Evaluation of Ferry Transport Tariffs Based on Operational Costs of Ships Operating on The Merak-Bakauheni Route

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Abstract. The current transportation rates for crossing the Merak-Bakauheni route are application-basedFerizy, must be in line with existing guidelines, namely Minister of Transportation Regulation Number PM 66 of 2019 concerning Mechanisms for Determining and Formulating Ferry Transport Tariff Calculations as referred to in article 17 paragraph 1 that the basic tariff contained in article 16 paragraph (2) is calculated based on units of production per mile with a load factor of 60% (sixty percent). The method used in this research is analysisload factor, analysis of Ship Operational Costs (BOK) and analysis of ferry transportation tariff calculations based on Minister of Transportation Regulation Number PM 66 of 2019 concerning Mechanisms for Determining and Formulating Ferry Transportation Tariff Calculations using cluster sampling techniques.

Based on the results of the calculation analysisload factor, the average is obtainedload factorfor passengers when loading, it is 1.041% and 1.538% when unloading. Meanwhile, on average load factorfor vehicles when loading it is 136.05% and 128.54% when unloading. The change in the current calculated tariff rate from existing conditions, which was obtained through the analysis of Ship Operational Costs (BOK) and the calculation of ferry transportation tariffs, has caused a difference between the current passenger and vehicle tariffs (Ferizy) with the planned tariff calculated based on Minister of Transportation Regulation Number PM 66 of 2019 concerning Mechanisms for Determining and Formulating Ferry Transport Tariff Calculations. There was an increase with an average of 6.53%.

Keywords: Ferry Transport Rates, Load factor, Ship Operational Costs (BOK)

1. Introduction

Ferry transportation rates for economy rates are determined based on the type of route from a port. If the port serves inter-state or inter-provincial crossings, the ferry transportation rates are determined by the Minister. One example of a port whose crossing rates are determined by the Minister is the Merak Ferry Port. The Indonesian government, as a country that has vast energy reserves, but has a very high demand for energy, has implemented various energy policies to save and regulate national energy availability by reducing domestic subsidies. A significant reduction in subsidies will have an impact on reducing energy demand. The government will be able to have more space to regulate and utilize funds used for energy subsidies

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for other matters that require a quicker response. One concrete form taken by the Indonesian government is raising and lowering fuel prices which are adjusted based on subsidies provided by the state. The implementation of the increase in fuel prices as of 03 September 2022 was accompanied by the implementation of the Decree of the Minister of Transportation of the Republic of Indonesia Number KM 184 of 2022 concerning amendments to the Decree of the Minister of Transportation of the Republic of Indonesia Number KM 172 of 2022 concerning Tariffs for Organizing Economy Class Ferry Transport for Inter-provincial and Inter-State Crossings which aims to maintain balance between the interests of society, the sustainability of the ferry industry.

Currently, the Merak Ferry Port applies tariffs for the Merak-Bakauheni crossing which can be accessed online via the application, namelyFerizy. The application of tariffs that are fair and take all related parties into account is really needed to achieve a balance between the interests of the community, the sustainability of the ferry industry, and shipping safety and security. It is on this basis that the author is interested in conducting research regarding“"Evaluation of Ferry Transport Tariffs Based on the Operational Costs of Ships Operating on the Merak-Bakauheni Route."

2. Research Methodology

The method used by researchers is a quantitative method that uses data in the form of numbers and is analyzed using statistics. This data consists of primary data obtained from interviews regarding Ship Operational Cost (BOK) component data. The secondary data used is supporting data obtained from BPTD Class II Banten, PT. ASDP Indonesia Ferry (Persero) Merak Branch, PT. ASDP Indonesia Ferry (Persero) Bakauheni Branch and the Central Statistics Agency of Cilegon City. The analysis carried out by researchers is analysisload factorships, analysis of Ship Operational Costs (BOK), and analysis of ferry transportation fare calculations.

3. Results and Discussion

3.1 Analysis Load Factors Boat

Data used in analysisload factorship, namely transportation productivity data for one month obtained from PT. ASDP Indonesia Ferry (Persero) Merak Branch and PT. ASDP Indonesia Ferry (Persero) Bakauheni Branch. To knowload factoron the Merak-Bakauheni ferry crossing, there are several things that need to be taken into account, namely, the number of passengers and vehicles and the capacity of the ferry that carries these passengers and vehicles. The number of passengers and vehicles carried affects the sizeload factorferry crossing from Merak to Bakauheni in Banten

Province. Following are the results of the analysisload factor boat:

Table 1 Load Factor Boat

CLASS TYPES AND BOAT	LOAD FACTOR(%)			
	PASSENGER		VEHICLE	
	Departure (Load)	Arrival (Demolish)	Departure (Load)	Arrival (Demolish)
Class I (KMP Shalem)	2,370	1,920	143.05	142.94
Class II (KMP Rishel)	0.485	1,399	148.63	137.99
Class III (KMP Tranship 1)	0.560	1,104	115.41	119.90
Class IV (KMP Amarisa)	1,032	1,973	145.30	125.46
Class V (KMP Amadea)	0.759	1,296	127.84	116.43
AMOUNT	**5,206**	**7,692**	**680.24**	**642.72**
AVERAGE	**1,041**	**1,538**	**136.05**	**128.54**

3.2 Analysis of Ship Operational Costs (BOK)

The data needed to analyze Ship Operational Costs (BOK) is primary data from interviews regarding the components of Ship Operational Costs (BOK). The following are the results of the analysis of Ship Operational Costs (BOK):

Table 2 Analysis of Ship Operational Cost Calculations (BOK)

Cost Operation/Tah un	Class I (KMP Shalem)	Class II (KMP Rishel)	Class III (KMP Tranship 1)	Class IV (KMP Amarisa)	Class V (KMP Amadea)
	Rp. 146,076,777,787	Rp. 305,343,584,584	Rp. 475,023,250,886	Rp. 402,141,690,784	Rp. 493,442,529,645

Source: Data Analysis Results (2023)

3.3 Analysis of Crossing Transport Tariff Calculations

The results of the calculation of Ship Operational Costs (BOK) which are accumulated with costs per unit per mile, shipping income tax, and basic costs per unit of production (SUP) per mile at the levelload factor60% results in the planned rates for passengers and vehicles as follows:

Table 3 Analysis of Planned Passenger and Vehicle Tariffs for the Merak-Bakauheni Route

No	Ticket Type	Current Tarif (Ferizy)	Tarif Plan Calculation Results Load Factor 60% (PM No. 66 Of 2019)	Difference	
				Rp	%
Passengers					
1	Adult (Economy Class)	Rp21,600	Rp14,573	-Rp7,027	-32.53%
Vehicles					
1	Group I	Rp25,100	Rp32,498	Rp7,398	29.48%
2	Group II	Rp58,550	Rp58,584	Rp34	0.06%
3	Group III	Rp126,350	Rp126,350	Rp0	0.00%
4	Group IVA	Rp457,700	Rp467,654	Rp9,954	2.17%
5	Group IVB	Rp425,250	Rp484,705	Rp59,455	13.98%
6	Group VA	Rp916,250	Rp881,388	-Rp34,862	-3.80%
7	Group VB	Rp792,750	Rp896,981	Rp104,231	13.15%
8	Group VIA	Rp1,516,500	Rp1,464,753	-Rp51,747	-3.41%
9	Group VIB	Rp1,220,000	Rp1,503,809	Rp283,809	23.26%
10	Group VII	Rp1,761,500	Rp1,970,444	Rp208,944	11.86%
11	Group VIII	Rp2,320,500	Rp2,750,693	Rp430,193	18.54%
12	Group IX	Rp3,546,500	Rp3,974,697	Rp428,197	12.07%
TOTAL		**Rp13,188,550**	**Rp14,627,130**	**Rp1,438,580**	**10.91%**
AVERAGE					**6.53%**

Source: Data Analysis Results (2023)

4. Conclusion

Based on calculation analysisload factorIn this research, the quantity obtainedload factorthe average of all ship class samples, both for passengers and vehicles.Load factorsthe average number of passengers at departure (Loading) was 1.041%, and 1.538% at arrival (Unloading). Load factorsthe average vehicle at departure (Loading) was 136.05% and 128.54% at arrival (Unloading).

Based on the analysis of Ship Operating Costs (BOK), the average ship operating costs/year for the five sample ship classes is IDR 364,405,566,737. Based on the analysis of ferry transportation tariff calculations, there is a change in the amount of the current calculated tariff from the existing conditions, causing a difference between the current passenger and vehicle tariffs (Ferizy) with the planned tariff

calculated based on Minister of Transportation Regulation Number PM 66 of 2019 concerning Mechanisms for Determining and Formulating Ferry Transport Tariff Calculations. There was an increase with an average of 6.53%.

To carry out supervision and evaluation of the basic tariff rates determined by the Minister of Transportation every six months based on what is intended in Chapter VI concerning Supervision and Control of Tariffs, Article 19 of the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 66 of 2019 concerning Mechanisms for Determining and Formulating Calculations Ferry Transport Rates. In determining ferry transportation rates for the Merak-Bakauheni route, it needs to be adjusted to the conditions of service users in terms of ability and willingness to pay when using crossing transportation. and it is necessary to disseminate information to service users regarding the implementation of new tariffs so that no party feels disadvantaged between operators and service users, and there are no misunderstandings for service users. Recommendations for fare determination policies can use comparative analysis of passenger purchasing power (Ability To Pay and Willingness To Pay).Ability To Pay(ATP) is a person's ability to pay for the services they receive based on income that is considered ideal. WhereasWillingness To Payis the user's ability to pay compensation for the services they have received. Service users (consumers) must understand that there are changes in tariffs because there will certainly be an increase in ship operational costs which inevitably results in an increase in vehicle tariffs.

References

1. Abubakar, I. dkk. (2013). Transportasi Penyeberangan. Depok: Raja Grafindo Persada.
2. Afif, M. (2021). EVALUASI PERHITUNGAN TARIF KMP. SIGINJAI PADA PENYEBERANGAN JEPARA – KARIMUNJAWA BERDASARKAN PERATURAN MENTERI NO. PM. 66 TAHUN 2019 TENTANG MEKANISME PENETAPAN DAN FORMULASI PERHITUNGAN TARIF ANGKUTAN PENYEBERANGAN. Palembang: Politeknik Transportasi Sungai, Danau dan Penyeberangan Palembang.
3. Afrinayah, S. R. (2014). Perhitungan Biaya Angkutan Penyeberangan Lintas Tarakan-Toli Toli. Review Journal, Vol 16 No 02.
4. Akbar, M., Budianto, E., & Doloksaribu, B. (2019). Penentuan Besarnya Tarif Angkutan Dalam Kota (Angkot) Dengan Metode BOK. Musamus Journal Of Civil Engineering, Vol 01 No 02.
5. Asoliha, F., Aulia, M. D., & Fathoni, M. (2020). Evaluasi Aktivitas Operasional Angkutan Penyeberangan Lintas Merak-Bakauheni. CRANE: Civil Engineering Research Journal, Vol 01 No 02.
6. Febriana, R. (2019). Evaluasi Pembelajaran. Jakarta: Sinar Grafika Offset.
7. Firmansyah, D., & Dede. (2022). Teknik Pengambilan Sampel Umum dalam Metodologi Penelitian. Jurnal Ilmiah Pendidikan Holistik (JIPH), Vol 01 No 02.

8. Harmono, W. (2022). Dampak Kebijakan Pengalihan Subsidi BBM di Tengah Krisis Multinasional Terhadap Inflasi dan Pertumbuhan Ekonomi Di Indonesia. Jurnal Ekonomi Kreatif Dan Manajemen Bisnis Digital, Vol 01 No 02.
9. Hasan, I. (2002). Pokok-Pokok Materi Metodologi Penelitian dan Aplikasinya Jakarta. Ghalia Indonesia.
10. Hidayat, R. (2022). EVALUASI PERHITUNGAN TARIF KMP. BILI PADA LINTASAN TEBAS KUALA-PERIGI PIAI PROVINSI KALIMANTAN BARAT. Palembang: Politeknik Transportasi Sungai, Danau dan Penyeberangan Palembang.
11. Husein, U. (2003). Metode Riset Bisnis (Panduan Mahasiswa Untuk Melaksanakan Riset Dilengkapi Contoh Proposal dan Hasil Riset Bidang Manajemen dan Akuntansi). Jakarta: Gramedia Pustaka Utama.
12. Jalil, E., Anggraini, R., Sugiarto, S., Kuala, S., Aceh, B., & Sipil, J. T. (2018). Analisis Biaya Operasional Kendaraan, Ability To Pay dan Willingness To Pay Untuk Penentuan Tarif Bus Transkoetaradja Koridor III. Jurnal Arsip Rekayasa Sipil Dan Perencanaan, Vol 01 No 04.
13. Karles, H., & Santoso, D. (2013). Analisis Komponen Biaya dan Tarif Angkutan Penyeberangan Dengan Simulasi Model Dinamis Pada Angkutan Lintasan Sibolga- Teluk Dalam PT. ASDP Indonesia Ferry (Persero). MIX Journal Vol 03 No 02.
14. Maslina dan Fauzan, M. (2016). Analisa Biaya Operasional Kapal Kotok Terhadap Keselamatan Transportasi Air Pada Pelabuhan Penyeberangan Balikpapan- Penajam. Transukma Journal, Vol 02 No 01.
15. Muhson, A. (2006). Teknik Analisis Kuantitatif. Yogyakarta: Universitas Negeri Yogyakarta.
16. Natalie, E., Ismanto, A., & Priyono, B. (2016). Analisis Karakteristik Arus Laut Untuk Pemanfaatan Potensi Energi Alternatif di Perairan Selat Gaspar. Oseanografi Journal, Vol 05 No 03.

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