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Vehicle Operational Cost Analysis (BOK) of Mini Bus Light Vehicle Public Transportation (Case Study of Siwa-Palopo Route)

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ABSTRACT

Land transportation, especially public transportation between cities, is very important in carrying out one of its main functions, namely as a means of transporting people to carry out their daily activities where the services provided are expected to be carried out quickly, safely, comfortably, cheaply and efficiently. The puIDRose of this study was to determine the value of vehicle operating costs (BOK) for the Siwa-Palopo route using data collection methods by means of surveys and direct interviews with public transportation operators. Based on the analysis of research data from the results of the Intercity Transportation Within the Province (AKDP) route Siwa - Palopo, the following conclusions were drawn; Mini Bus Vehicle Operating Costs with a BOK value of IDR 158,730,866, - / Year or IDR 2,701.71, - / Km. The income of Mini Bus Vehicle Owners is IDR 207,360,000 / Year or IDR 3,529.41 / Km. From the results of the analysis of the data calculations above, it can be seen that public transportation owners get a net profit of IDR. 48,629,134.1,-/year or IDR. 827.70,-/km. Where the income obtained by the transportation owner is greater than the Vehicle Operating Cost.

Keywords: *Operational Costs, Light Vehicles, Mini Buses*

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INTRODUCTION

Transportation, especially public transportation between cities, is very important in carrying out one of its main functions, namely as a means of transporting people to carry out their daily activities where the services provided are expected to be carried out quickly, safely, comfortably, cheaply and efficiently. With the ease and smoothness of movement, it is hoped that the function of a person's existence and the utility value of an item can be maximized both in terms of place (place utility) and time (time utility) so as to help accelerate the growth of a city or region. The growth or development of a city is one of the factors in the development of transportation and causes changes in the transportation system itself and the services of transportation service users. Transportation services continue to develop over time along with the growing population so that the provision of transportation facilities is needed to serve the activities and movements of the population. One element of the transportation system is public transportation which is very important to serve the needs of population

movement. Public transportation is also created to meet the social needs of commerce and others. In order to maintain the survival of public transportation companies and to be able to develop well, the tariff must be able to cover all vehicle operating costs (BOK) and obtain a decent profit, but also affordable for the community. For public transport operators or owners of public transport, the goal to be achieved is to gain maximum profit, while for the public users it is to get the best service and the lowest possible fare. Basically, the formulation of cost calculations is an application of the general theory of costs that apply in the transportation business sector, in this case road transportation. In this study, the calculation of public transport fares will pay attention to vehicle operating costs calculated from all costs incurred to operate the vehicle so that it can produce service.

Transportation Public passenger transportation is passenger transportation using public vehicles and is carried out with a rental or payment system (WaIDRani, 2002). In terms of mass transportation, the public transportation system (AU) becomes efficient because transportation costs become a shared burden, so public transportation costs become very cheap and affordable for the community. Public Transportation Objectives The public transportation services is to provide safe, fast, comfortable, and cheap services to the community whose mobility is increasing, especially for workers in carrying out their activities. The essence of public transportation service operations is to provide transportation services at the right time and place to meet the very diverse demands of the community. In essence, operators or vehicle owners must understand the pattern of needs, and must be able to mobilize provisions to meet needs economically(Ahmad Yauri, 2017).

Vehicle Operating Costs (VOC) Vehicle operating costs are defined as the costs of all factors related to the operation of a vehicle under normal conditions for a particular puIDRose. Based on economic considerations, a match is needed between the amount of tariffs (revenue). In this case, entrepreneurs get reasonable profits and can guarantee the continuity and development of the public transportation service business they manage. Vehicle Operating Costs are divided into two major parts, namely direct costs and indirect costs.

- Direct costs (Directcost) Direct costs are costs that are directly incurred without depending on the volume of production that occurs. Direct costs can be grouped as follows:
- Depreciation Costs (BP) Depreciation costs are costs incurred for the depreciation of the vehicle's value due to reduced economic life. Economic life is defined as the time of use of the tool that still provides economic benefits, while the residual value is the value of the tool after its economic life ends.

Capital Interest Costs (BM) Capital interest costs are costs incurred for capital interest calculated based on the amount of money borrowed to purchase a vehicle, either from your own loan or from an external party such as a Bank. The interest rate is calculated based on the applicable bank credit interest rate. 3.

Vehicle Operating Costs are divided into 2 (two) parts, namely direct costs and indirect costs. Direct costs are costs that are directly incurred without depending on the volume of production that occurs. Indirect costs are costs that are not directly charged to transportation operations that remain part of the basic costs and cost units. Vehicle

operating costs are the sum of direct costs plus indirect costs, while vehicle operating costs per trip are the total vehicle operating costs for one year divided by the vehicle's kilometers traveled per year. According to (Hernawan and Putri, 2012) Operating costs will support the company's profitability. Production Costs are the amount of sacrifice made to produce one unit of transportation service production. The amount of production costs is highly dependent on the amount of total operating costs per unit of time and the amount of service production per unit of time. Production Costs consist of direct costs and indirect costs plus a profit of 10% of the total production costs. (Ratnasari, 2008) basic costs are all components of costs incurred by the company, In principle, the policy of determining city transportation fares must be able to save two interests, namely being able to provide reasonable profits to be able to maintain the survival of the company and the amount of affordable fares for the community. (Sitorus, 2006) Tariff revenue has been calculated using operational cost components.

METHOD

Research Approach In this study, the author uses quantitative research, because the data obtained will be in the form of numbers. The numbers obtained will be further analyzed in data analysis. Location and Time of Research Research Location The location of the research to be conducted is in the city of Siwa and the city of Palopo by directly visiting the Office/Agency (passenger terminal) related to the operational costs of public transportation vehicles of the Panther, APV and Avanza types. Research Time The time of the research that we conducted was based on the level of data needs to be obtained. Type and Source of Data Primary Data Data obtained directly in the area or at the research location, such as: - Interviews with drivers and passengers - Use of spare parts Secondary Data Data taken at related agencies/offices: - Data from the Transportation Agency - Data from official car dealers and workshops. - Population and Sample Population The population of public transportation vehicles operating on the Siwa-Palopo route is around 12 vehicles per day.

Sample The sample or vehicle that is the object of the research is the type of light mini bus public transportation (<5 tons), such as: Panther, Kijang, APV, Avanza, Zenia. Data Collection Techniques With data collection at related agencies, such as: Passenger Data, Data and number of operating vehicles, Data on permits and vehicle completeness documents. Data collection at official dealers and official workshops. Direct interviews with related agencies, dealers and workshops, owners and drivers of public transportation vehicles, and passengers. Data Management Techniques The data analysis used in this final assignment consists of: - Analysis of light mini bus drivers, survey results conducted on drivers in the Siwa/Palopo area, questions to respondents: occupation, operating hours, ownership, determination of fares for passengers, basis for determining fares, passenger destinations, net income obtained, interest in changing jobs and driver expectations. - Analysis of vehicle operating costs (BOK).

FINDING AND DISCUSSION

RESEARCH RESULT

Analysis of Mini Bus Data for Public Transportation on the Siwa-Palopo Route Primary Data for AKDP Public Transportation Passenger Number Data

Table 1. Number of Public Transportation Passengers Siwa-Palopo

Year	Vehicle	Number of Passengers Per Year (Person)
2015	Mini Bus	2.880

Source: Field survey results 2018

Load Factor (LF) Data From the analysis results, the average load factor for public transportation on the Siwa-Palopo route was obtained using the formula:
Lf = (N/C) x 100% =
(8/8) x 100% = 100%
(N) = Number of Passengers
(C) = Number of Seats (vehicle carrying capacity)
So the average mini bus public transportation on the Siwa-Palopo route is 100%

Table 2. BOK Analysis Recapitulation

No	Cost	Cost/Year	Distance/Rit (PP)	Distance/Year	C ost/Rit	Cost/Km
		IDR	Km	Km	Rp	Rp
1	Vehicle Capital Costs	52.731.000	204	58.752	183.093,75	897,51
2	Depreciation Expense (7Year)	24.000.000	204	58.752	83.333,33	408,49
3	Licensing Fees	2.282.500	204	58.752	11.188,72	38,84
4	Insurance Cost	3.775.000	204	58.752	18.504,90	64,25
5	Fuel Cost	25.263.360	204	58.752	87.720	430
6	Tire Usage Cost	11.500.000	204	58.752	39.930,55	195,73
7	Daily Washing Fee	7.200.000	204	58.752	25.000	122,54
8	Periodic Washing Fee	600.000	204	58.752	2.083,33	10,21
9	Small Service Fee	2.325.000	204	58.752	8.072,91	39,57
10	Big Service Fee	5.437.500	204	58.752	18.880,20	92,55
11	Cost Overhul	7.750.000	204	58.752	26.909,72	131,91
12	Retribution Cost	1.440.000	204	58.752	5.000	24,50
13	Overhead(10% Total Cost)	14.435.953,9	204	58,752	50.104,43	245,71
	Total BOK	**158.730.866**	**204**	**58.752**	**551.161,24**	**2.701,71**

Source: Field survey results

Table 3. Tariff Analysis Recapitulation

No	Cost	Capital/Km	Distance/Km	Total Pnp	Cost liability/Pnp
1	Vehicle Capital Costs	897,51	204	10	18.309,20
2	Depreciation Expense (7Year)	408,49	204	10	8.333,19
3	Licensing Fees	38,84	204	10	792,336
4	Insurance Cost	64,25	204	10	1.310,7
5	Fuel Cost	430	204	10	8.772
6	Tire Usage Cost	195,73	204	10	3.992,89
7	Daily Washing Fee	122,54	204	10	1.499,81
8	Periodic Washing Fee	10,21	204	10	208,28
9	Small Service Fee	39,57	204	10	807,22
10	Big Service Fee	92,55	204	10	1.888,02
11	Cost Overhul	131,91	204	10	2.690,96
12	Retribution Cost	24,50	204	10	499,8
13	Overhead(10% Total Cost)	245,71	204	10	5.012,48
	Total liability /Pnp				**54.115,89**

Source: Field survey results

Table 4. Recapitulation of Revenue Analysis

Item	Revenue	Percent(%)	Total Rit/year	Revenue/Year	Km/Year	Revenue/Km
Driver	720.000	11	288	22.809.600	58.752	388,23
Owner	720.000	89	288	184.550.400	58.752	3.141,17
Total	**720.000**	**100**	**288**	**207.360.000**	**58.752**	**3.529,41**

Source: Field survey results

DISCUSSION

Calculated by Public Transport Owners as Their Own Drivers with Transport Rental of IDR 60,000,-/Pnp - Income per Trip (PP) 5 x 2 IDR 60,000 = IDR 600,000,- - Average Goods Delivery per Trip IDR 120,000,- Total Average Income/profit per Trip IDR 720,000 Based on the analysis of research data on Intercity Transportation Within the Province (AKDP) on the Siwa – Palopo route, then - Mini Bus Vehicle Operational Costs with a BOK value of IDR 158,730,866,-/Year or IDR 2,701.71,-/Km. - From the results of the analysis of the data calculation above, it can be seen that public transport owners earn a net profit of IDR 48,629,134.1,-/year or IDR 827.70,-/km. Where the income obtained by the vehicle owner is greater than the vehicle operating costs.

CONCLUSSION

Based on the analysis of research data on Intercity Transportation Within Province (AKDP) on the Siwa - Palopo route, the following conclusions were drawn; - Mini Bus Vehicle Operational Costs with a BOK value of IDR 158,730,866,-/Year or IDR 2,701.71,-/Km. - Mini Bus Vehicle Owner Income of IDR 207,360,000/Year or IDR 3,529.41/Km. - From the results of the analysis of the data calculations above, it can be seen that public transportation owners earn a net profit of IDR. 48,629,134.1,-/year or

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