the suitability of the applicable tariffs with the purchasing power of the community and assesses whether the tariffs applied by boat operators are in accordance with government regulations. The research methodology included primary data collection through direct observation, interviews with passengers, and surveys at the Simpang PU jetty. Secondary data was obtained from relevant agencies and literature studies. The analysis was carried out by comparing the existing tariff with the operational cost of the ship in accordance with the Decree of the Minister of Transportation Number 73 of 2004. The results showed that the tariff based on the calculation of ship operating costs has a smaller tariff than the existing tariff. In addition, the shipload factor also affects the ideal tariff amount. This study recommends a re-evaluation of river transportation tariffs to be more proportional, by considering operational costs and the economic capacity of the community, so as to create a balance between ship operators and passengers.

Keywords: River Transportation Fares; People's Purchasing Power.

INTRODUCTION

Transportation is the activity of moving people or goods from one place to another and plays an important role in the success of a regional development, it is also very close to development and stimulates new activities in economic, social and environmental development, especially for inland areas (Chovancová et al., 2023). To support river transportation activities, it is necessary to have a shipping lane that can be passed by river transportation users. Shipping lanes are waters that in terms of depth, width, and freedom from other shipping obstacles are considered safe and secure to navigate *Undang-undang (UU) Nomor 17 Tahun 2008 tentang Pelayaran*, the creation of a shipping lane network certainly has a purpose, as is the case for the purpose of making a shipping lane network, namely supporting the achievement of high economic development from several economic factors, supporting the achievement of balanced development between several regions, through available potential, supporting the achievement of dynamic and healthy national stability (Undang-Undang (UU) Nomor 17 Tahun 2008 Tentang Pelayaran, 2008).

River transportation is one form of transportation needed to reach areas bounded by rivers (Liu et al., 2023). River and lake transportation is a transportation activity using ships used on rivers, lakes, reservoirs, swamps, flood canals, and canals to transport passengers and / or goods organized by river and lake transportation companies *Peraturan Menteri Perhubungan Nomor 61 Tahun 2021 tentang Penyelenggaraan Angkutan Sungai dan Danau*. The existence of river transportation modes is still a mainstay for people living in water areas (Peraturan Menteri Perhubungan Nomor 61 Tahun 2021 Tentang Penyelenggaraan Angkutan Sungai Dan Danau, 2021).

Banyuasin Regency is drained by large rivers such as the Musi River, Banyuasin River, Calik River, Telang River, Upang River, which act as a means of water transportation along the coastline of more than 150 km, Badan Pusat Statistik Kab. Banyuasin (2023). River transportation that connects the Banyuasin Regency area is needed by the community because the Banyuasin Regency area is a water area that is very difficult to reach by land transportation. Seeing the importance of river transportation for the activities of all levels of society, in its implementation it is necessary to have government guidance, guidance so that river transportation can be organized in an orderly, regular, precise and affordable manner both from passengers and operators (Badan Pusat Statistik Kabupaten Banyuasin, 2023).

The route is a route or trajectory of transportation services from one port to another *Undang-undang (UU) Nomor 17 Tahun 2008 tentang Pelayaran*. There are 2 (two) types of river transportation routes that serve passengers and goods at the Simpang PU pier, fixed route Simpang PU Pier - Karang Agung Ilir P2-P16, Simpang PU Pier - Penuguan Village. While the route is not fixed, namely serving with a rental system between passengers and ship operators. The route to be studied is a fixed route (Undang-Undang (UU) Nomor 17 Tahun 2008 Tentang Pelayaran, 2008).

The mode of river transportation used for passenger or freight transportation activities is to use ships, ships are water vehicles of a certain shape and type, which are driven by wind power, mechanical power, other energy

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that is drawn or delayed, including vehicles with dynamic carrying capacity, vehicles under the water surface, as well as floating devices and stationary buildings *Undang-undang (UU) Nomor 17 Tahun 2008 tentang Pelayaran* (Undang-Undang (UU) Nomor 17 Tahun 2008 Tentang Pelayaran, 2008). Ships are vehicles that are able to float on water and can be used to travel on the sea or other waters (Xing & Zhu, 2021). Vessels for transporting passengers and goods use the type of speedboat with a fixed route of 17 units of ships that have outboard engines with a capacity of 200 PK with a load of 28 people, and as many as 22 units of speedboats that have 40 PK outboard engines with a load of 10 people. while the route is not fixed, as many as 51 units of ships have 40 PK outboard engines with a load of 10 people.

Tariffs are the amount of money determined by an institution or service provider that must be paid by consumers in return for the use of certain services or products (Kovalko et al., 2022). River and Lake transportation tariffs are the price of transportation services that must be paid by service users on a river and lake transportation route *Peraturan Menteri Perhubungan Nomor 61 Tahun 2021 tentang Penyelenggaraan Angkutan Sungai dan Danau*, the current condition of setting tariffs based on an agreement between the ship operator and passengers of the Simpang PU - Karang Agung Ilir P1-P9 track tariff Rp. 150,000 / person, PU Junction Pier - Karang Agung Tengah P2-P9 IDR 130,000 / person, PU Junction Pier - Karang Agung Ilir P2-P16 IDR 130,000 / person, PU Junction Pier - Penuguan Village IDR 75,000 / person, PU Junction Pier - Pulau Rimau Village IDR 50,000 / person, while the transportation tariff for PU Junction Pier - Manggaraya Village IDR 50,000 / person (Peraturan Menteri Perhubungan Nomor 61 Tahun 2021 Tentang Penyelenggaraan Angkutan Sungai Dan Danau, 2021).

From the amount of the tariff set by the riverboat operator, it is also necessary to see the ability and willingness of passengers to pay so that in determining the tariff there is no mutual harm between the boat operator and passengers for that Ability To Pay (ATP) analysis is needed, namely a person's ability to pay for the services he has received based on income which is considered ideal (Amaliah & Widyastuti, 2023). The approach used in the ATP analysis is based on the allocation of costs for transportation and the intensity of user travel (Idrus et al., 2022). Willingness To Pay (WTP) is the willingness of users to spend services or rewards for the facilities they have received. The approach used in the WTP analysis is based on user perceptions of tariffs and public transportation services (Natalia et al., 2021).

Based on previous research related to river transportation tariffs and Ability to Pay (ATP) and Willingnes to Pay (WTP), it is known that the method used is by direct observation, interviews, distributing questionnaires and calculating tariffs in accordance with the Decree of the *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau*, the object of research is getek and speed boat with a capacity of 40 PK with a maximum passenger load of 10 people with a rental system for water tourism transportation in the city of Palembang from the results of the study obtained water taxi rates based on ship operating costs of 15. 000,- per KM for getek type vessels and 14,000,- per KM for Speed Boat types the gap between the ability to pay passengers is up to 48.6 percent and when compared to the rp / km tariff Decree of the *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau* the gap can reach 50 percent (Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang Penyelenggaraan Angkutan Sungai Dan Danau, 2004).

Ship operating costs refer to all costs incurred in order to carry out ship operational activities, from preparation, travel, to maintenance (Ziajka-Poznańska & Montewka, 2021). In general, these operational costs include several main elements such as fuel, crew costs, port costs, and ship maintenance and repair (Animah & Shafiee, 2021). In addition, there is research conducted by Febriansyah (2019) Ship Operating Costs (BOK) the calculation results obtained Rp. 13. 694.92 / pnp - km with a load factor of 100%, the lowest Ability to Pay (ATP) of passengers on the cruise bus is Rp. 833 / pnp / km, the highest ATP is Rp. 22,633 / pnp / km and the average Ability to Pay (ATP) is Rp. 3,259.17 / pnp / km while the Willingness to Pay (WTP) of passengers on the cruise bus is the lowest ≤Rp. 2,500, the highest Willingnes to Pay (WTP) is Rp. 30,000, and the Willingness to Pay (WTP) is the highest. .000, and the average Willingness to Pay (WTP) is Rp. 6,345.89 / pnp / km (Ansyah et al., 2021).

Based on this background, the purpose of this research is planned to be able to identify the suitability of river transportation tariffs in Banyuasin Regency with the ability and willingness of passengers to pay, so that ship operators and passengers do not have a significant tariff gap. For the analysis method used, tariff calculation is in accordance with the Decree of the Minister of Transportation Number 73 of 2004 concerning the Implementation of River and Lake Transportation and Ability to Pay (ATP) and Willingnes to Pay (WTP) analysis. In order to meet the objectives of organizing river transportation, the researcher took the title "ANALYSIS OF RIVER TRANSPORTATION TARIFFS FOR THE SIMPANG PU - KARANG AGUNG ILIR VILLAGE AND SIMPANG PU - PENUGUAN VILLAGE ROUTES IN BANYUASIN REGENCY".

Research Method

This research method uses quantitative (Sugiyono, 2020). Data collection methods in this study include primary and secondary data. Primary data is obtained through direct observation in the field, interviews with passengers using the Stated Preference method, as well as surveys of sailing time and existing dock conditions. Observations were made to determine the number of boat trips, speedboat passenger productivity, transportation rates, and the number of vessels and crew operating. Secondary data was collected from relevant agencies such as the Department of Transportation and the Regional Development Planning Agency of Banyuasin Regency, as well as through literature studies and documentation of the research implementation. The research was conducted on weekdays and holidays, with a direct interview survey at the Simpang PU jetty by a survey team consisting of four surveyors and one supervisor. The equipment used included

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forms of passenger and vessel characteristics, counting tools, stopwatches, and stationery. Data analysis in this study is a systematic process carried out to process, interpret, and conclude data that has been collected in a study. This research can also find out how the characteristics of ship passengers, river transportation rates and people's purchasing power and the need for ship types for operations at the PU jetty in Banyuasin Regency.

1. Stated Preference Method
   A series of quantitative research techniques used to understand the preferences and values placed on river transportation services. This method involves collecting data through surveys, where respondents are asked to express their preferences or assessments of various alternatives or scenarios presented.
2. Ship Operational Cost Calculation Method
   To calculate the amount of ship operating costs, the formula contained in *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau* is used as follows:

Table 1. Formulation of River and Lake Transportation Tariffs

No.	BOK Component	Formulation
A.	**GENERAL DATA**	
1.	Ship Type	Speedboat / Water Bus / Water Truck / *Longboat* *)
2.	Route	.....
3.	Distance	..... km
	Frequency / Year	..... trip
	Fuel	
	Carrying Capacity	- ..... people - ..... tons
	Number of crew	..... person (Rp. ..... person/month)
	Ship Price	Rp. .....
	Machine Price (type)	Rp. ..... x Number of Machines
	Economic Life	..... year
B.	**DIRECT EXPENSES**	
	FIXED COSTS	
1.	Ship Depreciation Cost	(Ship Price - Residual Value (10%)) / Economic Life
2.	Interest Cost of Capital	(Interest/yr x (65% x Ship Price) x ((n+1)/2)) / Economic Life
3.	Insurance Premium Cost	1.5% x Ship Price
4.	Crew Cost	Jml bln (12) x Jml Crew x Crew salary / bln
	NON-FIXED COSTS	
1.	Fuel Cost	Number of Frequency per Year x Distance x Fuel Usage Ratio x Fuel Price/Liter
2.	Grease Cost, Oil per month	Number of months (12) x Grease/Oil Cost per month (according to type of Ship)
3.	Ship Maintenance Cost	
	1. Small Service 2. Large Service 3.General Over Houll	Maintenance Cost Per Month x Number of months (12)
4.	Port Charges	Number of operating days per year x port charges per day
C.	**INDIRECT COSTS*))**	
1.	Land Staff Costs	Number of months (12) x Number of Ground Staff x Salary of Ground Staff/month
2.	Office Expenses	Office rental fee per year
3.	Telephone, Water, Electricity Costs	Number of months (12) x Cost of telephone, water, electricity / month
4.	Wifi Fee/Data Plan	Number of months (12) x Wifi Cost / Data Package / month
5.	Management and management fees	Number of months (12) x management and management fee / month
6.	Kepil fee/rope tie attendant	Number of trips per year x cost of rope tie/day

The current condition of river transportation tariffs is in accordance with *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau* in Banyuasin Regency, there are several variables that need to be added in accordance with current field conditions, namely:

a. Wifi Fee / Data Plan / Credit

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This fee is needed by the boat operator to contact the passengers who will board the speedboat because the distance between the house and the dock is very far and also serves to notify passengers for the ship's departure schedule. Based on conditions in the field, ship operators usually need Rp100,000 per month for data package / credit costs.

b. Kepil Cost
Kepil fee is the cost that must be incurred to pay the rope tie officer, the rope tie officer is an officer who assists the ship operator to arrange the ship and raise and lower passengers and goods at the dock. The kepil fee that must be incurred by the ship is IDR 20,000 per ship for one berth.

From these 2 additional variables, the determination of river transportation tariffs in Banyuasin Regency is needed because it affects the operational costs of the ship.

1. Calculating Transportation Requirements
   a. Determination of factor*load*
   According to Nasution (1996) in his book transportation management, load factor is the number of passengers and vehicles carried by a ship compared to the capacity provided (Lutfi et al., 2024).
   The formula needed to determine the load factor of each ship is

$$LF = \frac{KP}{KT} \times 100\% \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

   Description:
   LF = Load Factor
   KP = Used Capacity
   KT = Available Capacity

   b. Number of ship departure frequencies
   To calculate the number of ships operating can be done based on the number of passengers as follows

$$FP = \frac{N}{365\ x\ K\ x\ LF\ x\ M} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

   Source: Abu Bakar (2010)
   Description:
   FP = Ship Departure Frequency by passenger
   N = Number of Passengers boarding at the port per year
   K = Coefficient of ship operating time per year (0.9)
   LF = Load factor (65%)
   M = Ship carrying capacity for passengers

   c. Trip ability
   The ability to achieve ship trips is the ship's ability to make round trips in a day which is limited by dock operating hours. Where the dock operating hours start at 07.00 WIB to 16.00 WIB in this case the number of trips that can be made by the ship depends on the *Sailing Time* (screen time) and *Ship Turn Around Time* (STAT) so that in finding the ability to trip the ship can be formulated as follows:

$$Kemampuan\ Trip = \frac{Waktu\ Operasional\ Dermaga}{2\ x\ (Waktu\ Layar + Waktu\ menunggu\ pnp} \quad \ldots\ldots (3)$$

   Source: Abu Bakar (2010)
   d. Number of Trips
   Number of Trips is the number of trips that must be made by the ship to meet the demand for the number of passengers at the Pier. Can be written with the formula:

$$Jumlah\ Trip = \frac{Jumlah\ Penumpang}{Kapasitas\ penumpang/Trip} \quad \ldots\ldots\ldots\ldots\ldots (4)$$

   e. Number of Ships
   Number of Ships is the number of ships needed to fulfill service user demand. Can be written with the formula:

$$Jumlah\ Kapal = \frac{Jumlah\ Trip\ Kapal}{Kemampuan\ Trip} \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

   f. Headway Time
   Is the departure between one ship and another. Can be written with the formula:

$$Headway\ Kapal = \frac{Waktu\ Operasional\ Dermaga}{Jumlah\ Keberangkatan\ Kapal} \quad \ldots\ldots\ldots\ldots\ldots (6)$$

2. *Ability to Pay* (ATP) Analysis
   According to Tamin (1999), *Ability to Pay* (ATP) is a person's ability to pay for the services he receives based on income that is considered ideal. The amount of ATP is obtained from the approach of the allocation of costs incurred for transportation and also the number of trips made by users. This value shows how much the community is able to pay the tariff or the cost of the trip made (Sebayang & Widyastuti, 2024)(Nugroho, 2023).
   The stages of calculating *Ability to pay* are as follows:
   a. Calculating the average income of river transport respondents
   b. Calculating the average percentage of transportation expenditure per month
   c. Calculating the average percentage of trips
   f. Calculating the ability to pay river transport fares for each trip

The value of ATP can be determined according to income, percentage of transportation, and frequency of travel (Lulusi et al., 2021)(Anas et al., 2024). The basic approach in calculating the value of *ATP* is formulated with the equation:

$$\text{ATP individual} = \frac{Ic\ x\ \%TC}{D} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Description:
ATP = ATP value of sample as an individual
Ic = Passenger income level per month (IDR/month)
% TC = Percentage allocation of income for transportation
D = Respondent's travel frequency

3. Willingnes to Pay (WTP) Analysis
   Willingness to pay is the willingness of service users to pay for the value of services they have obtained. The approach in analyzing *willingnes to pay* is the perception of service users of the tariffs of the services offered (Kasilingam & Krishna, 2022). The steps taken to get the value *willingnes to pay* (WTP) are:
   a. Calculating the average income of river transport respondents
   b. Calculating the center value
   c. Calculating the average ability to pay

The WTP value can be known based on the perception of the tariff value that is considered appropriate by transportation users (Song et al., 2022). The basic

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approach in calculating the value *WTP* is formulated by the equation:

$$MWTP = \frac{1}{n}\sum \quad nWTPi \ldots\ldots\ldots\ldots\ldots\ldots \quad (8)$$

Description:
MWTP = Average WTP value of the sample
n = Number of sample respondents
WTPi = Perceived WTP value of the i-th respondent

3. Results and Discussions

Presentation of Data

a. Analyzing factors in the calculation of existing conventional tariffs for river transportation based on ship operating costs (BOK).

Based on the results of the field survey to calculate the existing river transport tariff at the PU junction pier, namely by agreement between the ship operator and passengers, to find out the amount of the tariff, the author analyzes the river transport tariff based on *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau*. Operational Costs are costs incurred by river transport ship owners, the amount of which is influenced by current cost components and seen from what components have not been included in the formula of *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau*, namely the cost of Credit / Wifi and the Cost of Towing the Ship with the addition of these components we can adjust the tariff in the Banyuasin Regency area, as in the calculation below:

Table 1. Survey Results of Vessel Operating Costs (BOK) of PU Jetty Simpang - Penuguan Village Line

No	Ship Characteristics	Price	Unit
1	Fare	80,000	Per person
2	Ship Price	181,000,000	Per ship
3	Hull Price	34,000,000	Per unit
4	Engine Price	147,000,000	Per unit
5	Passenger Capacity	28	People
6	Cargo Capacity	150	Kg
7	Current Passenger Load	15	People
8	Current Cargo Load	50	Kg
9	Captain's Salary	1,500,000	Per day
10	Crew Salary	300,000	Per day
11	Fuel Consumption / Trip	35	Liters per trip
12	Fuel Price	12,000	Per liter
13	Oil Consumption / Trip	2	Liters
14	Oil Price	45,000	Per bottle
15	Gear Oil Price	40,000	Per bottle
16	Trip Duration	1	Hour
17	Distance	40	Kilometers
18	Speed	40	Km / Hour
19	Number of Operating Ships	2	Units
20	Frequency	2	Trips
21	Maintenance Cost	2,000,000	Per month
22	Port Fees	80,000	Per day
23	WiFi/Data Package Cost	150,000	Per month
24	Mooring Line Handling Fees	20,000	Per day

The following is the calculation of river transportation tariffs based on *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau*. To find out the analysis of passenger rates based on load factors, it can be seen in the tariff table below:

Table 2. River Transportation Line Tariffs PU Simpang Pier - Penuguan Village

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No	Load Factor	Number of Passengers (people)	Fare/Km (Rp)	Fare/passenger (Rp)
1	100%	28	1.393	55.629
2	90%	25	1.548	61.810
3	80%	22	1.741	69.536
4	70%	20	1.990	79.470
5	60%	17	2.322	92.715
6	50%	14	2.786	111.257
7	40%	11	3.483	139.072
8	30%	8	4.644	185.429
9	20%	6	6.966	278.144
10	10%	3	13.932	556.287

From the above calculations it can be seen that the existing passenger fare at the PU junction pier - Penuguan Village is Rp. 80,000, - while the analysis results with a load factor of 100% are Rp. 55,629, - this shows that the conventional calculation is too far from the calculation in accordance with *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau* which is -30% of the existing tariff.

The following is an analysis of river transportation rates at the Simpang PU pier - Karang Agung Ilir Village with an existing tariff of Rp. 150,000 per passenger.

The following is an analysis of river transportation rates at the PU Simpang pier - Karang Agung Ilir Village P2 - P16 with an existing tariff of Rp. 130,000 per passenger.

Table 3. Survey Results of Ship Operating Costs (BOK) PU Simpang Pier - Karang Agung Ilir Village Route P2 - P16

No	Ship Characteristics	Price	Unit
1	Tax	130,000	Per person
2	Ship Price	181,000,000	Per ship
3	Hull Price	34,000,000	Per unit
4	Engine Price	147,000,000	Per unit
5	Passenger Capacity	28	People
6	Cargo Capacity	150	Kg
7	Current Passenger Load	26	People
8	Current Cargo Load	50	Kg
9	Captain's Salary	1,500,000	Per trip
10	Crew Salary	400,000	Per trip
11	Fuel Consumption / Trip	100	Liters per trip
12	Fuel Price	12,000	Per liter
13	Oil Consumption / Trip	5	Liters
14	Oil Price	45,000	Per bottle
15	Gear Oil Price	40,000	Per bottle
16	Trip Duration	2.0	Hours
17	Distance	57	Kilometers
18	Speed	29	Km / Hour
19	Number of Operating Ships	2	Units
20	Frequency	2.0	Trips
21	Maintenance Cost	2,000,000	Per month
22	Port Fees	80,000	Per day
23	WiFi/Data Package Cost	100,000	Per month
24	Mooring Line Handling Fees	20,000	Per day

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The following is the calculation of river transportation tariffs based on Ministerial Decree Number 73 of 2004 concerning the Implementation of River and Lake Transportation. To find out the analysis of passenger rates based on load factors, it can be seen in the tariff table below:

Table 4. River Transportation Rates Simpang PU Jetty - Karang Agung Ilir Village P2 - P16

No	Faktor Beban	Number of Passengers (people)	Fare/Km (Rp)	Fare/passenger (Rp)
1	100%	28	1.612	91.894
2	90%	25	1.791	102.104
3	80%	22	2.015	114.868
4	70%	20	2.303	131.277
5	60%	17	2.687	153.157
6	50%	14	3.224	183.788
7	40%	11	4.030	229.735
8	30%	8	5.374	306.313
9	20%	6	8.061	459.470
10	10%	3	16.122	918.940

From the above calculations it can be seen that the existing passenger fare at the PU junction pier - Karang Agung Ilir Village P2 - P16 is Rp. 130,000, - while the analysis result with a 100% load factor is Rp. 91,894, - this shows that the conventional calculation is too far from the calculation in accordance with Ministerial Decree No. 73 of 2004 concerning the Implementation of River and Lake Transportation, which is -29% of the existing tariff.

The following are the results of the tariff analysis and the existing river transportation tariff in accordance with *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau* in Banyuasin Regency.

Table 5. Existing River Transportation Tariffs and Tariffs in Accordance with Ministerial Decree No. 73 of 2004 on the Implementation of River and Lake Transportation

No	Route		Existing Tariff	Tariff according to KM 73	Percentage
	From	Destination			
1	Dermaga Simpang PU	Desa Penuguan	Rp 80.000	Rp 55.629	-30,5%
2	Dermaga Simpang PU	Desa Karang Agung Ilir P2-P16	Rp 130.000	Rp 91.894	-29,3%

The following is a table of river transportation tariffs based on the results of load factor surveys in the field, namely:

Table 6. River Transportation Tariffs Based on Ship Load Factor Survey Results

No	Route		Existing Tariff	Taxes	
	From	Destination		Load Factor	As per LF
1	Dermaga Simpang PU	Desa Penuguan	Rp 80.000	90%	59.908
2	Dermaga Simpang PU	Desa Karang Agung Ilir P2-P16	Rp 130.000	98%	102.921

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Discussions

Based on the research findings, there is a significant discrepancy between the current river transportation fares imposed by boat operators and the fares that should be applied based on ship operational costs (BOK) according to *Keputusan Menteri Perhubungan 73 Tahun 2004 Tentang penyelenggaraan Angkutan Sungai Dan Danau*. This discrepancy indicates that the existing fares do not reflect actual operational costs, potentially burdening local communities that rely on river transportation.

More specifically, on the Simpang PU Jetty – Penuguan Village route, the current fare is Rp 80,000 per passenger, while the calculated fare based on a 100% load factor should be Rp 55,629. Similarly, on the Simpang PU Jetty – Karang Agung Ilir Village route, the current fare is Rp 130,000 per passenger, whereas the fare based on a 100% load factor should be Rp 91,894. In other words, the fares applied are 29%-30% higher than those calculated using regulatory standards.

This discrepancy can be attributed to two primary factors:

1. Boat operators set higher fares to cover potential losses due to low passenger occupancy (low load factor).
2. Lack of strict government oversight in fare determination, allowing operators to set prices based on informal agreements with passengers rather than actual operational costs.

This phenomenon aligns with the theory proposed by Nasution (1996), which states that transportation fare determination should consider operational costs, users' economic capacity, and the balance between supply and demand. An imbalance in these three factors can lead to fares that do not accurately reflect real-world conditions (Lutfi et al., 2024).

From a transportation theory perspective, public transportation fares must take into account operational costs, community purchasing power, and the equilibrium between supply and demand (Sebayang & Widyastuti, 2024). The operational costs of riverboats consist of fixed costs (vessel depreciation, insurance, crew wages) and variable costs (fuel, vessel maintenance, mooring fees, and telecommunication expenses for coordinating with passengers).

1. Fare Discrepancy and Its Impact on Users

The findings of this study are consistent with research conducted by Fitriansyah et al. (2023) in Kotabaru District, South Kalimantan, which found that river transportation fares often exceed actual operational costs, leading to inflated prices. This occurs because boat operators not only factor in basic operational expenses but also include economic risk factors, such as fluctuating passenger numbers and rising fuel prices. These findings mirror those of this study, where the applied fares significantly exceed the fares calculated using actual operational cost data due to concerns over low load factor (Fitriansyah et al., 2023).

Similarly, research by Alamsyah et al. (2023) on the Donan River in Cilacap also highlighted a significant discrepancy between cost-based fares and actual fares imposed by boat operators. The study concluded that insufficient regulation and tariff control allow boat operators to determine fares flexibly, ultimately leading to higher financial burdens on users of river transport services (Alamsyah et al., 2023).

From these two previous studies, it can be concluded that the issue of high river transport fares is not unique to Banyuasin Regency but is also prevalent in other areas dependent on river transportation. Therefore, regular data-driven fare evaluations and greater transparency in fare policies are necessary to bridge the gap between operational costs and users' ability to pay.

2. Fare Discrepancy and the Concepts of Ability to Pay (ATP) and Willingness to Pay (WTP)

This phenomenon can also be explained through the Ability to Pay (ATP) and Willingness to Pay (WTP) concepts (Rohmah & Harini, 2023). ATP refers to users' financial ability to pay for transportation services, while WTP refers to users' willingness to pay for services they perceive as valuable.

In this study, the indication that the current fares exceed ATP suggests that river transport users may be discouraged from using these services due to unaffordable fares. If users perceive that the fares are disproportionately high compared to their income, they may seek alternative transportation modes, even though land transport accessibility is highly limited in this region.

Furthermore, imposing fares that do not align with ATP and WTP may lead to a decline in passenger numbers, which could result in reduced revenues for boat operators. In the long run, this could cause a decrease in service frequency, a reduction in service quality, or even the discontinuation of certain routes deemed unprofitable.

Conclusion

The research findings indicate that there is a significant discrepancy between the existing conventional tariffs for river transportation and the tariffs derived from the calculation of Ship Operating Costs (BOK). The key factor influencing the calculation of existing tariffs is the cost of operation, including the cost of communication (data/pulse packages) and rope-tying services. These factors, along with others like fuel consumption, crew salaries, and maintenance costs, contribute to the determination of an ideal tariff based on BOK.

The results also show that the passenger fares on various routes often do not reflect the actual operating costs. For example, on the PU Simpang - Penuguan route, the existing fare of Rp. 80,000 is significantly higher than the ideal fare of Rp. 59,908, which suggests that the current fares are overestimated. Similarly, on other routes like PU Simpang - Karang Agung Ilir, the existing fares were either higher or lower than those calculated based on the load factor and operational costs. These discrepancies emphasize the need for a reassessment of the tariff structure to ensure fairness and sustainability for both operators and passengers.

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